



Walterboro®

The Front Porch of the Lowcountry

**City of Walterboro
242 Hampton Street
Walterboro, SC 29488
843.782.1000**

**BID: CPST-14
I-95 Loop Project
Streetscape Phases 1B & 1E**

DUE: Thursday, January 24, 2019 @ 11:00am

MAIL RESPONSE TO:

City of Walterboro
Attn: Hank Amundson
242 Hampton Street
Walterboro, SC 29488

DELIVER RESPONSE TO:

City of Walterboro
Attn: Hank Amundson
242 Hampton Street
Walterboro, SC 29488

TABLE OF CONTENTS

A. OVERVIEW..... 3

B. SCOPE OF WORK..... 3

C. INSTRUCTIONS TO CONTRACTOR..... 3

D. SELECTION CRITERIA 4

E. SPECIFIC TERMS AND CONDITIONS..... 4

F. GENERAL CONTRACTUAL REQUIREMENTS 6

G. LPA REQUIRED PROVISIONS – SCDOT..... 9

H. SPECIAL PROVISIONS – WOOD+PARTNERS10

I. SPECIAL PROVISIONS – DAVIS & FLOYD – PHASE 1B.....11

J. SPECIAL PROVISIONS – DAVIS & FLOYD – PHASE 1E.....12

K. SUPPLEMENTAL SPECIFICATIONS – WOOD+PARTNERS13

L. BID FORMS14

 BID SUMMARY 14

 BID DETAIL – PHASE 1B..... 15

 BID DETAIL – PHASE 1E..... 19

 REFERENCE FORM..... 21

 SUBCONTRACTOR FORM 22

 DBE SUBCONTRACTOR FORM 23

 CERTIFICATE OF FAMILIARITY FORM..... 23

 ADDENDA ACKNOWLEDGEMENT FORM..... 25

 DEBARMENT FORM 26

A. OVERVIEW

City of Walterboro, South Carolina (the "City") request bids from contractors for a streetscape project on SC 63 (South Jefferies Blvd) from Elizabeth Street (S-15-125) to Benson Street (S-15-293), approximately 2000 linear feet, in Walterboro, SC. All prospective bidders must be on the current South Carolina Department of Transportation (SCDOT) Prequalified Prime Contractor List prior to bidding.

Subject to the terms, conditions, provisions, and the enclosed specifications, responses to this solicitation will be received at this office until the stated date and time. Responses received after the scheduled due date and time will be rejected. Bids must be submitted in a sealed package marked on the outside with the Contractor's name, address, and the solicitation name and number.

This solicitation does not commit the City of Walterboro to award a contract, to pay any costs incurred in the preparation of bids submitted, or to procure or contract for the services. The City reserves the right to accept or reject or cancel in part, or in its entirety offers received as a result of this request if deemed to be in the best interest of the City to do so.

Questions regarding this solicitation must be submitted via email to Carla Harvey, Colleton County Engineer at charvey@colletoncounty.org no later than 12:00PM on Thursday, January 17, 2019. On behalf of the City, answers to all questions will be posted on the Colleton County website: www.colletoncounty.org/bids-and-proposal-requests as addendums to this bid.

B. SCOPE OF WORK

The project consists of resurfacing and adding a raised median approximately 2000 linear feet on SC 63 which is an SCDOT roadway in Walterboro. The project also includes sidewalk, landscaping, lighting, mast arm signals, and other streetscape enhancements as found in the bid drawings. Roadways must be open to traffic at all times during construction. Utilities may be present along certain roads. It will be the responsibility of the contractor for coordination with the local utility providers and for making the necessary adjustments. All road work is to be performed within the existing or obtained Right-of-Way of the road and construction easements.

This contract is a unit price contract.

C. INSTRUCTIONS TO CONTRACTOR

1. Submittal must include one **(1) original bid** response clearly marked as original, and **three (3) complete copies** of the Contractor's bid along with a completed **W-9 form**. Responses must be in a sealed envelope/package containing the solicitation name. The individual signing the response must be an Agent legally authorized to bind the company.
2. Show solicitation name on the outside of mailing package. The City of Walterboro assumes no responsibility for unmarked or improperly marked envelopes.
3. It is the contractor's sole responsibility to ensure that solicitation responses, amendments thereto or withdrawal requests are submitted by the scheduled due date and time.

4. The contractor must clearly mark as "Confidential" each part of their response, which they consider to be proprietary information that could be exempt from disclosure under Section 30-40(C) Code of Laws of South Carolina, 1976, Freedom of Information Act. The City of Walterboro reserves the right to determine whether this information should be exempt from disclosure and legal action may not be brought against the City or its agents for its determination in this regard.
5. The contractor shall complete and submit all forms listed in the **Bid Forms** of the table of contents. All responses shall be printed in ink or typewritten. Bids written in pencil will be disqualified.
6. Each Contractor shall submit with his/her bid a Bid Bond with a good and sufficient surety or sureties company licensed in South Carolina, in the amount of five percent (5%) of the total Bid amount. The Bid bond penalty may be expressed in terms of a percentage of the Bid price or may be expressed in dollars and cents.
7. The successful contractor shall pay the cost and furnish within ten days after written notice of acceptance of Bid, an irrevocable Surety in the form of a Performance and Payment Bond, Certificate of Deposit, Cashier's Check or irrevocable letter of credit. Performance Bond shall include a one-year warranty of workmanship and materials and shall commence upon completion and acceptance of the total contract by the City of Walterboro. The Surety shall be issued in the amount of 100% of the total contract covering the entire term of the contract as awarded. The cost of performance bond is to be included in the unit prices listed on the bid form.

A "No Response" qualifies as a response; however, it is the responsibility of the Contractor to notify the City if you receive solicitations that do not apply.

D. SELECTION CRITERIA

It is the intent of the City of Walterboro to award one contract to the lowest responsive, responsible Contractor based on the estimated quantities on the Bid Form with final approval by City Council.

E. SPECIFIC TERMS AND CONDITIONS

1. **COMPETITION:** This solicitation is intended to promote full and open competition. If any language, specifications, terms and conditions, or any combination thereof restricts or limits the requirements in this solicitation to a single source, it shall be the responsibility of the interested contractor to notify the City in writing no later than five (5) business days prior to the scheduled due date and time.
2. **RESPONDANTS QUALIFICATION:** The City reserves the right to request satisfactory evidence of their ability to furnish services in accordance with the terms and conditions listed herein. The City further reserves the right to make the final determination as to the Contractor's ability to provide said services.
3. **RESPONSE WITHDRAWAL:** Any responses may be withdrawn prior to the established closing date and time, but not thereafter with proper approval from the City Manager.
4. **REJECTION:** The City of Walterboro reserves the right to reject any and all bids, to cancel or withdraw this solicitation, and to waive any technicality if deemed to be in the best interest of the City.

5. WAIVER: The City reserves the right to waive any Instructions to Bidder, General or Special Provisions, General or Special Conditions, or specifications deviation if deemed to be in the best interest of the City.
6. RESPONSE PERIOD: All responses shall be good for a minimum period of 60 calendar days.
7. DEVIATIONS FROM 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 successful contractor will be held responsible therefore. Deviations must be explained in detail on separate attached sheet(s). The listing of deviations, if any, is required but will not be construed as waiving any requirements of the specifications. Unidentified deviations found during the evaluation of the response may be cause for rejection.
8. AMENDMENTS: All amendments to and interpretations of this solicitation shall be in writing and issued by the City Manager of the City of Walterboro.
9. DEBARMENT: By submitting a qualification package, the contractor is certifying that they are not currently debarred from responding to any request for bids by any agency or subdivision of the State of South Carolina or the United States Federal Government, nor are they an agent of any person or entity that is currently debarred from submitting bids on contracts by any agency or subdivision of the State of South Carolina.
10. DEFAULT: In case of default by the Contractor, the City reserves the right to purchase any or all items in default in the open market, charging the Contractor with any excessive costs. Should such charge be assessed, no subsequent solicitation response of the defaulting Contractor will be considered in future bids until the assessed charge has been satisfied.
11. HOLD HARMLESS: All respondents to this bid shall indemnify and hold harmless the City of Walterboro and any of their officers and employees from all suits and claims alleged to be a result of this request for bid. The issuance of this request of bids constitutes only an invitation to present a bid. The City of Walterboro reserves the right to determine, at its sole discretion, whether any aspect of a respondent's submittal meets the criteria in this request for bids. The City of Walterboro also reserves the right to seek clarifications, to negotiate with any Contractor submitting a response, to reject any or all responses with or without cause, and to modify the procurement process and schedule.
12. CANCELLATION: In the event that this request for bid is withdrawn or the project canceled for any reason, the City of Walterboro shall have no liability to any respondent for any costs or expenses incurred in connection with this request for bids or otherwise.
13. FAILURE TO SUBMIT ALL MANDATORY FORMS: Failure to submit all the mandatory forms from this request for bid shall be just cause for the rejection of the qualification package. However, the City of Walterboro reserves the right to decide, on a case by case basis, in its sole discretion, whether or not to reject such a bid as non-responsive.
14. CONTRACT AWARD:
 - a. This solicitation and submitted documents, when properly accepted by the City of Walterboro shall constitute an agreement equally binding between the successful Contractor and the City.

No oral statement of any person shall modify or otherwise change, or affect the terms, conditions or specifications stated in the resulting agreement. The City shall not be legally bound by any amendment or interpretation that is not fully executed by both parties in writing.

- b. The successful Contractor shall be required to execute a formal agreement with the City Manager's Office within ten (10) business days after issuance of the Notice of Award.

15. CONTRACT ADMINISTRATION: Questions or problems arising after award of an agreement shall be directed to the City Manager by calling (843) 782-1000. Copies of all correspondence concerning this solicitation or resulting agreement shall be sent to the City of Walterboro, 242 Hampton Street, Walterboro, SC 29488.

F. GENERAL CONTRACTUAL REQUIREMENTS

1. ABANDONMENT OR DELAY: If the work to be done under this contract shall be abandoned or delayed by the Contractor, or if at any time the City shall be of the opinion and shall so certify in writing that work has been abandoned or delayed by the Contractor, the City may annul the contract or any part thereof if the Contractor fails to resolve the matter within thirty (30) days of written notice.
2. CONTRACTOR'S COOPERATION: The Contractor shall maintain regular communications with the Project Manager and shall actively cooperate in all matters pertaining to this contract.
3. RESPONSIBILITY: The Contractor shall at all times observe and comply with all federal, state, local and municipal laws, ordinances, rules and regulations in any manner affecting the contract.
4. NON-APPROPRIATION/SUBSTITUTION PERMITTED: If the City of Walterboro Council fails to appropriate or authorize the expenditure of sufficient funds to provide the continuation of this contract or if a lawful order issued in, or for any fiscal year during the term of the agreement, reduces the funds appropriated or authorized in such amounts as to preclude making the payments set out therein, the agreement shall terminate on the date said funds are no longer available without any termination charges or other liability incurring to City. Following any such non-appropriation, the master lease agreement shall contain no limitation on the City's ability to replace the equipment financed with any other equipment.
5. INDEMNIFICATION: Except for expenses or liabilities arising from the negligence of the City, the Contractor hereby expressly agrees to indemnify and hold the City harmless against any and all expenses and liabilities arising out of the performance or default of any resulting agreement or arising from or related to the Work as follows:

Contractor expressly agrees to the extent that there is a causal relationship between its negligence, action or inaction, or the negligence, action or inaction of any of its employees or any person, Contractor, or corporation directly or indirectly employed by the Contractor, and any damage, liability, injury, loss or expense (whether in connection with bodily injury or death or property damage or loss) that is suffered by the City and its employees or by any member of the public, to indemnify and save the City and its employees harmless against any and all liabilities, penalties, demands, claims, lawsuits, losses, damages, costs, and expenses arising out of the performance or default of any resulting agreement or arising from or related to the equipment. Such costs are to include defense, settlement and reasonable attorneys' fees incurred by the City and its employees. This promise to indemnify shall include bodily injuries or death occurring to Contractor's employees and any person,

directly or indirectly employed by Contractor (including without limitation any employee of any subcontractor), the City's employees, the employees of any other independent contractor, or occurring to any member of the public. When the City submits notice, Contractor shall promptly defend any aforementioned action.

6. The prescribed limits of insurance set forth herein shall not limit the extent of the Contractor's responsibility under this Section. The terms and conditions contained in this Section shall survive the termination of any resulting agreement or the suspension of the Work hereunder. Additionally, the City will not provide indemnity to the successful CONTRACTOR. Failure to comply with this section may result in your request for bid to be deemed non-responsive.
7. FORCE MAJEURE: The Contractor shall not be liable for any excess costs if the failure to perform the resulting agreement arises out of causes beyond the control and without 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 the contractor. If the failure to perform is caused by default of a subcontractor, and if such default arises out of causes beyond the control of both the Contractor and subcontractor and without excess costs for 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.
8. ARBITRATION: Under no circumstances and with no exception will the City of Walterboro act as arbitrator between the Contractor and any sub-contractor.
9. PUBLICITY RELEASES: Contractor agrees not to refer to award of this contract in commercial advertising in such a manner as to state or imply that the products or services provided are endorsed or preferred by the City. The Contractor shall not have the right to include the City's name in its published list of customers without prior approval of the City Manager. With regard to news releases, only the name of the City, type and duration of any resulting agreement may be used and then only with prior approval of the City. The Contractor also agrees not to publish, or cite in any form, any comments or quotes from the City's staff unless it is a direct quote from the City Manager.
10. GOVERNING LAWS: Any agreement arising from this solicitation shall be governed by the laws of the State of South Carolina and any and all disputes arising out of said agreement shall, if litigation is necessary, be litigated only in a Circuit Court for the Fourteenth Judicial Circuit sitting in Colleton County, South Carolina. The prevailing party shall be entitled to attorney's fees and all costs of said litigation.
11. ASSIGNMENT: The Contractor shall not assign in whole or in part any agreement resulting from this Request for Bids without the prior written consent of the City. The Contractor shall not assign any money due or to become due to him under said agreement without the prior written consent of the City.
12. AFFIRMATIVE ACTION: The successful Contractor will take affirmative action in complying with all Federal and State requirements concerning fair employment and treatment of all employees, without regard or discrimination by reason of race, color, religion, sex, national origin or physical handicap.
13. FAILURE TO DELIVER GOODS IN ACCORDANCE WITH TERMS & CONDITIONS: In case of failure to deliver goods in accordance with the contract terms and conditions, the City of Walterboro, after due

oral or written notice, may procure substitute goods or services from other sources and hold the contractor responsible for any resulting additional purchasing and administrative costs. This remedy shall be in addition to any other remedies which the City of Walterboro may have.

14. TERMINATION OF CONTRACT

Subject to the Provisions below, the contract may be terminated by the City Manager providing a thirty (30) days advance notice in writing is given to the Contractor.

- a. Termination for Convenience: In the event that this contract is terminated or canceled upon request and for the convenience of the City without the required thirty (30) days advance written notice, then the City shall negotiate reasonable termination costs, if applicable.
- b. Termination for Cause: Termination by the City 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) days advance notice requirement is waived and the default provision in this request for bids shall apply.
- c. The City shall be obligated to reimburse the Contractor only for those services rendered prior to the date of notice of termination, less any liquidation damages that may be assessed for non-performance.

Non-Appropriations Clause: Notwithstanding any other provisions of the contract, if the funds anticipated for the continued fulfillment of this contract are at any time. Not forthcoming, through the failure of the City of Walterboro to appropriate funds, discontinuance or material alteration of the program under which funds were provided, the City shall have the right to terminate the contract without penalty by giving not less than thirty (30) days written notice documenting the lack of funding. Unless otherwise agreed to by the City and the Contractor, the contract shall become null and void on the last day of the fiscal year for which appropriations were received.

15. GOVERNING LAWS: Any contract resulting from this request for bids shall be governed in all respects by the laws of the State of South Carolina and any litigation with respect thereto shall be brought in the courts of the State of South Carolina.

16. BONDS: Payment and Performance Bonds are required for this request for bids.

17. OWNERSHIP OF MATERIAL: Ownership of all data, material, and documentation originated and prepared for the City pursuant to this contract shall belong exclusively to the City.

18. INSURANCE: The City of Walterboro will require the following remain in force at all times through the life of the contract:

Workers' Compensation - \$100,000 – each accident
Statutory Coverage and Employer's - \$100,000 each employee
Liability - \$500,000 – policy limit

Comprehensive General Liability - \$2,000,000 – bodily injury each occurrence
\$2,000,000 – bodily injury aggregate
\$2,000,000 – property damage each occurrence
\$2,000,000 – property damage aggregate
Products – Completed Operations - \$1,000,000 – aggregate
Business Auto Liability – Same as Comprehensive General Liability
Excess or Umbrella Liability - \$2,000,000

City of Walterboro will be named as an "additional insured" party

G. LPA REQUIRED PROVISIONS – SCDOT

(Begins Next Page)

TABLE OF CONTENTS

(1) STANDARDS AND REFERENCES:3

(2) ERRATA TO 2007 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION:3

(3) SECTION 101: STANDARD DRAWINGS:3

(4) SECTION 102: IMMINENT STANDARD DRAWINGS:3

(5) SECTION 102: STANDARD DRAWING ERRATA:4

(6) SECTION 103.8: CONTRACTOR'S LIABILITY INSURANCE:5

(7) SECTION 106: QUALIFIED PRODUCT LISTINGS5

(8) SECTION 106: SOUTH CAROLINA MINING ACT:5

(9) SECTION 107: FAIR LABOR STANDARDS ACT OF 1938, AS AMENDED:6

(10) SECTION 107: APPLICATION OF DAVIS-BACON AND RELATED ACTS TO INDEPENDENT TRUCK DRIVERS AND MISCELLANEOUS CONSTRUCTION ACTIVITIES:6

(11) SECTION 107: CRANE SAFETY:6

(12) SECTION 107: REQUIREMENTS FOR FEDERAL AID CONTRACTS WHICH AFFECT SUBCONTRACTORS, DBE HAULERS, MATERIAL SUPPLIERS AND VENDORS:6

(13) SECTION 107: DISADVANTAGED BUSINESS ENTERPRISES (DBE) GOALS AND REQUIREMENTS:6

(14) SECTION 107: LATE DISCOVERY OF ARCHAEOLOGICAL/HISTORICAL REMAINS ON FEDERAL AID PROJECTS AND APPROVAL OF DESIGNATED BORROW PITS:7

(15) SECTION 107: DBE PARTICIPATION:7

(16) SECTION 107: CONTRACT PROVISION TO REQUIRE CERTIFICATION AND COMPLIANCE CONCERNING ILLEGAL ALIENS.....7

(17) SECTION 107: IRAN DIVESTMENT ACT:7

(18) SECTION 107: CARGO PREFERENCE ACT REQUIREMENTS:7

(19) DIVISION 600: MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES:8

(20) DIVISION 600: TRAFFIC CONTROL:8

(21) DIVISION 600, ETAL.: ADHESIVELY BONDED ANCHORS AND DOWELS:8

(22) DIVISION 600: TRAILER MOUNTED AUTOMATED FLAGGER ASSISTANCE DEVICE SYSTEM (AFAD):9

(23) DIVISION 600: WORK ZONE TRAFFIC CONTROL TRAINING REQUIREMENTS FOR CONTRACTORS / SUBCONTRACTORS:9

(24) SECTION 605: PERMANENT CONSTRUCTION SIGNS:9

(25) SECTION 702: CONCRETE STRUCTURES – PREFORMED JOINT FILLER:9

(26) SECTION 815: EROSION CONTROL MEASURES:9

(27) SECTION 815: EROSION CONTROL:10

SUPPLEMENTAL SPECIFICATIONS.....11

ERRATA TO 2007 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION11

SOUTH CAROLINA MINING ACT15

APPLICATION OF DAVIS-BACON AND RELATED ACTS TO INDEPENDENT TRUCK DRIVERS AND MISCELLANEOUS CONSTRUCTION ACTIVITIES16

CRANE SAFETY17

REQUIREMENTS FOR FEDERAL AID CONTRACTS WHICH AFFECT SUBCONTRACTORS, DBE HAULERS, MATERIAL SUPPLIERS AND VENDORS18

REQUIREMENTS FOR FEDERAL AID CONTRACTS WHICH AFFECT SUBCONTRACTORS, DBE HAULERS, MATERIAL SUPPLIERS AND VENDORS18

DISADVANTAGED BUSINESS ENTERPRISE (DBE).....19

DISADVANTAGED BUSINESS ENTERPRISES (DBE) -- FEDERAL PROJECTS23

LATE DISCOVERY OF ARCHAEOLOGICAL/HISTORICAL REMAINS ON FEDERAL AID PROJECTS AND APPROVAL OF DESIGNATED BORROW PITS31

TRAFFIC CONTROL32

ADHESIVELEY BONDED ANCHORS AND DOWELS34

AUTOMATED FLAGGER ASSISTANCE DEVICE SYSTEM (AFAD)38

TRAINING REQUIREMENTS FOR CONTRACTORS / SUBCONTRACTORS)43

EROSION CONTROL MEASURES47

EROSION CONTROL49

DISADVANTAGED BUSINESS ENTERPRISES (DBE) COMMITTAL SHEET50

| |
|-------------------|
| TABLE OF CONTENTS |
|-------------------|

| | |
|---|-----------|
| GENERAL DECISION NUMBER SC41 | 51 |
| GENERAL DECISION NUMBER SC42 | 56 |
| GENERAL DECISION NUMBER SC43 | 61 |
| GENERAL DECISION NUMBER SC44 | 66 |
| GENERAL DECISION NUMBER SC45 | 71 |
| GENERAL DECISION NUMBER SC46 | 75 |
| GENERAL DECISION NUMBER SC47 | 81 |
| REQUIRED CONTRACT PROVISIONS FEDERAL AID CONSTRUCTION CONTRACTS..... | 86 |
| STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS | 97 |

SPECIAL PROVISIONS

(1) STANDARDS AND REFERENCES:

This project is to be constructed under the SCDOT 2007 Standard Specifications for Highway Construction, the 2009 SCDOT Standard Drawings, the SCDOT 2004 Construction Manual, the SCDOT Supplemental Technical Specifications in effect at the time of the letting, and the following Special Provisions:

The above noted publications are available on the internet as follows, or may be obtained from the SCDOT Engineering Publications office at (803) 737-4533 or via e-mail at enrpubsales@dot.state.sc.us

| | |
|--|---|
| SCDOT 2007 Standard Specifications for Highway Construction | http://www.scdot.org/doing/doingPDFs/2007_full_specbook.pdf |
| 2009 SCDOT Standard Drawings | Standard Drawings Disclaimer |
| SCDOT 2004 Construction Manual | SCDOT Construction Manual (2004) |
| SCDOT Supplemental Technical Specifications | Supplemental Technical Specifications |
| South Carolina Manual on Uniform Traffic Control Devices (SCMUTCD) | http://www.scdot.org/doing/technicalPDFs/mutcdSupp/supplement_mutcd.pdf |
| Approved Products List for Traffic Control Devices in Work Zones | Traffic Engineering Manuals |

(2) ERRATA TO 2007 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION:

See attached Supplemental Specification dated **May 4, 2009** on page 11.

(3) SECTION 101: STANDARD DRAWINGS:

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

The Standard Drawings are available to purchase through the SCDOT Engineering Publications Sales Center. The Engineering Publication Sales Center is located in Room 122 (College Street Entrance) of the SCDOT Headquarters Building, 955 Park Street, Columbia, South Carolina.

All references in the plans, standard specifications, supplemental specifications, supplemental technical specifications or special provisions to drawings under the previous numbering system 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 over the appropriate column on the results page. Be aware that some older drawings now span over multiple pages due to detailing changes.

(4) SECTION 102: IMMINENT STANDARD DRAWINGS:

On the Standard Drawings search page, enter status of Imminent with other fields blank to see a list of upcoming Standard Drawings and their corresponding effective let date. Imminent drawings may be used at any time they are available if approved by the Resident. Follow procedure shown in imminent drawings when noted in this section.

SPECIAL PROVISIONS

No imminent drawings are currently required on this project, but contractor is encouraged to review available imminent drawings for bidding upcoming projects.

(5) SECTION 102: 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 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 **720-305-00 (ver May 2008)**, delete the entire note directly above main detail:

~~If sidewalk exists, the driveway opening should...~~

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

Riprap (Bridge End)

On sheet **805-325-00 (ver Jan 2011)** detail 2 replace text "rectangular washers (FWR03) See 805-005-00" with:

"rectangular washers (FWR03) See 805-090-00"

On sheet **805-325-00 (ver Jan 2011)** change text of note 5 to the following:

5. For project specific requirements such as additional offset blocks, extra length posts, and post attachment details, see Project Plans. Include all costs of project specific requirements in the Guardrail Thrie-Beam Bridge Connector pay item.

On sheet **805-330-00 (ver Jan 2011)** detail 2 replace text "rectangular washers (FWR03) See 805-005-00" with:

"rectangular washers (FWR03) See 805-090-00"

On sheet **805-330-00 (ver Jan 2011)** change text of note 4 to the following:

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| SPECIAL PROVISIONS |
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4. For project specific requirements such as additional offset blocks, extra length posts, and post attachment details, see Project Plans. Include all costs of project specific requirements in the Guardrail Thrie-Beam Bridge Connector pay item.

On sheet 805-510-00 (ver Jan 2011) detail 3 replace guardrail base plate note with the following:
See standard drawings 805-655-xx for guardrail base plate options.

On sheet 805-655-M1 (ver Jan 2011) replace note 30.4 with the following:

30.4 Install adhesive anchors to a depth sufficient to develop a minimum factored (reduced) ultimate tensile capacity of 21 kips per anchor bolt. Increase minimum embedment shown in detail 4 as required by adhesive manufacturer's recommendations for the existing material properties, anchor bolt pattern, edge conditions, and any other design reduction.

On sheet 815-002-00 (ver Jan 2013) Type B, D1, & D2 Inlet Structure Filters, revise as follows:

Replace all references of #5 stone with #5 or #57 stone.

Payment for either #5 or #57 stone will be made under the pay item for *Aggregate No. 5 for Erosion Control (6 " Uniform)*

(6) SECTION 103.8: CONTRACTOR'S LIABILITY INSURANCE:

Delete the second sentence in paragraph 4.

Delete the third sentence in paragraph 5, and replace it with the following sentence:

Ensure that all policies contain a provision that coverage afforded under the policies cannot be cancelled or reduced by the Contractor until at least 30 days prior written notice has been provided to SCDOT and that the policies cannot be cancelled for non-payment of premiums until at least 10 days prior written notice has been provided to SCDOT. Send Notice of Cancellations to Director of Construction Room 330, PO Box 191, Columbia, SC 29202.

Add the following as paragraph 6 at the end of Subsection 103.8:

By execution of the contract, the Contractor accepts the responsibility to provide the liability insurance policies and endorsements as specified herein. Failure of SCDOT to identify a deficiency in the Certificate of Insurance submitted by the Contractor's insurance agent as evidence of the specified insurance or to request other evidence of full compliance with the liability insurance specified shall not be construed as a waiver of the Contractor's obligation to provide and maintain the required insurance for the duration of the contract.

(7) SECTION 106: 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.

(8) SECTION 106: SOUTH CAROLINA MINING ACT:

See Attached Supplemental Specification Dated **March 20, 2003** on page 15.

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| SPECIAL PROVISIONS |
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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.

(9) SECTION 107: FAIR LABOR STANDARDS ACT OF 1938, AS AMENDED:

Attention is directed to this Federal Legislation, which has been enacted into law. The contractor will be responsible for carrying out all of the provisions of this legislation, which may affect this contract.

(10) SECTION 107: APPLICATION OF DAVIS-BACON AND RELATED ACTS TO INDEPENDENT TRUCK DRIVERS AND MISCELLANEOUS CONSTRUCTION ACTIVITIES:

See attached Supplemental Specification dated **June 13, 1990** on page **15**.

(11) SECTION 107: CRANE SAFETY:

See attached Supplemental Specification dated August 1, 2013 on page **17**.

(12) SECTION 107: REQUIREMENTS FOR FEDERAL AID CONTRACTS WHICH AFFECT SUBCONTRACTORS, DBE HAULERS, MATERIAL SUPPLIERS AND VENDORS:

See attached Supplemental Specification dated **March 1, 2010** on page **18**.

(13) SECTION 107: DISADVANTAGED BUSINESS ENTERPRISES (DBE) GOALS AND REQUIREMENTS:

The DBE goal for the project is as follows:

DISADVANTAGE BUSINESS ENTERPRISES CONTRACT GOAL 15 %

See attached Supplemental Specification entitled special provision "Disadvantaged Business Enterprises (DBE)" dated **July 26, 2016** on page **19** for specific requirements that must be met.

The contractor's attention is invited to the electronic DBE BIN file found on the electronic bidding service website, *Bid Express*, containing data from the "Directory of Certified Disadvantaged Business Enterprises" approved for use in each particular letting. It specifies the

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| SPECIAL PROVISIONS |
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amount (percentage) that the contractor may count toward its appropriate DBE Goals of expenditure for materials and supplies obtained from DBE Suppliers and Manufacturers.

(14) SECTION 107: LATE DISCOVERY OF ARCHAEOLOGICAL/HISTORICAL REMAINS ON FEDERAL AID PROJECTS AND APPROVAL OF DESIGNATED BORROW PITS:

See attached Supplemental Specification dated **August 7, 1991** on page **31**.

(15) SECTION 107: DBE PARTICIPATION:

The Bidder is encouraged to use DBE subcontractors on this project. All DBE participation shall be reported to the RCE on the DBE Quarterly Report.

(16) SECTION 107: 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 sub-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).

(17) SECTION 107: IRAN DIVESTMENT ACT:

By submission of this bid/proposal, the bidder/proposer as the prime contractor/consultant/vendor does hereby certify his compliance to the following:

1. **CERTIFICATION:** (a) The Iran Divestment Act List is a list published pursuant to Section 11-57-310 that identifies persons engaged in investment activities in Iran. Currently, the list is available at the following URL: <http://procurement.sc.gov/PS/PS-iran-divestment.phtm> (.). Section 11-57-310 requires the government to provide a person ninety days (90) written notice before he is included on the list. The following representation, which is required by Section 11-57-330(A), is a material inducement for the SCDOT to award a contract to you. (b) By signing your Offer, you certify that, as of the date you sign, you are not on the then-current version of the Iran Divestment Act List. (c) You must notify the SCDOT immediately if, at any time before posting of a final statement of award, you are added to the Iran Divestment Act List.

2. **ONGOING OBLIGATIONS:** (a) You must notify SCDOT immediately if, at any time during the contract term, you are added to the Iran Divestment Act List. (b) Consistent with Section 11-57-330(B), you shall not contract with any person to perform a part of the Work, if, at the time you enter into the subcontract, that person is on the then-current version of the Iran Divestment Act List.

3. **OPTION TO RENEW RESTRICTION:** Contractor acknowledges that, unless excused by Section 11-57-320, if the contractor is on the then-current Iran Divestment Act List as of the date of any contract renewal, the renewal will be void ab initio.

(18) SECTION 107: CARGO PREFERENCE ACT REQUIREMENTS:

(a) Use of United States-flag vessels – General Provisions:

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| SPECIAL PROVISIONS |
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"(1) Pursuant to Pub. L. 664 (43 U.S.C. 1241(b)) at least 50 percent of any equipment, materials or commodities procured, contracted for or otherwise obtained with funds granted, guaranteed, loaned, or advanced by the U.S. Government under this agreement, and which may be transported by ocean vessel, shall be transported on privately owned United States-flag commercial vessels, if available.

"(2) Within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (a)(1) of this section shall be furnished to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590."

(b) Use of United States-flag vessels - The contractor agrees:

"(1) To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

"(2) To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b) (1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

"(3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract."

(19) DIVISION 600: MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES:

"The Contractor is hereby advised that the Department has adopted the MUTCD 2003 - Manual on Uniform Traffic Control Devices for use on all projects. All references to the South Carolina Manual on Uniform Traffic Control Devices (SCMUTCD) are hereby revised to read "MUTCD - 2003 Edition"."

(20) DIVISION 600: TRAFFIC CONTROL:

See attached Supplemental Specification dated **September 1, 2015** on page **32**.

(21) DIVISION 600, Etal.: ADHESIVELY BONDED ANCHORS AND DOWELS:

See attached Supplemental Specification dated **September 1, 2008** on page **34**.

This Supplemental Specification applies when Adhesively Bonded Anchors or Dowels are called for in the Plans or Detailed Drawings.

The following Standard Drawings have been identified as showing Adhesively Bonded Anchors or Dowels:

SPECIAL PROVISIONS

| | |
|------------|---|
| 605-205-03 | Temporary Concrete Barrier |
| 605-210-04 | Temporary Concrete Barrier |
| 605-310-01 | Temporary Concrete Barrier |
| 605-315-00 | Temporary Concrete Barrier |
| 605-320-00 | Temporary Concrete Barrier |
| 605-325-00 | Temporary Concrete Barrier |
| 605-330-00 | Temporary Concrete Barrier |
| 651-105-00 | Barrier Mounted Sign Post |
| 657-100-00 | Overhead Sign Support Roadway Bridges |
| 722-105-01 | Box Culvert (Used to connect headwall, wingwalls, and for extensions) |
| 805-120-00 | Guardrail (W Beam) Base Plate Connection |
| 805-405-03 | Guardrail (Tubular Beam) Bridge Railing |
| 805-405-04 | Guardrail (Tubular Beam) Bridge Railing |
| 806-505-00 | Fence (Ornamental Steel Picket) |

It is the contractor's responsibility to determine if Adhesively Bonded Anchors or Dowels are a part of the project, and to comply with the provisions of the Supplemental Specification.

(22) DIVISION 600: TRAILER MOUNTED AUTOMATED FLAGGER ASSISTANCE DEVICE SYSTEM

(AFAD):

See attached Supplemental Specification dated **September 1, 2012** on page **38**.

(23) DIVISION 600: WORK ZONE TRAFFIC CONTROL TRAINING REQUIREMENTS FOR CONTRACTORS / SUBCONTRACTORS:

See attached Supplemental Specification dated **September 1, 2013** on page **43**.

(24) SECTION 605: PERMANENT CONSTRUCTION SIGNS:

Utility locations must be performed prior to the placement of Permanent Construction Signs. State Law requires that the location of each sign be marked with a white line in the roadway or a stake in the shoulder. The locator company will mark 25 feet on either side of the location. The responsibility for marking the sign locations prior to the contractor calling PUPS for utility locate lies with the party responsible for lines and grades on the project. If Construction Lines and Grades is a pay item, then the Prime Contractor is responsible for marking the sign location. If this is not included, it is the Department's responsibility to mark the locations.

Prior to marking the sign location, care must be taken when marking the signs to ensure that there are no obstructions or other mitigating factors that will cause the sign to be moved outside of the 50 foot utility window. Any costs associated with staking out the sign locations are considered incidental to the cost of Permanent Construction Signs.

Requests for utility locates must be specific and isolated to the sign locations if no ground disturbing activities are occurring outside of the sign placement.

(25) SECTION 702: CONCRETE STRUCTURES – PREFORMED JOINT FILLER:

See attached Supplemental Specification dated **April 1, 2013** on page **46**.

(26) SECTION 815: EROSION CONTROL MEASURES:

See attached Supplemental Specification dated **January 1, 2009**, on page **47**.

- (27) **SECTION 815: EROSION CONTROL:**
See attached Supplemental Specification Dated **July 1, 2011**, on page **49**.

May 4, 2009

ERRATA TO 2007 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION

Make the changes listed below to correct errata in the SDCOT *2007 Standard Specifications for Highway Construction*:

DIVISION 100 GENERAL PROVISIONS

SECTION 101 DEFINITIONS AND TERMS

Subsection 101.2 Abbreviations and Acronyms

Amend the table of **SCDOT OFFICIALS AND OFFICES** as follows:

| DELETIONS | | REPLACEMENTS | |
|------------------|--|--------------|--------------------------------------|
| BDE* | Bridge Design Engineer | PSE* | Preconstruction Support Engineer |
| BDGE* | Bridge Design Geotechnical Engineer | GDSE* | Geotechnical Design Support Engineer |
| SHE* | State Highway Engineer | DSE* | Deputy Secretary for Engineering |

*Wherever it appears in the text, replace the deleted abbreviation with the new abbreviation.

SECTION 102 BIDDING REQUIREMENTS AND CONDITIONS

Subsection 102.8 Irregular Bids

Paragraph 2, item E, first sentence; delete the word "the" after the word "When".

SECTION 105 CONTROL OF WORK

Subsection 105.6 Cooperation with Utilities

Paragraph 1, last sentence; change the word "THE" to "the".

DIVISION 200 EARTHWORK

SECTION 202 REMOVAL OF STRUCTURES AND OBSTRUCTIONS

Subsection 202.5 Measurement

Paragraph 5, second bullet; change the words "Brick sidewalk" to "Concrete, brick or stone sidewalks".

SECTION 204 STRUCTURE EXCAVATION

Subsection 204.2.1.2 Structure Excavation for Culverts

Paragraph 1, at the end of the first sentence; change "**Subsection 204.4**" to "**Subsection 204.5**".

DIVISION 400 ASPHALT PAVEMENTS

SECTION 401 HOT MIXED ASPHALT (HMA) PAVEMENT

Subsection 401.2.1.2 Liquid Anti-Stripping Agent

Paragraph 1, first sentence; delete the period at the end of the sentence and add "and SC-M-406."

SUPPLEMENTAL SPECIFICATIONS

Subsection 401.2.5 Material for Full Depth Patching

Paragraph 1, delete and replace with the following:

"Use an approved SCDOT Intermediate Type C mix for all Full Depth Patching."

Subsection 401.5 Measurement

After paragraph 10, add the following paragraph:

- 11 The measurement of Prime Coat is the number of gallons of asphalt material applied to the completed and accepted base course.

Subsection 401.6 Payment

After paragraph 12, add the following paragraph:

- 13 "The payment for Prime Coat is at the contract unit price for Prime Coat and includes compensation for all labor, equipment, tools, maintenance, and incidentals necessary to complete that work."

Subsection 401.6 Payment

Paragraph 13, **Table of Pay Items**

Change paragraph reference number "13" to "14" and add the following Pay Item:

| Item No. | Pay Item | Unit |
|----------|------------|------|
| 4010005 | Prime Coat | GAL |

SECTION 403 HMA SURFACE COURSE

Subsection 403.5 Measurement

Paragraph 1, first sentence; change "HMA Intermediate Course" to "HMA Surface Course".

Subsection 403.6 Payment

Paragraph 1, first sentence; change "HMA Intermediate Course" to "HMA Surface Course".

SECTION 407 ASPHALT SURFACE TREATMENT – DOUBLE TREATMENT

Subsection 407.5 Measurement

Paragraph 1, first sentence; add the word "is" after "(Double Treatment Type (1, 2, 3, 4, or 5))".

SECTION 408 ASPHALT SURFACE TREATMENT – TRIPLE TREATMENT

Subsection 408.5 Measurement

Paragraph 1, first sentence; add the word "is" after "(Triple Treatment Type (1 or 2))".

DIVISION 600 MAINTENANCE AND TRAFFIC CONTROL

**SECTION 625 PERMANENT PAVEMENT MARKINGS
FAST DRY WATERBOURNE PAINT**

Subsection 625.2.2.4.11 Lead Content

Paragraph 1, first sentence; change 6% to 0.06%.

SECTION 627 THERMOPLASTIC PAVEMENT MARKINGS

Subsection 627.4.10 Inspection and Acceptance of Work

Paragraph 2, first sentence; change "period of 90 days" to "period of 180 days".

Subsection 627.4.10 Inspection and Acceptance of Work

Paragraph 2, second sentence; change "90-day observation period" to "180-day observation period".

Subsection 627.4.10 Inspection and Acceptance of Work

Paragraph 3, first sentence; change "90-day period" to "180-day period".

DIVISION 700 STRUCTURES

SECTION 709 STRUCTURAL STEEL

Subsection 709.4.3.5.2 Submittals and Notification

Paragraph 1, delete the last two sentences and replace them with, "The Department's review and acceptance are required before any field welding will be permitted."

Subsection 709.6.3 Pay Items (page 650)

Subsection heading number; change subsection heading number from "709.6.3" to "709.6.4".

SECTION 712 DRILLED SHAFTS AND DRILLED PILE FOUNDATIONS

Subsection 712.4.4 Dry Construction Method

Paragraph 2, last sentence in A; change "*Drilled Shaft Report*" to "*Drilled Shaft Log*".

Subsection 712.4.10.4 Excavation Cleanliness

Paragraph 1, last sentence; change "*Drilled Shaft Report*" to "*Drilled Shaft Log*".

Subsection 712.4.10.6 Shaft Load Test

Change first paragraph reference number from "2" to "1".

Subsection 712.6.10 Drilled Pile Set-Up

Insert paragraph reference number "1" to the left of the first paragraph.

SECTION 723 DECK JOINT STRIP SEAL

Subsection 723.1 Description

Insert paragraph reference number "3" to the left of the third paragraph.

SECTION 726 BRIDGE DECK REHABILITATION

Subsection 726.4.1 General

Insert paragraph reference number "1" to the left of the first paragraph.

Subsection 723.4.6 Full Depth Patching (page 790)

Subsection heading number; change subsection heading number from "723.4.6" to "726.4.6"

SECTION 727 CROSSHOLE SONIC LOGGING OF DRILLED SHAFT FOUNDATIONS

Subsection 726.6 Payment (page 807)

Subsection heading number; change subsection heading number from "726.6" to "727.6"

DIVISION 800 INCIDENTAL CONSTRUCTION

SECTION 805 GUARDRAIL

Subsection 805.5 Measurement

Paragraph 4; amend as follows:

"The quantity for the pay item 8053000 Additional Length Guardrail Post is the length of required post installed in excess of the standard length post based on the system being installed, measured by the linear foot (LF), complete, and accepted."

SECTION 815 EROSION CONTROL

Subsection 815.1 Description

Paragraph 1, first sentence; change “temporary flexible pipe” to “temporary pipe”.

Subsection 815.5 Measurement

Paragraph 13; delete the first sentence and replace it with the following sentence:
 "The quantity for Temporary Pipe Slope Drains is measured and paid for in accordance with **Subsections 803.5** and **803.6** respectively."

Subsection 815.5 Measurement

Delete paragraph 19.

Subsection 815.6 Payment

After paragraph 15, add the following paragraph:

- 16 Payment for Removal of Silt Retained by Silt Fence is full compensation for removing and disposing of sediment deposits accumulated by silt fences as specified or directed and includes all materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to fulfill the requirements of the pay item in accordance with the Plans, the Specifications, and other terms of the Contract.

Subsection 815.6 Payment

Change original paragraph number “16” to “17”.

Subsection 815.6 Payment

Pay Item table; change the Unit for Item No. 8156214 to "EA".

INDEX:

Amend as follows:

Page I-3, after "Bridge Deck Rehabilitation, measurement and payment:"
 Delete page 807.

Page I-12, after "Letting:"
 Replace page 19 with page 9.

Page I-13, after "Overhead Sign Structure:"
 Replace page 488 with page 495.

Page I-15, after "Proof Rolling:"
 Delete page 98.

Page I-18, after "Structural Steel, turned and ribbed bolts:"
 Replace page 624 with page 625.

Page I-19, after "Waterproofing, bridge deck:"
 Delete page 907.

Page I-20, after "Working Drawings:"
 Replace page 543 with page 779.

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 allow 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 by fifteen (15) pounds in lieu of the deleted bermuda seed.

June 13, 1990

APPLICATION OF DAVIS-BACON AND RELATED ACTS TO INDEPENDENT TRUCK DRIVERS AND MISCELLANEOUS CONSTRUCTION ACTIVITIESThe Davis-Bacon and Related Acts apply when:

- 1) A Contractor or Subcontractor hires a trucking firm or fleet of trucks to haul materials from a plant, pit, or quarry, which has been established specifically to serve (or nearly so) a particular project or projects covered by Davis-Bacon and Related Acts.
- 2) A Contractor or Subcontractor hires a trucking firm or fleet of trucks to haul material from a non-commercial stockpile or non-commercial storage site outside the limits of the project to the project site.
- 3) A Contractor or Subcontractor hires a trucking firm or fleet of trucks to haul excavated materials away from a Davis-Bacon covered project.
- 4) A contractor or Subcontractor rents or leases equipment with an operator to perform work as called for under a Davis-Bacon construction contract.
- 5) A common carrier is used for the transportation of materials from an exclusive material supply facility to fulfill the specific need of a construction contract.

The fleet owner is not considered a Subcontractor with regard to the 70% subcontracting limitations and would not have to be approved as a Subcontractor. However, payrolls must be submitted by truck fleet owner covering the truck drivers, and all requirements such as predetermined wages, overtime, etc., are applicable. Legitimate owner-operators (truck owner driving his own truck) must appear on the payroll by name and notation "truck Owner Operator" with no hours, etc. shown.

The Davis-Bacon and Related Acts do not apply when:

- 1) A Contractor or Subcontractor hires a trucking firm or fleet of trucks to haul materials from a commercial plant, pit, or quarry which had previously been established for commercial use and regularly sell materials to the general public.
- 2) A Contractor or Subcontractor hires a trucking firm or fleet of trucks to haul materials from an established commercial plant, pit, or quarry to a stockpile outside the limits of the project.
- 3) Bona fide owner-operators of trucks, who are independent contractors, use their own equipment to haul materials to or from or on a Davis-Bacon covered project. (One man-One truck)

The fleet owner is not considered a Subcontractor with regard to the 70% subcontracting limitation and would not have to be approved as a Subcontractor.

CRANE SAFETY

The contractor's attention is directed to the following Crane Safety criteria. All applicable items under the submittal list section shall be submitted to the Resident Construction Engineer (RCE) before any crane operations may begin. If any personnel or equipment is changed or added, all applicable items shall be updated and submitted to the RCE before continuing with crane(s) operations.

All contractors shall comply with the manufacturer specifications and limitations applicable to the operation of any and all cranes and derricks. Prime contractors and sub-contractors shall comply with the latest Occupational Safety and Health Administration (OSHA) regulations, adopted American National Standards Institute (ANSI) and American Society of Mechanical Engineers (ASME) crane standards, and other applicable standards including, but not limited to the following:

- OSHA 29 CFR 1926 Subpart CC "Cranes and Derricks in Construction"
- OSHA 29 CFR 1926.251 "Rigging Equipment for Material Handling"
- ASME B30.5-2007 "Mobile and Locomotive Cranes"
- ASME B30.8-2010 " Floating Cranes and Floating Derricks"
- ASME B30.22-2005 "Articulating Boom Cranes"
- ASME B30.26-2010 "Rigging Hardware"

Submittal List

1. **Crane Operators:** All crane operators shall be certified by the National Commission for the Certification of Crane Operators (NCCCO), National Center for Construction Education and Research (NCCER), or Crane Institute of America Certification (CIC).
 - a. Contractor shall submit a copy of the NCCCO, NCCER, or CIC certification for each crane operator prior to performing any crane operations on the job site. The original certification card shall be available for review upon request and must remain current within a 5 year expiration date for the duration of the job. (Contractors with a crane operator-in- training on the jobsite shall comply with all the OSHA Subpart CC requirements).
 - b. Contractor shall submit a copy of the current Crane Operators Medical Evaluation card (3 year expiration) in the form of NCCCO, NCCER or CIC Physical Examination form or equivalent meeting the ASME B30.5 requirement or a current USDOT Medical Examiner's Certificate card (2 year expiration). The original medical card or equivalent for all crane operators shall be available for review upon request.
2. **Competent Person:** The named competent person will have the responsibility and authority to stop any work activity due to safety concerns.
 - a. Contractor shall submit the name and qualifications of the "Competent Person" as defined by OSHA Subpart CC responsible for all crane safety and lifting operations.

March 1, 2010

REQUIREMENTS FOR FEDERAL AID CONTRACTS WHICH AFFECT SUBCONTRACTORS, DBE HAULERS, MATERIAL SUPPLIERS AND VENDORS

- A. The contractor's attention is directed to the requirements of Section I.2 in Form FHWA 1273 that is included in your contract documents as the Supplemental Specification "Required Contract Provisions Federal-Aid Construction Contracts". Section I.2 requires that "the contractor shall insert in each subcontract all of the stipulations contained in the Required Contract Provisions". This requirement also applies to lower tier subcontractors or purchase orders. These provisions must be physically included in your subcontracts. A reference to the applicable specification will not suffice.
- B. The contractor's attention is directed to the requirements of the Supplemental Specification "Standard Federal Equal Employment Opportunity Construction Contract Specifications". Section 2 requires that the provisions of this specification must be physically included in each subcontract with a value of \$10,000 or greater.
- C. The contractor's attention is directed to the requirements of the Equal Employment Opportunity Performance certifications in the Proposal Form Certifications and Signatures section of the contract. Section 1 concerning Equal Employment Opportunity must be physically included in each subcontract.
- D. Prior to the issuance of formal approval, all DBE subcontracts must include a signed copy of the subcontract agreement between the Prime Contractor and the DBE Subcontractor.
- E. Prior to the issuance of formal approval, of any DBE haulers, the contractor must submit a signed copy of the hauling agreement.
- F. The contractor's attention is further directed that sections 1, 2, 3, 8, 9, and 11 of Form FHWA 1273, or Sections 1, 3, 8 and 10 of Form 1316 (for Appalachian contracts only) must be physically included in each purchase agreement with a value of \$10,000 or greater with a vendor or supplier, and in open-end contracts where individual purchases are less than \$10,000 but where the total purchases accumulate to \$100,000 or more per year.

July 26, 2016

DISADVANTAGED BUSINESS ENTERPRISE (DBE) SUPPLEMENTAL SPECIFICATION

It is the policy of the South Carolina Department of Transportation (SCDOT) to ensure nondiscrimination in the award and administration of federally assisted contracts and to use Disadvantaged Business Enterprises (DBEs) in all types of contracting and procurement activities according to State and Federal laws. To that end the SCDOT has established a DBE program in accordance with regulations of the United States Department of Transportation (USDOT) found in 49 CFR Part 26.

This document, known as the "DBE Supplemental Specifications" includes two main parts:

Part A. "Instructions to Bidders – Pre-award Requirements"

Part B. "Instructions to Contractors – Post-award Requirements."

PART A. INSTRUCTIONS TO BIDDERS – PRE- AWARD REQUIREMENTS

When incorporated into Design Build and/or Local Public Agency procurements, the terms "bid", "bidder", and "bid letting" shall mean "proposal", "proposer" and "proposal opening."

1. DBE CONTRACT GOAL

A. The DBE participation goal for this contract is set forth in the DBE Special Provisions.

B. The successful bidder shall exercise all necessary and reasonable steps to ensure that DBEs perform services or provide materials on this contract in an amount that meets or exceeds the DBE contract goal and commitment. Submitting the bid, including electronically, shall constitute an agreement by the bidder that if awarded the contract, it will meet or exceed the DBE contract goal and commitment or make good faith efforts to meet the goal or commitment. Failure to meet the contract goal or make good faith efforts to meet the contract goal will result in the the bid being considered irregular and subject to rejection in accordance with Section 102.8(1)(D) of the SCDOT Standard Specification for Highway Construction, resulting in the contract being awarded to the next lowest responsible and responsive bidder.

2. DBE COMMITTAL

A. Each bidder shall enter all the information regarding how it intends to meet the DBE goal in the electronic bid folder found on the electronic bidding service website, *Bid Express*, entitled "DBE List." (See paragraph (D) below for non-electronic bid submissions.) The listing of DBEs shall constitute a commitment by the bidder to utilize the listed DBEs, subject to the replacement requirement set forth below in Section 2 of Part B. A DBE listed on the DBE List or DBE Committal Sheet hereinafter shall be referred to as a "committed DBE."

B. In meeting the DBE contract goal, the bidder shall use only certified DBEs included in the "South Carolina Unified Certification Program DBE Directory" (hereinafter referred to as the "Unified DBE Directory.") The DBE.BIN file used for the electronic bidding contains the names of the certified DBEs in the " Unified DBE Directory." For more information on the use of the DBE.BIN file in electronic bidding, see Section 6 below.

C. Failure to provide all information required in the electronic bid or DBE Committal Sheet will make the bid irregular and subject to rejection, resulting in the contract being awarded to the next lowest responsible and responsive bidder.

D. The DBE.BIN file listed for the letting must be downloaded for each particular letting because it is the data source for the DBEs listed in the "Unified DBE Directory" designated for use in the letting. ALL DBE data such as Name, Company ID, and Address must be selected from drop-down lists provided by the DBE. BIN file. If the DBE.BIN file is not downloaded, no data for the drop-down lists will be

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| SUPPLEMENTAL SPECIFICATIONS |
|-----------------------------|

available. For non-electronic bidding in Design/Build or Local Public Agency procurements, use the attached DBE Committal Sheet in lieu of the DBE.BIN file.

The following information must be selected or entered in the electronic bid:

- (1) The names and addresses of certified DBEs whose services or materials will be used in the contract.
- (2) Work Type and Work Code selected from a drop-down list. When one of these is selected, the other will be filled in automatically. **[Note: Only select the Work Type and Work Code for which the selected DBE firm has been certified to perform].**
- (3) An Item of work, approximate Quantity of work to be performed or materials to be supplied, Unit (of measurement), Unit Price, and the extended dollar amount of participation by each DBE listed.
 - (a) Item: The Item is the bid item with which the DBE will be associated and must be selected from the Schedule of (Bid) Items found in the drop-down list. If the proposed work is for only a portion of an Item of work (i.e. hauling of materials, tying of reinforced steel, etc.) an adequate description of this work shall be included in the Note block.
 - (b) Quantity, Unit, & Unit Price: Initially when an Item is selected, the contract quantity, unit, and the bidder's unit price and extension will appear. If the proposed work is for only a portion of an item as described in (1) above, then the Quantity, Unit Price and /or Extension shall be changed to reflect the actual amount of work committed to the DBE. The Unit (of measurement) cannot be changed.
- (4) The bidder must also submit a copy of a signed statement or quote from each of the DBEs listed in the DBE List folder of the electronic bid or DBE committal sheet. The signed statements or quotes should verify the items, quantities, units, unit prices, and dollar values listed in the DBE List folder of the electronic bid or DBE committal sheet. **COPIES OF THE SIGNED STATEMENTS MUST BE SUBMITTED TO SCDOT CONTRACT ADMINISTRATION OFFICE WITHIN FOUR (4) BUSINESS DAYS OF THE BID LETTING** from the apparent low bidder. Should the apparent low bid be rejected for failing to meet the goal, the next apparent low bidder will have three (3) business days from notification to submit the signed quotes. SCDOT will accept facsimiles of the verified statements with the caveat that the bidder must furnish the original document to SCDOT upon request. Signed quotes must be on the DBEs letterhead and contain the following information: date, printed name, address, and phone number of the authorized individual providing the quote, project name and identification number, quote needs to be addressed to contractor from DBE, and identify specific services being performed and/or material being supplied.

3. GOOD FAITH EFFORTS REQUIREMENTS

A. Requirements for Submission for Approval of a Good Faith Effort. If the bidder does not meet the DBE contract goal through the DBE committals submitted with the bid, it is the bidder's responsibility to request, in writing (faxes and emails are acceptable) a good faith effort review by 5:00 pm of the next business day after they submit their bid. Bidder must submit additional information to satisfy to SCDOT that good faith efforts have been made by the bidder in attempting to meet the DBE contract goal. **THIS SUPPORTING INFORMATION/DOCUMENTATION MUST BE FURNISHED TO SCDOT CONTRACT ADMINISTRATION OFFICE IN WRITING WITHIN THREE (3) BUSINESS DAYS OF THE BID LETTING.** One complete set and five (5) copies of this information must be received by Contract Administration no later than 12:00 noon of the third business day following the bid letting. Where the information submitted includes repetitious solicitation letters, it will be acceptable to submit a sample representative letter along with the list of the firms being solicited. The documented efforts listed in item (C.) below are some of items SCDOT will consider in evaluating the bidder's good faith efforts. The documentation may include written subcontractor quotations, telephone log notations of verbal quotations, or other types of quotation documents.

B. Failure to Submit Required Material. If the bidder fails to provide this information by the deadline, the bid is considered irregular and may be rejected in accordance with Section 102.8(1)(D), SCDOT Standard Specifications for Highway Construction.

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| SUPPLEMENTAL SPECIFICATIONS |
|-----------------------------|

C. Evaluation of a Good Faith Effort. SCDOT may consider the following factors in judging whether or not the bidder made adequate and acceptable good faith efforts to meet the DBE contract goal:

- (1) Did the bidder attend any pre-bid meetings that were scheduled by SCDOT or Local Public Agency to inform DBEs of subcontracting opportunities?
- (2) Did the bidder provide solicitations through all reasonable and available means (e.g. posting a request for quotes from DBE subcontractors on SCDOT Construction Extranet webpage; attendance at pre-bid meetings, advertising and/or written notices at least 10 days prior to the letting; or showing the bidder provided written notice to all DBEs listed in the "Unified DBE Directory" that specialize in the areas of work in which the bidder will be subcontracting).
- (3) Did the bidder follow-up initial solicitations of interest by contacting DBEs to determine with certainty whether they were interested or not? If a reasonable amount of DBEs in the area of work do not provide an intent to quote, or there are no DBEs that specialize in the area of work to be subcontracted, did the bidder call SCDOT Office of Business Development & Special Programs to give notification of the bidder's inability to obtain DBE quotes?
- (4) Did the bidder select portions of the work to be performed by DBEs in order to increase the likelihood of meeting the contract goal? This includes, where appropriate, breaking out contract items of work into economically feasible units to facilitate DBE participation, even when the bidder might otherwise perform these items of work with its own forces.
- (5) Did the bidder provide interested DBEs with adequate and timely information about the plans, specifications, and requirements of the contract?
- (6) Did the bidder negotiate in good faith with interested DBEs, or reject them as unqualified without sound reasons based on a thorough investigation of their capabilities? Any rejection should be noted in writing with a description as to why an agreement could not be reached. The fact that the bidder has the ability or desire to perform the work with its own forces will not be considered as sound reason for rejecting a DBEs quote.
- (7) Was a quote received from an interested DBE, but rejected as unacceptable because it was not the lowest quote received? The fact that the DBE firm's quotation for the work is not the lowest quotation received will not in and of itself be considered as a sound reason for rejecting the quotation as unacceptable, as long as the quote is not unreasonable.
- (8) Did the bidder specifically negotiate with non-DBE subcontractors to assume part of the responsibility to meet the contract goal when the work to be sublet includes potential for DBE participation?
- (9) Any other evidence that the bidder submits which demonstrates that the bidder has made reasonable good faith efforts to include DBE participation.
- (10) The DBE commitments submitted by all other bidders who were able to meet the DBE contract goal.
- (11) Did the bidder contact SCDOT for assistance in locating certified DBEs?

D. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy DBE contract goals.

E. SCDOT may give the bidder an opportunity to cure any deficiencies resulting from a minor informality or irregularity in the DBE commitment or waive any such deficiency when it is in the best interest of the State. A minor informality or irregularity is one which is merely a matter of form or is some immaterial variation from the exact requirements of the invitation for bids having no effect or merely a trivial or negligible effect on DBE contract goal, quality, quantity, or delivery of the supplies or performance of the contract, and the correct or waiver of which would not be prejudicial to bidders.

4. DETERMINATION AND RECONSIDERATION PROCEDURES

A. After the letting, SCDOT will determine whether or not the low bidder has met the DBE participation contract goal or made good faith efforts to meet the goal. If SCDOT determines that the apparent low bidder failed to meet the goal, did not demonstrate a good faith effort to meet the goal, or meet the requirements of a commercially useful function SCDOT will notify the apparent low bidder of its determination by email and by US Mail or hand-delivery. The apparent low bidder may request a reconsideration of this determination.

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| SUPPLEMENTAL SPECIFICATIONS |
|-----------------------------|

B. The bidder must make a request for reconsideration in writing within three (3) business days of receipt of the determination. Within six (6) business days of receipt of the determination, the bidder must provide written documentation to SCDOT Director of Construction supporting its position. Only documentation dated within three (3) business days of the bid letting may be used in support of its position. No DBE goal efforts performed after 3 business days of the bid will be allowed as evidence. If the bidder fails to request a reconsideration with three (3) business days, the determination shall be final.

C. To reconsider the bidder's DBE commitment or good faith efforts, the Deputy Secretary for Engineering will designate a panel of three (3) SCDOT employees, who did not take part in the original determination, comprised of: (1) one employee from the District Construction Engineer's (DCE) Office, (2) one employee from the Office of Business Development & Special Programs, and (3) one employee at large (hereinafter referred to as the "Reconsideration Panel"). The DCE Office representative will be appointed chairman of the Reconsideration Panel. A representative from FHWA may be a non-voting member of the Reconsideration Panel. The Reconsideration Panel will contact the bidder and schedule a meeting. The Reconsideration Panel will make reasonable efforts to accommodate the bidder's schedule; however, if the bidder is unavailable or not prepared for a hearing within ten (10) business days of receipt of SCDOT original written determination, the bidder's reconsideration rights will be considered to have been waived.

D. The meeting will be held at SCDOT Headquarters Building, 955 Park Street, Columbia, South Carolina. The bidder will be allowed up to two (2) hours to present written or oral evidence supporting its position.

E. The Reconsideration Panel will issue a written report and recommendation to the Deputy Secretary for Engineering. SCDOT shall not award the contract until the Deputy Secretary for Engineering issues a decision or the bidder waives its reconsideration right either through failure to request reconsideration or failure to be available for the meeting. The Deputy Secretary for Engineering will notify the bidder of the final decision in writing.

5. CONSEQUENCES OF FAILURE TO COMPLY WITH DBE PROVISIONS

A. Failure on the part of the bidder to meet the DBE contract goal or to demonstrate good faith efforts to meet the DBE contract goal will result in the bid being declared irregular and may be rejected resulting in the contract being awarded to the next lowest responsible and responsive bidder. Upon rejection, the award may be made to the next lowest responsible and responsive bidder.

B. After bid letting, but prior to award, SCDOT reserves the right to cancel the project, or any or all bids or proposals may be rejected in whole or part, when it is in the best interest of the State.

6. DIRECTORY OF SOUTH CAROLINA CERTIFIED DISADVANTAGED BUSINESS ENTERPRISES

A. The electronic DBE.BIN file found on the electronic bidding service website, *Bid Express*, contains data from the "Unified DBE Directory" approved for use in each particular letting. **The file must be downloaded for each letting because the directory approved for use in each letting is updated prior to the letting.** The bidder is advised that this directory pertains only to DBE certification and not to qualifications. It is the bidder's responsibility to determine the actual capabilities and/or limitations of the certified DBE firms. For non-electronic bid submissions, the directory can be found at http://www.scdot.org/doing/businessDevelop_SCUnified.aspx.

B. In meeting the DBE participation contract goal, the bidder shall use only DBEs that are included in the "Unified DBE Directory" contained in the DBE.BIN file, or on-line, current for the month the bid is submitted. The bidder may only count toward the DBE goal work in the areas for which the DBE has been certified, unless prior written approval from SCDOT is obtained. The bidder and the DBE must jointly apply to SCDOT's Director of Construction for approval of work in an area of work other than that in which the DBE has been certified. The requested work must be in an area related to the area of work in which the DBE has been certified. Such requests must be submitted in writing to the Director of Construction no later than ten (10) business days prior to the date of the letting. The Director of Construction has the right to approve or disapprove the request.

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| SUPPLEMENTAL SPECIFICATIONS |
|-----------------------------|

The Director of Construction will give the bidder and the DBE written notice of his decision no later than five (5) business days prior to the date on which bids are received. If approved, a copy of the written approval must accompany the submission of the subcontractor's quote.

C. Certification of a DBE for work in a certain area of work or approval to perform work in a related area shall not constitute a guarantee that the DBE will successfully perform the work or that the work will be performed completely. Such certification or approval shall only imply that the successful completion of the work by the DBE can count toward satisfying the DBE contract goal in accordance with the counting rules set forth in 49 CFR Part 26 (see Section 3 of Part B below.)

D. The bidder may print a copy of the "Unified DBE Directory" from SCDOT web page at http://www.scdot.org/doing/businessDevelop_SCUnified.aspx.

7. ADDITIONAL DBE PARTICIPATION

The bidder is strongly encouraged to obtain the maximum amount of DBE participation feasible on the contract. Any DBE participation in excess of the DBE contract goal shall also be included in the DBE Quarterly Reports.

8. CONTRACTOR'S RESPONSIBILITY TO REPORT BIDDER INFORMATION

The bidder should keep a list of all subcontractors (DBE or non-DBE) who bid or quoted for subcontracts on this project. As a condition to prequalification or renewal of prequalification, Contractors must submit the names and addresses of all firms (DBE and non-DBE) who quoted the Contractor for subcontracts on SCDOT projects throughout the course of the previous year.

PART B. INSTRUCTIONS TO CONTRACTORS – POST-AWARD REQUIREMENTS

1. CONTRACTOR'S OBLIGATIONS

A. 49 CFR 26. The Contractor shall carry out the applicable requirements of 49 CFR Part 26 and these DBE Supplemental Specifications in the award and administration of this contract. Failure by the Contractor to carry out these requirements is a material breach of the contract, and may result in the termination of the contract or such other remedy as SCDOT deems appropriate.

"a contractor's failure to comply with any provision of the DBE regulations will be considered a material contract breach"

B. Meeting both the Goal and Commitment or Making Good Faith Efforts to Meet the Goal and Commitment. It is the Contractor's responsibility to meet or make good faith efforts to meet the DBE contract goal and commitments. Failure to meet the goal or commitments to the specific DBEs listed on the committal sheet or to demonstrate good faith efforts to meet the goal or commitments may result in any one or more of the following sanctions:

- (1) Withholding monthly progress payments;
- (2) Declaring the Contractor in default pursuant to Section 108.10 of the Standard Specifications and terminating the contract;
- (3) Assessing sanctions in the amount of the difference in the DBE contract committal and the actual payments made to each certified DBEs; and/or
- (4) Disqualifying the Contractor from bidding pursuant to Regulation 63-306, Volume 25A, of the S. C. Code of Laws

C. Using the DBEs shown on the Committal Sheet to Perform the Work. The Contractor must utilize the specific DBEs listed on the "DBE Committal Sheet" to perform the work and supply the materials for which each is listed unless the Contractor obtains prior written approval from the Director of Construction to perform the work with other forces or obtain the materials from other sources as set forth in Section 2 below. The Contractor shall not be entitled to any payment for such work or material unless it is performed or supplied by the listed DBE or, with prior written approval of the Director of Construction, by other forces (including those of the Contractor). Failure to meet a commitment to a specific DBE may result in the sanctions listed in Section 1(B) above, unless prior written approval is obtained for replacement of the committed DBE.

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| SUPPLEMENTAL SPECIFICATIONS |
|-----------------------------|

When SCDOT makes changes that result in the reduction or elimination of work to be performed by a committed DBE, the Contractor will not be required to seek additional participation. When the SCDOT makes changes that result in additional work to be performed by a DBE based upon the Contractor's commitment, the DBE shall participate in additional work to the same extent as the DBE participated in the original work.

D. Incorporating DBE Supplemental Provisions in Subcontracts. The Contractor shall make available, at the request of SCDOT, a copy of all DBE subcontracts. The Contractor shall ensure that all subcontracts or agreements with DBEs to supply labor or materials require that the subcontract and all lower tier subcontracts be performed in accordance with these DBE Supplemental Specifications. The contractor is advised to insert the following provision in each subcontract or agreement:

"This contract or agreement shall be performed in accordance with the requirements of the SCDOT DBE Supplemental Specifications dated January 1, 2014."

2. REPLACEMENT OF CERTIFIED DBES

A. Requirement for Replacement. The following shall apply to replacement of a DBE listed on the "DBE Committal Sheet":

- (1) *When a DBE listed on the DBE committal sheet (hereafter referred to as a "committed DBE") is unable or unwilling to perform the work in accordance with the subcontract, the Contractor shall follow the replacement procedures in Section 2(B) below. Failure on the part of the Contractor to comply with this requirement shall constitute a breach of contract and may be cause for the imposition of the sanctions set forth in Section 1(B) above.*
- (2) *When a committed or non-committed DBE is decertified or removed from the SC Unified DBE Directory after execution of a valid subcontract agreement with the Contractor.*
 - (a) The Contractor may continue to utilize the decertified DBE on the contract and receive credit toward the DBE contract goal for the DBEs work unless the Contractor is implicated in the DBE decertification. However, the Contractor is encouraged to replace the decertified DBE with a certified DBE where feasible, to assist SCDOT in meeting the overall statewide DBE goal.
 - (b) If a *committed or non-committed* DBE is removed from the SC Unified DBE Directory due to graduation from the DBE program, the Contractor may continue to utilize the graduated DBE on the contract and receive credit toward the DBE contract goal for the DBEs work.
- (3) *When a committed DBE is decertified or removed from the SC Unified DBE Directory prior to execution of a valid subcontract agreement with the Contractor, the Contractor shall follow the replacement procedures in Section 2(B) below. Failure on the part of the Contractor to comply with this requirement shall constitute a breach of the contract and may be cause for the imposition of the sanctions set forth in Section 1(B) above.*

B. Replacement Procedures. In order to replace a *committed* DBE, the Contractor must obtain prior written approval from the Director of Construction. Prior to requesting SCDOT's approval to terminate and/or substitute a committed DBE, the Contractor is to give notice to the DBE subcontractor in writing (certified mail) with a copy provided to both the Director of Construction and the Director of Business Development & Special Programs. The purpose of this notice is to both inform the DBE subcontractor of the Contractor's intent to request SCDOT's approval to terminate and/or substitute as well as to outline the reasons for the request. The DBE subcontractor shall be given five business days from receipt of notice to provide a written response stating either its consent or its reasons why it objects to the proposed termination. On a case by case basis and at SCDOT's sole discretion, a shorter response period than five business days may be allowed as a matter of public necessity. If SCDOT determines a shorter response period is justified, the contractor and committed DBE will be advised in writing. In no case shall the Contractor's ability to negotiate a more advantageous contract with another subcontractor be considered a valid basis for replacement.

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| SUPPLEMENTAL SPECIFICATIONS |
|-----------------------------|

If the Contractor obtains the Director of Construction's approval for the replacement, the Contractor shall replace the committed DBE with another certified DBE or make good faith efforts to do so as set forth in Section 2(C) below. Any DBE who is certified at the time of replacement may be used as a replacement. If the Director of Construction does not approve of replacement, the Contractor shall continue to use the *committed* DBE in accordance with the contract. Failure to do so may constitute cause for imposition of any of the sanctions set forth in Section 1(B) above.

C. Good Faith Efforts. After approval for replacement is obtained, if the Contractor is not able to find a replacement DBE, the Contractor shall provide the Director of Construction with documentation of its good faith efforts to find a replacement. This documentation shall include, but is not limited to, the following:

- (1) Copies of written notification to certified DBEs that their interest is solicited in subcontracting the work defaulted by the previous certified DBE or in subcontracting other items of work in the contract.
- (2) Statement of efforts to negotiate with certified DBEs for specific subbids including at a minimum:
 - (a) Names, addresses and telephone numbers of certified DBEs who were contacted;
 - (b) Description of the information provided to certified DBEs regarding the plans and specifications for portions of the work to be performed;
 - (c) Statement of why additional agreements with certified DBEs were not reached.
- (3) For each certified DBE contacted but rejected, the reasons for the Contractor's rejection. Failure to find a replacement DBE at the original price is not in itself evidence of good faith.
- (4) Documentation demonstrating that the Contractor contacted SCDOT's DBE Supportive Service Office for assistance in locating certified DBEs willing to take over that portion of work or do other work on the contract.

If SCDOT determines that the Contractor has made good faith efforts to replace the committed DBE with another certified DBE, then the remaining portion of the DBEs work shown on the "DBE Committal Sheet" can be completed by the Contractor's own forces or by a non-DBE subcontractor approved by SCDOT. The Contractor will not be required to make up that part of the DBE goal attributable to the portion of work not completed by the committed DBE, and this shortfall in meeting the DBE goal will be waived by SCDOT.

If SCDOT determines that the Contractor has not made good faith efforts to replace the committed DBE with another certified DBE, such failure may constitute cause for imposition of any of the sanctions set forth in Section 1(B) above.

D. Payment from SCDOT. The Contractor shall not be entitled to payment for work or material committed to a committed DBE unless:

- (1) The work is performed by the *committed* DBE; or
- (2) The work is performed by another certified DBE after the Director of Construction has given approval to replace the committed DBE as provided above; or
- (3) The work is performed by a non-DBE after SCDOT determines that the Contractor has demonstrated good faith efforts to replace the committed DBE as provided above.

3. **COUNTING CERTIFIED DBE PARTICIPATION TOWARD MEETING THE DBE GOAL**

DBE participation shall be measured by the actual, verified payments made to DBEs subject to the following rules (all references to "DBE" herein shall mean "certified DBE"). The Contractor is bound by these rules in regard to receiving and reporting credit toward the DBE contract goal. The Contractor shall report on DBE Quarterly Reports only the amounts properly attributable toward the goal under these rules.

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| SUPPLEMENTAL SPECIFICATIONS |
|-----------------------------|

A. General Counting Rules.

- (1) The entire amount of that portion of a construction contract (or other contract not covered by paragraph A(2) of this section) that is performed by the DBEs own forces may be counted toward the goal. The cost of supplies and materials obtained by the DBE for the work of the contract, including supplies purchased or equipment leased by the DBE (except supplies and equipment the DBE subcontractor purchases or leases from the prime contractor or its affiliate) can be counted toward the goal.
- (2) When a DBE subcontracts part of the work of its contract to another firm, the value of the subcontracted work may be counted toward DBE goals only if the subcontractor is also a DBE. Work that a DBE subcontracts to a non-DBE firm does not count toward the DBE goals.
- (3) The Contractor can count expenditures to a DBE only if the DBE is certified by SCDOT, except as provided in section 2(A)(2) above, in the event a DBE loses eligibility status after a subcontract is signed.
- (4) The Contractor can count expenditures to a DBE only after the DBE has actually been paid.

B. Joint Ventures. When a DBE performs as a participant in a joint venture, the portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work of the contract that the DBE performs with its own forces can be counted toward DBE goals. A joint venture must be approved by the Director of Construction prior to start of the contract.

C. Commercially Useful Function. Expenditures to a DBE contractor can be counted toward DBE goals only if the DBE is performing a commercially useful function on that contract:

- (1) A DBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the DBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself. To determine whether a DBE is performing a commercially useful function, SCDOT will evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the contract is commensurate with the work it is actually performing and the DBE credit claimed for its performance of the work, and other relevant factors.
- (2) A DBE does not perform a commercially useful function if its role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of DBE participation. In determining whether a DBE is such an extra participant, SCDOT will examine similar transactions, particularly those in which DBEs do not participate.
- (3) If a DBE does not perform or exercise responsibility for at least 30 percent of the total cost of its contract with its own work force, or the DBE subcontracts a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involved, SCDOT will presume that it is not performing a commercially useful function.
- (4) When a DBE is presumed not to be performing a commercially useful function as provided in paragraph (3) of this section, the DBE may present evidence to rebut this presumption. SCDOT may determine that the firm is performing a commercially useful function given the type of work involved and normal industry practices.
- (5) SCDOT's decisions on commercially useful function matters are subject to review by the Federal Highway Administration, but are not administratively appealable to the USDOT.

D. Special Rules for Trucking Companies. SCDOT will use the following rules to determine whether a DBE trucking company is performing a commercially useful function and what portion of the DBE work can be counted toward DBE goals:

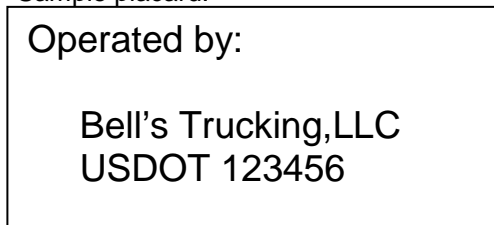
- (1) ***DBE must control all work.*** To be considered as performing a commercially useful function, the DBE must be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract, and there cannot be a contrived arrangement for the purpose of meeting DBE goals.

SUPPLEMENTAL SPECIFICATIONS

- (2) **DBE must “own” at least one truck.** The DBE must itself own and operate at least one fully licensed, insured, and operational truck used on the project. For purposes of this section, a DBE will be considered to “own” a truck if:
- a) the truck is titled in the DBEs name; or,
 - b) the DBE leases the truck under a valid lease-to-own agreement and the driver of the truck is an employee of the DBE.
- The DBE must submit documentation to SCDOT to establish the number of trucks the DBE owns, operates and insures. The DBE must submit the documentation to SCDOT’s Office of Business Development & Special Programs at the time of certification, annual reporting on certification requirements, or at any time during the year that the DBE obtains additional trucks.
- (3) **Counting DBE trucking toward DBE goal.** The Contractor can count toward DBE goals the total value of the transportation services the DBE provides using trucks the DBE owns, insures, and operates using drivers the DBE employs.
- (4) **Counting subcontracted DBE trucking toward DBE goal.** The DBE may subcontract with another DBE firm, including an owner-operator who is certified as a DBE, to provide trucks on a project. In this case, the Contractor may count toward the DBE goal the total value of the transportation services provided by the DBE subcontractor.
- (5) **Counting subcontracted non-DBE trucking toward the goal.** The DBE may lease trucks from a non-DBE firm, including an owner-operator, to provide trucks on a project. Prior to beginning work, the DBE must provide SCDOT’s Resident Construction Engineer with a list identifying all DBE and non-DBE trucks and truck numbers that will be used on the project. In this case, the Contractor may count toward the DBE goal the total value of the transportation services provided in each quarter by the non-DBE trucks, not to exceed the value of the transportation services provided by DBE-owned trucks in that quarter. For example, in a given quarter, if DBE-owned trucks provide transportation services of \$50,000, while non-DBE trucks provide transportation services of \$75,000, a maximum of \$100,000 can be counted toward the DBE goal in that quarter.

For purposes of this paragraph (5), a lease must indicate that the DBE has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the lease truck. Leased trucks must display a placard with the name and USDOT identification number of the DBE leasing the truck. The placard must be legible and visible when standing at least 15 feet from the driver’s side of the truck. It may be affixed to the side of the truck or inside the cab window as long as it does not interfere with the safe operation of the truck. See example below.

Sample placard:



NOTE: DBE firms may not receive credit for DBE participation when leasing non-DBE owned trucks from the Prime contractor with whom the DBE firm is subcontracted as 49 CFR 26.55(a)(1) applies.

E. DBE Manufacturers and Dealers. The Contractor can count expenditures with DBEs for materials or supplies toward DBE goals in accordance with the following rules:

- (1) *DBE Manufacturers.* If the materials or supplies are obtained from a DBE manufacturer, the Contractor can count 100 percent of the cost of the materials or supplies toward DBE goals. For purposes of this paragraph, a manufacturer is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract and of the general character described by the specifications. The DBE must be listed as a “manufacturer” in the "South Carolina Unified DBE Directory” to be considered a manufacturer for purposes of these counting rules.

- (2) *DBE Dealers.* If the materials or supplies are purchased from a DBE regular dealer, the Contractor can count 60 percent of the cost of the materials or supplies toward DBE goals. For purposes of this section, a regular dealer is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. The DBE must be listed as a “dealer” in the South Carolina Unified DBE Directory to be considered a dealer for purposes of these counting rules.

- (3) *DBE Brokers.* With respect to materials or supplies purchased from a DBE which is neither a manufacturer nor a regular dealer, count the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of material or supplies required on a job site, toward DBE goals.

F. Special Rules for Design Build and Local Public Agency Contracts

- (1) When the Design Build team changes work that results in the reduction or elimination of work that the Design Build team committed to be performed by a DBE, the Design Build team shall seek additional participation by DBEs equal to the reduced DBE participation cause by the change.

4. **JOINT CHECKS.**

The Director of Construction must approve all requests for a Contractor to issue and use joint checks with a DBE. The following conditions apply:

- a) The DBE must submit a request to the Director of Construction which includes a formalized agreement between all parties that specify the conditions under which the arrangement will be permitted;

- b) The DBE remains responsible for all other elements of 49 CFR 26.55(c)(1). SCDOT must clearly determine that independence is not threatened because the DBE retains final decision making responsibility;

- c) There can be no requirement by the prime contractor that a DBE use a specific supplier nor the prime contractor’s negotiated unit price.

5. REPORTS

The Contractor shall furnish to the SCDOT the following reports and information. THIS REQUIREMENT APPLIES REGARDLESS OF WHETHER THERE IS A CONTRACT GOAL ASSIGNED TO THE CONTRACT.

A. DBE Quarterly Reports. The Contractor shall provide to the SCDOT, DBE Quarterly Reports showing the dollar amount of payments to each certified DBE. The Contractor and each DBE that received payment must sign the report. The Contractor's and DBE's signature on the Quarterly Report shall constitute certification that the DBE has performed the work and that the Contractor is entitled to credit toward the DBE goal for the amount shown in accordance with the counting rules set forth in Section 3 above. The report shall include the amount paid each DBE for the quarter and the total amount paid to each DBE on the contract. The report must include DBE subcontractors, hauling firms, and suppliers. The report shall be submitted in duplicate to the Resident Construction Engineer by the 15th of the month after each calendar quarter (January, April, July, and October 15). Failure to submit the quarterly report may result in the withholding of monthly progress and/or final payment. The Quarterly Report must be submitted for each quarter even if no payments have been made to a DBE in that quarter. When no payments have been made to a DBE in a quarter, DBEs are not required to sign the report.

B. Trucker's Reports. All DBE haulers must complete and submit a DBE Trucker's Report along with the DBE quarterly report when the DBE leases trucks from another firm. The DBE hauler must list all trucks leased, payments made to the lessee during the quarter, and identify whether each leased truck is owned by a certified DBE or non-DBE. DBE Haulers must also submit one copy of each lease agreement to the Resident Construction Engineer prior to the start of work for each truck leased. A lease must indicate that the DBE has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. Leased trucks must display the name and identification number of the DBE.

C. Other Documents. Upon request of SCDOT, the Contractor and all subcontractors shall furnish documents, including subcontracts, necessary to verify the amount and costs of the materials or services provided by certified DBE suppliers or subcontractors. The Contractor shall keep the documents that verify this information for at least three years from the date of final close-out of the contract. Failure to provide these documents upon request may result in the withholding of monthly progress and/or final payment or disqualifying the Contractor from bidding pursuant to R. 63-306, South Carolina State Regulations.

6. CONTRACT COMPLETION – DETERMINATION OF WHETHER CONTRACTOR HAS MET THE GOAL OR MADE GOOD FAITH EFFORTS

A. Review by SCDOT. After receipt of the final DBE Quarterly Reports, SCDOT will review the necessary contract documentation to determine whether the Contractor has met the DBE commitments and contract goal.

B. Notification of Failure to Meet Goal. If the documentation indicates that the Contractor has not met the DBE commitments and contract goal, the Director of Construction will notify the Contractor in writing and request documentation of the Contractor's good faith efforts to meet the goal.

C. Determination of Good Faith Efforts. The Contractor shall submit documentation demonstrating good faith efforts to meet the contract commitments and goal to the Director of Construction within thirty (30) days of the date of the "Notification of Failure to Meet Goal." The Director of Construction will provide the Contractor with written notice of SCDOT's determination whether good faith efforts have been demonstrated.

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| SUPPLEMENTAL SPECIFICATIONS |
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D. Request for Reconsideration. If the Contractor disagrees with SCDOT's determination of post construction compliance, the Contractor may request a reconsideration by filing a written request with the Director of Construction within ten (10) business days after receipt of the determination. The Contractor shall submit any additional documentation that it wishes to be considered in support of its position within ten (10) business days of its request for reconsideration. If the Contractor fails to request a reconsideration within ten (10) days, the determination shall be final. If the Contractor requests reconsideration, the Director of Construction Office will appoint a Reconsideration Official who did not take part in the original determination to review the decision and supporting documentation (hereinafter referred to as the "Reconsideration Official"). FHWA may participate in the review process. The Reconsideration Official will contact the Contractor and schedule a meeting with the Contractor. The meeting will be held at the SCDOT Headquarters Building in Columbia. At the meeting, the Contractor will have an opportunity to present oral and written evidence to demonstrate that good faith efforts were made to meet the DBE commitments and contract goal. The Reconsideration Official may also consider evidence presented by SCDOT at the same meeting. After the meeting, the Reconsideration Official will issue a written report and recommendation to the Director of Construction. The Director of Construction shall make the final decision on the issue. The Director of Construction will notify the Contractor of the final decision in writing.

August 7, 1991

LATE DISCOVERY OF ARCHAEOLOGICAL/HISTORICAL REMAINS ON FEDERAL AID PROJECTS AND APPROVAL OF DESIGNATED BORROW PITS**A. Late Discovery of Archaeological/Historical Remains on Federal Aid Projects.****1. Responsibilities:**

The Contractor and subcontractors must notify their workers to watch for the presence of any prehistoric or historic remains, including but not limited to arrowheads, pottery, ceramics, flakes, bones, graves, gravestones, or brick concentrations. If any such cultural remains are encountered, the Resident Construction Engineer shall be immediately notified and all work in the vicinity of the discovered materials or site shall cease until the Department's Staff Archaeologist or the State Highway Engineer directs otherwise.

2. Applicability:

This provision covers all areas of ground disturbance resulting from this federal - aid contract, including but not limited to road construction, Department designated borrow pits, Contractor furnished borrow pits, and/or staging areas.

3. Cost Reimbursement and Time Delays:

Any extra work required by A(1) above within the project right of way or on Department designated borrow pits (see below) will be paid for in accordance with Subsection 104.05 of the Standard Specifications. Extra contract time may be provided under Subsection 108.06 of the Standard Specifications for archaeological work within the project right of way or on designated borrow pits.

NOTE: On Contractor furnished borrow pits the contractor is not entitled to any additional time or money for delay on impact resulting from A(1) above or for extra work required by A(1) above. Therefore, contractors may wish to retain professional archaeological services to better ensure that borrow pit areas are cleared of archaeological/historical remains prior to use on Federal aid projects.

B. Approval of Designated Borrow Pits on Federal Aid Projects (Plant Sites which qualify as commercial are not included).

In instances where the Department specifically designates the location of borrow pits on project plans or in contract specifications for use on a Federal aid project, an archaeological survey will be performed by Department archaeologists prior to award of contract.

This provision also applies to designated disposal sites, staging areas, haul roads, and job site field offices.

September 1, 2015

Traffic Control

Delete Subsection 601.1.3 of the Standard Specifications in their entirety and replace them with the following:

601.1.3 Restrictions

- 1 **The Department prohibits lane closures on interstate highways during holiday weekends, extended holiday periods or special events as defined below unless otherwise directed by the Engineer.** The Department's holiday lane closure restrictions for holidays that are observed on a Monday will include the weekend and are considered a holiday weekend unless otherwise established by these specifications. The Department defines the typical Monday holiday weekend as from 6:00 am of the Friday before the weekend until 6:00 a.m. of the Tuesday after the holiday. Lane closures, road closures, shoulder closures, pacing operations or any operations that will impact the efficient flow of traffic or hinder normal traffic operations during these Monday holiday weekends as defined above are prohibited unless otherwise directed by the Engineer.
- 2 Easter and Thanksgiving holidays are varied and extended holiday periods of a holiday weekend. Easter holidays are defined as from 12:00 noon of the Thursday before Easter until 6:00 p.m. of the Monday after Easter. Thanksgiving holidays are defined as from 12:00 noon of the Wednesday before Thanksgiving Day until 6:00 a.m. of the Monday after Thanksgiving Day. Lane closures, road closures, shoulder closures, pacing operations or any operations that will impact the efficient flow of traffic or hinder normal traffic operations during the Easter and Thanksgiving holidays as defined above are prohibited unless otherwise directed by the Engineer.
- 3 The 4th of July holiday is considered an extended holiday period. Considering the progressive nature of the calendar, this extended holiday period will vary from year to year depending upon the day of the week the holiday occurs. See the table below. Lane closures, road closures, shoulder closures, pacing operations or any operations that will impact the efficient flow of traffic or hinder normal traffic operations during the 4th of July holiday as defined below are prohibited unless otherwise directed by the Engineer.

| 4th of JULY HOLIDAY | |
|---------------------------------------|--|
| DAY OF WEEK | DURATION |
| MONDAY | 6:00 AM FRIDAY, JULY 1 ST through 10:00 PM SUNDAY JULY 10 TH |
| TUESDAY | 6:00 AM FRIDAY, JUNE 30 TH through 10:00 PM SUNDAY JULY 9 TH |
| WEDNESDAY | 6:00 AM FRIDAY, JUNE 29 TH through 10:00 PM SUNDAY JULY 8 TH |
| THURSDAY | 6:00 AM FRIDAY, JUNE 28 TH through 10:00 PM SUNDAY JULY 7 TH |
| FRIDAY | 6:00 AM FRIDAY, JUNE 27 TH through 10:00 PM SUNDAY JULY 13 TH |
| SATURDAY | 6:00 AM FRIDAY, JUNE 26 TH through 10:00 PM SUNDAY JULY 12 TH |
| SUNDAY | 6:00 AM FRIDAY, JUNE 25 TH through 10:00 PM SUNDAY JULY 11 TH |

SUPPLEMENTAL SPECIFICATIONS

⁴ The Christmas holidays are considered an extended holiday period. Considering the progressive nature of the calendar, this extended holiday period will vary from year to year depending upon the day of the week the holiday occurs. See the table below. Lane closures, road closures, shoulder closures, pacing operations or any operations that will impact the efficient flow of traffic or hinder normal traffic operations during the Christmas holidays as defined below are prohibited unless otherwise directed by the Engineer.

| CHRISTMAS HOLIDAYS | |
|---------------------------|--|
| DAY OF WEEK | DURATION |
| MONDAY | 6:00 AM FRIDAY, DECEMBER 22 ND through 10:00 PM WEDNESDAY JANUARY 3 RD |
| TUESDAY | 6:00 AM FRIDAY, DECEMBER 21 ST through 10:00 PM THURSDAY JANUARY 3 RD |
| WEDNESDAY | 6:00 AM FRIDAY, DECEMBER 20 TH through 10:00 PM FRIDAY JANUARY 3 RD |
| THURSDAY | 6:00 AM TUESDAY, DECEMBER 23 RD through 10:00 PM SUNDAY JANUARY 4 TH |
| FRIDAY | 6:00 AM WEDNESDAY, DECEMBER 23 RD through 10:00 PM SUNDAY JANUARY 3 RD |
| SATURDAY | 6:00 AM THURSDAY, DECEMBER 23 RD through 10:00 PM MONDAY JANUARY 3 RD |
| SUNDAY | 6:00 AM FRIDAY, DECEMBER 23 RD through 10:00 PM TUESDAY JANUARY 3 RD |

⁵ Special events are events generating excessive traffic as determined by the Department. Lane closures, road closures, shoulder closures, pacing operations or any operation that would impact the efficient flow of traffic or hinder normal traffic operations during special events are prohibited unless otherwise directed by the Engineer.

September 1, 2008

ADHESIVELY BONDED ANCHORS AND DOWELS

1.0 Adhesively Bonded Anchors and Dowels

1.1 Scope

Furnish all required labor, equipment, and materials and perform all operations necessary for installing anchors and dowels in concrete using an adhesive bonding system in accordance with the details shown on the Plans and with the requirements of this Specification. Provide a material system specifically intended for use in structural applications for bonding anchors and dowels to hardened concrete. Limit applications to anchors and dowels installed in horizontal, vertical, and downwardly inclined positions. Do not use adhesive anchors in overhead or upwardly inclined installations. See Figure 1.1.

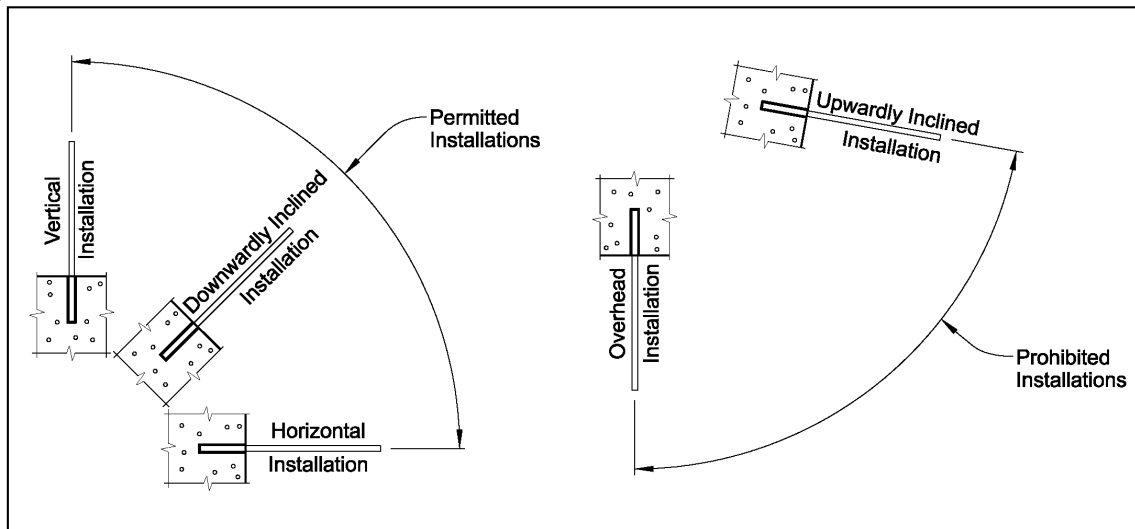


Figure 1.1

Submit a description of the proposed adhesive bonding system to the RCE for review, comments, and acceptance. Include in the description the anchor type, equipment, Manufacturer's recommended hole diameter, material specifications, and any other material, equipment or procedure not covered by the contract documents. List the properties of the adhesive, including density, minimum and maximum temperature application, setting time, shelf life, pot life, shear strength, bond strength, and compressive strength. If anchors or dowels containing a corrosion protective coating are required, provide an adhesive that does not contain any chemical elements that are detrimental to the coating and include a statement to this effect in the submittal concerning the contents as required by State or Federal Laws and Regulations.

Submit to the RCE Manufacturer's certification that the adhesive bonding system, when tested for tension pull-out according to ASTM E 488 utilizing identical anchorages, embedment depths, and concrete strengths as those specified on the Plans, does not fail by any mode listed in Section 12 of ASTM E 488 when loaded to the lesser of 85 percent of the specified bond strength (based on the nominal anchorage diameter and embedment depth) or 90 percent of the yield strength of the anchor. Also, submit to the RCE long term load (creep) test results performed in accordance with ASTM E 1512, ICC-ES AC 58, or ICC-ES AC 308. When specified on the Plans, field testing will also be required for adhesive anchorages.

1.2 Materials

Provide adhesive bonding material systems for structural applications that meet the requirements of ASTM C 881, Type IV, Grade 3, Class B or C (depending on site conditions). Do not use "Fast Set epoxy." Package components of the adhesive in containers of such size that one whole container of each component is used in mixing one batch of adhesive. Use containers of such design that all of the contents may be readily removed, and are well sealed to prevent leakage. Do not use material from containers which are damaged or have been previously opened. Use only full packages of components. Furnish adhesive material that requires hand mixing in two separate containers designated as Component A and Component B or in a self contained cartridge or capsule that consists of two components which will be automatically mixed as they are dispensed, as in the case of a cartridge, or drilled into, as in the case of a capsule.

Provide packages clearly marked by the Manufacturer with the following information:

- Manufacturer's name and address
- Product Name
- Date of Manufacture
- Expiration Date
- LOT Identification Number
- Storage and Handling Requirements

With each package include the Manufacturer's instructions for anchor and dowel installation. Include the following information with the instructions:

- Diameters of drilled holes for applicable anchor and dowel sizes.
- Cleaning procedure for drilled holes, including a description of permitted and prohibited equipment and techniques.
- Allowable temperature ranges for storage, installation and curing.
- Identification of acceptable mixing/dispensing nozzles.
- Fabrication requirements for anchors and dowels.
- Description of tools permitted or required for installation.
- Method of identifying properly proportioned and mixed adhesive materials.
- Time and temperature schedule for initial set ('gel time') and full-strength cure.
- Requirements for special installation conditions such as horizontal or near horizontal orientation of the anchor or dowel.

1.3 Construction Requirements

1.3.1 Storage

Deliver the adhesive bonding material system to the job-site in original unopened containers with the Manufacturer's label identifying the product. Store materials delivered to the job-site in the original unopened containers within an appropriate facility capable of maintaining storage conditions consistent with the Manufacturer's recommendations.

1.3.2 Installation

Install the adhesive anchors and dowels perpendicular to the plane surface of the structural member, in accordance with Manufacturer's recommendations, and when the concrete is above 40 degrees Fahrenheit and has reached its 28 day strength. Install the anchorages before the adhesive's initial set ('gel time').

1.3.2.1 Drilling of Holes into Concrete

Ensure that concrete members receiving adhesive-bonded anchors or dowels are structurally sound and free of cracks in the vicinity of the anchor or dowel to be installed. When directed by the RCE, use a jig or fixture to ensure the holes are positioned and aligned correctly during the drilling process.

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| SUPPLEMENTAL SPECIFICATIONS |
|-----------------------------|

Use a metal detector specifically designed for locating steel in concrete to avoid conflicts with existing steel reinforcement whenever placement tolerances and edge clearances permit. Unless other equipment is recommended by the Manufacturer, drill holes to the diameter required by the Manufacturer using a rotary hammer drill and bit. Perform core drilling to clear existing steel reinforcement only when approved by the RCE. Dry the drilled holes completely prior to cleaning and installing the anchors or dowels. Clean and prepare drilled holes in accordance with the Manufacturer's recommendations, but as a minimum, use oil-free compressed air to remove loose particles from drilling, brush inside surface to free loose particles trapped in pores, then use compressed air again to remove the remaining loose particles. Use a non-metallic bristle brush and avoid over-brushing to prevent polishing the inside surface of the drilled hole. Check each hole with a depth gauge to ensure proper embedment depth. Repair spalled or otherwise damaged concrete using methods approved by the RCE.

1.3.2.2 Inspection of Holes

Inspect each hole immediately prior to placing the adhesive and the anchors/dowels. Ensure all holes are dry and free of dust, dirt, oil, and grease.

1.3.2.3 Mixing of Adhesive

Mix the adhesive in strict conformance with the Manufacturer's instructions.

1.3.2.4 Embedment of Anchors and Dowels

Remove all debris, oils, and any other deleterious material from the anchors and dowels to avoid contamination of the adhesive bonding material. Insert the anchor or dowel the specified depth into the hole and slightly agitate it to ensure wetting and complete encapsulation. After insertion of the anchor or dowel, strike off any excessive adhesive flush with the concrete face. Should the adhesive fail to fill the hole, add additional adhesive to the hole to allow a flush strike-off. Do not disturb the anchors and dowels while adhesive is hardening. For horizontal and inclined installations, provide temporary supports to maintain the alignment of the anchors or dowels until the adhesive bonding material has cured.

1.3.3 Field Testing

When specified on the Plans, field test the installed anchors and dowels. Perform field testing of the installed anchors and dowels in accordance with the applicable sections of ASTM E 488. Inform the RCE and the Manufacturer when the tests will be performed at least 2 days prior to testing. For testing, use a calibrated hydraulic centerhole jack system that will not damage the anchor or dowel. Place the jack on a plate washer that has a hole at least 1/4" larger than the hole drilled into the concrete. Position the plate washer on center to allow an unobstructed pull. Position the anchors/dowels and the jack on the same axis. Have an approved testing agency calibrate the jack within 6 months prior to testing. Supply the RCE with a certificate of calibration.

Divide the anchors and dowels into LOTs for field testing and acceptance. A LOT consists of anchors or dowels of the same type, diameter, strength, embedment length, and adhesive bonding system. Prior to performing field tests, submit proposed testing locations to the RCE for review, comments, and acceptance. In the presence of the RCE, field test the anchors or dowels for each LOT in accordance with the following:

Test a minimum of 1 anchorage but not less than 10% of all anchors in the LOT to the test load shown on the Plans.

If less than 60 anchorages are to be installed: Install and test the minimum required number of anchorages prior to installing the remaining anchorages. After installing the remaining anchorages, test a minimum of 2 of these anchorages at random locations selected by the RCE.

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| SUPPLEMENTAL SPECIFICATIONS |
|-----------------------------|

If more than 60 anchorages are to be installed: Test the first 6 anchorages prior to installing the remaining anchorages. Then test, at random locations selected by the RCE, 10% of the number in excess of 60 anchorages.

For every failed field test, perform two additional field tests on adjacent untested anchors or dowels within the LOT. Continue additional field tests until no more test failures occur, or until all anchors and dowels within the LOT are tested.

Begin testing after the Manufacturer's recommended cure time has been reached. For testing, apply and hold the test load for three minutes. If the jack experiences any drop in gage reading, restart the test. For the anchorage to be deemed satisfactory, hold the test load for three minutes with no movement or drop in gage reading.

Remove all anchors and dowels that fail the field test, without damage to the surrounding concrete. Re-drill holes to remove adhesive bonding material residue and clean the hole in accordance with Subsection 1.3.2.1. For reinstalling replacement anchors or dowels, follow the same procedures as new installations. Do not reuse failed anchors or dowels unless approved by the RCE.

Determine failure of the field test in accordance with ASTM E 488. Submit certified test reports to the RCE. Final acceptance of the adhesively anchored system is based on the conformance of the pull test to the requirements of this Specification. Failure to meet the criteria of this Specification is grounds for rejection.

1.4 Measurement

No separate measurement for payment will be made for furnishing, installing, and testing of adhesively bonded anchors and dowels.

1.5 Payment

Include all costs of adhesively bonded anchors and dowels in the contract unit price bid for the items to be anchored.

September 1, 2012

**TRAILER MOUNTED
AUTOMATED FLAGGER ASSISTANCE DEVICE SYSTEM
(AFAD)**

1. Description:

This specification details the minimum requirements of all Automated Flagger Assistance Device Systems (AFAD) utilized and placed into operation on the roadways of the state of South Carolina.

An automated flagger assistance device system is a temporary traffic control device system for controlling the flow of traffic through temporary traffic control areas, typically work zones, that generate the requirement for two-way traffic to share a single travel lane. An automated flagger assistance device system shall consist of no less than 2 individual AFAD units linked and remotely controlled by wireless communications. A flagger(s), who has successfully completed a flagger training course sponsored by a South Carolina Department of Transportation approved work zone traffic control training provider, shall operate the system. Install, operate and maintain each AFAD unit as designated by these Supplemental Specifications, the manufacturer's specifications, the Standard Drawings for Road Construction, the Plans and the Engineer.

An automated flagger assistance device system acceptable for use on the roadways of the state of South Carolina shall be either a Type I "RED / YELLOW" Lens system or a Type II "STOP / SLOW" Sign system.

The automated flagger assistance device system shall comply with all requirements for Automated Flagger Assistance Devices as specified and directed by the MUTCD, latest edition, and this supplemental specification. An automated flagger assistance device system shall operate and comply with all requirements for flagging operations as specified and directed by the latest editions of the MUTCD, the South Carolina Flagger's Handbook and the Standard Specifications for Highway Construction. Also, an automated flagger assistance device system shall operate and comply with all requirements for flagging operations as specified and directed by the Standard Drawings for Road Construction, the special provisions, the plans and the Engineer.

2. Operations Requirements:

A. General: Automated flagger assistance device systems are only permitted for use on two-lane two-way roadways where each single travel lane of opposing traffic is required to utilize and share one travel lane. An AFAD system is PROHIBITED for use on multilane roadways with reduced numbers of travel lanes. An AFAD is not a traffic control signal and shall not be used as a temporary traffic control signal or to control traffic at any location with more than 2 opposing single travel lanes seeking to share one travel lane.

B. Documentation: Provide documentation to the SCDOT to verify that each operator of an automated flagger assistance device system has successfully completed instruction in the operation of a system by the manufacturer of that system. Also, provide documentation to verify that each operator has successfully completed a flagger training course sponsored by a South Carolina Department of Transportation approved work zone traffic control training provider.

1. **Work Conducted under Contract to SCDOT** - Provide documentation of proof of successful completion of training in the proper operation of the AFAD system by the manufacturer of the system and successful completion of training as a flagger by a South Carolina Department of Transportation approved work zone traffic control training provider to the Resident Engineer no less than 7 days prior to placing an automated flagger assistance device into operation.

SUPPLEMENTAL SPECIFICATIONS

2. **Work Conducted under Encroachment Permit** - Provide documentation of proof of successful completion of training in the proper operation of the AFAD system by the manufacturer of the system and successful completion of training as a flagger by a South Carolina Department of Transportation approved work zone traffic control training provider along with submittal of the encroachment permit to the SCDOT.

C. Operator: The operator of the an automated flagger assistance device system shall be a recipient of and have successfully completed instruction in the operation of the system by the manufacturer of that system. The operator shall have successfully completed a flagger training course sponsored by a South Carolina Department of Transportation approved work zone traffic control training provider.

The South Carolina Department of Transportation only recognizes the following entities as acceptable providers of work zone traffic control training for organizations outside of the SCDOT who perform work activities within the highway rights-of-way in South Carolina under either contract to SCDOT or encroachment permit:

American Traffic Safety Services Association (ATSSA)
Institute for Transportation Research and Education at North Carolina State University (ITRE)
Carolinas Association of General Contractors (AGC)
National Safety Council South Carolina Chapter

The operator shall control the automated flagger assistance device system from a location with an unobstructed view of the AFAD unit as well as an unobstructed view of the approaching traffic. If a single operator is controlling more than one unit, the operator shall have an unobstructed view of traffic from both directions. At no time is the operator permitted to leave the AFAD unattended when the AFAD is operating.

D. Site Location: When sufficient shoulder space is available, place and position the AFAD unit on the shoulder of the roadway no closer than 1 foot from either the near edge line or the near edge of pavement when an edge line is absent to the near edge of the trailer when the gate arm is in the upright position. When sufficient shoulder space to attain the minimum 1 foot requirement is unavailable, minimal encroachment of the unit upon the adjacent travel lane is permitted.

Place and position the AFAD unit to allow the end of the gate arm, when in the down position, to reach the center of the adjacent travel lane being controlled by the unit. Encroachment by the gate arm when in the down position to a point less than to the center of the adjacent travel lane or into the opposing travel lane beyond the center of the roadway is PROHIBITED.

Install the advance warning signs required for typical flagging operations on each approach. In addition to the typical flagging operations sign array, also include and install a "Be Prepared To Stop" sign (W3-4-48) between the "Flagger" symbol sign (W20-7-48) and the AFAD unit on each approach. Therefore, the required advance warning signs for each approach are, "Be Prepared To Stop" (W3-4-48), "Flagger" symbol (W20-7-48), "One Lane Road Ahead" (W20-4-48-A) and "Road Work Ahead" (W20-1-48-A).

E. Nighttime AFAD Flagging Operations: During nighttime operations, illuminate each AFAD unit 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 operations, operators 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 a 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.

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

3. System Requirements:

A. General: An automated flagger assistance device system shall consist of a Main AFAD unit and a Remote AFAD unit, linked and remotely controlled by wireless communications. The individual trailer-mounted units shall have nesting capabilities to permit towing of both units in a single trailer configuration. When nested, all lights including stop, tail and turn signal lights of both units shall operate uniformly.

B. Power Source: The electrical power for operation of the sign shall be supplied by a 12 VDC power source or a 110 VAC or a 120 VAC power source. Provide and mount a D/C power source for the unit on the trailer. An adaptable 110 VAC or 120 VAC power source may be used when available and selected for use.

1. **D/C Powered:** Power the unit by means of a battery bank charged by photovoltaic solar panels and/or a built-in 110 VAC 10 amp battery charger. House the battery bank in a lockable heavy duty weatherproof box or cabinet. The battery bank shall have the capability to provide sufficient operating power to the unit for no less than 7 continuous days.
2. **A/C Powered:** Power the unit by means of a 110 VAC or 120 VAC power source. Equip the unit with ground fault circuit interrupter circuit breakers. Conduct all A/C power adaptations with UL approved equipment and methods.

C. Remote Control: Equip each AFAD unit with a controller capable of receiving and implementing instructions through wireless communications from a handheld transceiver. Also, equip each AFAD unit with a handheld transceiver that provides wireless communication with the unit controller to permit operation of the individual unit or the system by an operator or operators from remote locations. The system shall provide the capability for total system operation and control of both units by one operator from a primary handheld transceiver as well as allow independent unit operation by one operator per unit from unit specific handheld transceivers.

Monitor and verify data transmissions utilized to control the AFAD units. Digitally encode signal transmissions to minimize interference. Comply with all applicable requirements of the Federal Communications Commission. In the event communications are disrupted or lost, the system shall go into a "fail safe" mode and display the "Circular Red" / "STOP" indications and lower the gate arms.

D. Gate Arm: Equip each AFAD unit with an automated gate arm that descends to a down position across the travel lane that approaching traffic is operating in when the AFAD unit displays the condition for approaching traffic to stop. The automated gate arm shall ascend to an upright position when the AFAD unit displays the condition to allow stopped traffic to proceed past the location of the AFAD unit.

Acceptable operation of the gate arm shall require the gate arm to begin descent to the down position no less than 2 seconds or more than 4 seconds after the AFAD unit displays the condition for approaching traffic to stop. The gate arm shall begin ascent to the upright position not less than 1 second or more than 2 seconds prior to display of the condition to allow stopped traffic to proceed.

The gate arm shall measure no less than 8 feet in length and shall have a minimum vertical height of 4 inches when placed in the down position. Reflectorize both sides of the gate arm with a Type III Microprismatic retroreflective sheeting with vertical alternating red and white stripes at 16 inch intervals.

The gate arm shall deflect in the event an errant vehicle drives through and strikes the gate arm and then return to a functional position after the errant vehicle clears the gate arm.

E. Trailer: Fabricate and equip each trailer with a single axle, springs, support assembly and four (4) leveling or stabilizer jacks. Properly equip the trailer to comply with South Carolina Law governing motor vehicles. The minimum requirement for lights and reflectors shall include turn signals, dual tail lights, and brake lights. Equip each trailer with Safety chains meeting SAE J-697 standards and paint each trailer with Federal Standard No. 595, Orange No. 12246.

Each trailer mounted AFAD unit shall have the capability to withstand winds up to 80 MPH without overturning when in the operating configuration or position.

4. Type I “RED / YELLOW” Lens System:

A Type I “RED / YELLOW” Lens AFAD system shall alternately display a steadily illuminated Circular RED lens and a flashing Circular YELLOW lens to control traffic without the need for a “human flagger” in the immediate vicinity of the AFAD unit. The steadily illuminated Circular RED lens shall illuminate when approaching traffic is required to stop and the flashing Circular YELLOW lens shall illuminate when stopped or approaching traffic is permitted to proceed pass the location of the AFAD unit.

A RED / YELLOW Lens AFAD unit shall have no less than one set of Circular RED and Circular YELLOW lenses in a vertical configuration that have diameters of no less than 12 inches. Arrange the lenses to place the Circular RED above the Circular YELLOW and provide a minimum height of no less than 7 feet from the bottom of the apparatus housing the Circular YELLOW lens to the grade elevation of the travel lane under control of the AFAD unit. However, if the lenses are located over any portion of a travel lane in which traffic is operating and may pass underneath the lenses, the minimum mounting height shall be no less than 15 feet from the bottom of the apparatus housing the YELLOW lens to the grade elevation of the travel lane under control of the AFAD unit in which traffic is operating.

The gate arm shall begin its descent to the down position not less than 2 seconds or more than 4 seconds after the Circular RED lens is illuminated. The automated gate arm shall begin its ascent to the upright position not less than 1 second or more than 2 seconds prior to illumination of the flashing Circular YELLOW lens.

Install a “Stop Here On Red” sign (R10-6-36) or (R10-6a-30) on the right side of the approach at the point at which motorists are expected to stop when the Circular RED lens is illuminated.

Transition Between RED and YELLOW Conditions -

Transition to Circular RED condition - The flashing Circular YELLOW lens shall enter into a minimum 5 second steady illumination phase prior to transitioning to the steadily illuminated Circular RED condition. The gate arm shall begin its descent not less than 2 seconds or more than 4 seconds after the Circular RED lens is illuminated.

Transition to Circular YELLOW condition - The gate arm shall complete its ascent to the upright position not less than 1 second or more than 2 seconds prior to illumination of the flashing Circular YELLOW lens. The steadily illuminated Circular RED lens shall transition to the flashing Circular YELLOW lens.

The Type I “RED / YELLOW” Lens AFAD system shall include a fail-safe system with a conflict monitor or similar device to prevent display of conflicting indications between units. Also, the system shall provide indicators to notify the operators of power loss that may impede proper operation of the system.

5. Type II “STOP / SLOW” Sign System:

A Type II “STOP / SLOW” Sign AFAD system shall have a STOP / SLOW sign that alternately displays the STOP (R1-1-36) face and the SLOW (W20-8-36) face of a STOP / SLOW paddle to control traffic without the need for a “human flagger” in the immediate vicinity of the AFAD unit. The STOP sign face shall display when approaching traffic is required to stop and the SLOW sign face shall display when stopped or approaching traffic is permitted to proceed pass the location of the AFAD unit.

The STOP / SLOW sign, fabricated from a rigid material, shall have an octagonal shape with a minimum face size of 36 inches by 36 inches. Reflectorize each face of the sign with a Type VII, Type VIII or Type IX Prismatic Retroreflective sheeting included on the latest edition of the *SCDOT Qualified Products List 20*. The STOP sign face shall have a red background with white letters and border and the SLOW sign face shall have a diamond shaped orange background with black letters and border. The letters shall have a minimum height of 8 inches. The sign faces shall have a minimum mounting height of 7 feet from the bottom of the sign to the grade elevation of the travel lane under control of the AFAD unit.

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| SUPPLEMENTAL SPECIFICATIONS |
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Supplement the Type II "STOP / SLOW" Sign AFAD unit with active conspicuity devices. Include a steadily illuminated RED lens beacon to illuminate when the STOP sign face is displayed and a flashing YELLOW lens beacon to illuminate when the SLOW sign face is displayed. Each beacon shall have a 12 inch signal lens. Mount the RED lens beacon no more than 24 inches above the top of the STOP sign face and YELLOW lens beacon no more than 24 inches above the top or to the side of the SLOW sign face.

Type B warning lights are PROHIBITED as alternatives to the 12 inch signal lens beacons.

The gate arm shall begin its descent to the down position 2 seconds or more than 4 seconds after the transition to a complete display of the STOP sign face is accomplished and the illumination of the steadily illuminated RED lens beacon. The automated gate arm shall begin its ascent to the upright position not less than 1 second or more than 2 seconds prior to the initiation of the transition from the STOP sign face to the SLOW sign face.

Install a "Wait On Stop" sign (R1-7-30) and a "Go On Slow" sign (R1-8-30) either on the same support structure as the AFAD unit or immediately adjacent to the AFAD unit.

Transition Between STOP and SLOW Conditions -

Transition to STOP condition - The RED lens beacon shall enter into a "flashing mode" no less than 5 seconds prior to transitioning from the SLOW sign face to the STOP sign face. Immediately upon completion of the transition to complete display of the STOP sign face, the "flashing mode" of the RED lens beacon shall transition to a steadily illuminated condition. The gate arm shall begin its descent in not less than 2 seconds or more than 4 seconds after completion of the transition to a complete display of the STOP sign face and illumination of the steadily illuminated RED lens beacon.

Transition to SLOW condition - The STOP sign face shall begin the transition to the SLOW sign face. The gate arm shall begin its ascent to the upright position not less than 1 second prior to the initiation of the transition from the STOP sign face to the SLOW sign face. The RED lens beacon shall cease to illuminate and the flashing YELLOW lens beacon shall begin to illuminate immediately upon completion of the transition of the STOP sign face to the SLOW sign face and the ascent of the gate arm to its completed upright position.

The Type II "STOP / SLOW" Sign AFAD system shall include a fail-safe system with a conflict monitor or similar device to prevent display of conflicting indications between units. Also, the system shall provide indicators to notify the operators of power loss that may impede proper operation of the system.

3. Method of Measurement: Unless otherwise specified, Automated Flagger Assistance Device Systems (AFAD's) are not measured for separate payment but are included in the contract lump sum bid price item Traffic Control as specified in Subsections 107.12 and 601.5 of the *2007 Standard Specifications for Highway Construction*.

4. Basis of Payment: Unless otherwise specified, payment for an Automated Flagger Assistance Device System (AFAD) is included in the contract lump sum bid price item Traffic Control as specified in Subsections 107.12 and 601.5 of the *2007 Standard Specifications for Highway Construction*. The payment shall be full compensation for providing, installing, removing, and relocating as necessary, operating, and maintaining an Automated Flagger Assistance Device System (AFAD). Payment shall include furnishing all labor, hardware, equipment, tools, incidentals, and any miscellaneous items necessary for installing, operating, and maintaining the system.

September 1, 2013

**WORK ZONE TRAFFIC CONTROL
TRAINING REQUIREMENTS
FOR
CONTRACTORS / SUBCONTRACTORS**

1. Description:

This specification details the work zone traffic control training requirements for employees and representatives of a contractor or subcontractor under contract to the South Carolina Department of Transportation (SCDOT) whose job duties include responsibilities relative to implementation and maintenance of the Transportation Management Plan (TMP). "Employees and representatives of a contractor or subcontractor" will henceforth be referred to as "employee" or "employees" and "contractor or subcontractor" will henceforth be referred to as "contractor".

The SCDOT requires the contractor to provide documentation to substantiate successful completion and attainment of a passing score of a prescribed training course conducted by an SCDOT approved provider by those employees whose job duties categorize them as "designated trainees" as defined hereinafter.

2. Implementation:

These requirements for work zone traffic control training for employees of those entities under contract to the SCDOT whose job duties include responsibilities relative to implementation and maintenance of a TMP shall become effective on all projects let to contract after September 1, 2013.

3. Designated Trainees:

An employee whose job duty responsibilities, as designated hereto, impact or involve any of or all of the components of a TMP must successfully complete an advanced work zone traffic control training program. These components include the primary component, the "Temporary Traffic Control" plan, and the secondary components, the "Transportation Operations" plan and the "Public Information" plan.

An employee whose job duties include any of the following responsibilities regarding the TMP shall successfully complete an advanced work zone traffic control training program conducted by an SCDOT approved work zone traffic control training provider:

- Supervision of the field installation of any or all components of the TMP
- Supervision of the maintenance of any or all components of the TMP
- Supervision of the removal of any or all components of the TMP
- Design and development of revisions to an existing TMP
- Design and development of a new or alternate TMP
- Any decision-making responsibilities regarding the TMP

Those employees whose job duties do not include responsibilities relative to the TMP as stated above are not required to attend an advanced work zone traffic control training program. However, it is recommended that all employees whose job duties place them on the job site within the highway rights-of-way within 30 feet or less of a travel lane open to traffic should attend a basic work zone traffic control training course.

Also, an employee whose job duties include "flagger" shall successfully complete a "Flagger Training" course. However, regarding an employee whose job duties include "flagger" but does not involve any of the responsibilities listed above, successful completion of a "Flagger Training" course is the only mandatory work zone traffic control training course required for this employee; other work zone traffic control training courses are elective.

4. Approved Work Zone Traffic Control Training Providers:

The SCDOT recognizes the following organizations as acceptable providers of an advanced work zone traffic control training program, a “Flagger Training” course or the optional basic work zone traffic control training course:

- American Traffic Safety Services Association (ATSSA)
- Institute for Transportation Research and Education at North Carolina State University (ITRE)
- Carolinas Association of General Contractors (AGC)
- National Safety Council South Carolina Chapter

These organizations provide work zone traffic control training in compliance with the MUTCD and reference requirements specific to SCDOT. Therefore, work zone traffic control training provided by entities other than those listed above are not considered comparable and shall be unacceptable.

Specific course material for work zone traffic control training courses designated as “Basic”, “Advanced”, “Supervisor” or “Flagger” and any additional training courses not specified here is determined by the work zone traffic control training course provider and has undergone review and received acceptance by SCDOT. Also, the passing score for each training course is determined by the work zone traffic control provider.

5. Training Requirements / Qualifications:

Successful completion of an advanced work zone traffic control training program is defined as achieving a passing score in all courses, including any prerequisite courses, to attain a level considered “advanced”, “supervisor” or any other relative term as designated by the provider to imply the trainee has an understanding of the course material inclusive of design, implementation and maintenance of work zone traffic control scenarios. Upon successful completion of the program, the trainee should also possess an understanding for determining the need for and developing and implementing adjustments as necessary when applying typical work zone traffic control applications to non-typical work site conditions and scenarios.

The employee whose job duty responsibilities mandate successful completion of an advanced work zone traffic control training program shall do so prior to performing any job duties with responsibilities relative to design and development of a TMP or revisions of an existing TMP or any decision-making responsibilities regarding the TMP or supervision of the field installation and maintenance of any and all components of the TMP.

Also, an employee whose job duties mandate successful completion of a “Flagger” training course shall do so prior to performing any job duties relative to flagging traffic.

Each employee who has successfully completed an approved advanced work zone traffic control training program or a “Flagger” training course shall attend and complete a refresher course relative to the employee’s job duties on a 5-year incremental time frame.

6. Documentation:

The contractor shall provide proof of successful completion of an acceptable advanced work zone traffic control training class by those employees whose job duty responsibilities mandate successful completion of approved work zone traffic control training to the Resident Engineer prior to the employee performing the job duties that incorporate responsibilities which necessitate approved work zone traffic control training. For proof of successful completion of an approved work zone traffic control training class, provide a copy of the certificate of training from the organization who conducted the training to the Resident Engineer. Failure to provide the required documentation as specified shall prevent SCDOT acceptance of the employee as properly trained and acceptable for conducting those job duties that necessitate the prescribed work zone traffic control training.

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| SUPPLEMENTAL SPECIFICATIONS |
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The contractor shall provide proof of successful completion of an acceptable "Flagger Training" course by all employees whose job duties require them to be the "Flagger" within a flagging operation to the Resident Engineer prior to the employee performing any "Flagger" job duties.

The contractor shall provide proof of successful completion of an acceptable advanced work zone traffic control refresher course for those employees no later than 60 days beyond the 5 year anniversary date of the employee's certificate date of completion of a previous advanced work zone traffic control training program.

Documentation of proof of completion of a basic work zone traffic control training course by employees whose job duties require their presence on the job site within the highway rights-of-way but exclude any responsibilities relative to the TMP is not required.

April 1, 2013

**Concrete Structures –
Preformed Joint Filler**

Delete Subsection 702.2.2.1 of the Standard Specifications in its entirety and replace it with the following:

702.2.2.1 Preformed Joint Filler

Use preformed joint material that meets AASHTO M 153 or AASHTO M 213 with the following exceptions:

1. Use only materials manufactured from rubber.
2. Use materials that require a load of not less than 340 kPa or greater than 5200 kPa to compress to 50% of its thickness when tested in accordance with AASHTO T 42.
3. Use materials that have a recovery of at least 70% when tested in accordance with AASHTO T 42.

Use preformed joint material that is listed on QPL 81.

Provide a manufacturer's certification that states that the material conforms to SCDOT specifications.

January 1, 2009

EROSION CONTROL MEASURES

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 may be viewed at the following Internet web address:

<http://www.scstatehouse.net/coderegs/c063.htm>

- 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 may be viewed at the following Internet web address:

<http://www.scstatehouse.net/code/t48c018.htm>

- National Pollutant Discharge Elimination System (NPDES) General Permit Number SCR100000, effective September 1, 2006: 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 following Internet web address:

<http://www.scdhec.net/environment/water/docs/finalcgp.pdf>

In accordance with the NPDES General Permit, sign a Co-Permittee Agreement and Contractor Certification statement (shown in Part 3.2D of the General Permit) and require all subcontractors performing land-disturbing activities to sign a Co-Permittee Agreement and Contractor Certification statement as part of their subcontract. These certifications are incorporated into the proposal form for the Contract. By signing either form, the Contractor acknowledges that upon award and execution of the Contract, he/she accepts/ understands the terms and conditions of the *Storm Water Pollution Prevention Plan (SWPPP)* as required by the NPDES General Permit and may be legally accountable to SCDHEC for compliance with the terms and conditions of the *SWPPP*. In addition, the Contractor certifies that the NPDES certification statement and/or co-permittee status is made part of all its subcontracts.

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 *CECP* will take place, coverage will be automatically granted.

Prepare and submit a *Contractor's Erosion Control Plan (CECP)* to the RCE before the pre-construction conference. Ensure that the plan meets the requirements of the NPDES General Permit. The plan will be reviewed and approved by the Department before commencing any land disturbing activities.

At the pre-construction conference, with all contactors and subcontractors performing land-disturbing activities present, the *CECP* will be explained and discussed so that each contractor and subcontractor is made aware of their responsibilities in the *CECP*.

Once approved, fully implement the *CECP*. Coordinate the prompt installation of erosion control devices with construction activities to maintain compliance with the above regulations and NPDES General Permit.

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| SUPPLEMENTAL SPECIFICATIONS |
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Conduct an Erosion and Sediment Control Inspection by an appointed Certified Erosion Prevention and Sediment Control Inspector (CEPSCI) from the Contractor and the Department at least every 7-calendar days. Both parties will acknowledge participation in the inspection by signing the inspection report and include their inspector's CEPSCI number on the report. Correct deficiencies noted during these inspections within the assigned priority period. If deficiencies are not corrected within this timeframe, the RCE will 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 7 days or 48 hours in accordance with their assigned priority after being identified during the Erosion and Sediment Control Inspection.

Closely follow the grading operations with the seeding operations. Shape and prepare the slopes for seeding as the grading progresses. Unless the RCE grants prior written approval, limit the amount of surface area exposed by land disturbing activities to 750,000 square feet. Commence seeding operations within 7 days following completion of construction activities within an area.

Initiate stabilization measures within 7 days for an area where construction activities will be temporarily or permanently ceased for 21 days or longer.

Coordinate the installation of all other permanent erosion control items with the grading and seeding operations. These items include, but are not limited to, asphalt gutter and riprap. Construct gutter work before or promptly after the seeding is performed. Place riprap at the ends of pipe immediately after the pipe is laid and promptly install riprap ditch checks after ditch work has been performed.

Failure to adequately comply with the provisions as detailed above or any other required erosion control measures will 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.

Keep the following documents at the RCE's office from the start of construction until the site is finally stabilized:

- Copy of the *CECP*,
- Copies of all the co-permittee agreements and Contractor certification statements,
- Copy of the permit,
- Letter from DHEC authorizing permit coverage if provided by DHEC, and
- A marked-up set of site plans.

When uniform perennial vegetation achieves a cover density of 70%, submit a *Notice of Termination (NOT)* to SCDHEC to terminate coverage. Include a signed statement with the *NOT* certifying that all work on the site has been completed in accordance with the *SWPPP* and the NPDES General Permit for all sites one acre or greater.

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 or that may become due to the Contractor. In case no monies are due or available, the fines incurred will be charged against the Contractor's Surety.

July 1, 2011

Erosion Control

Section 815.2.5.1 Posts

Replace Section 815.2.5.1 in its entirety with the following:

Furnish steel posts a minimum of 60 inches long and meeting the minimum physical requirements specified in Subsection 815.2.12 or Furnish Rigid PVC T-posts a minimum of 60 inches long meeting the physical requirements specified in paragraph 3 of this subsection.

When sandy soils are present on site and steel posts are utilized, provide a metal plate welded near the bottom of the steel post so that when the post is driven to the proper depth, the plate is below the ground level for added stability. In areas where conditions warrant, larger posts or reduced post spacing may be required to provide an adequate fence to handle the stress from sediment loading.

Rigid PVC T-posts shall meet the following physical requirements. Material shall consist of Rigid Polyvinyl Chloride with cell classification of 30304311 as determined in accordance with ASTM D4216. Width of the flange shall be a minimum of 2.1". Depth of the web shall be a minimum of 1.625". The thickness of the flange and the thickness of the web shall each be a minimum of 0.35" at the intersection of the flange and web. Weight per unit length shall be no less than 0.8lb/ft. Posts shall have only a single 3/8" hole in the center of the web spaced every 3" in the top 3' of the post. No holes shall be present on any part of the flange. Silt fence shall be placed directly against the flange of the post, with the flange parallel to the run of silt fence. In areas where conditions warrant, reduced post spacing may be required to provide an adequate fence to handle the stress from sediment loading.

DISADVANTAGED BUSINESS ENTERPRISES (DBE)
COMMITTAL SHEET

Information must be shown on this sheet as required by the supplemental specifications entitled "Instructions to Bidders - Federal Projects" and "Disadvantaged Business Enterprises (DBE) - Federal Projects" included in this proposal.

FAILURE TO PROVIDE ALL INFORMATION REQUIRED ON THIS FORM MAY RESULT IN THE AWARD BEING MADE TO THE NEXT LOWEST RESPONSIBLE BIDDER.

| ¹ Name & Address of DBE's (Subcontractor or Supplier) | ² Percent | ³ Description of Work and Approximate Quantity ⁶ (show percent when appropriate) | | | | ⁵ Dollar Value |
|---|----------------------|--|------|------|----------------------------|------------------------------|
| | | Item | Qty. | Unit | ⁴ Unit Price | |
| | | | | | | |

- ¹ The designation of Firm A and/or B is not considered acceptable. I hereby certify that this company has communicated with and received quotes from the DBE's listed above and that they are willing to perform the work as listed above and that this company is committed to utilizing the above firm(s) on this contract.
- ² Percent - show percent of total contract amount committed to each DBE listed.
- ³ All information requested must be included unless item is listed in proposal on a lump sum basis.
- ⁴ Unit Price - show unit price quoted by DBE.
- ⁵ Dollar Value - extended amount based on Quantity and Unit Price.
- ⁶ Applies to lump sum items only.

This form may be reproduced or additional sheets added in order to provide all requested information. (See *Instructions to Bidders - Federal Projects*).

SWORN to before me this _____ day of _____, 20____ Company _____

(Seal) By: _____

Notary Public for _____ Title: _____

My commission expires: _____

Superseded General Decision Number: SC20170041

State: South Carolina

Construction Type: Highway

Counties: Berkeley, Charleston, Dorchester and Horry Counties in South Carolina.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.35 for calendar year 2018 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.35 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2018. The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

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| Modification Number | Publication Date |
| 0 | 01/05/2018 |

SUSC2011-032 09/15/2011

| | Rates | Fringes |
|--------------------------------|----------|---------|
| CARPENTER (Form Work Only) | | |
| Berkeley, Dorchester..... | \$ 13.50 | |
| Charleston..... | \$ 13.07 | |
| Horry..... | \$ 14.29 | |
| CEMENT MASON/CONCRETE FINISHER | | |
| Berkeley, Dorchester..... | \$ 14.79 | |
| Charleston..... | \$ 14.33 | |
| Horry..... | \$ 14.62 | |
| IRONWORKER, REINFORCING..... | \$ 15.35 | |
| LABORER | | |
| Asphalt, Includes Asphalt | | |
| Distributor, Raker, | | |
| Shoveler, and Spreader | | |
| Berkeley, Charleston, | | |

Dorchester.....\$ 11.62
 Asphalt, Includes Asphalt
 Distributor, Shoveler and
 Spreader
 Horry.....\$ 11.54
 Common or General
 Berkeley.....\$ 10.06
 Charleston.....\$ 10.16
 Dorchester.....\$ 11.69
 Horry.....\$ 9.72
 Luteman.....\$ 11.61
 Mason Tender-
 Cement/Concrete.....\$ 10.40
 Pipelayer.....\$ 13.98
 Traffic Control-Cone Setter
 Berkeley, Charleston,
 Dorechester.....\$ 13.19
 Horry.....\$ 12.63
 Traffic Control-Flagger.....\$ 11.07

POWER EQUIPMENT OPERATOR:

Backhoe/Excavator/Trackhoe
 Berkeley.....\$ 15.68
 Charleston.....\$ 16.09
 Dorchester.....\$ 16.06
 Horry.....\$ 15.04
 Bulldozer.....\$ 14.81
 Crane
 Berkeley, Dorchester.....\$ 20.00 4.73
 Charleston.....\$ 20.08
 Horry.....\$ 20.58
 Grader/Blade.....\$ 14.61
 Hydroseeder.....\$ 11.00
 Loader (Front End/Track)....\$ 16.80
 Mechanic
 Berkeley, Dorchester.....\$ 19.07
 Charleston.....\$ 19.21
 Horry.....\$ 19.48
 Milling Machine.....\$ 11.84
 Paver
 Berkeley, Charleston,
 Dorchester.....\$ 18.85
 Horry.....\$ 13.29
 Roller.....\$ 15.17
 Scraper.....\$ 12.71
 Screed.....\$ 13.56
 Tractor.....\$ 13.28

TRUCK DRIVER

Dump Truck.....\$ 10.67
 Lowboy Truck.....\$ 15.55

 WELDERS - Receive rate prescribed for craft performing
 operation to which welding is incidental.
 =====

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave
 for Federal Contractors applies to all contracts subject to the
 Davis-Bacon Act for which the contract is awarded (and any

solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all

rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

Superseded General Decision Number: SC20170042

State: South Carolina

Construction Type: Highway

Counties: Calhoun, Fairfield, Kershaw, Lexington, Richland and Saluda Counties in South Carolina.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.35 for calendar year 2018 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.35 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2018. The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

| | |
|---------------------|------------------|
| Modification Number | Publication Date |
| 0 | 01/05/2018 |

SUSC2011-033 09/15/2011

| | Rates | Fringes |
|---|----------|---------|
| CARPENTER (Form Work Only) | | |
| Fairfield, Kershaw, | | |
| Richland, Saluda..... | \$ 15.04 | |
| Lexington..... | \$ 14.50 | |
| CEMENT MASON/CONCRETE FINISHER... | \$ 13.65 | |
| GUARDRAIL INSTALLER(Includes Guardrail/Post Driver Work)..... | \$ 12.49 | |
| IRONWORKER, REINFORCING..... | \$ 15.02 | |
| LABORER | | |
| Asphalt Includes Asphalt Distributor, Shoveler, and Spreader..... | \$ 11.54 | |

| | |
|------------------------------|----------|
| Common or General | |
| Calhoun..... | \$ 10.09 |
| Fairfield..... | \$ 9.55 |
| Kershaw..... | \$ 9.88 |
| Lexington..... | \$ 9.78 |
| Richland..... | \$ 9.97 |
| Saluda..... | \$ 9.88 |
| Luteman..... | \$ 11.61 |
| Mason Tender- | |
| Cement/Concrete..... | \$ 10.40 |
| Pipelayer..... | \$ 14.46 |
| Traffic Control-Cone Setter | |
| Calhoun, Fairfield, | |
| Kershaw, Richland, Saluda.. | \$ 10.87 |
| Lexington..... | \$ 11.26 |
| Traffic Control-Flagger..... | \$ 11.07 |

POWER EQUIPMENT OPERATOR:

| | |
|-----------------------------|----------|
| Backhoe/Excavator/Trackhoe | |
| Calhoun, Fairfield, | |
| Kershaw, Richland, Saluda.. | \$ 15.98 |
| Lexington..... | \$ 16.02 |
| Bulldozer..... | \$ 17.38 |
| Crane..... | \$ 18.93 |
| Grader/Blade | |
| Calhoun, Fairfield, | |
| Kershaw, Richland, Saluda.. | \$ 18.44 |
| Lexington..... | \$ 18.54 |
| Hydroseeder..... | \$ 11.00 |
| Loader (Front End)..... | \$ 17.22 |
| Mechanic..... | \$ 15.25 |
| Milling Machine..... | \$ 11.84 |
| Paver..... | \$ 13.93 |
| Roller | |
| Calhoun, Fairfield, | |
| Kershaw, Richland, Saluda.. | \$ 14.98 |
| Lexington..... | \$ 15.10 |
| Scraper..... | \$ 12.71 |
| Screed..... | \$ 13.56 |
| Tractor..... | \$ 13.28 |

TRUCK DRIVER

| | |
|-----------------------------|----------|
| Dump Truck | |
| Calhoun, Fairfield, | |
| Kershaw, Richland, Saluda.. | \$ 13.29 |
| Lexington..... | \$ 13.22 |
| Lowboy Truck..... | \$ 14.11 |

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this

contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and

the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.

Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

Superseded General Decision Number: SC20170043

State: South Carolina

Construction Type: Highway

Counties: Darlington, Florence and Sumter Counties in South Carolina.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.35 for calendar year 2018 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.35 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2018. The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number Publication Date
0 01/05/2018

SUSC2011-034 09/15/2011

| | Rates | Fringes |
|-----------------------------------|----------|---------|
| CARPENTER (Form Work Only)..... | \$ 13.73 | |
| CEMENT MASON/CONCRETE FINISHER... | \$ 13.16 | |
| IRONWORKER, REINFORCING..... | \$ 15.02 | |
| LABORER | | |
| Asphalt Includes Asphalt | | |
| Distributor, Shoveler, and | | |
| Spreader..... | \$ 11.54 | |
| Common or General | | |
| Darlington, Florence..... | \$ 9.85 | |
| Sumter..... | \$ 9.74 | |
| Luteman..... | \$ 11.61 | |
| Mason Tender- | | |
| Cement/Concrete..... | \$ 10.40 | |
| Pipelayer..... | \$ 14.46 | |

Traffic Control-Cone Setter.\$ 10.87
Traffic Control-Flagger.....\$ 11.07

POWER EQUIPMENT OPERATOR:

Backhoe/Excavator/Trackhoe..\$ 15.20
Bulldozer.....\$ 17.38
Crane.....\$ 18.93
Grader/Blade.....\$ 17.87
Hydroseeder.....\$ 11.00
Loader (Front End).....\$ 16.31
Mechanic.....\$ 15.25
Milling Machine.....\$ 11.84
Paver.....\$ 13.93
Roller.....\$ 14.09
Scraper.....\$ 12.71
Screed.....\$ 13.56
Tractor.....\$ 13.28

TRUCK DRIVER

Dump Truck.....\$ 12.91
Lowboy Truck.....\$ 14.11

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage

determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier. A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is

based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

Superseded General Decision Number: SC20170044

State: South Carolina

Construction Type: Highway

Counties: Anderson, Greenville, Laurens, Pickens, Spartanburg and York Counties in South Carolina.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.35 for calendar year 2018 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.35 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2018. The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

| | |
|---------------------|------------------|
| Modification Number | Publication Date |
| 0 | 01/05/2018 |

SUSC2011-035 09/15/2011

| | Rates | Fringes |
|--|----------|---------|
| CARPENTER (Form Work Only)..... | \$ 14.44 | |
| CEMENT MASON/CONCRETE FINISHER... | \$ 12.64 | |
| IRONWORKER, REINFORCING..... | \$ 15.02 | |
| LABORER | | |
| Asphalt Includes Asphalt Distributor, Shoveler, and Spreader Anderson, Greenville, Laurens, Pickens, Spartanburg..... | \$ 11.54 | |
| York..... | \$ 11.62 | |
| Common or General | | |
| Anderson..... | \$ 9.71 | |
| Greenville, Pickens..... | \$ 9.87 | |
| Laurens..... | \$ 8.89 | |

Spartanburg.....\$ 10.05
 York.....\$ 9.63
 Luteman.....\$ 10.76
 Mason tender-
 Cement/Concrete.....\$ 10.40
 Pipelayer.....\$ 13.98
 Traffic Control-Cone Setter.\$ 11.75
 Traffic Control-Flagger
 Anderson, Spartanburg,
 York.....\$ 10.13
 Greenville, Laurens,
 Pickens.....\$ 10.62

POWER EQUIPMENT OPERATOR:

Backhoe/Excavator/Trackhoe
 Greenville, Laurens,
 Pickens.....\$ 13.82
 Spartanburg, York.....\$ 13.92
 Bulldozer.....\$ 12.95
 Crane.....\$ 19.73
 Grader/Blade
 Anderson, Spartanburg,
 York.....\$ 13.13
 Greenville, Laurens,
 Pickens.....\$ 12.62
 Hydroseeder.....\$ 11.00
 Loader (Front End).....\$ 16.80
 Mechanic.....\$ 17.75
 Milling Machine.....\$ 11.84
 Paver
 Anderson, Spartanburg,
 York.....\$ 12.93
 Greenville, Laurens,
 Pickens.....\$ 13.61
 Roller
 Anderson, Spartanburg,
 York.....\$ 12.11
 Greenville.....\$ 12.59
 Laurens, Pickens.....\$ 12.16
 Scraper.....\$ 12.71
 Screed.....\$ 13.09
 Tractor.....\$ 13.28

TRUCK DRIVER

Dump Truck
 Anderson, Spartanburg,
 York.....\$ 12.75
 Greenville.....\$ 13.17
 Laurens, Pickens.....\$ 12.70
 Lowboy Truck
 Anderson, Spartanburg,
 York.....\$ 13.48
 Greenville, Laurens,
 Pickens.....\$ 13.36

 WELDERS - Receive rate prescribed for craft performing
 operation to which welding is incidental.

=====

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that

classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.

Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====
END OF GENERAL DECISION

Superseded General Decision Number: SC20170045

State: South Carolina

Construction Type: Highway

Counties: Aiken and Edgefield Counties in South Carolina.

DOES NOT INCLUDE SAVANNAH RIVER SITE IN AIKEN COUNTY

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.35 for calendar year 2018 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.35 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2018. The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number Publication Date
0 01/05/2018

SUSC2011-036 09/15/2011

| | Rates | Fringes |
|--|----------|---------|
| CARPENTER (Form Work Only)..... | \$ 13.73 | |
| CEMENT MASON/CONCRETE FINISHER...\$ | 13.16 | |
| IRONWORKER, REINFORCING.....\$ | 15.02 | |
| LABORER | | |
| Asphalt Includes Aspalt Distributor, Shoveler, and Spreader..... | \$ 11.54 | |
| Common or General..... | \$ 9.04 | |
| Luteman..... | \$ 11.61 | |
| Mason Tender- Cement/Concrete..... | \$ 10.40 | |
| Pipelayer..... | \$ 14.46 | |
| Traffic Control-Cone Setter.\$ | 10.87 | |
| Traffic Control-Flagger.....\$ | 11.07 | |

POWER EQUIPMENT OPERATOR:

| | |
|------------------------------|----------|
| Backhoe/Excavator/Trackhoe.. | \$ 15.20 |
| Bulldozer..... | \$ 17.38 |
| Crane..... | \$ 18.93 |
| Grader/Blade..... | \$ 17.87 |
| Hydroseeder..... | \$ 11.00 |
| Loader (Front End)..... | \$ 16.31 |
| Mechanic..... | \$ 15.25 |
| Milling Machine..... | \$ 11.84 |
| Paver..... | \$ 13.93 |
| Roller..... | \$ 14.09 |
| Scraper..... | \$ 12.71 |
| Screed..... | \$ 13.56 |
| Tractor..... | \$ 13.28 |

TRUCK DRIVER

| | |
|-------------------|----------|
| Dump Truck..... | \$ 12.25 |
| Lowboy Truck..... | \$ 14.11 |

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).
Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or

"UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
 Wage and Hour Division
 U.S. Department of Labor
 200 Constitution Avenue, N.W.
 Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
 U.S. Department of Labor
 200 Constitution Avenue, N.W.
 Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
 U.S. Department of Labor
 200 Constitution Avenue, N.W.
 Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

Superseded General Decision Number: SC20170046

State: South Carolina

Construction Type: Highway

Counties: Abbeville, Cherokee, Chester, Chesterfield, Clarendon, Dillon, Greenwood, Lancaster, Lee, Marion, Marlboro, McCormick, Oconee and Union Counties in South Carolina.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.35 for calendar year 2018 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.35 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2018. The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

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|---------------------|------------------|
| Modification Number | Publication Date |
| 0 | 01/05/2018 |

SUSC2011-037 09/15/2011

| | Rates | Fringes |
|---------------------------------|----------|---------|
| CARPENTER (Form Work Only)..... | \$ 14.00 | |
| CEMENT MASON/CONCRETE FINISHER | | |
| Abbeville, Cherokee, | | |
| Chester, Greenwood, | | |
| Lancaster, McCormick, | | |
| Oconee, Union..... | \$ 11.63 | |
| Chesterfield, Clarendon, | | |
| Dillon, Lee, Marion, | | |
| Marlboro..... | \$ 13.02 | |

GUARDRAIL INSTALLER, Includes
Guard Rail/Post Driver
Installation
 Abbeville, Cherokee,

Chester, Chesterfield,
 Clarendon, Dillon,
 Greenwood, Lancaster, Lee,
 Marion, Marlboro,
 McCormick, Union.....\$ 12.52
 Oconee.....\$ 12.65

IRONWORKER, REINFORCING.....\$ 15.64

LABORER

Asphalt, Includes Asphalt
 Distributor, Raker,
 Shoverler, and Spreader.....\$ 10.96
 Common or General
 Abbeville, Greenwood.....\$ 8.85
 Cherokee.....\$ 9.40
 Chester.....\$ 9.55
 Chesterfield.....\$ 9.93
 Clarendon, Dillon, Lee,
 Marion, Marlboro.....\$ 10.00
 Lancaster.....\$ 9.67
 McCormick, Union.....\$ 9.39
 Oconee.....\$ 9.47
 Luteman.....\$ 10.93
 Pipelayer.....\$ 13.87
 Traffic Control- Cone
 Setter.....\$ 12.47
 Traffic Control-Flagger
 Abbeville, Cherokee,
 Chester, Chesterfield,
 Clarendon, Dillon,
 Greenwood, Lee, Marion,
 Marlboro, McCormick,
 Oconee, Union.....\$ 10.15
 Lancaster.....\$ 10.83

POWER EQUIPMENT OPERATOR:

Backhoe/Excavator/Trackhoe
 Abbeville, Cherokee,
 Chester, Greenwood,
 Lancaster, McCormick,
 Oconee, Union.....\$ 16.25
 Chesterfield, Clarendon,
 Dillon, Lee, marion,
 Marlboro.....\$ 15.08
 Bulldozer.....\$ 13.66
 Crane.....\$ 20.12
 Grader/Blade
 Abbeville, Cherokee,
 Chester, Greenwood,
 Lancaster, McCormick,
 Oconee, Union.....\$ 16.20
 Chesterfield, Clarendon,
 Dillon, Lee, Marion,
 Marlboro.....\$ 15.85
 Loader (Front End).....\$ 15.51
 Mechanic.....\$ 18.22
 Milling Machine.....\$ 15.51
 Paver
 Abbeville, Cherokee,

3.40

Chester, Greenwood,
Lancaster, McCormick,
Oconee, Union.....\$ 14.58
Chesterfield, Clarendon,
Dillon, Lee, Marion,
Marlboro.....\$ 13.39
Roller
Abbeville, Cherokee,
Chester, Greenwood,
Lancaster, McCormick,
Oconee, Union.....\$ 11.22
Chesterfield, Clarendon,
Dillon, Lee, Marion,
Marlboro.....\$ 11.95
Screed.....\$ 12.45
Tractor.....\$ 13.26

TRUCK DRIVER

Dump Truck
Abbeville, Cherokee,
Chester, Greenwood,
Lancaster, McCormick,
Oconee, Union.....\$ 12.83
Clarendon, Dillon, Lee,
Marion, Marlboro.....\$ 11.69
Lowboy Truck
Abbeville, Cherokee,
Chester, Greenwood,
Lancaster, McCormick,
Oconee Union.....\$ 14.19
Chesterfield, Clarendon,
Dillon, Lee, Marion,
Marlboro.....\$ 14.16
Single Axle, Includes
Pilot Car
Abbeville, Cherokee,
Greenwood, Lancaster,
McCormick, Oconee, Union...\$ 10.83
Tractor Haul truck.....\$ 16.25

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave
for Federal Contractors applies to all contracts subject to the
Davis-Bacon Act for which the contract is awarded (and any
solicitation was issued) on or after January 1, 2017. If this

contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which

these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

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=====

END OF GENERAL DECISION

Superseded General Decision Number: SC20170047

State: South Carolina

Construction Type: Highway

Counties: Allendale, Bamberg, Barnwell, Beaufort, Colleton, Georgetown, Hampton, Jasper, Newberry, Orangeburg and Williamsburg Counties in South Carolina.

DOES NOT INCLUDE SAVANNAH RIVER SITE IN ALLENDALE AND BARNWELL COUNTIES

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.35 for calendar year 2018 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.35 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2018. The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

| | |
|---------------------|------------------|
| Modification Number | Publication Date |
| 0 | 01/05/2018 |

SUSC2011-038 09/15/2011

| | Rates | Fringes |
|-----------------------------------|----------|---------|
| CARPENTER (Form Work Only)..... | \$ 14.47 | |
| CEMENT MASON/CONCRETE FINISHER... | \$ 14.11 | |
| IRONWORKER, REINFORCING..... | \$ 15.64 | |
| LABORER | | |
| Asphalt, Includes Asphalt | | |
| Distributor, Raker, | | |
| Shoverler, and Spreader..... | \$ 10.96 | |
| Colleton..... | \$ 10.16 | |
| Common or General | | |
| Beaufort..... | \$ 10.15 | |

Colleton.....\$ 10.16
 Georgetown, Hampton,
 Jasper.....\$ 10.07
 Newberry, Allendale,
 Bamberg, Barnwell.....\$ 11.82
 Orangeburg.....\$ 12.63
 Williamsburg.....\$ 10.01
 Luteman.....\$ 11.71
 Pipelayer.....\$ 13.87
 Traffic Control-Cone Setter
 Allendale, Bamber,
 Barnwell, Newberry,
 Orangeburg.....\$ 12.98
 Beaufort, Colleton,
 Georgetown, Hampton,
 Jasper, Williamsburg.....\$ 12.84
 Traffic Control-Flagger.....\$ 11.68

POWER EQUIPMENT OPERATOR:

Backhoe/Excavator/Trackhoe
 Allendale, Bamberg,
 Barnwell, Newberry,
 Orangeburg.....\$ 17.56
 Beaufort.....\$ 15.20
 Colleton.....\$ 17.78
 Georgetown, Hampton,
 Jasper, Williamsburg.....\$ 17.23
 Bulldozer.....\$ 20.12
 Crane.....\$ 16.62
 Grader/Blade.....\$ 16.62
 Loader (Front End).....\$ 15.51
 Mechanic.....\$ 18.22
 Milling Machine.....\$ 18.83
 Paver
 Allendale, Bamberg,
 Barnwell, Newberry,
 Orangeburg, Williamsburg...\$ 15.01
 Beaufort.....\$ 14.96
 Colleton, Georgetown,
 Hampton, Jasper.....\$ 13.67
 Roller.....\$ 12.76
 Screed.....\$ 13.01
 Tractor.....\$ 13.26

TRUCK DRIVER

Dump Truck.....\$ 12.00
 Lowboy Truck.....\$ 14.43
 Single Axle, Includes
 Pilot Car.....\$ 12.04
 Tractor Haul Truck.....\$ 16.25

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

=====

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this

contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

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WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
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200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

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U.S. Department of Labor
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Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is

labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is

expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker

rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. Davis-Bacon and Related Act Provisions

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime

contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of

Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where

appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements.

The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government

contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

- (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
- (2) the prime contractor remains responsible for the quality of the work of the leased employees;
- (3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
- (4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the

contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or

related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.

2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. Instructions for Certification – First Tier Participants:

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first

tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies

available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its

certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)

1. The Offeror's or Bidders attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
2. The goals and timetables for minority and female participation expressed in percentage terms for the Contractor's aggregate work force in each trade on all construction work in the covered area are as follows:

Goals for Women Apply Nationwide

GOALS AND TIMETABLES

| <i>Timetable</i> | <i>Goals (percent)</i> |
|---|----------------------------|
| From Apr. 1, 1976 until March 31, 1979----- | 3.1 |
| -- | |
| From Apr. 1, 1979 until March 31, 1980----- | 5.1 |
| -- | |
| From Apr. 1, 1980 until March 31, 1981----- | 6.9 |
| -- | |

Goals for Minority Participation

| | |
|---|------|
| South Carolina | |
| SMSA Counties:..... | 16.0 |
| Greenville, Pickens, Spartanburg | |
| Non-SMSA Counties:..... | 17.8 |
| Abbeville, Anderson, Cherokee, Greenwood, Laurens, Oconee, Union | |
| SMSA Counties:..... | 23.4 |
| Lexington, Richland | |
| Non-SMSA Counties..... | 32.0 |
| Calhoun, Clarendon, Fairfield, Kershaw, Lee, Newberry, Orangeburg, Saluda, Sumter | |
| Non-SMSA Counties..... | 33.0 |
| Chesterfield, Darlington, Dillon, Florence, Georgetown, Horry, Marion, Marlboro, Williamsburg | |
| SMSA Counties:..... | 30.0 |
| Berkeley, Charleston, Dorchester | |
| Non-SMSA Counties..... | 30.7 |
| Colleton | |
| Non-SMSA Counties..... | 29.8 |
| Beaufort, Hampton, Jasper | |
| Non-SMSA Counties..... | 15.7 |
| Chester Lancaster York | |
| Non-SMSA Counties..... | 32.8 |
| Barnwell, Edgefield, McCormick, Allendale, Bamberg | |
| SMSA Counties:..... | 27.2 |
| Aiken | |

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical areas where the work is actually performed. With regard to this second area, the Contractor is also subject to the goals for both its federally involved and nonfederally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 Shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications

set forth in 41 CFR 60-4.3(a) and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees of trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

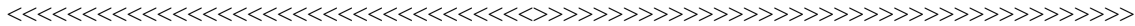
3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor, employer identification number, estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.
4. As used in this Notice and in the contract resulting from this solicitation, the "covered area" is (insert description of the geographical areas where the contract is to be performed giving the state, county, and city, if any). The "covered area is the SMSA County or Counties or Non-SMSA County or Counties in which the contract work is performed.

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)

1. As used in these specifications:
 - a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;
 - b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;
 - c. "Employer identification number" means the Federal Social Security number used on the Employers Quarterly Federal Tax Return, U. S. Treasury Department Form 941.
 - d. "Minority" includes:
 - (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin regardless of race);
 - (iii) Asian or Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U. S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.
4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in which it has employees in each construction trade in which it has employees in the covered area. Covered construction contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notices form and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.
5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.
6. In order for the non-working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U. S. Department of Labor.
7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:
 - a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority of female individuals working at such sites or in such facilities.
 - b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available and maintain a record of the organization's responses.
 - c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may taken.
 - d. Provide immediate written notification to the Director when union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet his obligations.
 - e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.
 - f. Disseminate the Contractor's EEO policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
 - g. Review at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Foremen, etc., prior to the initialization of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
 - h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.
 - i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall sent written notification to organizations such as the above, describing the openings, screening procedures and tests to be used in the selection process.
 - j. Encourage present minority and female employees to recruit other minority persons and women and where reasonable, provide after school, summer, and vacation employment to minority and female youth both on the site and in other areas of a Contractor's work force.

- k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
 - l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
 - m. Ensure that all seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.
 - n. Ensure that all facilities and company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
 - o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
 - p. Conduct a review, at least annually of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.
8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association joint contractor-union, contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the contractor's minority and female work force participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.
9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).
10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.
11. The Contractor shall not enter into any Subcontract with any person or firm debarred from the Government contracts pursuant to the executive Order 11246.
12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and the Equal Opportunity Clause, including suspensions, termination and cancellation of the existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended. and its implementing regulations, by the Office if the Federal Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of the specifications and Executive Order 11246, as amended.
13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4-8.
14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any employee identification number when assigned, social security number, race, sex status(e.g., Mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and location at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that the existing records satisfy this requirement, contractors shall not be required to maintain separate records.
15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents(e.g. those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

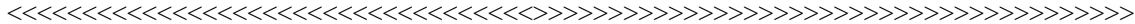


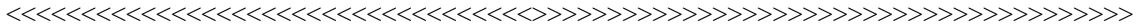
ESTABLISHMENT OF A DRUG FREE WORK PLACE

In accordance with Section 44-107-30, South Carolina Code of Law, 1976, as amended, and as a condition precedent to the Award of the Contract, the PROPOSER, (hereinafter the Contractor), CERTIFIES on behalf of the Contract that the Contractor will provide a drug-free workplace by:

- (1) publishing a statement notifying employees that the unlawful manufacture, distribution, dispensations, possession, or use of a controlled substance is prohibited in the Contractor’s workplace and specifying the actions that will be taken against employees for violations of the prohibition;
- (2) establishing a drug-free awareness program to inform employees about:
 - (a) the dangers of drug abuse in the workplace;
 - (b) the person’s policy of maintaining a drug-free workplace;
 - (c) any available drug counseling, rehabilitation, and employee assistance programs; and
 - (d) the penalties that may be imposed upon employees for drug violations.;
- (3) making it a requirement that each employee to be engaged in the performance of the Contract be given a copy of the statement required by item (1);
- (4) notifying the employee in the statement required by item (1) that, as a condition of employment on the Contract, the employee will:
 - (a) abide by the terms of the statement; and
 - (b) notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after the conviction;
- (5) notifying the South Carolina Department of Transportation within ten (10) days after receiving notice under item (4)(b) from an employee or otherwise receiving actual notice of conviction;
- (6) imposing a sanction on, or requiring the satisfactory participation in a drug abuse assistance or rehabilitation program by, any employee convicted as required on Section 44-107-50; and
- (7) making a good faith effort to continue to maintain a drug-free workplace through implementation of items (1), (2), (3), (4), (5), and (6).

END OF THIS SECTION





(COMPLETE THIS SECTION FOR FEDERAL PROJECTS ONLY)
EQUAL EMPLOYMENT OPPORTUNITY PERFORMANCE

Select the Certification that applies to the PROPOSER:

Certification (1) **or** **Certification (2)**

Select the appropriate responses in the applicable Certification:

Certification (1): Pursuant to 41 C.F.R. §60-1.7(b)(1), Previous Equal Employment Opportunity Performance Certification, as the Prospective Prime Contractor, **I HEREBY CERTIFY THAT I:**

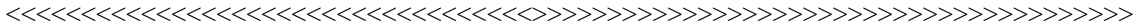
- (a) (**HAVE / HAVE NOT**) developed and filed an Affirmative Action Program pursuant to 41 C.F.R. §60-2;
- (b) (**HAVE / HAVE NOT**) participated in a previous contract or subcontract subject to the equal opportunity clause;
- (c) (**HAVE / HAVE NOT**) filed with the Joint Reporting Committee, the Director of Office of Federal Contract Compliance, or the Equal Employment Opportunity Commission, all reports due under the applicable filing requirements,

OR

Certification (2): **I, HEREBY CERTIFY** that as the Prospective Prime Contractor submitting this Proposal, (**CLAIM / DO NOT CLAIM**) exemption from the submission of the Standard Form 100 (EEO-1) due to the fact that it employs a total of less than fifty (50) employees under C.F.R. §60-1.7, or qualifies for an exempted status under 41 C.F.R. §60-1.5.

I FURTHER CERTIFY that the above Certification will be made part of any Subcontract Agreement involved with this project.

END OF THIS SECTION



FAILURE TO PERFORM THE ABOVE SELECTIONS AND REQUIREMENTS OR TO EXECUTE THE CERTIFICATION BELOW, WILL MAKE THE BID NON-RESPONSIVE AND NOT ELIGIBLE FOR AWARD CONSIDERATION.

BY SUBMITTING THIS BID ELECTRONICALLY, **I HEREBY ACKNOWLEDGE** THAT ALL REQUIREMENTS INCLUDED IN THE HARD COPY PROPOSAL, ADDENDUMS, AMENDMENTS, PLANS, STANDARD SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS, AND SPECIAL PROVISIONS ARE PART OF THIS BID PROPOSAL AND CONTRACT. **I FURTHER ACKNOWLEDGE** THAT THIS ELECTRONIC BID IS SUBJECT TO THE PROVISIONS OF THE SOUTH CAROLINA ELECTRONIC COMMERCE ACT, §26-5-10, ET, SEQ., OF THE SOUTH CAROLINA CODE OF LAWS.

IN ACCORDANCE WITH THE PROVISIONS OF S.C.CODE ANN.§§ 39-3-10 ET.SEQ., 39-5-10 ET.SEQ.,15 U.S.C. §45; 23 C.F.R.§635.112(F); AND 28U.S.C.§1746, THAT I AM AN OFFICER OF THE PROPOSER FIRM AND, UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE UNITED STATES AND SOUTH CAROLINA, DECLARE, BY MY CERTIFICATION BELOW, THAT THE FOLLOWING IS TRUE AND CORRECT, AND FURTHER, THAT THIS FIRM, ASSOCIATION OR CORPORATION HAS NOT, EITHER DIRECTLY OR INDIRECTLY, ENTERED INTO ANY AGREEMENT, PARTICIPATED IN ANY COLLUSION, OR OTHERWISE TAKEN ANY ACTION IN RESTRAINT OF FREE COMPETITIVE BIDDING IN CONNECTION WITH THE SUBMISSION OF A BID PROPOSAL ON THE ABOVE REFERENCED PROJECT.

BY CHECKING THIS BOX , I CERTIFY THAT I HAVE READ, UNDERSTAND, ACCEPT, AND ACKNOWLEDGE ALL OF THE ABOVE STATEMENTS.

COMPLETE THE FOLLOWING ONLY IF HARD COPY BID PROPOSAL IS REQUIRED:

Executed on _____, 20__.

Signed: _____

(Officer/Proposer)

(Title)

(Company)

(Address)

SEAL

H. SPECIAL PROVISIONS – WOOD+PARTNERS

(Begins Next Page)

SPECIAL PROVISIONS

JOB NUMBER

31588

SCDOT FILE NO.

P041932

COUNTY

Colleton

This project is to be constructed under the South Carolina Department of Transportation's Specifications For Highway Construction Edition of 2007, the South Carolina Department of Transportation's 2004 Construction Manual, the **Supplemental Technical Specifications** in effect at the time of the letting, and the following Special Provisions.

(1) **ERRATA TO 2007 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION:**

See attached Supplemental Specification dated **May 4, 2009** on page **171**.

(2) **SUPPLEMENTAL TECHNICAL SPECIFICATIONS:**

This project will utilize all appropriate Supplemental Technical Specifications including but not limited to SC-M-201, SC-M-400, SC-M-401, SC-M-402, SC-M-403, SC-M-714, SC-M-815-(2 & 8).

These may be downloaded at the link below.

http://www.scdot.org/doing/road_SupTechSpec.aspx

(3) **SUBMITTALS:**

All submittals, regardless of origin, shall be stamped with the approval of the Contractor and identified with the name and number of this Contract, Contractor's name, and references to applicable specification paragraphs and Contract Drawings. Each submittal shall indicate the intended use of the item in the work. When catalog pages are submitted, applicable items shall be clearly identified and inapplicable data crossed out. The current revision, issue number, and date shall be indicated on all drawings and other descriptive data.

The Contractor shall be solely responsible for the completeness of each submittal. Contractor's stamp of approval is a representation to the Owner and Engineer that the Contractor accepts sole responsibility for determining and verifying all quantities, dimension, field construction criteria, materials, catalog numbers, and similar data, and that the Contractor shall reviewed and coordinated each submittal with the requirements of the work and the Contract Documents.

Engineer's review of submittals covers only general conformity to the Drawings and Specifications, external connections, and dimensions that affect layout; it does not indicate thorough review of all dimensions, quantities, and details of the material, equipment, device, or item covered. Engineer's review shall not relieve Contractor of sole responsibility for errors, omissions, or deviations in the drawings and data, nor of Contractor's sole responsibility for compliance with the Contract Documents.

Engineer's submittal review period shall be the consecutive number of calendar days as required (30) and shall commence on the first calendar day following receipt of the submittal in the Engineer's office. The time required to mail the submittal back to the Contractor shall not be considered a part of the submittal review period.

(4) **MANUFACTURERS MATERIALS CERTIFICATIONS AND CERTIFIED TEST REPORTS:**

The contractor shall supply the Resident Engineer with all required materials certifications and manufacturers test reports for items to be permanently incorporated into the project. These material certifications shall be provided prior to the materials use in the project. The Authority will supply the Resident Engineer with a list of required certifications and manufacturers tests based on the pay items and special provisions included in the proposals. The Resident Engineer must approve these certifications and reports before payment can be made to the contractor for these items.

(5) **SECTION 101: STANDARD DRAWINGS:**

The Bidders are hereby advised that this project will be constructed using the 2013 Standard Drawings with all updates effective at the time of letting. The Standard Drawings are available for download at http://www.scdot.org/doing/sd_disclaimer.shtml. All drawings that are updated are labeled with the effective letting date in red.

The Standard Drawings are available to purchase through the SCDOT Engineering Publications Sales Center located in Room G-19 (basement level) of the SCDOT Headquarters Building, 955 Park Street, Columbia, South Carolina.

All references in the plans, standard specifications, supplemental specifications, supplemental technical specifications or special provisions to drawings under the previous numbering system 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.

(6) **SECTION 106: QUALIFIED PRODUCT LISTINGS:**

All references to "Approval Sheet" or "Approval Policy" are to be replaced with "Qualified Products Listing (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.

(7) **SECTION 108: (PROSECUTION AND PROGRESS)**

Section 108.9 (Failure to Complete the Work on Time)

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

"Authority and Contractor recognize that time is of the essence and that the traveling public and Department will suffer loss, inconvenience and other damage if the work is not substantially complete in accordance with the time(s) specified herein, which damages would be difficult if not impossible to ascertain. Accordingly, the Authority and the Contractor agree that as liquidated damages for delay (but not as a penalty) the Contractor shall pay the Authority the amounts stipulated below.

LIQUIDATED DAMAGES SCHEDULE

| | |
|---------------------------|----------------|
| <i>Liquidated Damages</i> | |
| <i>\$400</i> | <i>Per Day</i> |

(8) **SOUTH CAROLINA MINING ACT:**

See attached Supplemental Specification dated **March 20, 2003** on page **176**.

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.

(9) **SECTION 103.8 CONTRACTOR'S LIABILITY INSURANCE:**

Section 103.8 is hereby amended by adding the following sentence to the end of the last paragraph:

“The City of Walterboro shall be named as an additional insured.”

Delete the second sentence in paragraph 4.

Delete the third sentence in paragraph 5, and replace it with the following sentence:

Ensure that all policies contain a provision that coverage afforded under the policies cannot be cancelled or reduced by the Contractor until at least 30 days prior written notice has been provided to SCDOT and that the policies cannot be cancelled for non-payment of premiums until at least 10 days prior written notice has been provided to SCDOT. Send Notice of Cancellations to Director of Construction Room 330, PO Box 191, Columbia, SC 29202.

Add the following as paragraph 6 at the end of Subsection 103.8:

By execution of the contract, the Contractor accepts the responsibility to provide the liability insurance policies and endorsements as specified herein. Failure of SCDOT to identify a deficiency in the Certificate of Insurance submitted by the Contractor's insurance agent as evidence of the specified insurance or to request other evidence of full compliance with the liability insurance specified shall not be construed as a waiver of the Contractor's obligation to provide and maintain the required insurance for the duration of the contract.

(10) **SECTION 105: CONSTRUCTION STAKES, LINES AND GRADES:**

Section 105.8.2 applies to this project. Payment for this work shall be made according to the following schedule:

| Percent Contract Complete | Percent of Stakes, Lines, and Grades bid amount to be paid |
|----------------------------------|---|
| 1-5 | 20 |
| 6-15 | 40 |
| 16-29 | 60 |
| 30-49 | 70 |
| 50-69 | 80 |
| 70-89 | 90 |
| 90-100 | 100 |

(11) **SECTION 107: 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. Due to the limited Right-of-Way available and the project utilizing an existing drainage system which can't be relocated, coordination with utility contractors on relocations and grade adjustments should be anticipated.

It is the responsibility of the Contractor to call South Carolina 811 (811) three (3) days prior to work so that existing utilities can be properly marked.

**Coordination with SCE&G must be maintained throughout the project for lighting installation that is under separate contract.

(12) **SECTION 107.13 – LOW SHOULDER SIGNS:**

In accordance with Section 107.13, the Engineer and the Contractor shall inspect the roads in this contract to determine low shoulder conditions. If low shoulder signs are needed, they will be measured and paid at the unit price bid for Permanent Construction Signs. If there is not a bid item for Permanent Construction Signs, a Supplemental Agreement will be required.

(13) **SECTION 107: CRANE SAFETY (REVISED 05/01/2011):**

See attached Supplemental Specification dated **August 1, 2013** on page **178**.

(14) **SECTION 108: CRITICAL PATH METHOD CONSTRUCTION SCHEDULES:**

See Attached Supplemental Specification dated **March 1, 2007** on page **179**. The attached specification is hereby modified by changing the first sentence in the section entitled "Submission, Review, and Acceptance Process – Monthly Updates" to the following:

"Monthly updates shall be made no later than 15 days following the most recent estimate period end date and shall have a data date the same as the most recent estimate period end date."

(15) **SECTION 108: NOTICE TO PROCEED:**

Section 108.2 is hereby revised to include the following:

A Notice to Proceed Date shall be determined at the Preconstruction Conference that will be held within thirty (30) calendar days of the Award Date. The Notice to Proceed Date shall not be more than forty-five (45) calendar days after the Date of Award unless extenuating circumstances such as utility conflicts occur which are beyond the control of the Contractor as determined by the Engineer.

(16) **SECTION 109: RETAINAGE**

The Engineer will retain 10 percent of the amount of each partial payment until final completion and acceptance of the work. After 50 percent of the work has been completed, the Contractor may request that the remaining partial payment be made in full and no retainage withheld. If the Engineer agrees that acceptable progress is being made additional retainage will not be withheld. All retainage, subject to any liquidated damages, will be paid to the Contractor with the final payment

(17) **AS-BUILT CONSTRUCTION PLANS:**

See attached Supplemental Specification dated **November 4, 2009** on page **185**.

(18) **PROMPT PAYMENT CLAUSE:**

See attached Supplemental Specification dated **January 5, 2012** on page **186**.

(19) **SUBLETTING OF CONTRACTS (SPECIALTY ITEMS);**

The following items of work, when not performed by the Prime Contractor, will be designated as Specialty Items in all contracts in which the item does not constitute thirty percent (30%) or more of the original contract value:

| | |
|----------------------------------|-----------------------------|
| Pavement Markings | Permanent Roadway Signs |
| Guardrail | Signalization |
| Milling Asphalt Pavement | Electrical/Lighting |
| Grassing | Specialized Retaining Walls |
| Landscaping | Fencing |
| Erosion Control | Right of Way Surveying |
| Permanent Construction Signs | Railroad Track Work |
| Utilities | Jacking and Boring |
| Contaminated Soil & Tank Removal | Bridge Floor Grooving |
| Bridge Barrier Walls | Milled Rumble Strips |
| Traffic Count Stations | Buildings |
| Drilled Shafts & Casings | Navigational Lighting |
| Pier Fender Systems | Sound Barrier Walls |

(20) **CONTRACT TIME AND DETERMINATION AND EXTENSION OF CONTRACT TIME:**

Completion date for this project is JUNE 1, 2019.

(21) **MAINTENANCE OF TRAFFIC:**

In addition to the Contractor maintaining traffic throughout the length of this project as required by the Specification, it will also be necessary that the Contractor, prior to beginning any work, submit to the Resident Construction Engineer for approval his plan for constructing these projects. Because construction of the median will require the removal of existing concrete pavement, lane closures will be required and the installation of the medians will have to be scheduled around the construction of the sidewalk. At least one lane of traffic will have to be open at all times. During hurricane season; the contractor must have a plan to restore two lanes of traffic in the direction of evacuation with two days' notice from the City or SCDOT.

(22) **REQUIRED MEDIA NOTIFICATION FOR CONSTRUCTION PROJECTS:**

Contractors are encouraged to cooperate 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 cooperate with the media. However, the safety, security and construction schedule on site should not be disrupted in order to accomplish this.

(23) **BORROW EXCAVATION:**

Borrow pit location – Borrow material for this project shall not be obtained from wetlands, streams, or rivers.

(24) **SECTION 208: FINE GRADING:**

See attached Supplemental Specification dated **January 4, 2012**, on page **187**.

(25) **SECTION 305: MAINTENANCE STONE:**

Maintenance Stone used on this project shall conform to the gradation requirements or Section 305, or to the gradation specified for Aggregate No. CR-14 in the Standard Specifications.

(26) **SECTION 401: ASPHALT BINDER AND ADDITIVES**

See attached Supplemental Specifications dated **May 1, 2014** on page **188**.

(27) **SECTION 401: ASPHALT BINDER ADJUSTMENT INDEX:**

See attached Supplemental Specifications dated **March 3, 2009** on page **191**. For this project the Basic Bituminous Material Index will be determined on the first calendar day of the month in which this project is let. The index and adjustment table will be available on the internet at www.scdot.org/doing/monthlyindexes.asp, or may be obtained from the office of the Contracts' Administrator.

All items of work included in this project, that are listed in the table entitled "Items of Work Eligible for A.C. Binder Adjustments" below paragraph 4 of the Supplemental Specification, will be subject to price adjustment.

(28) **SECTION 401: TRANSPORTATION AND DELIVERY OF MIXES:**

See attached Supplemental Specifications dated **July 1, 2010** on page **193**.

(29) **FULL DEPTH ASPHALT PAVEMENT PATCHING (8" UNIFORM):**

Description: This work shall consist of the removal of a deteriorated pavement and replacing with a full depth asphalt plant mix patch.

Construction Process: The deteriorated pavement shall be removed to the width and length indicated by the Engineer, with the face of the cut being straight and vertical. The pavement shall be removed to the depth indicated in the plans. In the event unstable material is encountered at this point, then such additional material shall be removed as directed by the Engineer. The volume of material removed below the patch shall be backfilled with crushed stone and thoroughly compacted in 4-inch layers with vibratory compactors. Prior to placing the asphalt patch material in the hole, the sides of the existing asphalt pavement shall be thoroughly tacked. The patch material shall then be placed in layers not exceeding 3 inches with each layer being thoroughly compacted with a vibratory compactor. The patch material shall be an approved SCDOT Asphalt Concrete Binder Course Mix. The work shall be conducted so that the patches are removed and replaced each day, with the roadway being opened to traffic by late afternoon. The finished patch shall be smooth riding.

Measurement and Payment: The quantity to be measured for payment shall be the number of square yards (square Meters) of Full Depth Asphalt Pavement Patching completed and accepted. The price and payment shall be full compensation for furnishing all materials including plant mix, asphalt cement, excavating and disposing of all material, labor, equipment, tools, and incidentals necessary to complete the work.

Any crushed stone necessary for backfilling below the specified depth shall be measured and paid for at the contract price for Maintenance Stone.

(30) **SECTION 401: MATERIAL FOR FULL DEPTH PATCHING:**

Section 401.2.5 of the Standard Specifications is hereby deleted, and replaced with the following:

Section 401.2.5 Material for Full Depth Patching

Use an approved SCDOT Intermediate Type C Mix for all Full Depth Patching.

(31) **DIVISION 600: TRAFFIC CONTROL – HOLIDAY RESTRICTIONS:**

See attached Supplemental Specification dated **January 3, 2013** on page **194**.

(32) **DIVISION 600: 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.

All signs mounted on portable sign supports shall have a minimum mounting height of 5' from the ground to the bottom of the sign. All signs mounted on ground mounted u-channel posts shall have a minimum mounting height of 7' from the ground to the bottom of the sign.

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. Install these signs no further than 500 feet in advance of the beginning of this pavement condition on primary routes with speed limits of 60 MPH or less and no less than 500 feet in advance of the beginning of this pavement condition on interstate routes. 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 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 107-2004 standard performance for Class 3 risk exposure or latest revisions and a 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".

LANE CLOSURE RESTRICTIONS -

The Contractor shall install all lane closures as directed by the 2007 Standard Specifications For Highway Construction, 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 roadways as directed by the typical traffic control standard drawings designated for lane closures on primary routes.

The Department prohibits lane closures on primary routes during any time of the day that traffic volumes exceed 800 vehicles per hour per direction. 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 restriction 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 restriction 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.

The Department reserves the right to suspend a lane closure if any resulting traffic backups are deemed by the Engineer. Maintain all lane closure restrictions as directed by the Standard Specifications, these special provisions, and the Engineer.

SHOULDER CLOSURE RESTRICTIONS -

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.

TYPICAL TRAFFIC CONTROL STANDARD DRAWINGS -

The typical traffic control standard drawings of the "Standard Drawings For Road Construction", although compliant with the MUTCD, shall take precedence over the MUTCD. The typical traffic control standard drawings of the "Standard Drawings For Road Construction" shall apply to all projects let to contract.

Install the permanent construction signs as shown on the typical traffic control standard drawings for permanent construction signing. Payment for the Permanent Construction Signs shown on these sheets shall be paid for under the Bid Item – Permanent Construction Signs per Square Foot. Signs not illustrated on the above sheets shall be considered temporary and shall be included in the lump sum price bid item for "Traffic Control" unless otherwise specified.

ADDENDUMS

(Addendums to the "2007 Standard Specifications for Highway Construction")

(A) Trailer-Mounted Changeable Message Signs -

Sub-section 606.5 Measurement (paragraph 2) -

Trailer-mounted changeable message signs are included in the lump sum item for Traffic Control in accordance with **Subsections 107.12** and **601.5** of the “2007 Standard Specifications for Highway Construction”. No separate measurement will be made for trailer-mounted changeable message signs unless the contract includes a specific pay item for trailer-mounted changeable message signs.

The Contractor shall provide, install, operate, and maintain the trailer-mounted changeable message sign per traffic control set-up as directed by the Plans, the “Standard Drawings for Road Construction”, these Special Provisions, the Specifications, and the Engineer.

Sub-section 606.6 Payment (paragraph 2) -

In addition to **Subsections 107.12** and **601.6**, the payment for Traffic Control is full compensation for providing, installing, removing, relocating, operating, and maintaining trailer-mounted advance warning arrow panels and trailer-mounted changeable message signs as specified or directed and includes providing the units’ primary power source; repairing or replacing damaged or malfunctioning units within the specified time; providing traffic control necessary for installing, operating, and maintaining the units; and all other materials, labor, hardware, equipment, tools, supplies, transportation, incidentals, and any miscellaneous items necessary to fulfill the requirements of the pay item in accordance with the Plans, the Specifications, and other items of the Contract.

Sub-section 606.6 Payment (paragraph 3) -

Disregard this paragraph unless the Contract includes a specific pay item for trailer-mounted changeable message signs.

(B) Temporary Concrete Barrier –

Sub-section 605.2.3.2 Temporary Concrete Barrier (paragraph 6) -

Previously used temporary concrete barrier walls are subject to inspection and approval by the RCE before use. Ensure that previously used temporary concrete barrier walls are in good condition. Defects to a temporary concrete barrier wall that may disqualify a section of wall for use include gouges, cracks, chipped, or spalled areas. A defect that exposes reinforcing steel warrants immediate disqualification. A disqualification grade type defect shall consist of measurements in excess of 1 inch, entirely or partially within the boundaries of the end connection areas and the drainage slot areas as illustrated in the “Standard Drawings for Road Construction”, and/or in excess of 4 inches for all areas beyond the end connection areas. To warrant disqualification, these measurements shall exceed the specified dimensions in all three directions, width, height, and depth. A defect that exceeds the specified dimensions in only one or two of the three directions does not warrant disqualification.

Temporary concrete barrier walls with defects less than 6 inches in all three directions, width, height, and depth that do not expose reinforcing steel may be repaired in accordance with the following requirements. Repair is prohibited on temporary concrete barrier walls with defects 6 inches or greater in all three directions, width, height, and depth.

For repair of temporary concrete barrier walls with defects less than 6 inches in all three directions, width, height, and depth that do not expose reinforcing steel, repair the defect with a pre-manufactured patching material specifically fabricated for patching structural concrete. The

strength of the patch must meet or exceed the design strength of the class 3000 concrete of the temporary concrete barrier wall. Perform the repair procedures in accordance with all requirements and instructions from the manufacturer of the patch material. Use a bonding compound between the patch material and the concrete unless specifically stated by the manufacturer that a bonding compound is not required. If the manufacturer states that application of a bonding compound is optional, SCDOT requires application of a bonding compound compatible with the patch material. If cracking occurs within the patched area, remove the patch material completely and repeat the repair process. The contractor shall submit documentation stating all repairs have been conducted in accordance with these requirements prior to installing any temporary concrete barrier walls with repairs. Utilization of temporary concrete barrier walls with repairs shall require approval by the RCE prior to installation.

The Contractor shall submit certification documents for the patch material utilized for repairs to the Engineer prior to placing temporary concrete barrier walls that have been repaired on the project site.

(C) Construction –

Sub-section 601.4.2 Construction Vehicles (paragraph 2) -

The Contractor shall have flaggers available to control all construction vehicles entering or crossing the travel lanes of secondary and primary routes. The RCE shall determine the necessity of these flaggers for control of these construction vehicles. The RCE shall consider sight distance, vertical and horizontal curves of the roadway, prevailing speeds of traffic, frequency of construction vehicles entering or crossing the roadway, and other site conditions that may impact the safety of the workers and motorists when determining the necessity of these flaggers. Ensure that these flaggers do not stop traffic, cause traffic to change lanes, or affect traffic in any manner. The Contractor's vehicles may not disrupt the normal flow of traffic or enter the travel lane of the roadway until a sufficient gap is present.

(D) Category I Traffic Control Devices –

Sub-section 603.2.2 Oversized Traffic Cones (paragraph 6) -

Reflectorize each oversized traffic cone with 4 retroreflective bands: 2 orange and 2 white retroreflective bands. Alternate the orange and white retroreflective bands, with the top band always being orange. Make each retroreflective band not less than 6 inches wide. Utilize Type III – Microprismatic retroreflective sheeting for retroreflectorization on all projects let to contract after May 1, 2010 unless otherwise specified. Separate each retroreflective band with not more than a 2-inch non-reflectorized area. Do not splice the retroreflective sheeting to create the 6-inch retroreflective bands. Apply the retroreflective sheeting directly to the cone surface. Do not apply the retroreflective sheeting over a pre-existing layer of retroreflective sheeting.

Sub-section 603.2.3 Portable Plastic Drums (paragraph 3) -

Reflectorize each drum with Type III – Microprismatic retroreflective sheeting: 2 orange and 2 white retroreflective bands, 6 inches wide on all projects let to contract after May 1, 2010 unless otherwise specified. Alternate the orange and white retroreflective bands with the top band always being orange. Ensure that any non-reflectorized area between the orange and white retroreflective bands does not exceed 2 inches. Do not splice the retroreflective sheeting to create the 6-inch retroreflective bands. Apply the retroreflective sheeting directly to the drum surface. Do not apply the retroreflective sheeting over a pre-existing layer of retroreflective sheeting.

(E) Truck-Mounted Attenuator –

Sub-section 605.4.2.2 Truck-Mounted Attenuators (paragraph 6) -

Attach each truck-mounted attenuator to the rear of a truck with a minimum gross vehicular weight (GVM) of 15,000 pounds (actual weight). 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 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 part from the frame of the truck during an impact upon the attached 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 and shall not protrude from the steel structure in any manner.

(F) **Flagging Operations-**

Sub-section 610.4.1.11 Flagging Operations (paragraph 1) –

Use a flagging operation to control the flow of traffic when two opposing directions of traffic must share a common travel lane. A flagging operation may be necessary during a land closure on a two-lane two-way roadway, an intermittent ramp closure or an intermittent encroachment of equipment onto a portion of the roadway. Utilize flagging operations to direct traffic around work activities and maintain continuous traffic flow at reduced speeds when determined to be appropriate by the RCE. As stated above, flagging operations shall direct traffic around the work activities and maintain continuous traffic flow, therefore, stopped traffic shall not be required to stop for time durations greater than those listed below unless otherwise directed by the RCE.

| Length of Closure | Maximum time duration for Stopped Traffic |
|--------------------------|--|
| 1 Mile or Less | 5 Minutes |
| 1 to 2 Miles | 7 ½ Minutes |

If the work activities require traffic to be stopped for periods greater than 5 to 7 ½ minutes as stated above, consider alternate work methods, conducting work activities during times of lowest traffic volumes such as during the hours of darkness or complete road closure with detour installation.

- (33) **DIVISION 600: TRAILER MOUNTED AUTOMATED FLAGGER ASSISTANCE DEVICE SYSTEM (AFAD):**
See attached Supplemental Specification dated **September 1, 2012** on page **197**.
- (34) **DIVISION 600: WORK ZONE TRAFFIC CONTROL TRAINING REQUIREMENTS FOR CONTRACTORS / SUBCONTRACTORS:**
See attached Supplemental Specification dated **September 1, 2013** on page **204**.
- (35) **DIVISION 600: ADHESIVELY BONDED ANCHORS AND DOWELS:**
See attached Supplemental Specification dated **September 1, 2008** on page **207**.
This Supplemental Specification applies when Adhesively Bonded Anchors or Dowels are called for in the Plans or Detailed Drawings.

The following Standard Drawings have been identified as showing Adhesively Bonded Anchors or Dowels:

| | |
|------------|---|
| 605-210-04 | Temporary Concrete Barrier |
| 605-310-01 | Temporary Concrete Barrier |
| 605-315-00 | Temporary Concrete Barrier |
| 605-320-00 | Temporary Concrete Barrier |
| 605-325-00 | Temporary Concrete Barrier |
| 605-330-00 | Temporary Concrete Barrier |
| 651-105-00 | Barrier Mounted Sign Post |
| 657-100-00 | Overhead Sign Support Roadway Bridges |
| 722-105-01 | Box Culvert (Used to connect headwall, wingwalls, and for extensions) |
| 805-120-00 | Guardrail (W Beam) Base Plate Connection |
| 805-405-03 | Guardrail (Tubular Beam) Bridge Railing |
| 805-405-04 | Guardrail (Tubular Beam) Bridge Railing |
| 806-505-00 | Fence (Ornamental Steel Picket) |

It is the contractor's responsibility to determine if Adhesively Bonded Anchors or Dowels are a part of the project, and to comply with the provisions of the Supplemental Specification.

(36) **DIVISION 600: MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES:**

The Contractor is 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 be in compliance with 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. for use on all projects. All references to the South Carolina Manual on Uniform Traffic Control Devices (SCMUTCD) are hereby revised to read "MUTCD – 2003 Edition".

(37) **SECTION 605: PERMANENT CONSTRUCTION SIGNS:**

Utility locations must be performed prior to the placement of Permanent Construction Signs. State Law requires that the location of each sign be marked with a white line in the roadway or a stake in the shoulder. The locator company will mark 25 feet on either side of the location. The responsibility for marking the sign locations prior to the contractor calling PUPS for utility locate lies with the party responsible for lines and grades on the project. If Construction Lines and Grades is a pay item, then the Prime Contractor is responsible for marking the sign location. If this is not included, it is the Department's responsibility to mark the locations.

Prior to marking the sign location, care must be taken when marking the signs to ensure that there are no obstructions or other mitigating factors that will cause the sign to be moved outside of the 50 foot utility window. Any costs associated with staking out the sign locations are considered incidental to the cost of Permanent Construction Signs.

Requests for utility locates must be specific and isolated to the sign locations if no ground disturbing activities are occurring outside of the sign placement.

(38) **SECTION 610: WORK ZONE TRAFFIC CONTROL PROCEDURES:**

The first sentence of Section 610.3 of the 2007 Standard Specifications is hereby revised to:

"Ensure that background color of personal protective apparel is either fluorescent Yellow-Green or fluorescent Orange-Red, and meets ANSI Standard 107-2004 National Standard for High Visibility Apparel Class 2 (or Class 3 as necessary) Performance Criteria, or latest edition."

Note #12 of Standard Drawing 610-005-00 is hereby revised to:

"During nighttime flagging operations, flaggers shall wear a Safety Vest and Safety Pants meeting ANSI Standard 107-2004 National Standard for High Visibility Apparel Class 3 Performance

Criteria, or Latest Edition, and a Hardhat. The color of the apparel background material shall be either fluorescent Yellow-Green or fluorescent Orange-Red.”

- (39) **SECTION 702: CONCRETE STRUCTURES – PREFORMED JOINT FILLER:**
See attached Supplemental Specification dated **April 1, 2013** on page **212**.
- (40) **SECTION 815: EROSION CONTROL MEASURES:**
See attached Supplemental Specification dated **January 1, 2015**, on page **213**.
- (41) **SEEDING AND EROSION CONTROL MEASURES:**
In addition to all the erosion control measures specified in the Standard Specifications, the plans and these Special Provisions, the Contractor shall construct all erosion control devices promptly as directed by the Engineer. Sodding or seeding of all disturbed areas shall be carried out as the grading progresses. Failure of the Contractor to comply promptly and adequately with all the required erosion control measures and seeding will result in stopping all contract operations until corrective action has been taken.
- (42) **SECTION 815: EROSION CONTROL:**
See attached Supplemental Specification Dated **July 1, 2011**, on page **216**.
- (43) **SECTION 810: PRE-CONSTRUCTION CONFERENCE CERTIFICATION FORM & CONTRACTOR CERTIFICATION FORM:**
See attached Pre-Construction Conference Certification Form & Contractor Certification Form. In accordance with the NPDES General Permit (effective January 1, 2013), all Contractors and Sub-contractors must attend a Pre-construction Conference and sign the Pre-Construction Conference Certification Form. The Contractor Certification Form must be completed by all Contractors and Sub-contractors prior to beginning work. Section A-C must be completed by the Contractor. Section C (Company Certifications) is required to be completed by all Sub-contractors. A Contractor or Sub-contractor that does not attend a Pre-Construction Conference and sign the contractor certification agreements will not be permitted to perform work on this project. No additional compensation will be made in association with this Conference or Certification.
- (44) **MODIFIED CATCH BASINS**
Items S000001, S000002, S000003, S000004, S000005, and S000006 shall be provided, installed, measured, and paid for per Section 719 of the SCDOT 2007 Standard Specifications for Highway Construction. See plan sheets S1, S2, S3 and S4 for details.
- (45) **IMPRINTED AGGREGATE REINFORCED PREFORMED THERMOPLASTIC SYSTEM GENERAL**
A. The Aggregate Reinforced Preformed Thermoplastic System is a thermoplastic surfacing system that provides a textured, highly attractive and durable topical treatment to the surface of asphalt pavement. Typically the system replicates, in relief, the grout lines common to brick or other types of unit pavers, but may also be used to create other patterns.
B. It is intended for use on asphalt pavements to create traffic calming solutions and decorative crosswalks, medians, intersections and through areas in parking lots.
C. It provides a seamless, aesthetic look without the trip hazards and ongoing maintenance often associated with pavers and stamped concrete.
D. The Aggregate Reinforced Preformed Thermoplastic System is applied to asphalt pavement using patented asphalt pavement reheating equipment. The asphalt surface is covered with 2 ft. x 2 ft. (.61m x .61m) panels of aggregated reinforced thermoplastic then heated to the required liquefaction temperature. Sand is applied at the end of the melting process to achieve added

friction properties on the surface. As the material is cooling, it is imprinted with a template made from 3/8 in. (9.5 mm) flexible wire rope in the required design to create crisp, clean lines which define the pattern. For crosswalks, it is typically demarcated by applying white preformed thermoplastic transverse lines on both sides of the installation.

E. It is available in a variety of standard colors and patterns. Color can be used to create patterns within the crosswalk area to reflect the typical white crosswalk “ladder-bars” for additional visibility and awareness. Within certain limitations, custom patterns and colors are available upon request.

REFERENCES

- A. ASTM D570 Standard Test Method for the Water Absorption of Plastics.
- B. ASTM D792 Standard Test Methods for Density and Specific Gravity (relative density) Of Plastics by Displacement.
- C. ASTM D2240 Standard Test Method for Rubber Property – Durometer Hardness.
- D. ASTM D92 Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester.
- E. ASTM D256, Mtd A Standard Test Methods for Determining the IZOD Pendulum Impact Resistance of Plastics.
- F. AASHTO T250 Standard Method of Test for Thermoplastic Traffic Line Material.
- G. ASTM D4541 Standard Test method for Bond Strength of Thermoplastic Traffic Marking Materials.
- H. Manufacturer’s Substrate Guide
- I. Manufacturer’s Recommended Application Procedure Guide

DEFINITIONS

- A. “Accredited Applicator” is an applicator that is accredited and licensed by the manufacturer to perform the Work.
- B. “Owner” refers to the representative person who has decision making authority for the application of the Aggregate Reinforced Preformed Thermoplastic System.
- C. “Ambient air temperature” is the air temperature in the immediate surrounding area.
- D. “The Work” is as outlined in the Scope of Work and includes the execution of the Aggregate Reinforced Preformed Thermoplastic System.
- E. “ASTM” ASTM International.

REQUIRED BID SUBMITTAL DOCUMENTS

- A. Product Brochure
- B. Product Specification
- C. A copy of the current year certificate of accreditation as provided by the Manufacturer to the Accredited Applicator or written verification from the Manufacturer that the bidding applicator is qualified to perform this Work.

PRODUCTS

MATERIALS

The materials required for proper execution of the Aggregate Reinforced Preformed Thermoplastic System are listed as follows:

A. The Aggregate Reinforced Preformed Thermoplastic is available in a variety of colors and provided in 2ft x 2ft (.61m x .61m) panels. This material is provided by the Accredited Applicator and is available only from Manufacturer. No substitutions.

B. The Sand used in the process is packaged in 50 lb (22.68 kg) bags, is provided by the Accredited Applicator and is available only from the Manufacturer. No substitutions.

C. Transverse lines for crosswalk applications. These are supplied as white, retroreflective preformed thermoplastic linear material 90 mils (2.3mm) or 125 mils (3.2mm) thick, and available in 6 in. (.15m), 8 in. (.20m) or 12 in. (.30m) widths. This material should be provided by the Accredited Applicator and is available from the preformed thermoplastic Manufacturer.

Characteristics of the Aggregate Reinforced Preformed Thermoplastic

A. Aggregate Reinforced Preformed Thermoplastic consists of homogeneously mixed nonhazardous polymer resins, pigments, fillers consisting of TiO₂ and CaCO₃, and at least 12% coarse aggregate particles sized 6-14 mesh. This product is not a hazardous chemical as defined by the OSHA Hazard Communication Standard CFR TITLE 29 1910.1200 or the WHMIS Canadian Legislation.

B. Aggregate Reinforced Preformed Thermoplastic has a negligible VOC level.

C. Aggregate Reinforced Preformed Thermoplastic shall be supplied as 2' x 2' (.61m x .61m) panels at a standard thickness of ≥140 mils (3.6 mm).

D. Upon heating to application temperature, it will flow and preserve the integrity of its properties including its color.

E. Environmental and Chemical Resistance: it is resistant to deterioration when exposed to sunlight, gasoline, oil, salt, water or adverse weather conditions.

F. Storage Life: it can be stored for a period of one year if stored indoors in its original packaging and protected from the elements.

G. The following table provides typical characteristics of the Aggregate Reinforced Preformed Thermoplastic

TABLE 1

Characteristics for Aggregate Reinforced Preformed Thermoplastic

| Characteristic | Test Method | Typical Results of Traffic Patterns XD Thermoplastic Regular Formula |
|----------------------------------|------------------|--|
| Water Absorption | ASTM D570 | < 0.5% |
| Binder Content | AASHTO T250 | > 18.0% |
| Low Temp. Resistance | AASHTO T250 | No cracking |
| Specific Gravity | ASTM D792 | < 2.15 |
| Indentation resistance (Shore A) | ASTM D 2240 | >40 |
| Impact Resistance | ASTM D256, Mtd A | > 10 in.-lb |
| Flash Point | ASTM D92 | >475°F |
| Bond Strength | ASTM D4541 | > 180psi or cohesive failure |
| Friction | British Pendulum | BPN > 65 |

EQUIPMENT

The following equipment available from the preformed thermoplastic Manufacturer and is an integral part of the proper execution of the Aggregate Reinforced Preformed Thermoplastic System. Equipment substitutions are not permitted.

A. Template. The wire rope template is required in the execution of the Aggregate Reinforced Preformed Thermoplastic system. The template is used for imprinting to define the pattern once the preformed thermoplastic has been applied. The wire rope diameter for the imprinting template used for the specified pattern is 3/8 in. (9.5mm).

B. Pavement Heaters. The preformed thermoplastic Manufacturer offers three mobile pieces of equipment designed specifically to elevate the temperature of the thermoplastic without adversely affecting this material, or the underlying asphalt pavement. The primary pavement heaters each employ a bank of propane fired infrared heaters, mounted on a track device that allows it to reciprocate back and forth over a designated area, thereby allowing the operator to monitor the temperature during the heating process.

C. Another reheating device is the mobile pavement heater designed specifically to heat small areas that are inaccessible to the primary heaters. It may also be used to melt the white, preformed thermoplastic transverse lines in place. Similar to the primary heaters, the mobile heater allows the operator to monitor the temperature of the thermoplastic at all times during the heating process.

D. The recommended heat torch is a hand-held portable heating device to be used to heat isolated areas of the thermoplastic.

E. The Hand Held Finishing Tool enables the applicator to complete the stamping of the thermoplastic in areas around permanent structures, such as curbs and manhole covers, which may be inaccessible to the template.

F. An air powered sand spreader is used to spray the sand in a uniform manner.

G. Vibratory Plate Compactors in the size range from 700 – 900 pounds shall be used for pressing the template into the preformed thermoplastic. The preformed thermoplastic Manufacturer does not supply Vibratory Plate Compactors.

EXECUTION

GENERAL

The Aggregate Reinforced Preformed Thermoplastic system shall be supplied and installed only by an Accredited Applicator or an applicator authorized in writing by the Manufacturer for a specific project. The Aggregate Reinforced Preformed Thermoplastic shall be supplied and installed in accordance with the most recent Recommended Application Procedure Guide as provided by the Manufacturer. The work shall be carried out in accordance with the plans and specifications or as directed by the Owner. Do not begin installation without written confirmation of applicator accreditation or authorization.

PRECONDITIONS

A highly stable asphalt pavement free of defects is a prerequisite for the installation of the Aggregate Reinforced Preformed Thermoplastic system. Do not install over poor quality asphalt pavement. For further information, please refer to the Manufacturer's Substrate Guide.

Prerequisites for new asphalt pavement

A durable and stable asphalt pavement mix design installed, according to best practices, over a properly prepared and stable substrate is a prerequisite for all long-lasting asphalt pavement surfaces. The application of the Aggregate Reinforced Preformed Thermoplastic does not change this requirement. Generally, the asphalt pavement mix design for roadways as prescribed by the

local jurisdiction will be sufficient for the application of Aggregate Reinforced Preformed Thermoplastic.

Prerequisites for existing asphalt pavement

Depending upon the condition and age, existing asphalt pavement may or may not be suitable for the successful installation of Aggregate Reinforced Preformed Thermoplastic. Minimally, the asphalt pavement must be free of all visible defects, including cracks, ruts or potholes, nor can it demonstrate any flushing, excessive raveling or like deficiencies. Heavily oxidized pavements and those that show polishing of the aggregates may require preformed thermoplastic primer. The Accredited Applicator can advise on the suitability of the asphalt pavement.

Pavement Marking Removal: recommended guidelines

Pavement markings may be removed by sandblasting, water-blasting, grinding, or other approved mechanical methods. The removal methods should, to the fullest extent possible, cause no significant damage to the pavement surface. Heavy duty equipment, such as a milling machine, will likely cause too much damage to the pavement. The Accredited Applicator can advise on the suitability of the asphalt pavement after the markings have been removed.

Recommended guidelines for Mill & Fill applications.

The Owner may decide to remove and replace the existing asphalt pavement. If so, a durable, stable mix design installed in accordance with best practices is a prerequisite. A minimum lift thickness of two inches is recommended. It is not generally recommended to proceed with a Mill & Fill pavement application when the outside air temperature is less than 50°F (10°C). For further information, refer to the latest version of the Manufacturer's Substrate Guide.

SURFACE PREPARATION

The asphalt pavement surface shall be dry and free of all foreign matter, including but not limited to dirt, dust, de-icing materials, and chemical residue.

LAYOUT

Layout of the preformed thermoplastic shall be as per the drawings and specifications and in accordance with the pattern, dimensions and methods prescribed by the Accredited Applicator in conjunction with the Owner.

INSTALLING Aggregate Reinforced Preformed Thermoplastic

- A. The area must be thoroughly cleaned and dried before installing Aggregate Reinforced Preformed Thermoplastic.
- B. Do not install during periods of precipitation.
- C. Both the ambient air temperature and the pavement temperature must be above 45°F (7°C). Do not install when there is frost still on the ground.
- D. Place the preformed thermoplastic panels on the asphalt pavement. The panels are butted together without overlap and cover the entire area designated to receive the material.
- E. Using the recommended reciprocating heating equipment, heat is applied to the thermoplastic to gradually raise the temperature, so that the thermoplastic is thoroughly molten all the way through. It will begin to flow and fuse with both the surface of the asphalt pavement and the edges of the neighboring thermoplastic sheet.

F. After the Aggregate Reinforced Preformed Thermoplastic starts to flow and adhesion to the pavement surface is achieved, the manufacturer-recommended sand is applied evenly using the sand hopper so it can be imbedded. The sand is applied until the thermoplastic stabilizes and stops accepting sand.

G. Once cooled to the appropriate temperature, using the vibratory plate compactor, the thermoplastic is then stamped using the 3/8 in. (9.5mm) diameter wire rope template. The pattern will now be clearly defined.

H. In areas difficult to get at with the template, or areas that have light print, the Hand Held Finishing Tool may be used to complete the imprint process.

I. Aggregate Reinforced Preformed Thermoplastic crosswalks require boundary demarcation to be compliant with the MUTCD. These lines may be applied by the Accredited Applicator using white preformed thermoplastic retroreflective line striping material.

PROTECTION AND OPENING TO TRAFFIC

The molten thermoplastic is to be protected until it cools and hardens. Do not permit any debris such as dust, excessive water, pollen, etcetera to come in contact with the molten thermoplastic. The road may be opened to traffic once the thermoplastic has cooled to adjacent pavement temperature.

MEASUREMENT AND PAYMENT

Measurement

The measured area is the actual area of pavement that has received the Aggregate Reinforced Preformed Thermoplastic and (where applicable) transverse white lines, measured in place. No deduction will be made for the area(s) occupied by manholes, inlets, drainage structures, bollards or by any public utility apparatus within the area.

Payment

Payment will be full compensation for all work completed as per conditions set out in the contract. For unit price contracts, the payment shall be calculated using the measured area as determined above.

Pay items under this section include the following:

| Item No. | Description | Unit |
|----------|--|------|
| 4039013 | Asphalt Pavement Texturing – Herringbone (Brick) | SY |

(1) **TRAFFIC SIGNAL SPECIAL PROVISIONS**

1. GENERAL PROVISIONS -

- a. All work under this Contract shall be performed under: the SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION, "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION", Latest Edition; the SCDOT SUPPLEMENTAL SPECIFICATIONS FOR TRAFFIC SIGNALS; the SCDOT STANDARD DRAWINGS; these SCDOT TRAFFIC SIGNAL SPECIAL PROVISIONS; the "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" (latest revision); the SCDOT TRAFFIC SIGNAL DESIGN GUIDELINES; and the PLANS. Traffic signal specifications and provisions may be downloaded at the following link:
http://www.scdot.org/doing/publications_Traffic.aspx
- b. Unless noted otherwise on the plans or in these Special Provisions this is a "turn-key" project, with the contractor furnishing and installing all equipment, complete and operational to the satisfaction of the Engineer.
- c. The PLANS are schematic in nature, showing what is generally expected at each intersection. The CONTRACTOR must devise/refine the final details, working within the Supplemental Specifications, the Design Details, the Standards, and with the Engineer.
- d. Any deviation from the Plans must be approved by the Engineer.
- e. At Project completion all traffic signals/equipment shall be complete and operational, to the satisfaction of the Engineer.
- f. The CONTRACTOR will install the traffic signal to provide a completely modern installation.
- g. Notifications
Prior to beginning construction, the CONTRACTOR shall participate in a "Pre-Construction Conference" at a time and place to be scheduled by the Department's Resident Construction Engineer (RCE).
- h. Unauthorized Work
Any work performed without notification of the proper parties in the Department, will be treated as un- authorized work (see Section 105.11 of the Standard Specifications), and could result in nonpayment to the CONTRACTOR for that work.
- i. Power
The CONTRACTOR, prior to the beginning of any construction activity, shall coordinate as necessary with the Utility Company supplying the power for this project. A representative of the Utility Company should be present at the RCE's Pre-Construction Conference.
- j. Maintenance during construction
The contractor shall be responsible for the maintenance and operation of all existing signals until the final acceptance of the project. Final acceptance occurs 60 days after all punch list items are completed and signal is accepted by SCDOT.
This shall include all daily maintenance of signals and any emergencies which may arise. There is no separate pay item for maintenance during construction; maintenance is simply part of the construction process. Additional details on maintenance responsibility are found in these Special Provisions, *Section 10 Maintenance of Operations* and in the *SCDOT Traffic Signal Supplemental Specifications, 688.2 Temporary Adjustment of Traffic Signal Equipment and Timings*.

2. EQUIPMENT

Contractor Supplied Equipment

- i. The CONTRACTOR shall furnish all **new** equipment, including incidental items; used, refurbished equipment will not be accepted.
- ii. Compatibility
 1. To insure compatibility, any additional equipment required during the life of this contract, as Change Order or Extra Work, shall be purchased by the CONTRACTOR from the same Manufacturer as the original item.
 2. When installing equipment such as signal heads or pedestrian equipment, where some existing equipment is being retained, the contractor shall provide the same type of equipment, as is remaining, for visual compatibility.
- iii. The CONTRACTOR shall submit for approval a list of equipment including make, model number, manufacturer serial numbers, and warranty information, in a format similar to chart below. The chart shows a list of potential furnished signal equipment. Documentation only has to be submitted for the furnish items required for this

contract. At the time of such submission, the CONTRACTOR shall provide a copy of the Transmittal Letter, to the Engineer.

| Item | Make | Model # | Manufacturer | Is item on current QPL or is item under current SCDOT equipment contract (y or n) | If no, is cut sheet attached (y or n) | Serial #'s attached | Warranty info attached | Purchase date | Purchase invoice attached |
|---|------|---------|--------------|---|---------------------------------------|---------------------|------------------------|---------------|---------------------------|
| Electrical Cable | | | | | | | | | |
| Communication Cable | | | | | | | | | |
| Fiber Optic Cable | | | | | | | | | |
| Fiber Interconnect Center / Fiber Splice Trays | | | | | | | | | |
| Loop Wire and Sealant Splice Boxes / Junction Boxes | | | | | | | | | |
| Steel Cable | | | | | | | | | |
| Vehicle Signal Head with LED Modules | | | | | | | | | |
| LED Blank Out Signs | | | | | | | | | |
| Optically Programmable Vehicle Signal Head | | | | | | | | | |
| Pedestrian Signal Head | | | | | | | | | |
| Pedestrian Push Button Station Assembly | | | | | | | | | |
| Steel Strain Pole | | | | | | | | | |
| Mast Arm | | | | | | | | | |
| Concrete Strain Pole | | | | | | | | | |
| Controllers and 332/336 Cabinets | | | | | | | | | |
| Spread Spectrum Radio Assembly | | | | | | | | | |
| Ethernet Extender | | | | | | | | | |
| Video Detection Systems | | | | | | | | | |

- iv. If equipment is on the SCDOT Equipment Contract or the SCDOT QPL, catalog cut sheets do not have to be provided. On all other equipment, the CONTRACTOR shall submit for approval, catalog descriptions and documentation--THREE (3) COPIES--for each class of signal equipment and materials furnished by the CONTRACTOR. They are to be submitted TWO WEEKS PRIOR TO INSTALLATION to the Construction Office FOR APPROVAL. At the time of such submission, the CONTRACTOR shall provide a copy of the Transmittal Letter, to the Engineer.
- v. Equipment substitutions in the life of the contract are only allowed if the contractor can show a valid hardship in remaining with the originally submitted equipment. A valid hardship may include drastic price increases, non-availability of

type of equipment due to unforeseen delivery or material shortages (contractor ordering equipment late does not apply), vendor going out of business, etcetera. SCDOT may allow equipment substitutions if product is of better quality than originally submitted or if contractor is replacing non-QPL items with QPL or SCDOT Equipment Contract items, or if equipment is experimental in nature and SCDOT wants to test said equipment.

- vi. SCDOT will not pay for furnish and or installation costs of any materials installed without prior approval and acceptance, in accordance with iii and iv above.

3. PERMITS, CODES, LICENSES, & ABILITIES –

- a. All work shall be done in a workmanlike manner to meet the highest industry standards, all in accordance with the requirements of the latest editions of the National Electrical Code (NEC), the National Electrical Safety Code (NESC), the Illuminating Engineering Society (IES), the American National Standards Institute (ANSI), the National Electrical Manufacturer's Association (NEMA), and the regulations and standards of the local power company.
- b. The prime contractor or subcontractor responsible for the performance of the work covered by these:
SCDOT TRAFFIC SIGNAL SPECIAL PROVISIONS **must be licensed by the SC Licensing Board For Contractors and possess a Journeyman Card issued by the South Carolina Municipal Association or as required by the city in which work occurs at the time work is performed.**
- c. Further, at least one '**ON-SITE**' field supervisor shall have **LEVEL II** or higher, Traffic Signal Certification by the International Municipal Signal Association (IMSA). Photo copies of the license and certificate (for both above) shall be submitted before work commences. The CONTRACTOR shall retain employee(s) holding the above certificate for the duration of the project; and the employee(s) shall be present **DAILY** and at the **FINAL INSPECTION**.
- d. The CONTRACTOR shall employ persons capable of programming traffic signal controllers of the type used by this project. The CONTRACTOR shall possess both a desktop and a portable (laptop) computer, and be capable of using them to upload and download signal operating parameters.
- e. In addition to the state requirements, all permits and licenses required by a City/County are the responsibility of the CONTRACTOR. The CONTRACTOR shall arrange with the utility company for hookup connections and attachment agreements.

4. INSPECTION

- a. Engineer
During construction, the INSPECTION will be the responsibility of the City or their representatives. The Department's Construction Office, MAY designate those individuals responsible for inspection, and may include a number of qualified persons, including DISTRICT ELECTRICAL SUPERVISOR (DES). For signals located within a local government that SCDOT has a signal maintenance agreement, the inspection personnel may include the local government's Electrical Supervisor to perform inspection for SCDOT.
- b. Disputes
The CONTRACTOR is advised that in any dispute between the Contractor and the Manufacturer, concerning the operation/maintainability/reparability of any piece of equipment, **THE DECISION OF THE ENGINEER SHALL BE FINAL.**
- c. Faulty Equipment
When equipment supplied by the Department is designated faulty by the Engineer, if it is under warranty, the Contractor shall return it to the Manufacturer for replacement. The Manufacturer shall furnish a replacement unit.

5. SIGNAL INTEGRATION

The following entity will perform integration in accordance with 689.2 System Integration and Testing:

X Contractor

6. MAINTENANCE OF OPERATION

- a. Existing traffic signals shall **REMAIN IN OPERATION** until the new/modified installation has been satisfactorily tested, and it has been placed in operation after approval by the Engineer. The Testing shall be accomplished without hazard to the traveling public and while the signal heads are suitably **BAGGED WITH BURLAP**. All signal heads in place, but not in use, shall be covered with **BURLAP**. **NOTE: PLASTIC BAGS ARE NOT ACCEPTABLE.**
- b. After approval is received from the Engineer, the new signal heads shall be switched into service during that controller phase being displayed by the existing equipment; and the existing equipment shall be turned off simultaneously. Immediately after the new signal equipment has been made operational, the existing signal heads shall be turned off, and removed.
- c. The Contractor is cautioned to PLAN their work to cause minimum interference with any existing signal operation. Adjustments in the existing equipment made necessary by the new installation will be made at the expense of the Contractor.
- d. The Contractor shall retain ownership of the materials and equipment after the intersection has been made operational, until Inspection and Acceptance (either partial or final) has been made by the Engineer, when it then becomes SCDOT property. Prior to Acceptance, if the materials or equipment is damaged by whatever cause, the Contractor shall be responsible for repair or replacement.
- e. Operation, Maintenance and Emergency Service-
 The contractor shall be responsible for the maintenance and operation of all existing signals in the "LIST OF PROJECT TRAFFIC SIGNALS" from the date of the "NOTICE TO PROCEED" of the contract until the final acceptance of the project. This shall include all daily maintenance of signals and any emergencies which may arise. The CONTRACTOR is also responsible and liable for proper and safe operation of each signal. Herein, this activity will be termed "Maintenance".
 - i. Restriction
 The CONTRACTOR shall not change the phasing or other operation of a signalized intersection without Departmental approval.
 - ii. Procedure
 At that point in the project when construction activity is about to occur which could Affect the operation of a particular signal, the CONTRACTOR shall request the Department's concurrence, and the CONTRACTOR shall assume responsibility for operations and maintenance of that traffic signal. This request shall be in writing to the ENGINEER and shall have a written response. In the absence of the request, any activity of the CONTRACTOR which affects the operation of a signal shall be deemed evidence of the CONTRACTOR's assumption of responsibility for the operation and maintenance of the signal.
 - iii. New Signals
 Signals installed by the CONTRACTOR shall be maintained by the CONTRACTOR until the
 Department formally
 accepts the work. iv.
 - Requirements
 The CONTRACTOR shall perform EMERGENCY REPAIRS AND SERVICES as required, to insure continuity of operation of listed traffic signals and associated equipment. **This shall include replacement of malfunctioning LED modules.**
 - v. Technician
 The CONTRACTOR shall provide at least one (1) qualified LOCAL signal technician, subject to call at all times, to provide emergency services as required to assure continuous and efficient operation of signal installations and systems. This shall include non-business hours, weekends, and holidays. The Technician shall be fully qualified to trouble-shoot, service, repair and/or replace traffic controllers and components, both electro-mechanical and solid-state. At the PRE- CONSTRUCTION CONFERENCE, the CONTRACTOR shall furnish the RCE with a LIST OF THE SIGNAL TECHNICIANS who will be responsible for performing the emergency service, and the LOCAL PHONE NUMBER(S) of the CONTRACTOR's agent(s) (answering service, etc.), who will receive emergency calls during and after the CONTRACTOR's normal business hours.

vi. Repair Time

The CONTRACTOR shall be ON-SITE of the malfunctioning signal for emergency service within the maximum time listed in the following schedule-

| <u>Weekdays or Saturday</u> | <u>Maximum Time</u> |
|-----------------------------|---------------------|
| 6 AM to 6 PM | 1 hour |
| 6 PM to 6 AM | 4 hours |
| <u>Sundays or Holidays</u> | |
| Day or Night | 4 hours |

vii. Restoration of Normal Service

Once the CONTRACTOR has started repair work/emergency service, the CONTRACTOR shall restore a malfunctioning signal to normal phase operations uninterrupted.

viii. Time Changes (EST/DST)

As part of Maintenance, the CONTRACTOR shall reset all time clocks to local legal time.

ix. Records

The CONTRACTOR shall maintain a LOG of all trouble calls received, the response time, and the corrective action taken. The records and logs shall be available to Department personnel for review during normal working hours. All records and logs shall be turned over to the Department at FINAL ACCEPTANCE.

x. Failure To Perform

In the event the CONTRACTOR fails to perform in accordance with requirements and schedules of this Specification, the Department reserves the right, without notice to the CONTRACTOR, to engage a Third Party to perform the maintenance and emergency service necessary to assure continuous traffic signal operation. Further, all expenses incurred by the Department in implementing this option, shall be deducted from the payment due the CONTRACTOR, plus a **FIFTEEN HUNDRED (\$1500) DOLLAR PENALTY FOR EACH OCCASION, FOR EACH DAY (UNTIL CORRECTED)**. The penalty shall be forfeited as liquidated damages.

7. PAYMENT FOR MATERIALS ON HAND

The attention of the CONTRACTOR is directed to Section 109.7 of the STANDARD SPECIFICATIONS; which is amended to include the following paragraphs.

When permitted by the Engineer, partial payment will be made for major traffic signal items that are being furnished by the CONTRACTOR. Certain items such as wooden poles, and other very heavy units not readily movable or vandalized, may be stored in un-secured locations either ON- or OFF-SITE. Other items such as signal heads, detector amplifiers, controllers, cabinets, and certain other major items may be stored in a secured/protected location either ON- or OFF-SITE. The equipment shall be labeled stating SCDOT, and the Project Name. Other requirements of Paragraph 109.8 remain applicable. Payment shall be in accordance with the following criteria:

1. For MATERIALS ON HAND, the Contractor may be paid at: FIFTY (50%) PERCENT OF THE CONTRACT UNIT PRICE OF ITEM, NOT TO EXCEED THE PAID INVOICE AMOUNT.
2. ONLY ITEMS MEASURED BY --EACH-- SHALL BE ELIGIBLE.
3. ONLY ITEMS WITH A UNIT PRICE EXCEEDING \$100 SHALL BE ELIGIBLE.
4. THE TOTAL INVOICE PRICE OF THE ITEMS SHALL EXCEED \$5000.

8. SUBMITTING AS-BUILT PLANS

After the completion of the project, the CONTRACTOR shall furnish to the Engineer, three (3) "red-lined" sets of Plans showing the exact locations and sizes of all conduits, poles, pedestals, splice boxes, detectors, and the routing and destination of all wires leaving the control cabinets.

9. FINAL INSPECTION

a. Request

The CONTRACTOR shall request Final Inspection one week prior to the desired day of inspection. Confirmation to the Resident Construction Engineer shall be provided forty-eight (48) hours prior to Final Inspection, that the project is on schedule and ready for inspection.

b. System Test

Upon completion of the Final Inspection and correction of any deficiencies, the work will be subject to a **sixty (60) day operational test** for the System, and for individual intersections. If during this period a problem arises in either the System or an individual traffic signal, it must be resolved, and a **NEW sixty (60) day test** period shall begin

10. MAINTENANCE OF TRAFFIC

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. *For Traffic Signal projects, see the amendment to the Standard Specifications, **MAINTENANCE OF TRAFFIC – General Regulations** included.*

(2) PLANTING IRRIGATION

In addition to the requirements specified in the Plans, Standard Specifications, and Supplemental Technical Specifications, the Contractor is advised that the following Section 817 shall be added to Division 800:

Section 817 Planting Irrigation

817.01 Description. This work shall consist of furnishing all labor, equipment and materials and performing all operations necessary for installing an automatic irrigation system as shown on the plans and/or described by these Specifications. The work includes: excavation and preparation of trenches, installation of the irrigation system (including: plastic pipe – solvent weld and gasketed, plastic fittings – solvent weld and gasketed, ductile iron fittings - gasketed, thrust blocking directional fittings and isolation valves, sprinkler heads, gate valves, electric control valves, valve boxes, electrical control cable, automatic controller, grounding and surge protection, decoders, sensors, wiring to controller, discharge zee pipe for pump station, connection of zee pipe to PVC mainline), and all required submittals.

MATERIALS

817.02 Irrigation Components.

A. Pipe.

1. Copper Tube: ASTM B 88 Types L and M water tube, annealed and drawn tempers, with plain ends.
2. Polyvinyl Chloride (PVC) Plastic Pipe: ASTM D 1785, PVC 1120, Schedule 40, 160 psi minimum pressure rating for 8-inch and smaller sizes, with Belled/Solvent Weld ends.
3. Polyvinyl Chloride (PVC) Plastic Pipe: ASTM D 1785, PVC 1120, SDR 21, 200 psi minimum pressure rating, with Belled/Solvent Weld ends.
4. Polyvinyl Chloride (PVC) Plastic Pipe: ASTM D 2241; PVC 1120, SDR 26, 160 psi minimum pressure rating, with Belled/Solvent Weld ends.

B. Pipe Fittings.

1. Copper Tube Fittings: ASME B16. 22, wrought copper or cast-brass, solder-joint, pressure types.
2. Polyvinyl Chloride (PVC) Plastic Pipe Fittings: ASTM D 2466, Schedule 40, socket-type.

C. Joining Materials.

1. Solvent Cement: ASTM F 656 purple color primer and ASTM D 2564 solvent cement.
2. Solder: ASTM B 32, Alloys Sn95 and E.
3. Gaskets for Plastic Flanged Joints: Materials recommended by plastic pipe and fittings manufacturer.

D. Backflow Preventers.

1. Consult with local water authority and only use approved type device and installation method prior to installation. ASSE standard backflow preventer of size indicated for maximum flow rate and maximum pressure loss indicated.
 - a. Working Pressure: 150-psi minimum except where otherwise indicated.
 - b. 2 Inches and Smaller: Bronze body with threaded ends.
 - c. 2.5 Inches and Larger: Bronze, cast-iron, steel, or stainless steel body with flanged ends.
2. Approved type of devices may include one of the following and as indicated on drawings.
 - a. Reduced Pressure Principle Backflow Prevent.
 - b. Double Check Valve Backflow Preventer.
 - c. Pressure Vacuum Breaker.

E. Pressure Regulators

1. ASSE 1003, single seated, direct operated type water pressure regulators, rated for initial working pressure of 150 psi minimum, with size, flow rate, and inlet and outlet pressures indicated. Include integral factory installed or separate field-installed wye-pattern strainer that is compatible with unit for size and capacity. Manufacturer model number and size are indicated on drawings.
 - a. 2 Inches and Smaller: Bronze body with threaded ends.
 - b. 2.5 Inches and Larger: Bronze or cast-iron body with flanged ends.
 - c. Interior components: Corrosion resistant materials

F. Valves.

1. Non-rising Stem Gate valves 3 Inches and Larger: AWWA C500, cast-iron double disc, bronze disc and seat rings or AWWA C509, resilient seated; bronze stem, cast-iron, or ductile-iron body and bonnet, stem nut, 200 psi working pressure; and ends that fit NPS dimension, PVC pipe. Include elastomeric gaskets.
2. Brass, non-rising Stem Gate Valves, 3 inches and smaller: Type 1, solid wedge; non-rising, full port, class (200 WOG Rating) brass body and screw bonnet with threaded or solder-joint ends. Include polytetrafluoroethylene (PTFE) impregnated packing, brass packing gland, and malleable-iron handwheel.
3. Bronze, non-rising-Stem Gate Valves, 3 inches and smaller: MSS SP-80, Type 1, solid wedge; rising, copper-silicon-alloy stem; 125 class (200 PSI WOG Rating) body and screw bonnet of ASTM B 62 cast bronze, with threaded or solder-joint ends. Include polytetrafluorethylene (PTFE) impregnated packing, brass packing gland, and malleable-iron handwheel.
4. Plastic Valves: Polyvinyl chloride (PVC) plastic with 150 psi minimum pressure rating FPT, ends compatible to piping where valve is to be installed, and tee handle.

G. Control Valves.

1. Manufacturer's standard control valves for circuits, of type, size and model number are indicated on drawings and as follows.
 - a. Manual Control Valves: Class 150 psi minimum rating, globe valves.
 - b. Key-Operated, Manual Control Valves: Class 150 PSI rating, Gate Valves, fitted for key operation.
 - c. Automatic control valves: Diaphragm type, normally closed, with manual flow adjustment, and operated by 24-volt AC solenoid.
 - d. Automatic Drain Valves: Designed to open for drainage when line pressure drops below 3 psi (when required).
 - e. Quick-Couplers: Factory-fabricated, assembly. Include coupler water seal valve, single piece body with spring loaded or weighted, rubber covered cap: hose swivel with ASME B1.20.7, ¾-11.5NH threads for garden hose on Outlet; and operating key.
2. Control Valve Boxes: Polyethylene (PE), acrylonitrile-butadlene-styrene (ABS), fiberglass, polymer concrete, or precast concrete box and cover. Large enough for easy service access. Plastic valve boxes to be the "Pro Series" or "Spec Series" grade only, size as indicated on drawings detail drawings.
 - a. Drainage Backfill: Cleaned gravel or crushed stone, graded from 2 inches maximum to ¾ inch minimum.
 - b. Include valve key, 60 inches long with tee handle and key end to fit key operated valve.

H. Automatic Control System.

1. Low-voltage controller system, made for control of irrigation system automatic control valves. Controller operates on 120 volts AC building power system, provides 24 volts AC power to control valves, and includes stations for at least the number of control valves indicated. Manufacturer model number and size are indicated on drawings.
2. Exterior Control Enclosure: Weatherproof enclosure with locking cover and 2 matching keys. Enclosure construction complies with NFPA 70 and NEMA 250, Type 4, and includes provision for grounding.
 - a. Material: Molded plastic or painted steel.
 - b. Mounting: Surface-type for wall mounting.
 - c. Transformer: Internal-type, and suitable for converting 120 volts AC building power to 24 volts AC power.
3. Interior Control Enclosure: Drip-proof enclosure with and locking cover and 2 matching keys.
 - a. Material: Molded plastic or painted steel.
 - b. Mounting: Surface-type for wall mounting.
 - c. Transformer: Plug-in style and suitable for converting 120 volts AC building power to 24 volts AC power.
4. Controller Stations for Automatic Control Valves: Each station is variable from approximately 1 to 360 minutes. Include switch for manual or automatic operation.
5. Timing Device: Adjustable, 24-hour, 14-day clock to operate any time of day. Include provision for the following settings:
 - a. Setting to skip operation any day in timer period.
 - b. Setting for operation every other day.
 - c. Settings for multiple programs, 3 programs minimum.
 - d. Settings for operation 4 or more times daily.
 - e. Include manual or semi-automatic operation without disturbing preset automatic operation. Provide battery (NiO Cad or Alkaline) to automatically power the timing device during power outages to maintain time and date while non-volatile memory maintains schedule
6. Incorporate an adjustable rain shut-off device or weather sensor as indicated on drawings.
7. Controller to be grounded as per code and manufacturer's recommendations.

I. Sprinklers.

1. Manufacturer's standard sprinklers designed to provide uniform ("Head to Head" placement) coverage over entire area of spray shown on Drawings at available water pressure. Manufacturer type, size and model number are indicated on drawings and as follows:
 - a. Housings: Brass or plastic, except where material is specified.
 - b. Flush, Surface: Fixed pattern with screw-type flow adjustment.
 - c. Interior Parts: Brass or other corrosion-resistant materials.
 - d. Bubbler: Fixed pattern, with screw-type flow adjustment and pressure compensating.
 - e. Shrubbery: Fixed pattern, with screw-type flow adjustment.
 - f. Plastic Pop-Up Spray: Fixed pattern with screw-type flow adjustment and stainless steel retraction spring.
 - g. Pop-Up, Rotary Spray: Gear drive, full-circle and adjustable part-circle type.

J. Drip Emitters, Tubes, and Devices.

1. Manufacturer's standard units as indicated on drawings and as follows:
 - a. Application Pressure Regulators: Brass or plastic housing, ¾ -1inch size, with corrosion-resistant internal parts, and capable of controlling outlet pressure to approximately 40 psi.
 - b. Strainer/Filter Units: Brass or plastic housing, with corrosion-resistant internal parts of size and capacity required for emitters, drip tubes, and devices downstream of unit.
 - c. Emitters: Plastic body with single outlet to deliver the flow over a range of 15-50 psi and be pressure compensating.
 - d. Inline pressure compensating emitter tubing, to deliver the flow over a range of 15 – 50 psi. Emitter flow, inline spacing and spacing between the rows are as indicated on drawings.
 - e. Drip Tubes: Flexible polyvinyl chloride (PVC)/or Polyethylene (P.E.) plastic tube for emitters or other devices indicated and with flushable end plug/cap. Size: ½-inch NPS.

817.03 Wire. Solid copper conductor, insulated cable, suitable for direct burial.

817.04 Pressure Gauges. ASME B40.1, 2.5 inch diameter dial, liquid filled, stainless steel housing with minimum dial range of 1½ times system operating pressure and bottom outlet.

817.05 Pump (Primary or Booster). If a pump (primary or booster) is required, contractor must install the manufacturer type and size as indicated on drawings. See detail notes and drawings for specific model number and electrical requirements. Contractor must verify the water source meets the minimum requirements of the design.

PRODUCTS

817.06 Manufacturers. Subject to compliance with requirements, provide products by one of the following manufacturers or equal as approved by Engineer:

1. Backflow Preventers: Wilkins Regulator, Zurn Industries, Inc.
2. Pressure Regulators:
 - a. Wilkins Regulator, Zurn Industries, Inc.
 - b. Rain Bird Corporation
3. Valves for Aboveground and Underground Pit Installation:
 - a. Nibco
 - b. Harvard
 - c. Clow
4. Automatic Control Valves:
 - a. Rain Bird Corporation
 - b. Hunter Industries
5. Control Valve Boxes:
 - a. NDS
 - b. Carson Industries
6. Sprinklers:
 - a. Rain Bird Corporation
 - b. Hunter Industries
7. Drip Emitters, Tubes, and Devices:
 - a. Rain Bird Corporation
 - b. Agrifim
 - c. Agricultural Products
 - d. Antelco
8. Controllers:
 - a. Rain Bird Corporation
 - b. Hunter Industries
9. Automatic Rain Shutoff Device:
 - a. Rain Bird Corporation
 - b. Hunter Industries
10. PVC Solvent Weld Pipe:
 - a. Jet Stream Plastics
 - b. Silver Line Plastics
11. Solvent Weld PVC Fittings: Lasco Fittings, Inc.
12. Wire: Regency Wire and Cable.
13. PVC Gasketed Pipe:
 - a. Jet Stream Plastics
 - b. Silverline Plastics
 - c. Sanderson Pipe
14. Gasketed PVC and Ductile Fittings: Harco Fittings.
15. Solvents and Cements: IPS Weld-on

CONSTRUCTION REQUIREMENTS

817.07 System Performance Requirements.

A. Locations of Sprinklers and Devices. Design location is approximate. Minor field adjustments may be necessary to avoid plantings and obstructions such as signs and light standards. Sprinklers to be spaced no

greater than 55% of diameter of throw at optimum performance pressure. This will achieve "Head to Head" coverage performance.

B. Minimum Water Coverage. Not less than:

Turf Areas: 100 percent

Other Planting Areas: 100 percent

C. Components and Installation. Capable of producing piping systems with the following minimum working pressure ratings except where indicated otherwise on drawings:

Pressure Piping: 160 psi

Circuit and Drain Piping: 160 p

D. Electrical. Source Power for irrigation controller to be 120 Volts A.C., 60 Hertz, Single Phase, with a 10 amp circuit breaker.

817.08 General.

A. Submittals. Submit product data, shop drawings and samples for approval by Engineer.

B. Preparation. Set flags to identify proposed sprinkler and valve locations. Obtain Engineer's approval before excavation.

C. Installation. Comply with manufacturer's written installation instructions, unless more stringent requirements are indicated. Complete field assembly of irrigation components, where required.

1. Piping: Drawings indicate diagrammatic general location and arrangement of piping systems. Indicated locations and arrangements were used to size pipe and calculate friction loss, and in other design considerations. Install piping as indicated, except where deviations to layout are approved on coordination drawings to avoid plants, trees, structures and utilities.
2. Valves: Install underground valves in valve boxes or pits, top of valve box to be level with surrounding finished grade. Bottom of valve box to contain 3 inch of gravel sump.
3. Control Valves: Install in valve control valve boxes, arranged for easy adjustment and removal. Top of valve box to be level with surrounding finished grade. Bottom of valve box to contain 3 inch of gravel sump.
4. Water Meter: Install meter per local codes and per local water authority. Contractor to pay all fees associated with meter and tap unless otherwise agreed upon by Owner.
5. Backflow Preventers: Install backflow preventers of type, size, and capacity as indicated on drawings. Include valves and test cocks. Consult with local water Authority with jurisdiction and use only approved type device and installation method prior to installation.
6. Pressure Regulator: Install pressure regulators with shutoff valve and strainer on inlet and pressure gauge on outlet. Install shutoff valve on bypass where indicated.
7. Sprinklers: Flush circuit piping with full head of water and install sprinklers **after** hydrostatic test is completed.

D. Hydrostatic Testing. Perform hydrostatic test of mainline piping and valves before backfilling trenches. Piping may be tested in sections to expedite work. Notify the Engineer or Owner 72 hours in advance of pressure testing and document testing to their satisfaction.

1. Subject the piping system to static operating pressure without exceeding pressure rating of piping system materials. Isolate the test source and allow to stand for 4 hours. Leaks and loss in test pressure constitute defects that must be repaired.
2. Repair leaks and defects with new materials and retest system or portion thereof until satisfactory results are obtained.

E. Cleaning. Flush dirt and debris from piping before installing sprinklers and other devices. Adjust automatic control valves to provide flow rate of rated operating pressure required for each sprinkler circuit. Carefully adjust lawn sprinklers so they will be flush with, or not more than ½ inch above, finish grade after completion of landscape work. Adjust settings of controllers and automatic control valves, and provide written irrigation schedule.

F. Commissioning. Follow manufacturer's written procedures. If no procedures are prescribed by manufacturers, proceed as follows:

1. Verify that specialty valves and their accessories have been installed correctly and operate correctly.
2. Verify that specified tests of piping are complete.
3. Check that sprinklers and devices are correct type.
4. Check that damaged sprinklers and devices have been replaced with new materials.
5. Check that potable water supplies have correct type backflow preventers.
6. Energize circuits to electrical equipment and devices.
7. Adjust operating controls.
8. Operational Testing: Perform operational testing after hydrostatic testing is completed, backfill is in place, and sprinklers are adjusted to final position.

G. Demonstration: Demonstrate to Engineer that system meets coverage requirements and that automatic controls function properly. Demonstrate to Owner's maintenance personnel operation of equipment, sprinklers, specialties, and accessories. Review operating and maintenance information. Provide 7 days written notice in advance of demonstration to Engineer and Owner. Provide a written schedule indicating days of operation, start time, and length of time each valve (zone) is required to open and provide 1.0 inch of water per week to the planted area.

(3) **WAYFINDING SIGNAGE**

In addition to the requirements specified in the Plans, Standard Specifications, Supplemental Technical Specifications and Special Provisions, the Contractor is advised that the following paragraphs shall be added to Section 608:

Section 608 Supplemental Traffic Control Devices

Add the following paragraphs:

WAYFINDING SIGNAGE

608.13 Description. This work shall also include furnishing and installing permanent wayfinding signage.

MATERIALS

A. Aluminum Sheet and Plate. ASTM B 209, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with at least the strength and durability properties of Alloy 5005-H32.

B. Aluminum Extrusions. ASTM B 221, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with at least the strength and durability properties of Alloy 6063-T5. Provide posts of minimum 0.125 inch thick extruded aluminum.

C. Aluminum Finish. Manufacturer's standard, baked, polyester, powder-coat finish complying with finish manufacturer's written instructions for surface preparation, including pretreatment, application, baking, and minimum dry film thickness.

D. Reflective Sheeting. In accordance with requirements of Section 608.04 of SCDOT Standard Specifications for Highway Construction.

E. Screening Inks. In accordance with requirements of Section 608.04 of SCDOT Standard Specifications for Highway Construction.

PRODUCTS

608.14 Basis-of-Design for Wayfinding Signs. Provide Wayfinding Signage as approved by Engineer.

FABRICATION

A. Sign Panels. All wayfinding signs will be fabricated as indicated on the drawings. The sign panels will be 3/16" thick aluminum. All graphics will be reflective following MUTCD guidelines.

B. Sign Assembly. All panels, posts, and decorative components will be welded to main assembly and then painted with Matthews Acrylic Polyurethane or powder coated on the front, back and sides. Sign posts will be 5" diameter aluminum with .187 thick walls. Base plate is fabricated from 3/4" aluminum is welded to bottom and top rim of the 5" post. 3/4" thick flanges will be welded to four sides of the post. Sign assembly shall be completed prior to installation.

CONSTRUCTION REQUIREMENTS

608.15 General. Install signs using installation methods indicated and according to manufacturer's written instructions. Install signs level, plumb, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.

A. Corrosion Protection. Coat concealed surfaces of exterior aluminum in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.

B. Cast-in-Place Concrete Footings. Concrete bases for signage are to be poured in place and footings are to extend beneath the frost line, or deeper to meet local code. All footings or bases shall be poured within a form and level with grade unless otherwise indicated on the drawings. Foundation/footings shall be level with grade unless otherwise noted or as specified by state or local code. Foundation/ footings shall not extend above grade more than 2" and exposed edges should be finished with a bevel to prevent chipping. Concrete shall be floated by machine or hand before finishing in order to embed larger aggregates. Provide smooth or brushed finish grade appearance. All concrete bases and footings shall be edged to break any bond with the form and create a neat appearance. All forms shall be removed once the concrete has properly cured. Concrete and reinforcement specifications shall be shown on shop drawing submittals. The fabricator is responsible for the necessary templates, mounting plates and hardware for concrete and masonry bases. A minimum 1' rock bed with landscape edging or concrete pad must be added around each concrete base as protection from landscaping maintenance.

C. Mounting. The sign assembly will be mounted to the concrete footing with MUTCD approved breakaway bolts. The bolt size and bolt pattern will be determined by structural engineer before fabrication to assure wind resistance up to 90mph.

D. Adjusting and Cleaning. Remove and replace damaged or deformed signs and signs that do not comply with specified requirements. Replace signs with damaged or deteriorated finishes or components that cannot be successfully repaired by finish touchup or similar minor repair procedures. On completion of installation, clean exposed surfaces of signs according to manufacturer's written instructions, and touch up minor nicks and abrasions in finish. Maintain signs in a clean condition during construction and protect from damage until acceptance by Owner.

(4) **ADDITIONS TO SECTION 811**

In addition to the requirements specified in the Plans, Standard Specifications, Supplemental Technical Specifications and Special Provisions, the Contractor is advised that the following paragraphs shall be added to Section 811:

Section 811 Furnish and Plant Trees, Shrubs, Vines and Ground Covers

Add the following paragraphs:

GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Trees.
 - 2. Shrubs.
 - 3. Ground Covers.
 - 4. Plants.
 - 5. Planting soils and soil amendments.
 - 6. Fertilizers and Mulches
 - 7. Stakes and guys.
 - 8. Root barrier.
 - 9. Portable drip irrigation units for trees ("Tregators").
 - 10. Initial Maintenance of Landscape Material

1.2 DEFINITIONS

- A. Backfill: The earth used to replace or the act of replacing earth in an excavation.
- B. Balled and Burlapped Stock: Plants dug with firm, natural balls of earth in which they were grown, with ball size not less than sizes indicated; wrapped with burlap, tied, rigidly supported, and drum laced with twine with the root flare visible at the surface of the ball as recommended by ANSI Z60.1.
- C. Balled and Potted Stock: Plants dug with firm, natural balls of earth in which they are grown and placed, unbroken, in a container. Ball size is not less than sizes indicated.
- D. Bare-Root Stock: Plants with a well-branched, fibrous-root system developed by transplanting or root pruning, with soil or growing medium removed, and with not less than minimum root spread according to ANSI Z60.1 for type and size of plant required.
- E. Container-Grown Stock: Healthy, vigorous, well-rooted plants grown in a container, with a well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1 for type and size of plant required.
- F. Duff Layer: The surface layer of native topsoil that is composed of mostly decayed leaves, twigs, and detritus.
- G. Fabric Bag-Grown Stock: Healthy, vigorous, well-rooted plants established and grown in-ground in a porous fabric bag with well-established root system reaching sides of fabric bag. Fabric bag size is not less than diameter, depth, and volume required by ANSI Z60.1 for type and size of plant.
- H. Finish Grade: Elevation of finished surface of planting soil.
- I. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
- J. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.

- K. Pests: Living organisms that occur where they are not desired, or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
- L. Planting Area: Areas to be planted.
- M. Planting Soil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.
- N. Plant; Plants; Plant Material: These terms refer to vegetation in general, including trees, shrubs, vines, ground covers, ornamental grasses, bulbs, corms, tubers, or herbaceous vegetation.
- O. Root Flare: Also called "trunk flare." The area at the base of the plant's stem or trunk where the stem or trunk broadens to form roots; the area of transition between the root system and the stem or trunk.
- P. Stem Girdling Roots: Roots that encircle the stems (trunks) of trees below the soil surface.
- Q. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.
- R. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.
- S. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil; but in disturbed areas such as urban environments, the surface soil can be subsoil.
- T. Weeds: Includes Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass and other unspecified growth.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated, including soils.
 - 1. Plant Materials: Include quantities, sizes, quality, and sources for plant materials.
 - 2. Pesticides and Herbicides: Include product label and manufacturer's application instructions specific to the Project.
- B. Plant Photographs: Include color photographs in digital format of specimen plant material as it will be furnished to the Project. Take photographs from an angle depicting true size and condition of the typical plant to be furnished. Include a scale rod or other measuring device in each photograph. Identify each photograph with the full scientific name of the plant, plant size, and name of the growing nursery.
- C. Qualification Data: For qualified landscape Installer. Include list of similar projects completed by Installer demonstrating Installer's capabilities and experience. Include project names, addresses, and year completed, and include names and addresses of owners' contact persons.
- D. Product Certificates: For each type of manufactured product, from manufacturer, and complying with the following:

1. Manufacturer's certified analysis of standard products.
 2. Analysis of other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.
- E. Material Test Reports: For existing in-place surface soil and imported or manufactured topsoil.
- F. Maintenance Instructions: Recommended procedures to be established by Owner for maintenance of plants during one calendar year. Submit before start of required maintenance periods.
- G. Warranty: Sample of special warranty.
- H. Planting Schedule indicating anticipated dates and locations for each type of planting.
- I. Plant Material Record Drawings:
1. Legibly mark drawings to record actual construction
 2. Indicate horizontal locations, referenced to permanent surface improvements.
 3. Identify field changes of dimensions and detail changes made by change order.

1.4 QUALITY ASSURANCE

- A. All landscaping and irrigation shall be performed by same contractor and shall be a single firm specializing in this work and must have a minimum of 5 years experience.
- B. Installer Qualifications: A qualified landscape Installer whose work has resulted in successful establishment of plants.
1. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
 2. Pesticide Applicator: State licensed, commercial.
- C. Soil-Testing Laboratory Qualifications: An independent or university laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.
- D. Soil Analysis: For each unamended soil type, furnish soil analysis and a written report by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; deleterious material; pH; and mineral and plant-nutrient content of the soil.
1. Report suitability of tested soil for plant growth.
 - a. Based upon the test results, state recommendations for soil treatments and soil amendments to be incorporated. State recommendations in weight per 1000 sq. ft. or volume per cu. yd. for nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory planting soil suitable for healthy, viable plants.
 - b. Report presence of problem salts, minerals, or heavy metals, including aluminum, arsenic, barium, cadmium, chromium, cobalt, lead, lithium, and vanadium. If such problem materials are present, provide additional recommendations for corrective action.

- E. Provide quality, size, genus, species, and variety of plants indicated, complying with applicable requirements in ANSI Z60.1.
 - 1. Do not make substitutions. If specified material is not obtainable, submit proof of non-availability to Owner's Representative with a proposal for use of equivalent material.
 - 2. Provide healthy, vigorous stock, grown in recognized nursery in accordance with good horticultural practice and free of disease, insects, eggs, larvae, and defects such as knots, sun-scald, injuries, abrasions, or disfigurement.
- F. Measurements: Measure according to ANSI Z60.1. Do not prune to obtain required sizes.
 - 1. Trees and Shrubs: Measure with branches and trunks or canes in their normal position. Take height measurements from or near the top of the root flare for field-grown stock and container grown stock. Measure main body of tree or shrub for height and spread; do not measure branches or roots tip to tip. Take caliper measurements 6 inches above the root flare for trees up to 4-inch caliper size, and 12 inches above the root flare for larger sizes.
 - 2. Other Plants: Measure with stems, petioles, and foliage in their normal position.
- G. Plant Material Observation: Owner's Representative may observe plant material either at place of growth or at site before planting for compliance with requirements for genus, species, variety, cultivar, size, and quality. Owner's Representative retain right to observe trees and shrubs further for size and condition of balls and root systems, pests, disease symptoms, injuries, and latent defects and to reject unsatisfactory or defective material at any time during progress of work. Remove rejected trees or shrubs immediately from Project site.
 - 1. Notify Owner's Representative of sources of planting materials seven days in advance of delivery to site.
- H. Preinstallation Conference: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws if applicable. Protect materials from deterioration during delivery and while stored at site.
- B. Bulk Materials:
 - 1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
 - 2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
 - 3. Accompany each delivery of bulk fertilizers, lime, and soil amendments with appropriate certificates.
- C. Do not prune trees and shrubs before delivery. Protect bark, branches, and root systems from sun scald, drying, wind burn, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of plants during shipping and delivery. Do not drop plants during delivery and handling.

- D. Handle planting stock by root ball.
- E. Deliver plants after preparations for planting have been completed, and install immediately. If planting is delayed more than six hours after delivery, set plants and trees in shade, protect from weather and mechanical damage, and keep roots moist.
 - 1. Set balled stock on ground and cover ball with soil, peat moss, sawdust, or other acceptable material.
 - 2. Do not remove container-grown stock from containers before time of planting.
 - 3. Water root systems of plants stored on-site deeply and thoroughly with a fine-mist spray. Water as often as necessary to maintain root systems in a moist, but not overly-wet condition.
 - 4. Spray deciduous plants in foliage with an approved anti-transpirant immediately after digging to prevent dehydration.
- F. Inspection certifications required by law shall accompany each shipment invoice or order to stock and on arrival the certificate shall be filed with the Owner's Representative.

1.6 PROJECT CONDITIONS

- A. Field Measurements: Verify actual grade elevations, service and utility locations, irrigation system components, and dimensions of plantings and construction contiguous with new plantings by field measurements before proceeding with planting work.
- B. Any damage to utilities shall be repaired at contractor's expense.
- C. Interruption of Existing Services or Utilities: Do not interrupt services or utilities to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary services or utilities according to requirements indicated:
 - 1. Notify Owner's Representative no fewer than two days in advance of proposed interruption of each service or utility.
 - 2. Do not proceed with interruption of services or utilities without Owner's Representative's written permission.
- D. Planting Restrictions: Coordinate installation of planting materials during normal planting season for each type of plant material required.
- E. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions and warranty requirements.
- F. Coordination with Turf Areas (Lawns): Plant trees, shrubs, and other plants after finish grades are established and before planting turf areas unless otherwise indicated or approved by Owner's Representative.
 - 1. When planting trees, shrubs, and other plants after planting turf areas, protect turf areas, and promptly repair damage caused by planting operations.
 - 2. Coordination with Irrigation: Coordinate the work of this section with installation of underground sprinkler system piping and watering heads. Repair irrigation components damaged during planting operations at Contractor's expense.

1.7 WARRANTY

- A. It is the responsibility of the Contractor to make known any site conditions which may be harmful or growth inhibiting to the plan materials specified, prior to the installation of said materials.
- B. Special Warranty: Installer agrees to repair or replace plantings and accessories that fail in materials, workmanship, or growth within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Death and unsatisfactory growth, except for defects resulting from abuse, lack of adequate maintenance, or neglect by Owner, or incidents that are beyond Contractor's control. Warranty shall cover any plant loss due to weather damage to plants installed out of normal planting season.
 - 2. Warranty Periods from Date of Substantial Completion:
 - a. Trees, Shrubs, Vines, and Ornamental Grasses: 12 months.
 - b. Ground Covers, Biennials, Perennials, and Other Plants: 12 months.
 - 3. Include the following remedial actions as a minimum:
 - a. Immediately remove dead plants and replace unless required to plant in the succeeding planting season.
 - b. Replace plants that are more than 25 percent dead or in an unhealthy condition at end of warranty period.
 - c. Replace with plants of same size and species as specified.
 - d. A limit of one replacement of each plant will be required except for losses or replacements due to failure to comply with requirements.
 - e. Provide extended warranty for period equal to original warranty period, for replaced plant material.
 - 4. Satisfaction of Warranty:
 - a. Contractor shall request, by written notice, inspection of final acceptance to take place within one week before or after end of warranty period.
 - b. If plants are in satisfactory condition, the Contractor shall receive a written notice of warranty compliance.
 - c. Replace rejected work and continue maintenance until work is inspected by Owner's Representative and found acceptable.

1.8 MAINTENANCE SERVICE

- A. Initial Maintenance Service for Trees and Shrubs: Provide maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after plants are installed and continue until plantings are acceptably healthy and well established but for not less than maintenance period below.
 - 1. Maintenance Period: from time of installation until time of Final Acceptance or for 60 days after Substantial Completion, whichever is greater
- B. Initial Maintenance Service for Ground Cover and Other Plants: Provide maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance

immediately after plants are installed and continue until plantings are acceptably healthy and well established but for not less than maintenance period below.

1. Maintenance Period: from time of installation until time of Final Acceptance or for 60 days after Substantial Completion, whichever is greater.
- C. Submit written instructions for proposed Contractor maintenance and continuing Owner maintenance.

PRODUCTS

1.9 PLANT MATERIAL

- A. General: Furnish nursery-grown plants true to genus, species, variety, cultivar, stem form, shearing, and other features indicated in Plant Schedule or Plant Legend shown on Drawings and complying with ANSI Z60.1; and with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock, densely foliated when in leaf and free of disease, pests, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.
1. Trees with damaged, crooked, or multiple leaders; tight vertical branches where bark is squeezed between two branches or between branch and trunk ("included bark"); crossing trunks; cut-off limbs more than 3/4 inch in diameter; or with stem girdling roots will be rejected.
 2. Collected Stock: Do not use plants harvested from the wild, from native stands, from an established landscape planting, or not grown in a nursery unless otherwise indicated.
- B. Provide plants of sizes, grades, and ball or container sizes complying with ANSI Z60.1 for types and form of plants required. Plants of a larger size may be used if acceptable to Owner's Representative, with a proportionate increase in size of roots or balls.
- C. Labeling: Label each plant of each variety, size, and caliper with a securely attached, waterproof tag bearing legible designation of common name and full scientific name, including genus and species. Include nomenclature for hybrid, variety, or cultivar, if applicable for the plant as shown on Drawings.
- D. If formal arrangements or consecutive order of plants is shown on Drawings, select stock for uniform height and spread, and number the labels to assure symmetry in planting.

1.10 INORGANIC SOIL AMENDMENTS

- A. Lime: ASTM C 602, agricultural liming material containing a minimum of 80 percent calcium carbonate equivalent and as follows:
1. Class: T, with a minimum of 99 percent passing through No. 8 sieve and a minimum of 75 percent passing through No. 60 sieve.
 2. Provide lime in form of ground dolomitic limestone.
- B. Perlite: Horticultural perlite, soil amendment grade.
- C. Sand: Clean, washed, natural or manufactured, and free of toxic materials.
- D. Peat Humus: Finely divided or granular texture with a pH range of 6 to 7.5, composed of partially decomposed moss peat (other than sphagnum), peat humus, or reed-sedge peat.

1.11 ORGANIC SOIL AMENDMENTS

- A. Wood Derivatives: Decomposed, nitrogen-treated sawdust, ground bark, or wood waste; of uniform texture and free of chips, stones, sticks, soil, or toxic materials.
 - 1. In lieu of decomposed wood derivatives, mix partially decomposed wood derivatives with ammonium nitrate at a minimum rate of 0.15 lb/cu. ft. of loose sawdust or ground bark, or with ammonium sulfate at a minimum rate of 0.25 lb/cu. ft. of loose sawdust or ground bark.
- B. Manure: Well-rotted, unleached, stable or cattle manure containing not more than 25 percent by volume of straw, sawdust, or other bedding materials; free of toxic substances, stones, sticks, soil, weed seed, debris, and material harmful to plant growth.

- C. Water: Potable.

1.12 FERTILIZERS

- A. Bonemeal: Commercial, raw or steamed, finely ground; a minimum of 4 percent nitrogen and 20 percent phosphoric acid.
- B. Superphosphate: Commercial, phosphate mixture, soluble; a minimum of 20 percent available phosphoric acid.
- C. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
 - 1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

1.13 PLANTING SOILS

- A. Planting Soil: ASTM D 5268 topsoil, with pH range of 5.5 to 7, a minimum of 4 > percent organic material content; free of stones 1 inch or larger in any dimension and other extraneous materials harmful to plant growth.

1.14 MULCHES

- A. Organic Mulch: Free from deleterious materials and suitable as a top dressing of trees and shrubs, as allowable by SCDOT. See Section 811.2.5.

1.15 PESTICIDES

- A. General: Pesticide registered and approved by EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.
- B. Pre-Emergent Herbicide (Selective and Non-Selective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.
- C. Post-Emergent Herbicide (Selective and Non-Selective): Effective for controlling weed growth that has already germinated.

1.16 TREE STABILIZATION MATERIALS

- A. Root-Ball Stabilization Materials:

1. Upright Stakes and Horizontal Hold-Down: Rough-sawn, sound, new hardwood or softwood, free of knots, holes, cross grain, and other defects, 2-by-2-inch nominal by length indicated; stakes pointed at one end.
 2. Wood Screws: ASME B18.6.1.
 3. Proprietary Root-Ball Stabilization Devices: Proprietary at- or below-grade stabilization systems to secure each new planting by root ball; sized per manufacturer's written recommendations unless otherwise indicated.
 - a. **Products:** Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - 1) [Border Concepts, Inc.](#); Tomahawk Tree Stabilizers.
 - 2) [Foresight Products, LLC](#); Duckbill Rootball Fixing System.
 - 3) [Tree Staple, Inc.](#); Tree Staples.
 - 4) Or Approved Equal
- B. Palm Bracing: Battens or blocks, struts, straps, and protective padding as indicated.
1. Battens or Blocks and Struts: Rough-sawn, sound, new hardwood or softwood, free of knots, holes, cross grain, and other defects, 2-by-4-inch nominally lengths indicated.
 2. Straps: Adjustable steel or plastic package banding straps.
 3. Padding: Burlap.
 4. Proprietary Palm-Bracing Devices: Proprietary systems to secure each new planting by trunk; sized per manufacturer's written recommendations unless otherwise indicated.
 - a. **Products:** Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - 1) [Arborbrace](#); ArborBrace Palm Bracing.
 - 2) [Horticultural Consultants, Inc.](#); Oasis Palm Tree Anchoring System.
 - 3) Or Approved Equal

1.17 MISCELLANEOUS PRODUCTS

- A. Root Barrier: 7/16-inch-hemisphere nodules through-injection-molded to 4-ounce-per-square-yard, durable, proven Typar® geotextile fabric or approved equal on 1.5-inch centers; with Trifluralin to diffuse from the protective nodules in vapor form, creating a root inhibition zone in the soil.
1. 24" Root Barrier by DeepRoot ub 24-2
 2. Or Approved Equal
- B. Antidesiccant: Water-insoluble emulsion, permeable moisture retarder, film forming, for trees and shrubs. Deliver in original, sealed, and fully labeled containers and mix according to manufacturer's written instructions. Provide one of the following or approved equal:
1. "Wilt-Pruf" by Nursery Specialty Products
 2. "D-Wax" by Plant Products
 3. "Pro-tex" by Protex Industries.
- C. Portable Drip Irrigation Units: Provide "Tregators" by Spectrum Products, 4200-152 Atlantic Avenue, Raleigh, NC 27604, Phone: 919-878-8911; FAX: 919-872-6173, or approved equal, in the following size:
1. Size: 20-gallon bag.

EXECUTION

1.18 EXAMINATION

- A. Examine areas to receive plants for compliance with requirements and conditions affecting installation and performance.
 - 1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
 - 2. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.
 - 3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
 - 4. Uniformly moisten excessively dry soil that is not workable and which is too dusty.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Owner's Representative and replace with new planting soil.
- D. Beginning of installation means acceptance of existing condition.

1.19 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities and turf areas and existing plants from damage caused by planting operations.
- B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
- C. Lay out individual tree and shrub locations and areas for multiple plantings. Stake locations, outline areas, adjust locations when requested, and obtain Owner's Representative's acceptance of layout before excavating or planting. Make minor adjustments as required.
- D. Lay out plants at locations directed by Owner's Representative. Stake locations of individual trees and shrubs and outline areas for multiple plantings.
- E. Apply antidessicant to trees and shrubs using power spray to provide an adequate film over trunks (before wrapping), branches, stems, twigs, and foliage to protect during digging, handling, and transportation.
 - 1. If deciduous trees or shrubs are moved in full leaf, spray with antidessicant at nursery before moving and again two weeks after planting.
- F. Wrap trees and shrubs with burlap fabric over trunks, branches, stems, twigs, and foliage to protect from wind and other damage during digging, handling, and transportation.

1.20 PLANTING AREA ESTABLISHMENT

- A. Slope all subgrades to positively drain plant beds.
- B. Loosen subgrade of planting areas to a minimum depth of 6 inches . Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
 - 1. Apply superphosphate fertilizer directly to subgrade before loosening.

2. Thoroughly blend planting soil off-site before spreading or spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil.
 - a. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.
 - b. Mix lime with dry soil before mixing fertilizer.
 - c. Prevent lime from contacting roots of acid-loving plants.
 3. Spread planting soil to a depth of 4 inches but not less than required to meet finish grades after natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.
 - a. Spread approximately one-half the thickness of planting soil over loosened subgrade. Mix thoroughly into top 4 inches of subgrade. Spread remainder of planting soil.
- C. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.
- D. Before planting, obtain Owner's Representative 's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

1.21 EXCAVATION FOR TREES AND SHRUBS

- A. Planting Pits and Trenches: Excavate circular planting pits with sides sloping inward at a 45-degree angle. Excavations with vertical sides are not acceptable. Trim perimeter of bottom leaving center area of bottom raised slightly to support root ball and assist in drainage away from center. Do not further disturb base. Ensure that root ball will sit on undisturbed base soil to prevent settling. Scarify sides of planting pit smeared or smoothed during excavation.
1. Excavate width as detailed on drawings.
 2. Do not excavate deeper than depth of the root ball, measured from the root flare to the bottom of the root ball.
 3. If area under the plant was initially dug too deep, add soil to raise it to the correct level and thoroughly tamp the added soil to prevent settling.
 4. Maintain required angles of repose of adjacent materials as shown on the Drawings. Do not excavate subgrades of adjacent paving, structures, hardscapes, or other new or existing improvements.
 5. Maintain supervision of excavations during working hours.
 6. Keep excavations covered or otherwise protected overnight.
 7. If drain tile is shown on Drawings or required under planting areas, excavate to top of porous backfill over tile.
- B. Subsoil and topsoil removed from excavations may not be used as planting soil.
- C. Obstructions: Notify Owner's Representative if unexpected rock or obstructions detrimental to trees or shrubs are encountered in excavations.
- D. Drainage: Notify Owner's Representative if subsoil conditions evidence unexpected water seepage or retention in tree or shrub planting pits.
- E. Fill excavations with water and allow to percolate away before positioning trees and shrubs.

1.22 TREE, SHRUB, AND VINE PLANTING

- A. Before planting, verify that root flare is visible at top of root ball according to ANSI Z60.1. If root flare is not visible, remove soil in a level manner from the root ball to where the top-most root emerges from the trunk. After soil removal to expose the root flare, verify that root ball still meets size requirements.

- B. Remove stem girdling roots and kinked roots. Remove injured roots by cutting cleanly; do not break.
- C. Set container-grown stock plumb and in center of planting pit or trench with root flare above adjacent finish grades as indicated on drawings.
- D. When planting on slopes, set the plant so the root flare on the uphill side is flush with the surrounding soil on the slope; the edge of the root ball on the downhill side will be above the surrounding soil. Apply enough soil to cover the downhill side of the root ball.

1.23 TREE, SHRUB, AND VINE PRUNING

- A. Remove only dead, dying, or broken branches. Do not prune for shape.
- B. Prune, thin, and shape trees, shrubs, and vines according to standard professional horticultural and arboricultural practices. Unless otherwise indicated by Owner's Representative, do not cut tree leaders; remove only injured, dying, or dead branches from trees and shrubs; and prune to retain natural character.
- C. Do not apply pruning paint to wounds.

1.24 TREE STABILIZATION – Replaces Sections 811.4.17 and 811.4.18

- A. Root-Ball Stabilization: Install at- or below-grade stabilization system to secure each new planting by the root ball unless otherwise indicated.
 - 1. Wood Hold-Down Method: Place vertical stakes against side of root ball and drive them into subsoil; place horizontal wood hold-down stake across top of root ball and screw at each end to one of the vertical stakes.
 - a. Install stakes of length required to penetrate at least 18 inches below bottom of backfilled excavation. Saw stakes off at horizontal stake.
 - b. Install screws through horizontal hold-down and penetrating at least 1 inch into stakes. Pre-drill holes if necessary to prevent splitting wood.
 - c. Install second set of stakes on other side of root trunk for larger trees as indicated.
 - 2. Proprietary Root-Ball Stabilization Device: Install root-ball stabilization system sized and positioned as recommended by manufacturer unless otherwise indicated and according to manufacturer's written instructions.
- B. Palm Bracing: Install bracing system at three or more places equally spaced around perimeter of trunk to secure each palm until established unless otherwise indicated.
 - 1. Site-Fabricated Palm-Bracing Method:
 - a. Place battens over padding and secure battens in place around trunk perimeter with at least two straps, tightened to prevent displacement. Ensure that straps do not contact trunk.
 - b. Place diagonal braces and cut to length. Secure upper ends of diagonal braces with galvanized nails into battens or into nail-attached blocks on battens. Do not drive nails, screws, or other securing devices into palm trunk; do not penetrate palm trunk in any fashion. Secure lower ends of diagonal braces with stakes driven into ground to prevent outward slippage of braces.
 - c. Proprietary Palm-Bracing Device: Install palm-bracing system sized and positioned as recommended by manufacturer unless otherwise indicated and according to manufacturer's written instructions.

1.25 ROOT-BARRIER INSTALLATION

- A. Install root barrier where indicated on Drawings.
 - 1. Install root barrier per manufacture's guidelines.

1.26 GROUND COVER AND PLANT PLANTING

- A. Set out and space ground cover and plants other than trees, shrubs, and vines as scheduled in even rows with triangular spacing.
- B. Use planting soil for backfill.
- C. Dig holes large enough to allow spreading of roots.
- D. For rooted cutting plants supplied in flats, plant each in a manner that will minimally disturb the root system but to a depth not less than two nodes.
- E. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water.
- F. Water thoroughly after planting, taking care not to cover plant crowns with wet soil.
- G. Protect plants from hot sun and wind; remove protection if plants show evidence of recovery from transplanting shock.

1.27 PLANTING AREA MULCHING

- A. Install weed-control barriers before mulching according to manufacturer's written instructions. Completely cover area to be mulched, overlapping edges a minimum of 6 inches.
- B. Mulch backfilled surfaces of planting areas and other areas indicated.
 - 1. Trees in Turf Areas: Apply mulch ring of minimum 3" thickness, with radius dimension as indicated on detailed drawings around trunks or stems. Do not place mulch within 3 inches of trunks or stems.
 - 2. Pine Mulch in Planting Areas: Apply minimum 3" thickness of organic mulch over whole surface of planting area and finish level with adjacent finish grades. Do not place mulch within 3 inches of trunks or stems.

1.28 PLANT MAINTENANCE

- A. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings. Spray or treat as required to keep trees and shrubs free of insects and disease.
- B. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.
- C. Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.
- D. Refill portable drip irrigation units ("Treegators") as required.

1.29 PESTICIDE APPLICATION

- A. Apply pesticides and other chemical products and biological control agents in accordance with authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.

- B. Pre-Emergent Herbicides (Selective and Non-Selective): Apply to tree, shrub, and ground-cover areas in accordance with manufacturer's written recommendations. Do not apply to seeded areas.
- C. Post-Emergent Herbicides (Selective and Non-Selective): Apply only as necessary to treat already-germinated weeds and in accordance with manufacturer's written recommendations.

1.30 CLEANUP AND PROTECTION

- A. During planting, keep adjacent paving and construction clean and work area in an orderly condition.
- B. Protect plants from damage due to landscape operations and operations of other contractors and trades. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged plantings.
- C. After installation and before Substantial Completion, remove nursery tags, nursery stakes, tie tape, labels, wire, burlap, and other debris from plant material, planting areas, and Project site.

1.31 DISPOSAL

- A. Remove surplus soil and waste material including excess subsoil, unsuitable soil, trash, and debris and legally dispose of them off Owner's property.

1.32 INSPECTION AND ACCEPTANCE

- A. When landscape work is substantially complete, Owner's Representative will make and inspection to determine acceptability.
 - 1. Landscape work may be inspected for acceptance in portions as agreeable to Owner's Representative, provided each portion of work offered for Inspection is complete, including maintenance.
 - 2. When work does not comply with requirements, replace rejected work and continue specified maintenance until reinspected by Owner's Representative and found to be acceptable. Remove materials promptly from project site.
 - 3. Following Owner's Representative's inspection of installed material, remove all flags, labels, tags, or other non-biodegradable materials from trees and shrubs.

END OF SPECIAL PROVISIONS

I. SPECIAL PROVISIONS – DAVIS & FLOYD – PHASE 1B

(Begins Next Page)

SPECIAL PROVISIONS

JOB NUMBER

31588.00

COUNTY

Colleton

This project is to be constructed under the South Carolina Department of Transportation's Specifications For Highway Construction Edition of 2007, the South Carolina Department of Transportation's 2004 Construction Manual, the **Supplemental Technical Specifications** in effect at the time of the letting, and the following Special Provisions.

- (1) **ERRATA TO 2007 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION:**
See attached Supplemental Specification dated **January 1, 2018** on page **1 of Phase 1B Supplemental Specifications**.
- (2) **SUPPLEMENTAL TECHNICAL SPECIFICATIONS:**
This project will utilize all appropriate Supplemental Technical Specifications including but not limited to SC-M-400, SC-M-401, SC-M-402, SC-M-403, SC-M-714, SC-M-815-(2 & 8). These may be downloaded at the link below.
<https://www.scdot.org/business/road-technical-specs.aspx>
- (3) **SUBMITTALS:**
All submittals, regardless of origin, shall be stamped with the approval of the Contractor and identified with the name and number of this Contract, Contractor's name, and references to applicable specification paragraphs and Contract Drawings. Each submittal shall indicate the intended use of the item in the work. When catalog pages are submitted, applicable items shall be clearly identified and inapplicable data crossed out. The current revision, issue number, and date shall be indicated on all drawings and other descriptive data.
The Contractor shall be solely responsible for the completeness of each submittal. Contractor's stamp of approval is a representation to the Owner and Engineer that the Contractor accepts sole responsibility for determining and verifying all quantities, dimension, field construction criteria, materials, catalog numbers, and similar data, and that the Contractor shall reviewed and coordinated each submittal with the requirements of the work and the Contract Documents.

Engineer's review of submittals covers only general conformity to the Drawings and Specifications, external connections, and dimensions that affect layout; it does not indicate thorough review of all dimensions, quantities, and details of the material, equipment, device, or item covered. Engineer's review shall not relieve Contractor of sole responsibility for errors, omissions, or deviations in the drawings and data, nor of Contractor's sole responsibility for compliance with the Contract Documents.

Engineer's submittal review period shall be the consecutive number of calendar days as required (30) and shall commence on the first calendar day following receipt of the submittal in the Engineer's office. The time required to mail the submittal back to the Contractor shall not be considered a part of the submittal review period.
- (4) **MANUFACTURERS MATERIALS CERTIFICATIONS AND CERTIFIED TEST REPORTS:**
The contractor shall supply the Resident Engineer with all required materials certifications and manufacturers test reports for items to be permanently incorporated into the project. These material certifications shall be provided prior to the materials use in the project. The Authority will supply the Resident Engineer with a list of required certifications and manufacturers tests based on the pay items and special provisions included in the proposals. The Resident Engineer must

approve these certifications and reports before payment can be made to the contractor for these items.

(5) SECTION 101: STANDARD DRAWINGS:

The Bidders are hereby advised that this project will be constructed using the 2019 Standard Drawings with all updates effective at the time of letting. The Standard Drawings are available for download at <http://206.74.144.33/falconwebv3/default.aspx>. All drawings that are updated are labeled with the effective letting date shown in the title block of the drawings with dates also displayed in SCDOT Standard Drawings section 000-000 under the Table of Contents.

The Standard Drawings are available to purchase through the SCDOT Engineering Publications Sales Center located in Room G-19 (basement level) of the SCDOT Headquarters Building, 955 Park Street, Columbia, South Carolina.

All references in the plans, standard specifications, supplemental specifications, supplemental technical specifications or special provisions to drawings under the previous numbering system are hereby updated to the new drawing numbers. Refer to sheets 000-105-1 through 000-105-15 to find new drawing numbers when looking for references to older drawing numbers.

(6) SECTION 106: QUALIFIED PRODUCT LISTINGS:

All references to "Approval Sheet" or "Approval Policy" are to be replaced with "Qualified Products Listing (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.

(7) SECTION 108: (PROSECUTION AND PROGRESS)

Section 108.9 (Failure to Complete the Work on Time)

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

"Authority and Contractor recognize that time is of the essence and that the traveling public and Department will suffer loss, inconvenience and other damage if the work is not substantially complete in accordance with the time(s) specified herein, which damages would be difficult if not impossible to ascertain. Accordingly, the Authority and the Contractor agree that as liquidated damages for delay (but not as a penalty) the Contractor shall pay the Authority the amounts stipulated below.

LIQUIDATED DAMAGES SCHEDULE

| | |
|---------------------------|----------------|
| <i>Liquidated Damages</i> | |
| <i>\$400</i> | <i>Per Day</i> |

(8) SOUTH CAROLINA MINING ACT:

See attached Supplemental Specification dated **March 20, 2003** on page **5 of Phase 1B Supplemental Specifications**.

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 <https://www.scdot.org/business/technicalPDFs/supTechSpecs/SC-M-810-4.pdf>.

(9) SECTION 103.8 CONTRACTOR’S LIABILITY INSURANCE:

Section 103.8 is hereby amended by adding the following sentence to the end of the last paragraph:

“The City of Walterboro shall be named as an additional insured.”

Delete the second sentence in paragraph 4.

Delete the third sentence in paragraph 5, and replace it with the following sentence:

Ensure that all policies contain a provision that coverage afforded under the policies cannot be cancelled or reduced by the Contractor until at least 30 days prior written notice has been provided to SCDOT and that the policies cannot be cancelled for non-payment of premiums until at least 10 days prior written notice has been provided to SCDOT. Send Notice of Cancellations to Director of Construction Room 330, PO Box 191, Columbia, SC 29202.

Add the following as paragraph 6 at the end of Subsection 103.8:

By execution of the contract, the Contractor accepts the responsibility to provide the liability insurance policies and endorsements as specified herein. Failure of SCDOT to identify a deficiency in the Certificate of Insurance submitted by the Contractor’s insurance agent as evidence of the specified insurance or to request other evidence of full compliance with the liability insurance specified shall not be construed as a waiver of the Contractor’s obligation to provide and maintain the required insurance for the duration of the contract.

(10) SECTION 105: CONSTRUCTION STAKES, LINES AND GRADES:

Section 105.8.2 applies to this project. Payment for this work shall be made according to the following schedule:

| Percent Contract Complete | Percent of Stakes, Lines, and Grades bid amount to be paid |
|---------------------------|--|
| 1-5 | 20 |
| 6-15 | 40 |
| 16-29 | 60 |
| 30-49 | 70 |
| 50-69 | 80 |
| 70-89 | 90 |
| 90-100 | 100 |

(11) SECTION 107: 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. Due to the limited Right-of-Way available and the project utilizing an existing drainage system which can't be relocated, coordination with utility contractors on relocations and grade adjustments should be anticipated.

It is the responsibility of the Contractor to call South Carolina 811 (811) three (3) days prior to work so that existing utilities can be properly marked.

(12) SECTION 107.13 – LOW SHOULDER SIGNS:

In accordance with Section 107.13, the Engineer and the Contractor shall inspect the roads in this contract to determine low shoulder conditions. If low shoulder signs are needed, they will be measured and paid at the unit price bid for Permanent Construction Signs. If there is not a bid item for Permanent Construction Signs, a Supplemental Agreement will be required.

(13) SECTION 107: CRANE SAFETY (REVISED 05/01/2011):

See attached Supplemental Specification dated **August 1, 2013** on page **7 of Phase 1B Supplemental Specifications**.

(14) SECTION 108: CRITICAL PATH METHOD CONSTRUCTION SCHEDULES:

See Attached Supplemental Specification dated **March 1, 2007** on page **8 of Phase 1B Supplemental Specifications**.

The attached specification is hereby modified by changing the first sentence in the section entitled "Submission, Review, and Acceptance Process – Monthly Updates" to the following: "Monthly updates shall be made no later than 15 days following the most recent estimate period end date and shall have a data date the same as the most recent estimate period end date."

(15) SECTION 108: NOTICE TO PROCEED:

Section 108.2 is hereby revised to include the following:

A Notice to Proceed Date shall be determined at the Preconstruction Conference that will be held within thirty (30) calendar days of the Award Date. The Notice to Proceed Date shall not be more than forty-five (45) calendar days after the Date of Award unless extenuating circumstances such as utility conflicts occur which are beyond the control of the Contractor as determined by the Engineer.

(16) SECTION 109: RETAINAGE

The Engineer will retain 10 percent of the amount of each partial payment until final completion and acceptance of the work. After 50 percent of the work has been completed, the Contractor may request that the remaining partial payment be made in full and no retainage withheld. If the Engineer agrees that acceptable progress is being made additional retainage will not be withheld. All retainage, subject to any liquidated damages, will be paid to the Contractor with the final payment

(17) AS-BUILT CONSTRUCTION PLANS:

See attached Supplemental Specification dated **November 4, 2009** on page **13 of Phase 1B Supplemental Specifications**.

(18) PROMPT PAYMENT CLAUSE:

See attached Supplemental Specification dated **July 1, 2017** on page **14 of Phase 1B Supplemental Specification**.

(19) SUBLETTING OF CONTRACTS (SPECIALTY ITEMS);

The following items of work, when not performed by the Prime Contractor, will be designated as Specialty Items in all contracts in which the item does not constitute thirty percent (30%) or more of the original contract value:

- | | |
|----------------------------------|-----------------------------|
| Pavement Markings | Permanent Roadway Signs |
| Guardrail | Signalization |
| Milling Asphalt Pavement | Electrical/Lighting |
| Grassing | Specialized Retaining Walls |
| Landscaping | Fencing |
| Erosion Control | Right of Way Surveying |
| Permanent Construction Signs | Railroad Track Work |
| Utilities | Jacking and Boring |
| Contaminated Soil & Tank Removal | Bridge Floor Grooving |
| Bridge Barrier Walls | Milled Rumble Strips |
| Traffic Count Stations | Buildings |
| Drilled Shafts & Casings | Navigational Lighting |
| Pier Fender Systems | Sound Barrier Walls |

(20) MAINTENANCE OF TRAFFIC:

In addition to the Contractor maintaining traffic throughout the length of this project as required by the Specification, it will also be necessary that the Contractor, prior to beginning any work, submit to the Resident Construction Engineer for approval his plan for constructing these projects. Because construction of the median will require the removal of existing concrete pavement, lane closures will be required and the installation of the medians will have to be scheduled around the construction of the sidewalk. At least one lane of traffic will have to be open at all times. During hurricane season; the contractor must have a plan to restore two lanes of traffic in the direction of evacuation with two days' notice from the City or SCDOT.

(21) REQUIRED MEDIA NOTIFICATION FOR CONSTRUCTION PROJECTS:

Contractors are encouraged to cooperate 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 cooperate with the media. However, the safety, security and construction schedule on site should not be disrupted in order to accomplish this.

(22) SITE EXCAVATION:

Borrow pit location – Borrow material for this project shall not be obtained from wetlands, streams, or rivers. For material brought onto site, contractor shall provide proctor results and classifications to ensure borrow material meets SCDOT specifications. All payment for excavation, borrow and testing shall be included in payment for site excavation.

(23) SECTION 208: FINE GRADING:

See attached Supplemental Specification dated **January 4, 2012**, on page **16 of Phase 1B Supplemental Specifications**.

(24) SECTION 305: MAINTENANCE STONE:
 Maintenance Stone used on this project shall conform to the gradation requirements or Section 305, or to the gradation specified for Aggregate No. CR-14 in the Standard Specifications.

(25) SECTION 401: ASPHALT BINDER AND ADDITIVES
 See attached Supplemental Specifications dated **March 1, 2016** on page **17 of Phase 1B Supplemental Specifications**.

(26) SECTION 401: ASPHALT BINDER ADJUSTMENT INDEX:
 See attached Supplemental Specifications dated **March 3, 2009** on page **19 of Phase 1B Supplemental Specifications**. For this project the Basic Bituminous Material Index will be determined on the first calendar day of the month in which this project is let. The index and adjustment table will be available on the internet at www.scdot.org/doing/monthlyindexes.asp, or may be obtained from the office of the Contracts' Administrator.

All items of work included in this project, that are listed in the table entitled "Items of Work Eligible for A.C. Binder Adjustments" below paragraph 4 of the Supplemental Specification, will be subject to price adjustment.

(27) SECTION 401: TRANSPORTATION AND DELIVERY OF MIXES:
 See attached Supplemental Specifications dated **July 1, 2010** on page **21 of Phase 1B Supplemental Specifications**.

(28) FULL DEPTH ASPHALT PAVEMENT PATCHING (8" UNIFORM):

Description: This work shall consist of the removal of a deteriorated pavement and replacing with a full depth asphalt plant mix patch.

Construction Process: The deteriorated pavement shall be removed to the width and length indicated by the Engineer, with the face of the cut being straight and vertical. The pavement shall be removed to the depth indicated in the plans. In the event unstable material is encountered at this point, then such additional material shall be removed as directed by the Engineer. The volume of material removed below the patch shall be backfilled with crushed stone and thoroughly compacted in 4-inch layers with vibratory compactors. Prior to placing the asphalt patch material in the hole, the sides of the existing asphalt pavement shall be thoroughly tacked. The patch material shall then be placed in layers not exceeding 3 inches with each layer being thoroughly compacted with a vibratory compactor. The patch material shall be an approved SCDOT Asphalt Concrete Binder Course Mix. The work shall be conducted so that the patches are removed and replaced each day, with the roadway being opened to traffic by late afternoon. The finished patch shall be smooth riding.

Measurement and Payment: The quantity to be measured for payment shall be the number of square yards (square Meters) of Full Depth Asphalt Pavement Patching completed and accepted. The price and payment shall be full compensation for furnishing all materials including plant mix, asphalt cement, excavating and disposing of all material, labor, equipment, tools, and incidentals necessary to complete the work.

Any crushed stone necessary for backfilling below the specified depth shall be measured and paid for at the contract price for Maintenance Stone.

(29) SECTION 401: MATERIAL FOR FULL DEPTH PATCHING:
 Section 401.2.5 of the Standard Specifications is hereby deleted, and replaced with the following:

Section 401.2.5 Material for Full Depth Patching

Use an approved SCDOT Intermediate Type C Mix for all Full Depth Patching.

(30) DIVISION 600: TRAFFIC CONTROL – HOLIDAY RESTRICTIONS:

See attached Supplemental Specification dated **September 1, 2015** on page **22 of Phase 1B Supplemental Specifications**.

(31) DIVISION 600: 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.

All signs mounted on portable sign supports shall have a minimum mounting height of 5' from the ground to the bottom of the sign. All signs mounted on ground mounted u-channel posts shall have a minimum mounting height of 7' from the ground to the bottom of the sign.

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. Install these signs no further than 500 feet in advance of the beginning of this pavement condition on primary routes with speed limits of 60 MPH or less and no less than 500 feet in advance of the beginning of this pavement condition on interstate routes. 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 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 107-2004 standard performance for Class 3 risk exposure or latest revisions and a 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".

LANE CLOSURE RESTRICTIONS -

The Contractor shall install all lane closures as directed by the 2007 Standard Specifications For Highway Construction, 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 roadways as directed by the typical traffic control standard drawings designated for lane closures on primary routes.

The Department prohibits lane closures on primary routes during any time of the day that traffic volumes exceed 800 vehicles per hour per direction. 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 restriction 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 restriction 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.

The Department reserves the right to suspend a lane closure if any resulting traffic backups are deemed by the Engineer. Maintain all lane closure restrictions as directed by the Standard Specifications, these special provisions, and the Engineer.

SHOULDER CLOSURE RESTRICTIONS -

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.

TYPICAL TRAFFIC CONTROL STANDARD DRAWINGS -

The typical traffic control standard drawings of the "Standard Drawings For Road Construction", although compliant with the MUTCD, shall take precedence over the MUTCD. The typical traffic control standard drawings of the "Standard Drawings For Road Construction" shall apply to all projects let to contract.

Install the permanent construction signs as shown on the typical traffic control standard drawings for permanent construction signing. Payment for the Permanent Construction Signs shown on these sheets shall be paid for under the Bid Item – Permanent Construction Signs per

Square Foot. Signs not illustrated on the above sheets shall be considered temporary and shall be included in the lump sum price bid item for "Traffic Control" unless otherwise specified.

ADDENDUMS

(Addendums to the "2007 Standard Specifications for Highway Construction")

(A) Trailer-Mounted Changeable Message Signs -

Sub-section 606.5 Measurement (paragraph 2) -

Trailer-mounted changeable message signs are included in the lump sum item for Traffic Control in accordance with **Subsections 107.12** and **601.5** of the "2007 Standard Specifications for Highway Construction". No separate measurement will be made for trailer-mounted changeable message signs unless the contract includes a specific pay item for trailer-mounted changeable message signs.

The Contractor shall provide, install, operate, and maintain the trailer-mounted changeable message sign per traffic control set-up as directed by the Plans, the "Standard Drawings for Road Construction", these Special Provisions, the Specifications, and the Engineer.

Sub-section 606.6 Payment (paragraph 2) -

In addition to **Subsections 107.12** and **601.6**, the payment for Traffic Control is full compensation for providing, installing, removing, relocating, operating, and maintaining trailer-mounted advance warning arrow panels and trailer-mounted changeable message signs as specified or directed and includes providing the units' primary power source; repairing or replacing damaged or malfunctioning units within the specified time; providing traffic control necessary for installing, operating, and maintaining the units; and all other materials, labor, hardware, equipment, tools, supplies, transportation, incidentals, and any miscellaneous items necessary to fulfill the requirements of the pay item in accordance with the Plans, the Specifications, and other items of the Contract.

Sub-section 606.6 Payment (paragraph 3) -

Disregard this paragraph unless the Contract includes a specific pay item for trailer-mounted changeable message signs.

(B) Temporary Concrete Barrier –

Sub-section 605.2.3.2 Temporary Concrete Barrier (paragraph 6) -

Previously used temporary concrete barrier walls are subject to inspection and approval by the RCE before use. Ensure that previously used temporary concrete barrier walls are in good condition. Defects to a temporary concrete barrier wall that may disqualify a section of wall for use include gouges, cracks, chipped, or spalled areas. A defect that exposes reinforcing steel warrants immediate disqualification. A disqualification grade type defect shall consist of measurements in excess of 1 inch, entirely or partially within the boundaries of the end connection areas and the drainage slot areas as illustrated in the "Standard Drawings for Road Construction", and/or in excess of 4 inches for all areas beyond the end connection areas. To warrant disqualification, these measurements shall exceed the specified dimensions in all three directions, width, height, and depth. A defect that exceeds the specified dimensions in only one or two of the three directions does not warrant disqualification.

Temporary concrete barrier walls with defects less than 6 inches in all three directions, width, height, and depth that do not expose reinforcing steel may be repaired in accordance with the following requirements. Repair is prohibited on temporary concrete barrier walls with defects 6 inches or greater in all three directions, width, height, and depth.

For repair of temporary concrete barrier walls with defects less than 6 inches in all three directions, width, height, and depth that do not expose reinforcing steel, repair the defect with a pre-manufactured patching material specifically fabricated for patching structural concrete. The strength of the patch must meet or exceed the design strength of the class 3000 concrete of the temporary concrete barrier wall. Perform the repair procedures in accordance with all requirements and instructions from the manufacturer of the patch material. Use a bonding compound between the patch material and the concrete unless specifically stated by the manufacturer that a bonding compound is not required. If the manufacturer states that application of a bonding compound is optional, SCDOT requires application of a bonding compound compatible with the patch material. If cracking occurs within the patched area, remove the patch material completely and repeat the repair process. The contractor shall submit documentation stating all repairs have been conducted in accordance with these requirements prior to installing any temporary concrete barrier walls with repairs. Utilization of temporary concrete barrier walls with repairs shall require approval by the RCE prior to installation.

The Contractor shall submit certification documents for the patch material utilized for repairs to the Engineer prior to placing temporary concrete barrier walls that have been repaired on the project site.

(C) Construction –

Sub-section 601.4.2 Construction Vehicles (paragraph 2) -

The Contractor shall have flaggers available to control all construction vehicles entering or crossing the travel lanes of secondary and primary routes. The RCE shall determine the necessity of these flaggers for control of these construction vehicles. The RCE shall consider sight distance, vertical and horizontal curves of the roadway, prevailing speeds of traffic, frequency of construction vehicles entering or crossing the roadway, and other site conditions that may impact the safety of the workers and motorists when determining the necessity of these flaggers. Ensure that these flaggers do not stop traffic, cause traffic to change lanes, or affect traffic in any manner. The Contractor's vehicles may not disrupt the normal flow of traffic or enter the travel lane of the roadway until a sufficient gap is present.

(D) Category I Traffic Control Devices –

Sub-section 603.2.2 Oversized Traffic Cones (paragraph 6) -

Reflectorize each oversized traffic cone with 4 retroreflective bands: 2 orange and 2 white retroreflective bands. Alternate the orange and white retroreflective bands, with the top band always being orange. Make each retroreflective band not less than 6 inches wide. Utilize Type III – Microprismatic retroreflective sheeting for retroreflectorization on all projects let to contract after May 1, 2010 unless otherwise specified. Separate each retroreflective band with not more than a 2-inch non-reflectorized area. Do not splice the retroreflective sheeting to create the 6-inch retroreflective bands. Apply the retroreflective sheeting directly to the cone surface. Do not apply the retroreflective sheeting over a pre-existing layer of retroreflective sheeting.

Sub-section 603.2.3 Portable Plastic Drums (paragraph 3) -

Reflectorize each drum with Type III – Microprismatic retroreflective sheeting: 2 orange and 2 white retroreflective bands, 6 inches wide on all projects let to contract after May 1, 2010 unless otherwise specified. Alternate the orange and white retroreflective bands with the top band always being orange. Ensure that any non-reflectorized area between the orange and white

retroreflective bands does not exceed 2 inches. Do not splice the retroreflective sheeting to create the 6-inch retroreflective bands. Apply the retroreflective sheeting directly to the drum surface. Do not apply the retroreflective sheeting over a pre-existing layer of retroreflective sheeting.

(E) Truck-Mounted Attenuator –

Sub-section 605.4.2.2 Truck-Mounted Attenuators (paragraph 6) -

Attach each truck-mounted attenuator to the rear of a truck with a minimum gross vehicular weight (GVM) of 15,000 pounds (actual weight). 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 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 part from the frame of the truck during an impact upon the attached 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 and shall not protrude from the steel structure in any manner.

(F) Flagging Operations-

Sub-section 610.4.1.11 Flagging Operations (paragraph 1) –

Use a flagging operation to control the flow of traffic when two opposing directions of traffic must share a common travel lane. A flagging operation may be necessary during a land closure on a two-lane two-way roadway, an intermittent ramp closure or an intermittent encroachment of equipment onto a portion of the roadway. Utilize flagging operations to direct traffic around work activities and maintain continuous traffic follow at reduced speeds when determined to be appropriate by the RCE. As stated above, flagging operations shall direct traffic around the work activities and maintain continuous traffic flow, therefore, stopped traffic shall not be required to stop for time durations greater than those listed below unless otherwise directed by the RCE.

| Length of Closure | Maximum time duration for Stopped Traffic |
|-------------------|---|
| 1 Mile or Less | 5 Minutes |
| 1 to 2 Miles | 7 ½ Minutes |

If the work activities require traffic to be stopped for periods greater than 5 to 7 ½ minutes as stated above, consider alternate work methods, conducting work activities during times of lowest traffic volumes such as during the hours of darkness or complete road closure with detour installation.

(32) DIVISION 600: TRAILER MOUNTED AUTOMATED FLAGGER ASSISTANCE DEVICE SYSTEM (AFAD):

See attached Supplemental Specification dated **September 1, 2012** on page **24 of Phase 1B Supplemental Specifications**.

(33) DIVISION 600: WORK ZONE TRAFFIC CONTROL TRAINING REQUIREMENTS FOR CONTRACTORS / SUBCONTRACTORS:

See attached Supplemental Specification dated **September 1, 2013** on page **29 of Phase 1B Supplemental Specifications**.

(34) DIVISION 600: ADHESIVELY BONDED ANCHORS AND DOWELS:

See attached Supplemental Specification dated **September 1, 2008** on page **32 of Phase 1B Supplemental Specifications**.

This Supplemental Specification applies when Adhesively Bonded Anchors or Dowels are called for in the Plans or Detailed Drawings.

The following Standard Drawings have been identified as showing Adhesively Bonded Anchors or Dowels:

| | |
|------------|---|
| 605-205-03 | Temporary Concrete Barrier |
| 605-210-04 | Temporary Concrete Barrier |
| 605-310-01 | Temporary Concrete Barrier |
| 605-315-00 | Temporary Concrete Barrier |
| 605-320-00 | Temporary Concrete Barrier |
| 605-325-00 | Temporary Concrete Barrier |
| 605-330-00 | Temporary Concrete Barrier |
| 651-105-00 | Barrier Mounted Sign Post |
| 657-100-00 | Overhead Sign Support Roadway Bridges |
| 722-105-01 | Box Culvert (Used to connect headwall, wingwalls, and for extensions) |
| 805-120-00 | Guardrail (W Beam) Base Plate Connection |
| 805-405-03 | Guardrail (Tubular Beam) Bridge Railing |
| 805-405-04 | Guardrail (Tubular Beam) Bridge Railing |
| 806-505-00 | Fence (Ornamental Steel Picket) |

It is the contractor's responsibility to determine if Adhesively Bonded Anchors or Dowels are a part of the project, and to comply with the provisions of the Supplemental Specification.

(35) DIVISION 600: MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES:

The Contractor is 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 be in compliance with 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. for use on all projects. All references to the South Carolina Manual on Uniform Traffic Control Devices (SCMUTCD) are hereby revised to read "MUTCD – 2009 Edition".

(36) SECTION 605: PERMANENT CONSTRUCTION SIGNS:

Utility locations must be performed prior to the placement of Permanent Construction Signs. State Law requires that the location of each sign be marked with a white line in the roadway or a stake in the shoulder. The locator company will mark 25 feet on either side of the location. The responsibility for marking the sign locations prior to the contractor calling PUPS for utility locate lies with the party responsible for lines and grades on the project. If Construction Lines and Grades is a pay item, then the Prime Contractor is responsible for marking the sign location. If this is not included, it is the Department's responsibility to mark the locations. Prior to marking the sign location, care must be taken when marking the signs to ensure that there are no obstructions or other mitigating factors that will cause the sign to be moved outside of the 50 foot utility window. Any costs associated with staking out the sign locations are considered incidental to the cost of Permanent Construction Signs. Requests for utility locates must be specific and isolated to the sign locations if no ground disturbing activities are occurring outside of the sign placement.

(37) SECTION 610: WORK ZONE TRAFFIC CONTROL PROCEDURES:

The first sentence of Section 610.3 of the 2007 Standard Specifications is hereby revised to:

“Ensure that background color of personal protective apparel is either fluorescent Yellow-Green or fluorescent Orange-Red, and meets ANSI Standard 107-2004 National Standard for High Visibility Apparel Class 2 (or Class 3 as necessary) Performance Criteria, or latest edition.”

Note #12 of Standard Drawing 610-005-00 is hereby revised to:

“During nighttime flagging operations, flaggers shall wear a Safety Vest and Safety Pants meeting ANSI Standard 107-2004 National Standard for High Visibility Apparel Class 3 Performance Criteria, or Latest Edition, and a Hardhat. The color of the apparel background material shall be either fluorescent Yellow-Green or fluorescent Orange-Red.”

- (38) **SECTION 702: CONCRETE STRUCTURES – PREFORMED JOINT FILLER:**
See attached Supplemental Specification dated **April 1, 2013** on page **36 of Phase 1B Supplemental Specifications**.

- (39) **SECTION 815: EROSION CONTROL MEASURES:**
See attached Supplemental Specification dated **January 1, 2018**, on page **37 of Phase 1B Supplemental Specifications**.

- (40) **SEEDING AND EROSION CONTROL MEASURES:**
In addition to all the erosion control measures specified in the Standard Specifications, the plans and these Special Provisions, the Contractor shall construct all erosion control devices promptly as directed by the Engineer. Sodding or seeding of all disturbed areas shall be carried out as the grading progresses. Failure of the Contractor to comply promptly and adequately with all the required erosion control measures and seeding will result in stopping all contract operations until corrective action has been taken.

- (41) **SECTION 810: PRE-CONSTRUCTION CONFERENCE CERTIFICATION FORM & CONTRACTOR CERTIFICATION FORM:**
In accordance with the NPDES General Permit (effective January 1, 2013), all Contractors and Sub-contractors must attend a Pre-construction Conference and sign the Pre-Construction Conference Certification Form. The Contractor Certification Form must be completed by all Contractors and Sub-contractors prior to beginning work. Section A-C must be completed by the Contractor. Section C (Company Certifications) is required to be completed by all Sub-contractors. A Contractor or Sub-contractor that does not attend a Pre-Construction Conference and sign the contractor certification agreements will not be permitted to perform work on this project. No additional compensation will be made in association with this Conference or Certification.

- (42) **CONCRETE SIDEWALK (4” UNIFORM) OYSTER SHELL FINISH**
Concrete shall meet requirements of section 720 of the SCDOT specifications and be a minimum Class 3000.

OYSTER SHELL

Oyster Shell for Tabby Finish: No. 2 and 3 size gradations in 50/50 mix.
A 10lb sample of oyster shell shall be submitted for approval prior to installation. Contractor shall submit the method of shell application to owner for approval.

MEASUREMENT AND PAYMENT

Measurement

Sidewalk will be measured per section 720.5 of the SCDOT specifications.

Payment

Payment shall be made per section 720.6 of the SCDOT specifications and shall also include all materials, equipment and labor to install the oyster shell finish.

(43) SCE&G COORDINATION

Contractor to coordinate with and allow SCE&G to install foundations, electrical conduit and other lighting elements prior to the concrete being poured for the sidewalk. All costs associated with this coordination shall be incidental and included in the bid items provided.

(44) MAST ARM

Mast arms shall be provided per the lengths shown on the plans and shall be the type shown on Union Metal drawing number 50603-B382 dated 6/13/14. This drawing is included in the supplemental technical specifications.

(45) FOUNTAIN STRUCTURE

Refer to Geotechnical Engineering Report (Walterboro Fountain) in the appendices for additional compaction requirements and design recommendations.

(46) Utility Connections for Fountain

In addition to providing all the materials, equipment and labor to install the fountain per the drawings and specifications contained within the plan set and these specifications, the Contractor is also responsible for the utility connections and tap fees. The contractor shall provide for a drain line to the City of Walterboro Sewer line, water connection, and electrical connection. Applications and a schedule of tap fees are included in this provision for reference. Contractor is responsible for all costs to make the connections and associated fees including tap fees and traffic control necessary to make the connections.

See the sketch included for possible locations of utility connections. All costs associated with open cutting the street and making the tap for both the water and sewer connection shall be included. This includes the cost for restoring any items removed or damaged during installation.

Include utility coordination drawing, tap fees, and fee schedule following the payment section.

MEASUREMENT AND PAYMENT

Measurement

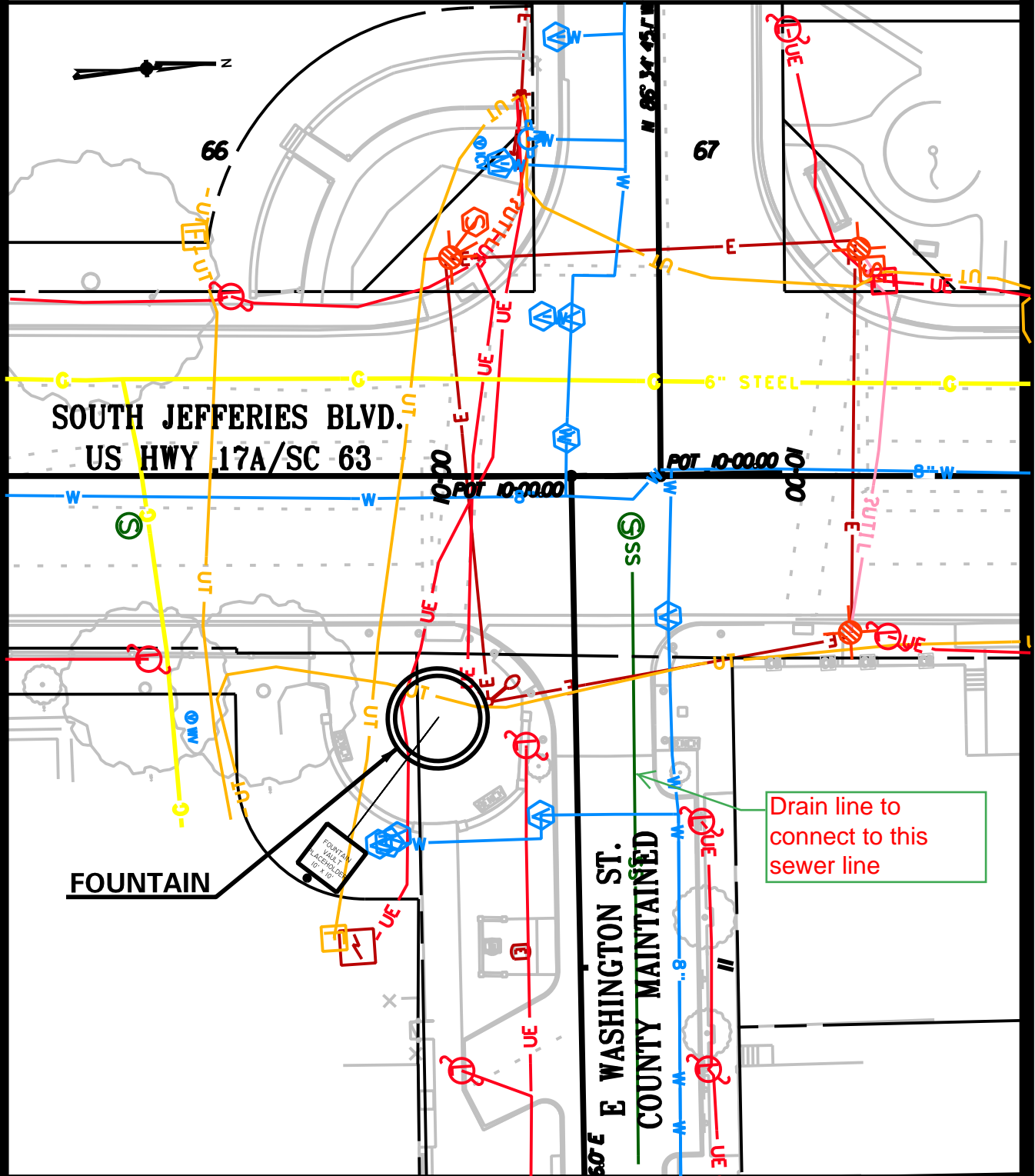
The work will be considered complete when the City and SCDOT are satisfied the connections are complete and the fountain is fully operational.

Payment

Payment for this item will be lump sum. The City may agree to make a partial payment to cover materials for the connections and tap fees. Applications and a schedule of tap fees are included here for reference.

CITY OF WALTERBORO

FOUNTAIN AT THE CORNER OF E WASHINGTON ST. AND S JEFFERIES BLVD.
UTILITY EXHIBIT



0 30
SCALE  FEET

FOUNTAIN UTILITY EXHIBIT
I-95 BUSINESS LOOP
PHASE 1B

City of Walterboro

248 Hampton Street

Walterboro, South Carolina, 29488-3525

Telephone:
(843) 782-1065

Fax:
(843) 549-7725

SEWER TAP APPLICATION

Date:

Name:

Job Address:

Tax Map #

Phone Number:

Type of Service: Residential Commercial

Location: Inside City Outside City \$_____

Plumber/Engineer:

Use of Location: Residential Business Restaurant Motel

Directions:

Applicants Signature

Director/Superintendent Approval

Date:_____

Date:_____

THIS TAP WAS INSTALLED ON _____ BY _____

City of Walterboro

248 Hampton Street

Walterboro, South Carolina, 29488-3929

Telephone:
(843) 782-1065

Fax:
(843) 549-7725

WATER TAP APPLICATION

Date: _____

Name: _____

Address: _____

Phone Number: _____

Size: 3/4" 1" 1 1/2" 2"

Type of Service: Residential Irrigation Commercial

Location: Inside City Outside City

Directions:

Will you be obtaining sewer services from the City of Walterboro? YES NO

*******IF YOU INTEND TO TIE AN IRRIGATION SYSTEM TO THIS METER, A BACKFLOW PREVENTER MUST BE INSTALLED. ALL NEW TAPS MUST HAVE PERSONAL CUT OFF VALVES INSTALLED PRIOR TO ACTIVATION OF SERVICE. THIS INSTALLATION MAY TAKE UP TO 2 WEEKS DUE TO STATE REGULATIONS.**

Applicants Signature: _____

Customer Copy: _____

*****OFFICIAL USE ONLY*****

APPROVED OR DENIED: _____

Supervisor Signature: _____

ORDINANCE # 2018-05

**AN ORDINANCE OF THE CITY OF WALTERBORO, SOUTH CAROLINA,
AMENDING THE COMPREHENSIVE FEE SCHEDULE FOR THE UTILITY
SUPPORT DEPARTMENT.**

WHEREAS, the City of Walterboro from time to time must review its fees and charges and make adjustments as necessary; and

WHEREAS, the need to maintain a comprehensive fee schedule for all City of Walterboro fees is necessary; and

WHEREAS, the fees recommended by the Mayor and Walterboro City Council are as follows:

NOW, THEREFORE, BE IT ORDAINED by the Mayor and Council of the City of Walterboro, the following fees are amended or adopted:

UTILITY SUPPORT DEPARTMENT FEES:

WATER

Minimum Charges (Bi-Monthly Billing)

| <u>Service Size/Type</u> | <u>In-City</u> | <u>Out-of City</u> |
|--------------------------|----------------|--------------------|
| 3/4" Residential | \$22.31 | \$46.22 |
| 3/4" Commercial | \$28.68 | \$60.21 |
| 1" Residential | \$34.44 | \$84.28 |
| 1" Commercial | \$40.13 | \$96.36 |
| 1 1/4" Residential | \$45.87 | \$108.38 |
| 1 1/4" Commercial | \$51.61 | \$120.40 |
| 1 1/2" Residential | \$54.45 | \$129.42 |
| 1 1/2" Commercial | \$60.22 | \$141.49 |
| 2" Residential | \$94.62 | \$231.77 |
| 2" Commercial | \$100.34 | \$243.83 |
| 3" Residential | \$180.61 | \$454.50 |
| 3" Commercial | \$186.34 | \$466.52 |
| 4" Residential | \$352.58 | \$899.91 |
| 4" Commercial | \$358.32 | \$911.95 |
| 6" Residential | \$696.55 | \$1,787.75 |
| 6" Commercial | \$728.09 | \$1,799.81 |
| 8" Residential | \$1,384.47 | \$3,563.46 |
| 8" Commercial | \$1,390.21 | \$3,575.50 |

Usage Rates

| | <u>In-City</u> | <u>Out-of-City</u> |
|------------------|----------------|--------------------|
| First 4,000 | Included in | Minimum |
| Next 36,000 | \$1.48 | \$2.98 |
| Next 160,000 | \$1.35 | \$2.70 |
| All over 200,000 | \$1.23 | \$2.45 |

Water Tap Fees

| <u>Service Size</u> | <u>In-City</u> | <u>Out-of-City</u> |
|---------------------|----------------|--------------------|
| 3/4" | \$589.05 | \$1,178.10 |
| 1" | \$610.05 | \$1,220.10 |
| 1 1/2" | \$750.75 | \$1,501.50 |
| 2" | \$2,326.80 | \$4,653.60 |
| Over 2" | Cost plus 20% | |

SEWER**Usage Rates - Per Thousand**

| <u>In-City</u> | <u>Out-of-City</u> |
|----------------|--------------------|
| \$4.31 | \$8.15 |

Sewer Tap Fees

| | <u>In-City</u> | <u>Out-of-City</u> | |
|------------------|----------------|--------------------|-----------------|
| Residential | \$376.95 | \$753.90 | |
| Restaurant | \$3,794.70 | \$7,589.40 | |
| Motel/Apartments | \$1,517.25 | \$3,034.50 | 1st unit |
| | \$91.18 | \$182.35 | each additional |
| Business | \$753.90 | \$1,507.80 | |

Administrative

| | |
|--|----------|
| Late Fee | \$10.00 |
| Processing cut-off/on fee | \$30.00 |
| Water meter removal/replacement | \$50.00 |
| Deposit | \$100.00 |
| Turn on/off service fee | \$5.00 |
| Tampering fee | \$100.00 |
| Terminate/restore tap fee | \$400.00 |
| Missed appointment fee 3 rd visit | \$25.00 |

SANITATION

Garbage Fees

| | |
|--------------------------|----------|
| Residential rollout | \$25.00 |
| Commercial rollout | \$27.82 |
| Dumpster - 1 pickup/wk | \$228.70 |
| Extra pickup on dumpster | \$29.83 |
| Sharing dumpster | \$114.35 |

This Ordinance shall become effective July 1, 2018.

DONE, this _____ day of June, 2018.

William T Young, Jr.
Mayor

ATTEST:

Betty J. Hudson
Municipal Clerk

First Reading: _____
Public Hearing: _____
Second Reading: _____

(51) TRAFFIC SIGNAL SPECIAL PROVISIONS

1. GENERAL PROVISIONS -

- a. All work under this Contract shall be performed under: the SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION, "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION", Latest Edition; the SCDOT SUPPLEMENTAL SPECIFICATIONS FOR TRAFFIC SIGNALS; the SCDOT STANDARD DRAWINGS; these SCDOT TRAFFIC SIGNAL SPECIAL PROVISIONS; the "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" (latest revision); the SCDOT TRAFFIC SIGNAL DESIGN GUIDELINES; and the PLANS.
Traffic signal specifications and provisions may be downloaded at the following link:
<https://www.scdot.org/business/traffic-signals.aspx>
- b. Unless noted otherwise on the plans or in these Special Provisions this is a "turn-key" project, with the contractor furnishing and installing all equipment, complete and operational to the satisfaction of the Engineer.
- c. The PLANS are schematic in nature, showing what is generally expected at each intersection. The CONTRACTOR must devise/refine the final details, working within the Supplemental Specifications, the Design Details, the Standards, and with the Engineer.
- d. Any deviation from the Plans must be approved by the Engineer.
- e. At Project completion all traffic signals/equipment shall be complete and operational, to the satisfaction of the Engineer.
- f. The CONTRACTOR will install the traffic signal to provide a completely modern installation.
- g. Notifications
Prior to beginning construction, the CONTRACTOR shall participate in a "Pre-Construction Conference" at a time and place to be scheduled by the Department's Resident Construction Engineer (RCE).
- h. Unauthorized Work
Any work performed without notification of the proper parties in the Department, will be treated as unauthorized work (see Section 105.11 of the Standard Specifications), and could result in nonpayment to the CONTRACTOR for that work.
- i. Power
The CONTRACTOR, prior to the beginning of any construction activity, shall coordinate as necessary with the Utility Company supplying the power for this project. A representative of the Utility Company should be present at the RCE's Pre-Construction Conference.
- j. Maintenance during construction
The contractor shall be responsible for the maintenance and operation of all existing signals until the final acceptance of the project. Final acceptance occurs 60 days after all punch list items are completed and signal is accepted by SCDOT.
This shall include all daily maintenance of signals and any emergencies which may arise. There is no separate pay item for maintenance during construction; maintenance is simply part of the construction process. Additional details on maintenance responsibility are found in these Special Provisions, *Section 6 Maintenance of Operations* and in *the SCDOT Traffic Signal Supplemental Specifications, 675.0 General Provisions*.

2. EQUIPMENT

Contractor Supplied Equipment

- i. The CONTRACTOR shall furnish all **new** equipment, including incidental items; used, refurbished equipment will not be accepted.
- ii. Compatibility
 1. To insure compatibility, any additional equipment required during the life of this contract, as Change Order or Extra Work, shall be purchased by the CONTRACTOR from the same Manufacturer as the original item.
 2. When installing equipment such as signal heads or pedestrian equipment, where some existing equipment is being retained, the contractor shall provide the same type of equipment, as is remaining, for visual compatibility.

- iii. The CONTRACTOR shall submit for approval a list of equipment including make, model number, manufacturer serial numbers, and warranty information, in a format similar to chart below. The chart shows a list of potential furnished signal equipment. Documentation only has to be submitted for the furnish items required for this contract At the time of such submission, the CONTRACTOR shall provide a copy of the Transmittal Letter, to the Engineer.

| Item | Make | Model # | Manufacturer | Is item on current QPL or is item under current SCDOT equipment contract (y or n) | If no, is cut sheet attached (y or n) | Serial #'s attached | Warranty info attached | Purchase date | Purchase invoice attached |
|---|------|---------|--------------|---|---------------------------------------|---------------------|------------------------|---------------|---------------------------|
| Electrical Cable | | | | | | | | | |
| Communication Cable | | | | | | | | | |
| Fiber Optic Cable | | | | | | | | | |
| Fiber Interconnect Center / Fiber Splice Trays | | | | | | | | | |
| Loop Wire and Sealant Splice Boxes / Junction Boxes | | | | | | | | | |
| Steel Cable | | | | | | | | | |
| Vehicle Signal Head with LED Modules | | | | | | | | | |
| LED Blank Out Signs | | | | | | | | | |
| Optically Programmable Vehicle Signal Head | | | | | | | | | |
| Pedestrian Signal Head | | | | | | | | | |
| Pedestrian Push Button Station Assembly | | | | | | | | | |
| Steel Strain Pole | | | | | | | | | |
| Mast Arm | | | | | | | | | |
| Concrete Strain Pole | | | | | | | | | |
| Controllers and 332/336 Cabinets | | | | | | | | | |
| Spread Spectrum Radio Assembly | | | | | | | | | |
| Ethernet Extender | | | | | | | | | |
| Video Detection Systems | | | | | | | | | |

- iv. If equipment is on the SCDOT Equipment Contract or the SCDOT QPL, catalog cut sheets do not have to be provided. On all other equipment, the CONTRACTOR shall submit for approval, catalog descriptions and documentation--THREE (3) COPIES--for each class of signal equipment and materials furnished by the CONTRACTOR. They are to be submitted TWO WEEKS PRIOR TO INSTALLATION to the Construction Office FOR APPROVAL. At the time of such submission, the CONTRACTOR shall provide a copy of the Transmittal Letter, to the Engineer.
- v. Equipment substitutions in the life of the contract are only allowed if the contractor can show a valid hardship in remaining with the originally submitted equipment. A valid hardship may include drastic price increases, non-availability of type of equipment due to unforeseen delivery or material shortages (contractor ordering equipment late does not apply), vendor going out of business, etcetera. SCDOT may allow equipment substitutions if product is of better quality than originally submitted or if contractor is replacing non-QPL items with QPL or SCDOT Equipment Contract items, or if equipment is experimental in nature and SCDOT wants to test said equipment.
- vi. SCDOT will not pay for furnish and or installation costs of any materials installed without prior approval and acceptance, in accordance with iii and iv above.

3. PERMITS, CODES, LICENSES, & ABILITIES –

- a. All work shall be done in a workmanlike manner to meet the highest industry standards, all in accordance with the requirements of the latest editions of the National Electrical Code (NEC), the National Electrical Safety Code (NESC), the Illuminating Engineering Society (IES), the American National Standards Institute (ANSI), the National Electrical Manufacturer's Association (NEMA), and the regulations and standards of the local power company.
- b. The prime contractor or subcontractor responsible for the performance of the work covered by these SCDOT TRAFFIC SIGNAL SPECIAL PROVISIONS **must be licensed by the SC Licensing Board For Contractors and possess a Journeyman Card issued by the South Carolina Municipal Association or as required by the city in which work occurs at the time work is performed.**
- c. Further, at least one 'ON-SITE' field supervisor shall have LEVEL II or higher, Traffic Signal Certification by the International Municipal Signal Association (IMSA). Photo copies of the license and certificate (for both above) shall be submitted before work commences. The CONTRACTOR shall retain employee(s) holding the above certificate for the duration of the project; and the employee(s) shall be present **DAILY** and at the **FINAL INSPECTION.**
- d. The CONTRACTOR shall employ persons capable of programming traffic signal controllers of the type used by this project. The CONTRACTOR shall possess both a desktop and a portable (laptop) computer, and be capable of using them to upload and download signal operating parameters.
- e. In addition to the state requirements, all permits and licenses required by a City/County are the responsibility of the CONTRACTOR. The CONTRACTOR shall arrange with the utility company for hookup connections and attachment agreements.

4. INSPECTION

- a. Engineer
During construction, the INSPECTION will be the responsibility of the City or their representatives. The Department's Construction Office, MAY designate those individuals responsible for inspection, and may include a number of qualified persons, including DISTRICT ELECTRICAL SUPERVISOR (DES). For signals located within a local government that SCDOT has a signal maintenance agreement, the inspection personnel may include the local government's Electrical Supervisor to perform inspection for SCDOT.
- b. Disputes
The CONTRACTOR is advised that in any dispute between the Contractor and the Manufacturer, concerning the operation/maintainability/reparability of any piece of equipment, **THE DECISION OF THE ENGINEER SHALL BE FINAL.**
- c. Faulty Equipment
When equipment supplied by the Department is designated faulty by the Engineer, if it is under warranty, the Contractor shall return it to the Manufacturer for replacement. The Manufacturer shall furnish a replacement unit.

5. SIGNAL INTEGRATION

The following entity will perform integration in accordance with 689.2 System Integration and Testing:

X Contractor

6. **MAINTENANCE OF OPERATION**

- a. Existing traffic signals shall **REMAIN IN OPERATION** until the new/modified installation has been satisfactorily tested, and it has been placed in operation after approval by the Engineer. The Testing shall be accomplished without hazard to the traveling public and while the signal heads are suitably **BAGGED WITH BURLAP**. All signal heads in place, but not in use, shall be covered with **BURLAP**. **NOTE: PLASTIC BAGS ARE NOT ACCEPTABLE.**
- b. After approval is received from the Engineer, the new signal heads shall be switched into service during that controller phase being displayed by the existing equipment; and the existing equipment shall be turned off simultaneously. Immediately after the new signal equipment has been made operational, the existing signal heads shall be turned off, and removed.
- c. The Contractor is cautioned to PLAN their work to cause minimum interference with any existing signal operation. Adjustments in the existing equipment made necessary by the new installation will be made at the expense of the Contractor.
- d. The Contractor shall retain ownership of the materials and equipment after the intersection has been made operational, until Inspection and Acceptance (either partial or final) has been made by the Engineer, when it then becomes SCDOT property. Prior to Acceptance, if the materials or equipment is damaged by whatever cause, the Contractor shall be responsible for repair or replacement.
- e. Operation, Maintenance and Emergency Service-

The contractor shall be responsible for the maintenance and operation of all existing signals in the "LIST OF PROJECT TRAFFIC SIGNALS" from the date of the "NOTICE TO PROCEED" of the contract until the final acceptance of the project. This shall include all daily maintenance of signals and any emergencies which may arise. The CONTRACTOR is also responsible and liable for proper and safe operation of each signal. Herein, this activity will be termed "Maintenance".

- i. Restriction
The CONTRACTOR shall not change the phasing or other operation of a signalized intersection without Departmental approval.
- ii. Procedure
At that point in the project when construction activity is about to occur which could Affect the operation of a particular signal, the CONTRACTOR shall request the Department's concurrence, and the CONTRACTOR shall assume responsibility for operations and maintenance of that traffic signal. This request shall be in writing to the ENGINEER and shall have a written response. In the absence of the request, any activity of the CONTRACTOR which affects the operation of a signal shall be deemed evidence of the CONTRACTOR's assumption of responsibility for the operation and maintenance of the signal.
- iii. New Signals
Signals installed by the CONTRACTOR shall be maintained by the CONTRACTOR until the Department formally accepts the work.
- iv. Requirements
The CONTRACTOR shall perform EMERGENCY REPAIRS AND SERVICES as required, to insure continuity of operation of listed traffic signals and associated equipment. **This shall include replacement of malfunctioning LED modules.**
- v. Technician
The CONTRACTOR shall provide at least one (1) qualified LOCAL signal technician, subject to call at all times, to provide emergency services as required to assure continuous and efficient operation of signal installations and systems. This shall include non-business hours, weekends, and holidays. The Technician shall be fully qualified to trouble-shoot, service, repair and/or replace traffic controllers and components, both electro-mechanical and solid-state. At the PRE-CONSTRUCTION CONFERENCE, the CONTRACTOR shall furnish the RCE with a LIST OF THE SIGNAL TECHNICIANS who will be responsible for performing the emergency service, and the LOCAL PHONE NUMBER(S) of the CONTRACTOR's agent(s) (answering service, etc.), who will receive emergency calls during and after the CONTRACTOR's normal business hours.
- vi. Repair Time
The CONTRACTOR shall be ON-SITE of the malfunctioning signal for emergency service within the maximum time listed in the following schedule-

| <u>Weekdays or Saturday</u> | <u>Maximum Time</u> |
|-----------------------------|---------------------|
| 6 AM to 6 PM | 1 hour |
| 6 PM to 6 AM | 4 hours |
| | |
| <u>Sundays or Holidays</u> | |
| Day or Night | 4 hours |

- vii. Restoration of Normal Service
Once the CONTRACTOR has started repair work/emergency service, the CONTRACTOR shall restore a malfunctioning signal to normal phase operations uninterrupted.
- viii. Time Changes (EST/DST)
As part of Maintenance, the CONTRACTOR shall reset all time clocks to local legal time.
- ix. Records
The CONTRACTOR shall maintain a LOG of all trouble calls received, the response time, and the corrective action taken. The records and logs shall be available to Department personnel for review during normal working hours. All records and logs shall be turned over to the Department at FINAL ACCEPTANCE.
- x. Failure To Perform
In the event the CONTRACTOR fails to perform in accordance with requirements and schedules of this Specification, the Department reserves the right, without notice to the CONTRACTOR, to engage a Third Party to perform the maintenance and emergency service necessary to assure continuous traffic signal operation. Further, all expenses incurred by the Department in implementing this option, shall be deducted from the payment due the CONTRACTOR, plus a FIFTEEN HUNDRED (\$1500) DOLLAR PENALTY FOR EACH OCCASION, FOR EACH DAY (UNTIL CORRECTED). The penalty shall be forfeited as liquidated damages.

7. PAYMENT FOR MATERIALS ON HAND

The attention of the CONTRACTOR is directed to Section 109.7 of the STANDARD SPECIFICATIONS; which is amended to include the following paragraphs.

When permitted by the Engineer, partial payment will be made for major traffic signal items that are being furnished by the CONTRACTOR. Certain items such as wooden poles, and other very heavy units not readily movable or vandalized, may be stored in un-secured locations either ON- or OFF-SITE. Other items such as signal heads, detector amplifiers, controllers, cabinets, and certain other major items may be stored in a secured/protected location either ON- or OFF-SITE. The equipment shall be labeled stating SCDOT, and the Project Name. Other requirements of Paragraph 109.8 remain applicable. Payment shall be in accordance with the following criteria:

1. For MATERIALS ON HAND, the Contractor may be paid at: FIFTY (50%) PERCENT OF THE CONTRACT UNIT PRICE OF ITEM, NOT TO EXCEED THE PAID INVOICE AMOUNT.
2. ONLY ITEMS MEASURED BY --EACH-- SHALL BE ELIGIBLE.
3. ONLY ITEMS WITH A UNIT PRICE EXCEEDING \$100 SHALL BE ELIGIBLE.
4. THE TOTAL INVOICE PRICE OF THE ITEMS SHALL EXCEED \$5000.

8. SUBMITTING AS-BUILT PLANS

After the completion of the project, the CONTRACTOR shall furnish to the Engineer, three (3) "red-lined" sets of Plans showing the exact locations and sizes of all conduits, poles, pedestals, splice boxes, detectors, and the routing and destination of all wires leaving the control cabinets.

9. FINAL INSPECTION

- a. Request
The CONTRACTOR shall request Final Inspection one week prior to the desired day of inspection. Confirmation to the Resident Construction Engineer shall be provided forty-eight (48) hours prior to Final Inspection, that the project is on schedule and ready for inspection.
- b. System Test
Upon completion of the Final Inspection and correction of any deficiencies, the work will be subject to a **sixty (60) day operational test** for the System, and for individual intersections. If during this period a problem arises in either the System or an individual traffic signal, it must be resolved, and a **NEW sixty (60) day test** period shall begin.

10. MAINTENANCE OF TRAFFIC

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. *For Traffic Signal projects, see the amendment to the Standard Specifications, MAINTENANCE OF TRAFFIC – General Regulations included.*

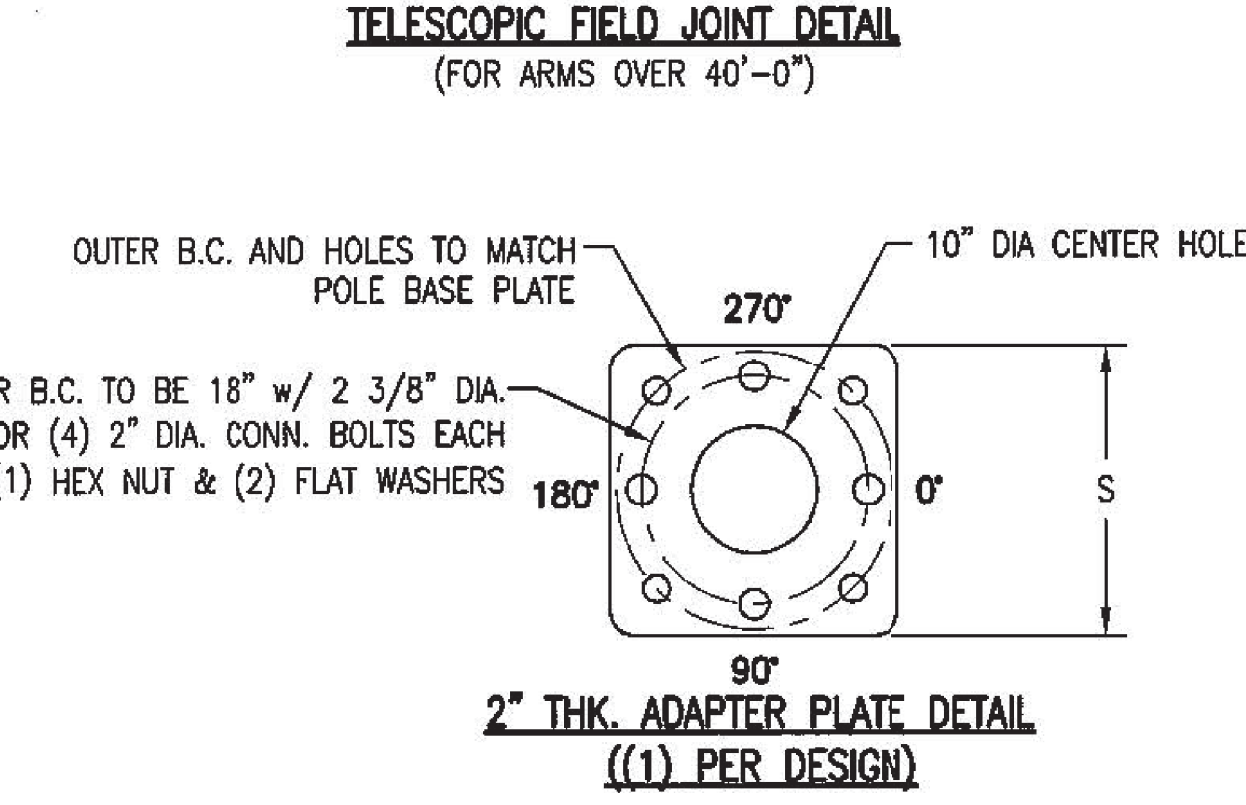
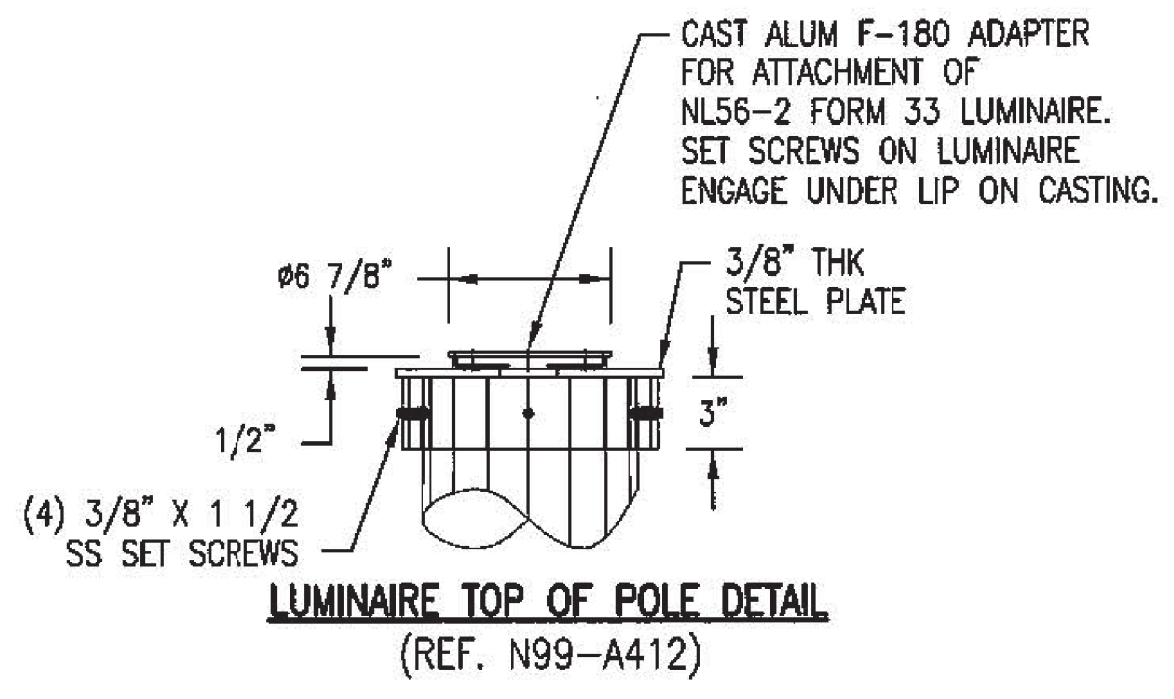
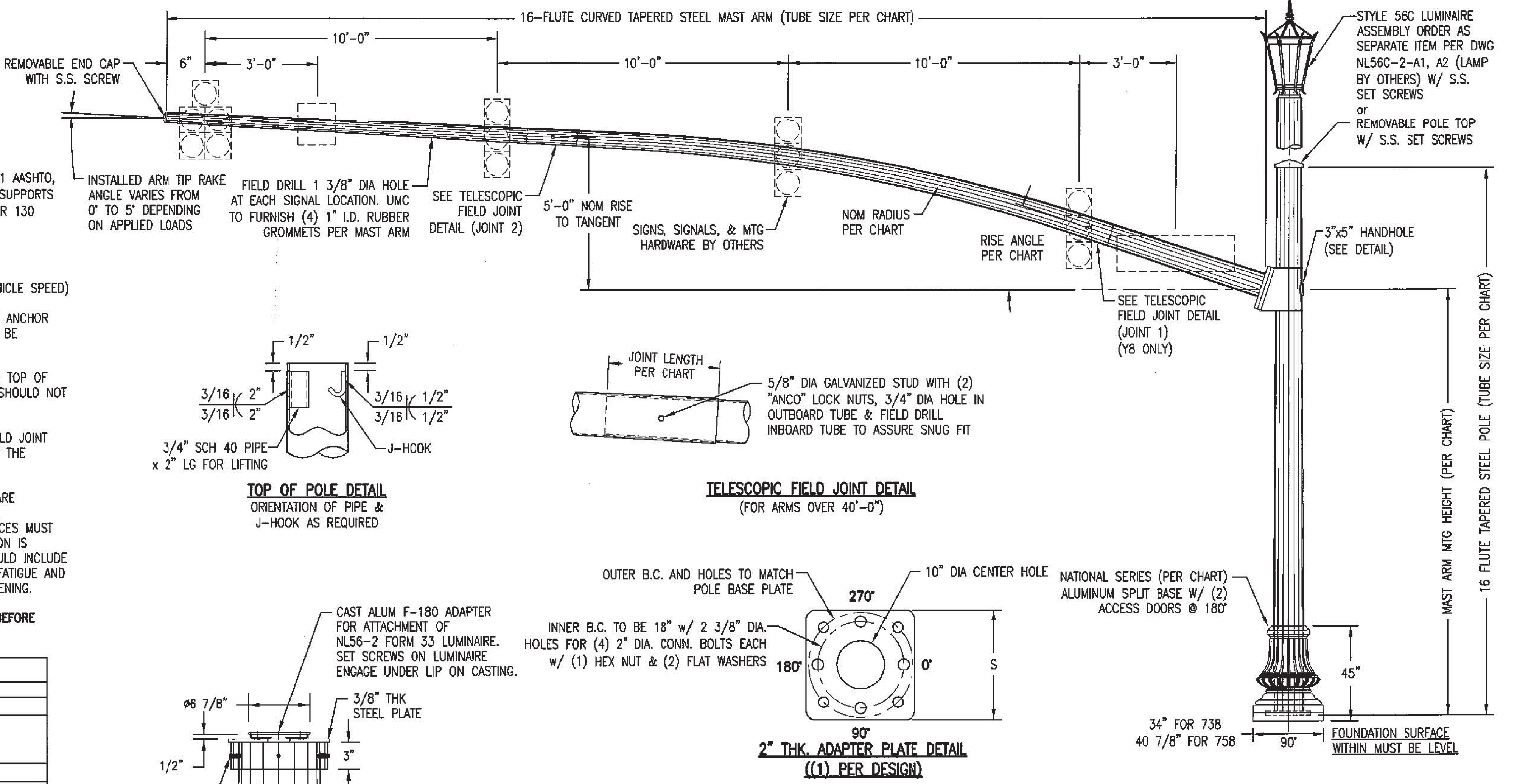
| QTY | UMC DESIGN NUMBER | MAST ARM DATA | | | | | | | MAST ARM FLANGE CONNECTION DATA | | | | | | | POLE BASE CONNECTION DATA | | | | | CAP (STANDARD or LUM) | | | | | |
|-----|-------------------|---------------|-------------------------|---------|---------|---------|--------|-------------|---------------------------------|--------|----|----|----|--------|----|---------------------------|-------|------|-----------------------|------|-----------------------|--------|-------|-------|----------------|------------------|
| | | SPAN | TUBE SIZE | JOINT 1 | JOINT 2 | MTG HGT | ORIENT | NOM. RADIUS | RISE ANGLE | BOLT Ø | X | Y | Y2 | W | H | APL | PPL | G | POLE TUBE SIZE | B.C. | | S | F | P | T | ANCHOR BOLT SIZE |
| | 50603-B382-Y1 | 20'-0" | *7F-9.00x5.40x25'-9" | - | - | 16'-0" | 180° | 22.5' | 21' | 1 1/4 | 9 | 16 | - | 17 1/2 | 21 | 1 1/4 | 1 1/4 | 1/4 | 7F-15.00x12.06x21'-0" | 20 | 20 | 14 1/8 | 6 1/4 | 1 1/2 | 1 1/2 x 54 x 6 | 738 |
| | 50603-B382-Y2 | 25'-0" | 7F-9.00x5.40x25'-9" | - | - | 16'-0" | 180° | 22.5' | 21' | 1 1/4 | 9 | 16 | - | 17 1/2 | 21 | 1 1/4 | 1 1/4 | 1/4 | 7F-15.00x12.06x21'-0" | 20 | 20 | 14 1/8 | 6 1/4 | 1 1/2 | 1 1/2 x 54 x 6 | 738 |
| | 50603-B382-Y3 | 30'-0" | 7F-11.00x6.70x30'-9" | - | - | 16'-0" | 180° | 44.8' | 18' | 1 1/2 | 9 | 16 | - | 17 1/2 | 21 | 1 1/2 | 1 1/2 | 1/4 | 7F-15.00x12.06x21'-0" | 20 | 20 | 14 1/8 | 6 1/4 | 1 1/2 | 1 1/2 x 54 x 6 | 738 |
| | 50603-B382-Y4 | 35'-0" | 7F-11.00x6.00x35'-9" | - | - | 16'-0" | 180° | 44.8' | 18' | 1 1/2 | 9 | 16 | - | 17 1/2 | 21 | 1 1/2 | 1 1/2 | 1/4 | 7F-15.00x12.06x21'-0" | 20 | 20 | 14 1/8 | 6 1/4 | 1 1/2 | 1 1/2 x 54 x 6 | 738 |
| | 50603-B382-Y5 | 40'-0" | 3F-11.00x5.30x40'-9" | - | - | 16'-0" | 180° | 44.8' | 18' | 1 1/2 | 9 | 16 | - | 17 1/2 | 21 | 1 1/2 | 1 1/2 | 1/4 | 7F-15.00x12.06x21'-0" | 20 | 20 | 14 1/8 | 6 1/4 | 1 1/2 | 1 1/2 x 54 x 6 | 738 |
| | 50603-B382-Y6 | 45'-0" | 3F-13.00x9.36x26'-0" | 24 | - | 16'-0" | 180° | 44.8' | 18' | 1 1/2 | 9 | 16 | - | 17 1/2 | 21 | 1 1/2 | 1 1/2 | 5/16 | 3F-16.00x13.06x21'-0" | 24 | 24 | 17 | 8 1/4 | 2 | 2 x 84 x 6 | 738 |
| | 50603-B382-Y7 | 50'-0" | 3F-13.00x9.36x26'-0" | 24 | - | 16'-0" | 180° | 44.8' | 18' | 1 1/2 | 9 | 16 | - | 17 1/2 | 21 | 1 1/2 | 1 1/2 | 5/16 | 3F-16.00x13.06x21'-0" | 24 | 24 | 17 | 8 1/4 | 2 | 2 x 84 x 6 | 738 |
| | 50603-B382-Y8 | 75'-0" | 7+7F-14.60x12.85x12'-6" | 27 | 24 | 16'-0" | 180° | 44.8' | 12' | 1 1/4 | 20 | 14 | 3 | 25 | 25 | 2 | 2 | 5/16 | 0F-18.00x15.06x21'-0" | 24 | 24 | 17 | 8 1/4 | 2 | 2 x 84 x 6 | 758 |

*** CUT TUBE TO LENGTH AFTER BENDING**
 11 GA = 0.120" WALL THICKNESS
 7 GA = 0.179" WALL THICKNESS
 3 GA = 0.250" WALL THICKNESS
 7+7 GA = 0.358" WALL THICKNESS
 F = 16-FLUTE TAPERED STEEL TUBE @ 0.14 in/ft TAPER

DESIGN CRITERIA:

- DESIGNED IN ACCORDANCE WITH THE 2006 INTERIM TO 2001 AASHTO, 4TH EDITION, "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS" FOR 130 M.P.H. WIND ZONE. THE DESIGN PARAMETERS INCLUDE:
 25 YEAR STRUCTURE DESIGN LIFE
 FATIGUE CATEGORY II CONSIDERATION FOR:
 NATURAL WIND GUST
 TRUCK-INDUCED GUST (65 MPH TRUCK VEHICLE SPEED)
- ANCHOR BOLTS ANALYZED FOR STEEL STRENGTH ONLY. THE ANCHOR BOLT EMBEDMENT LENGTH SHOWN ON THIS DRAWING SHALL BE VERIFIED BY THE FOUNDATION ENGINEER.
- THE EXPOSED LENGTH OF THE ANCHOR BOLT BETWEEN THE TOP OF THE FOUNDATION AND THE BOTTOM OF THE LEVELING NUT SHOULD NOT EXCEED ONE BOLT DIAMETER.
- PER AASHTO THE MINIMUM LENGTH OF ANY TELESCOPIC FIELD JOINT SHALL BE 1.5 TIMES THE INSIDE DIAMETER OF THE END OF THE FEMALE SECTION.
- VIBRATION IS MORE LIKELY TO OCCUR WHEN STRUCTURES ARE INSTALLED WITHOUT ATTACHING THE SIGNALS AND OR SIGNS. THEREFORE, THE INTENDED EQUIPMENT OR DAMPENING DEVICES MUST BE INSTALLED AT THE TIME OF ERECTION. BECAUSE VIBRATION IS GENERALLY UNPREDICTABLE, A MAINTENANCE PROGRAM SHOULD INCLUDE INSPECTION FOR INDICATIONS OF EXCESSIVE VIBRATION OR FATIGUE AND EXAMINATION FOR ANY STRUCTURAL DAMAGE OR BOLT LOOSENING.
- CUSTOMER TO CONFIRM ALL DIMENSIONS & ORIENTATIONS BEFORE RELEASING ORDER FOR MANUFACTURING.

| MATERIAL SPECIFICATIONS | |
|----------------------------|---|
| TAPERED TUBE | ASTM A595 GR A |
| PLATE | ASTM A36 |
| BAR HANDHOLE FRAME | ASTM A529 GR 50 or ASTM A572 GR 50 or ASTM A709 GR 50 |
| HANDHOLE COVER | ASTM A1011 |
| ORNAMENTAL CAST ALUM. BASE | ASTM B26 (356.0F) |
| ANCHOR BOLTS | ASTM F1554 GR 55 |
| ANCHOR BOLT NUTS | ASTM A563 GR A |
| FLAT WASHERS | ASTM F436 |
| ARM CONNECTION BOLTS | ASTM A325 |
| POLE TOP/ARM END CAP | ASTM B26 (356.0F) or A1011 |
| PIPE | ASTM A500 GR B or A53 GR B |
| S.S. HARDWARE | AISI-300 SERIES (18-8) |
| STRUCTURE FINISH | HD GALV TO ASTM A123 & UMS 1007 |
| HARDWARE FINISH | MWT B4, CHARLESTON GREEN |
| | HD GALV TO ASTM A153 |

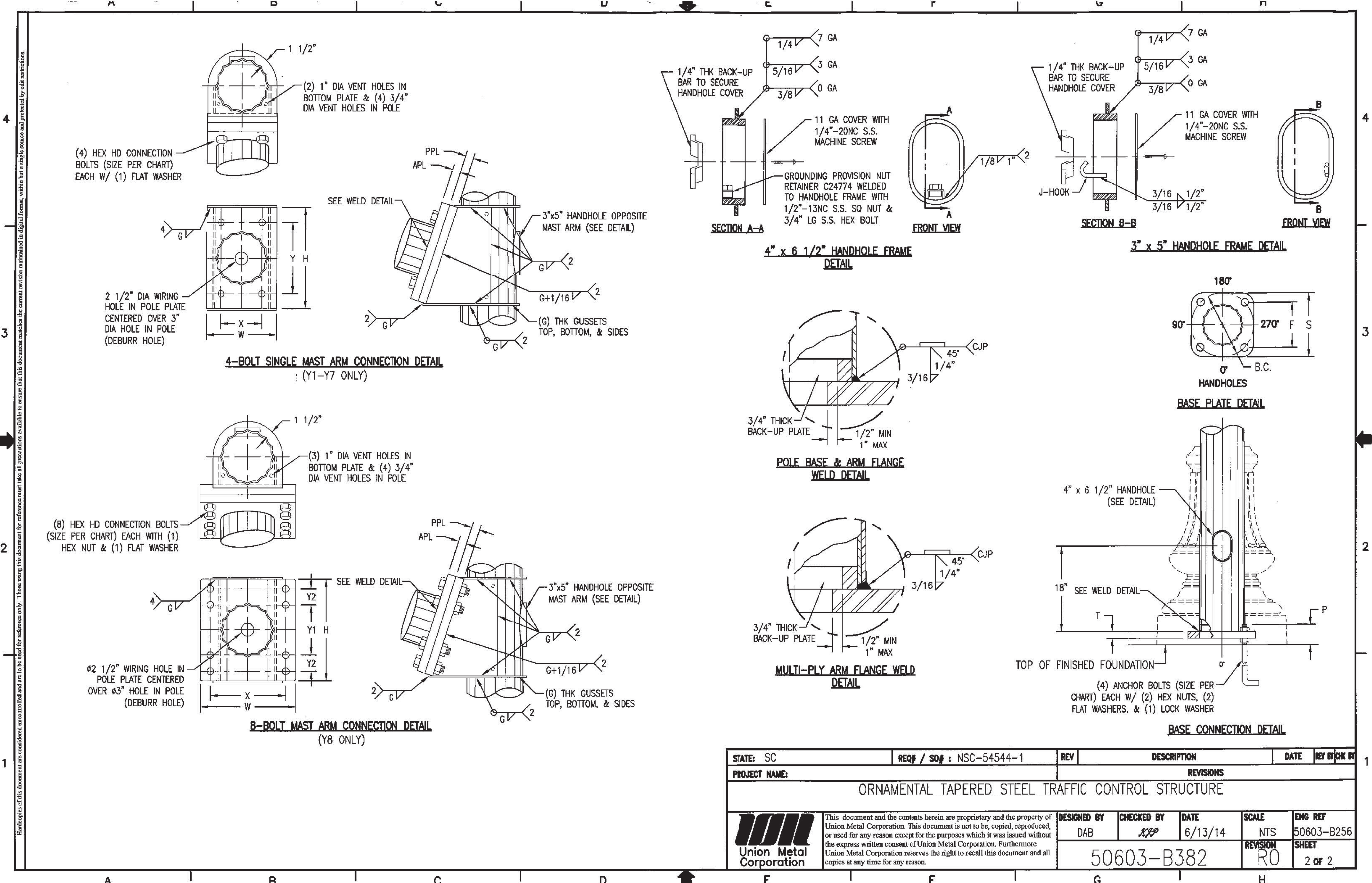


| | | | | | |
|--|-------------------------|------------|-------------|----------|---------------|
| STATE: SC | REQ# / SO#: NSC-54544-1 | REV | DESCRIPTION | DATE | REV BY/CHK BY |
| PROJECT NAME: | | | REVISIONS | | |
| ORNAMENTAL TAPERED STEEL TRAFFIC CONTROL STRUCTURE | | | | | |
| | DESIGNED BY | CHECKED BY | DATE | SCALE | ENG REF |
| | DAB | RJP | 6/13/14 | NTS | 50603-B256 |
| 50603-B382 | | | | REVISION | SHEET |
| | | | | RO | 1 OF 2 |

FOR REFERENCE ONLY

| 4 | | | |
|----------|----|------|-----------------------------|
| 3 | | | |
| 2 | | | |
| 1 | | | |
| REV. NO. | BY | DATE | DESCRIPTION OF REVISION |
| TOPO. | | DATE | PLAN SCALE 1" = 20' |
| DWG. | | DATE | PROF SCALE 1" = _____ HORIZ |
| R/W | | DATE | SCALE 1" = _____ VERT |

MAST ARM DETAIL



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|--|---|-----|-------------|------------|---------------|
| STATE: SC | REQ# / SO#: NSC-54544-1 | REV | DESCRIPTION | DATE | REV BY/CHK BY |
| PROJECT NAME: | | | REVISIONS | | |
| ORNAMENTAL TAPERED STEEL TRAFFIC CONTROL STRUCTURE | | | | | |
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| | DAB | JPP | 6/13/14 | SCALE | ENG REF |
| 50603-B382 | | | REVISION | RO | SHEET |
| | | | | | 2 OF 2 |

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| REV. NO. | BY | DATE | DESCRIPTION OF REVISION |
| TOPO. | | DATE | PLAN SCALE 1" = 20' |
| DWG. | | DATE | PROF SCALE 1" = _____ HORIZ |
| R/W | | DATE | SCALE 1" = _____ VERT |

MAST ARM DETAIL

SCDOT Mast Arm Standards (page 3 of 3)

Mast Arm Information Form

Documentation for each mast arm must be provided to SCDOT. A copy of this information should also be retained by the local government. All mast arms should meet the SCDOT specification in effect at the time of installation.

County: _____

City/Town: _____

Intersection: _____

Mast Arm Information

NE Quad SE Quad NW Quad SW Quad

| | | | | |
|------------|--|--|--|--|
| Arm Length | | | | |
|------------|--|--|--|--|

| | | | | |
|-------------|--|--|--|--|
| Pole Height | | | | |
|-------------|--|--|--|--|

Pole Manufacturer _____

Pole Color (Number) _____

Install date _____

Installed by (Signal Contractor) _____

PE of Record _____

Maintained by _____

Replacement poles purchased (yes/no) _____

If yes, located where? _____

If no, ordering information and delivery time frame. _____

Specs attached (yes/no) _____

The mast arms installed meet the current SCDOT specification in place during the pole installation. (Yes/No) _____

Contact Person for Mast Arm Maintenance / Replacement _____

Title: _____

Affiliation _____

Address _____

City / State / Zip _____

Phone _____

Cell _____

Fax _____

January 1, 2018

ERRATA TO 2007 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION

Make the changes listed below to correct errata in the SDCOT *2007 Standard Specifications for Highway Construction*:

DIVISION 100 GENERAL PROVISIONS

SECTION 101 DEFINITIONS AND TERMS

Subsection 101.2 Abbreviations and Acronyms

Amend the table of **SCDOT OFFICIALS AND OFFICES** as follows:

| DELETIONS | | REPLACEMENTS | |
|------------------|--|--------------|---|
| BDE* | Bridge Design Engineer | PSE* | Preconstruction Support Engineer |
| BDGE* | Bridge Design Geotechnical Engineer | GDSE* | Geotechnical Design Support Engineer |
| SHE* | State Highway Engineer | DSE* | Deputy Secretary for Engineering |

*Wherever it appears in the text, replace the deleted abbreviation with the new abbreviation.

SECTION 102 BIDDING REQUIREMENTS AND CONDITIONS

Subsection 102.8 Irregular Bids

Paragraph 2, item E, first sentence; delete the word "the" after the word "When".

SECTION 105 CONTROL OF WORK

Subsection 105.6 Cooperation with Utilities

Paragraph 1, last sentence; change the word "THE" to "the".

DIVISION 200 EARTHWORK

SECTION 202 REMOVAL OF STRUCTURES AND OBSTRUCTIONS

Subsection 202.5 Measurement

Paragraph 5, second bullet; change the words "Brick sidewalk" to "Concrete, brick or stone sidewalks".

SECTION 204 STRUCTURE EXCAVATION

Subsection 204.2.1.2 Structure Excavation for Culverts

Paragraph 1, at the end of the first sentence; change "**Subsection 204.4**" to "**Subsection 204.5**".

DIVISION 400 ASPHALT PAVEMENTS

SECTION 401 HOT MIXED ASPHALT (HMA) PAVEMENT

Subsection 401.2.1.2 Liquid Anti-Stripping Agent

Paragraph 1, first sentence; delete the period at the end of the sentence and add "and SC-M-406".

Subsection 401.2.5 Material for Full Depth Patching

Paragraph 1, delete and replace with the following:

SUPPLEMENTAL SPECIFICATIONS

"Use an approved SCDOT Intermediate Type C mix for all Full Depth Patching."

Subsection 401.5 Measurement

After paragraph 10, add the following paragraph:

11 The measurement of Prime Coat is the number of gallons of asphalt material applied to the completed and accepted base course.

Subsection 401.6 Payment

After paragraph 12, add the following paragraph:

13 "The payment for Prime Coat is at the contract unit price for Prime Coat and includes compensation for all labor, equipment, tools, maintenance, and incidentals necessary to complete that work."

Subsection 401.6 Payment

Paragraph 13, **Table of Pay Items**

Change paragraph reference number "13" to "14" and add the following Pay Item:

| Item No. | Pay Item | Unit |
|----------|------------|------|
| 4010005 | Prime Coat | GAL |

SECTION 403 HMA SURFACE COURSE

Subsection 403.5 Measurement

Paragraph 1, first sentence; change "HMA Intermediate Course" to "HMA Surface Course".

Subsection 403.6 Payment

Paragraph 1, first sentence; change "HMA Intermediate Course" to "HMA Surface Course".

SECTION 407 ASPHALT SURFACE TREATMENT – DOUBLE TREATMENT

Subsection 407.5 Measurement

Paragraph 1, first sentence; add the word "is" after "(Double Treatment Type (1, 2, 3, 4, or 5))".

SECTION 408 ASPHALT SURFACE TREATMENT – TRIPLE TREATMENT

Subsection 408.5 Measurement

Paragraph 1, first sentence; add the word "is" after "(Triple Treatment Type (1 or 2))".

DIVISION 600 MAINTENANCE AND TRAFFIC CONTROL

SECTION 625 PERMANENT PAVEMENT MARKINGS

FAST DRY WATERBOURNE PAINT

Subsection 625.2.2.4.11 Lead Content

Paragraph 1, first sentence; change 6% to 0.06%.

SECTION 627 THERMOPLASTIC PAVEMENT MARKINGS

Subsection 627.4.10 Inspection and Acceptance of Work

Paragraph 2, first sentence; change "period of 90 days" to "period of 180 days".

Subsection 627.4.10 Inspection and Acceptance of Work

Paragraph 2, second sentence; change "90-day observation period" to "180-day observation period".

Subsection 627.4.10 Inspection and Acceptance of Work

Paragraph 3, first sentence; change "90-day period" to "180-day period".

DIVISION 700 STRUCTURES

SECTION 709 STRUCTURAL STEEL

Subsection 709.4.3.5.2 Submittals and Notification

Paragraph 1, delete the last two sentences and replace them with, "The Department's review and acceptance are required before any field welding will be permitted."

Subsection 709.6.3 Pay Items (page 650)

Subsection heading number; change subsection heading number from "709.6.3" to "709.6.4".

SECTION 712 DRILLED SHAFTS AND DRILLED PILE FOUNDATIONS

Subsection 712.4.4 Dry Construction Method

Paragraph 2, last sentence in A; change "*Drilled Shaft Report*" to "*Drilled Shaft Log*".

Subsection 712.4.10.4 Excavation Cleanliness

Paragraph 1, last sentence; change "*Drilled Shaft Report*" to "*Drilled Shaft Log*".

Subsection 712.4.10.6 Shaft Load Test

Change first paragraph reference number from "2" to "1".

Subsection 712.6.10 Drilled Pile Set-Up

Insert paragraph reference number "1" to the left of the first paragraph.

SECTION 723 DECK JOINT STRIP SEAL

Subsection 723.1 Description

Insert paragraph reference number "3" to the left of the third paragraph.

SECTION 726 BRIDGE DECK REHABILITATION

Subsection 726.4.1 General

Insert paragraph reference number "1" to the left of the first paragraph.

Subsection 723.4.6 Full Depth Patching (page 790)

Subsection heading number; change subsection heading number from "723.4.6" to "726.4.6"

Subsection 726.6.8 Concrete Overlay (Latex) or (Portland Cement) (page 802)

Paragraph 2, the equation is changed to $AP = CP \times (ACS/RCS)^2$

SECTION 727 CROSSHOLE SONIC LOGGING OF DRILLED SHAFT FOUNDATIONS

Subsection 726.6 Payment (page 807)

Subsection heading number; change subsection heading number from "726.6" to "727.6"

DIVISION 800 INCIDENTAL CONSTRUCTION

SECTION 805 GUARDRAIL

Subsection 805.5 Measurement

Paragraph 4; amend as follows:

"The quantity for the pay item 8053000 Additional Length Guardrail Post is the length of required post installed in excess of the standard length post based on the system being installed, measured by the linear foot (LF), complete, and accepted."

SECTION 815 EROSION CONTROL

Subsection 815.1 Description

Paragraph 1, first sentence; change "temporary flexible pipe" to "temporary pipe".

Subsection 815.5 Measurement

Paragraph 13; delete the first sentence and replace it with the following sentence:

"The quantity for Temporary Pipe Slope Drains is measured and paid for in accordance with **Subsections 803.5** and **803.6** respectively."

Subsection 815.5 Measurement

Delete paragraph 19.

Subsection 815.6 Payment

After paragraph 15, add the following paragraph:

- 16 Payment for Removal of Silt Retained by Silt Fence is full compensation for removing and disposing of sediment deposits accumulated by silt fences as specified or directed and includes all materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to fulfill the requirements of the pay item in accordance with the Plans, the Specifications, and other terms of the Contract.

Subsection 815.6 Payment

Change original paragraph number "16" to "17".

Subsection 815.6 Payment

Pay Item table; change the Unit for Item No. 8156214 to "EA".

INDEX:

Amend as follows:

Page I-3, after "Bridge Deck Rehabilitation, measurement and payment:"
Delete page 807.

Page I-12, after "Letting:"
Replace page 19 with page 9.

Page I-13, after "Overhead Sign Structure:"
Replace page 488 with page 495.

Page I-15, after "Proof Rolling:"
Delete page 98.

Page I-18, after "Structural Steel, turned and ribbed bolts:"
Replace page 624 with page 625.

Page I-19, after "Waterproofing, bridge deck:"
Delete page 907.

Page I-20, after "Working Drawings:"
Replace page 543 with page 779.

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 allow 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.

| |
|-----------------------------|
| SUPPLEMENTAL SPECIFICATIONS |
|-----------------------------|

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 by fifteen (15) pounds in lieu of the deleted bermuda seed.

August 1, 2013

CRANE SAFETY

The contractor's attention is directed to the following Crane Safety criteria. All applicable items under the submittal list section shall be submitted to the Resident Construction Engineer (RCE) before any crane operations may begin. If any personnel or equipment is changed or added, all applicable items shall be updated and submitted to the RCE before continuing with crane(s) operations.

All contractors shall comply with the manufacturer specifications and limitations applicable to the operation of any and all cranes and derricks. Prime contractors and sub-contractors shall comply with the latest Occupational Safety and Health Administration (OSHA) regulations, adopted American National Standards Institute (ANSI) and American Society of Mechanical Engineers (ASME) crane standards, and other applicable standards including, but not limited to the following:

- OSHA 29 CFR 1926 Subpart CC "Cranes and Derricks in Construction"
- OSHA 29 CFR 1926.251 "Rigging Equipment for Material Handling"
- ASME B30.5-2007 "Mobile and Locomotive Cranes"
- ASME B30.8-2010 "Floating Cranes and Floating Derricks"
- ASME B30.22-2005 "Articulating Boom Cranes"
- ASME B30.26-2010 "Rigging Hardware"

Submittal List

1. **Crane Operators:** All crane operators shall be certified by the National Commission for the Certification of Crane Operators (NCCCO), National Center for Construction Education and Research (NCCER), or Crane Institute of America Certification (CIC).
 - a. Contractor shall submit a copy of the NCCCO, NCCER, or CIC certification for each crane operator prior to performing any crane operations on the job site. The original certification card shall be available for review upon request and must remain current within a 5 year expiration date for the duration of the job. (Contractors with a crane operator-in- training on the jobsite shall comply with all the OSHA Subpart CC requirements).
 - b. Contractor shall submit a copy of the current Crane Operators Medical Evaluation card (3 year expiration) in the form of NCCCO, NCCER or CIC Physical Examination form or equivalent meeting the ASME B30.5 requirement or a current USDOT Medical Examiner's Certificate card (2 year expiration). The original medical card or equivalent for all crane operators shall be available for review upon request.
2. **Competent Person:** The named competent person will have the responsibility and authority to stop any work activity due to safety concerns.
 - a. Contractor shall submit the name and qualifications of the "Competent Person" as defined by OSHA Subpart CC responsible for all crane safety and lifting operations.

March 1, 2007

CRITICAL PATH METHOD CONSTRUCTION SCHEDULES

General

This supplemental specification addresses the Critical Path Method (CPM) construction schedule requirements for SCDOT contracts. The Contractor will provide and update a construction schedule to the SCDOT, which will be used as a quantitative basis for:

- Monitoring and evaluating the Contractor’s progress in completing contracted work;
- Evaluating requests for additional contract time;
- Budgeting for construction estimate payments; and
- Managing SCDOT engineering and inspection personnel.

The Contractor’s construction schedule shall encompass the entire contract period, and be developed consistent with the contract milestones and the contract maintenance of traffic plan. Critical path activities shall be identified for the duration of the work.

The schedule shall reflect the utility relocations noted in the contract documents and include activities of appropriate duration for the utility adjustments. Where utility durations are unknown, the Contractor shall provide a reasonable estimate of duration. Utility durations will be reviewed in the baseline approval process as outlined in the section “Submission, Review, and Acceptance Process”. Utility durations will be presented at the Preconstruction Conference for concurrence by the utility provider. In the event that the utility representative cannot provide concurrence at the Preconstruction Conference, the Contractor, the Resident Construction Engineer, and the utility provider shall work diligently to reach acceptance durations. If there is no concurrence or input from the utility provider concerning the Contractor’s utility durations within 15 days following the Preconstruction Conference, the submission with the Contractor’s estimate of utility duration will be reviewed for baseline acceptance. Further utility duration changes beyond this point in time will be assessed in monthly schedule updates. Failure to include activities for any element of work or any known utility work will not relieve the Contractor from completing the work within the allotted contract time.

The schedule shall also include sufficient information as *outlined in this supplemental specification* to provide for monetary and quantitative tracking of the work by the SCDOT.

Schedule Types

Contractors shall maintain CPM schedules for all projects using Primavera 5.0 (or current version) or Primavera Contractor.

Templates for the CPM schedules are available to download at the SCDOT construction Extranet site (http://www.scdot.org/doing/const_extranet.shtml).

When submitting schedules to the SCDOT, the contractor shall assign file names to each schedule file (baseline and updates) according to the following conventions (dates are YYMMDD):

| Type of Schedule Submitted: | Baseline | Update |
|-----------------------------|---------------------------|---------------------------|
| File Name Convention: | [File Number]b[Data Date] | [File Number]u[Data Date] |
| File Name Example: | 32.82571b60201 | 32.82571u060201 |

Note on Data Dates – The initial Baseline Construction Schedule shall have a data date equal to the date of submission of the schedule and not include any work to date. Monthly schedule updates shall have a data date set the same as the most recent estimate period end date.

Schedule Submissions

All submissions shall be made within the time frames defined under “Submission, Review and Acceptance Process”.

Electronic File: Each baseline construction schedule and monthly update submission shall be uploaded to the SCDOT Construction Extranet site in .xer format. The site can be found at: (http://www.scdot.org/doing/const_extranet.shtml)

Hard Copies: A hard copy of each baseline construction schedule and monthly update submission shall be provided to the District Scheduler and the Resident Construction Engineer. Printout shall include the following columns on 11 inch x 17 inch paper: Activity ID, Activity Name, Early Start, Actual Start, Early Finish, Actual Finish, Schedule % Complete, Physical % Complete, Budgeted Total Cost, Actual Total Cost, Original Duration, Remaining Duration, and Total Float.

Schedule Narrative: Submit a Schedule Narrative Report with the baseline and each monthly update schedule describing current project schedule status and identifying potential delays. This report will include a description of the progress made since the previous schedule submission and objectives for the upcoming 30 calendar days.

- 1.) The report shall indicate if the project is *on schedule*, *ahead of schedule* or *behind schedule* as compared to the accepted baseline. If the project is ahead of schedule or behind schedule, the report shall include the specific number of calendar days. If the project is behind schedule, the report shall include a detailed recovery plan that will put the project back on schedule.
- 2.) The report will describe the *current critical path* of the project including the lowest total float value and indicate if this has changed in the last 30 calendar days. Discuss current successes or problems that have affected either the critical path’s length or have caused a shift in the critical path within the last 30 calendar days. Identify specific activities, progress, or events that may reasonably be anticipated to impact the critical path within the next 30 calendar days, either to affect its length or to shift it to an alternate path.
- 3.) List all schedule logic or duration changes that have been made to the schedule since the previous submission. Provide an explanation for any *constraint* used. For each change, describe the basis for the change and specifically identify the affected activities by identification number.
- 4.) Identify activities, either in progress or scheduled to occur within the following 30 days, that require Department participation, review, approval, etc.
- 5.) Identify any calendars used that are not DOT specific, and explain the details of those calendars.
- 6.) Identify schedule settings used.
- 7.) An explanation of lag for each activity lag is associated with.
- 8.) Description of how the schedule is organized (e.g. broken down by road or activity).
- 9.) Narrative will be submitted with a naming convention of [File Number]n[Data Date].doc (e.g. 32.82571n060201.doc). Contractor will upload the electronic copy [in .doc format] to the South Carolina Department of Transportation Construction Extranet site (http://www.scdot.org/doing.const_extranet.shtml).

Schedule Details

Data Date – The Baseline Construction Schedule shall have a data date equal to the date of submission of the schedule and not include any completed work to date. Monthly schedule updates shall have a data date set the same as the most recent estimate period end date.

Milestones - Schedule shall identify the following milestones as a minimum:

- **Notice to Proceed Date (NTP):** Issuance of this date indicates the project site is available to the Contractor and contract time has begun. The NTP is determined in coordination between the Engineer and the Contractor and shall be within 45 days of the Award Date unless extenuating circumstances warrant setting the NTP more than 45 days after the Award Date. Include any extenuating circumstances in the narrative. The Notice to Proceed Date shall be the first milestone in the schedule.
- **Work Begin Date:** Actual date that on-site work commences.
- **Interim Completion Dates or Interim Milestones:** When interim completion dates or interim milestones (associated with project stages) are included in the contract specifications.
- **Start of Paving:** Date paving production and placement is to start.
- **Substantial Work Complete Date:** Anticipated date that work will be substantial complete. Facility will be available for the safe and convenient use of motorists; only allowable work remaining at substantial completion is placement of permanent pavement markings and resolution of punch list items.
- **Contract Completion Data:** Date defined by the Department as the latest date for contract completion. This is the last milestone and will establish the finish date of the project schedule. The schedule may indicate a completion date in advance of the contract completion date. However, the Department will not be liable for the Contractor’s failure to complete the project prior to the Contract Completion Date. Any additional costs, including extended overhead incurred between the Contractor’s schedule completion date and the completion of the contract time, shall be the responsibility of the Contractor.

Activities – Each Activity shall be part of the logic driven network and include a predecessor (excepting the first activity) and a successor (excepting the last activity). Each activity duration shall be limited to 30 days. As a minimum, the schedule shall include the following activities when related work is part of the contract, but there shall be sufficient detail in included activities to determine monthly progress of work and forecast of inspection and cost. The Contractor shall use the Activity Codes provided in the template for organizing activities. Activities for deliverables and reviews shall be included in the schedule.

- **Mobilization:** Preparations for and moving of equipment, etc., to the project site.
- **Clearing & Grubbing:** Self-explanatory.
- **Utility Relocations:** The schedule must reflect the utility relocations noted in the contract documents and include activities of appropriate duration for the utility adjustments. Where utility durations are unknown, the Contractor shall provide a reasonable estimate of duration.
- **Earthwork:** Unclassified & borrow excavation, compaction, fine grading, etc.
- **Drainage:** Pipe, catch basins, manholes, etc.
- **Base Course:** Graded aggregate base courses, cement modified bases, etc.
- **Paving:** Hot mix asphalt base, intermediate, and surface courses; Portland cement concrete pavements, etc.
- **Structures:** Bridges, box culverts, retaining walls, etc.

The Department required retained logic be used in scheduling projects. In situations where a Contractor has to address activities out of sequence, the Contractor may request to use the “progress override” option. The monthly schedule update narrative shall provide justification for selecting this option and quantify any logic change(s).

Resources – The Department will not require any input to the resource component of the schedule by the Contractor.

Expenses – Contractor shall assign the SCDOT contract items as expenses to each activity. SCDOT contract items will be included as Expense Categories and will be made part of the SCDOT schedule

template available to download from the construction Extranet site. These shall be the only expense categories associated with activities. Other fields under expenses that shall be populated included Budgeted Units, Price/Unit, and Actual Units.

Calendars – Contractor shall assign an appropriate SCDOT calendar to each activity in the schedule. Alternate calendars may be assigned, but specifics of the alternate calendars must be justified in the baseline narrative. Contractor shall assign all calendars as project specific. Acceptance of the alternate calendars is subject to review by the SCDOT. Considerations for weather shall be addressed within the activities – calendars shall not be modified to account for weather conditions. Calendars have been created to address established seasonal restrictions.

The Baseline Construction Schedule shall not extend beyond the number of working days or contract completion date originally provided in the contract.

Cost Loading – All schedule activities shall be cost loaded using the contract items and unit prices under “Expenses: in Primavera.

Float – Float is not for the exclusive use or benefit of either the Department or the Contractor. Initial baseline schedules shall not attribute negative float or negative lag to any activity.

Schedule Layout – Schedule shall be structured consistent with the phasing and staging noted in the contract documents. Activity Codes for area and stage are included in the template. These codes shall be used to organize each activity included in “Schedule Details – Activities” as appropriate to provide a detailed schedule layout. Activities shall not be allowed to cover more than one stage of the contract.

Default Values – Contractor shall use the following defaults, physical percent complete, retain logic, and longest path critical activities.

Submission, Review and Acceptance Process

Baseline Schedule – Contractor shall submit a Critical Path Method (CPM) Contract Schedule and Narrative to the District Scheduler within 30 calendar days after award of the Contract or 15 days prior to preconstruction conference, whichever is earlier. The CPM Schedule and narrative shall be submitted via upload to the Extranet. Upon upload, the Contractor shall immediately notify the District Scheduler and the Resident Engineer via email that the CPM schedule has been submitted.

Upon receipt of the CPM Construction Schedule, SCDOT shall review and provide comments to the Contractor within 10 days of receipt. The Contractor will have 5 business days to respond to SCDOT comments. This process will continue until the Engineer and the District Scheduler determine the construction schedule is acceptable.

The Contractor shall present their accepted schedule at the Preconstruction Conference. In the event the schedule has not been accepted (i.e. review process is ongoing), the most current schedule under review shall be presented.

Acceptance of the submitted schedule by the SCDOT will establish the baseline schedule for the contract. This acceptance by SCDOT does not serve to excuse any omissions or errors in the Contractor’s schedule (i.e. activities not included in baseline will not be considered in any time extensions).

Review and acceptance of baseline schedule is required prior to start of work. Delays in reaching this acceptance will not constitute a basis for granting additional contract time. If there is no concurrence or input from the utility provider concerning the Contractor's utility durations within 15 days following the Preconstruction Conference, the submission with the Contractor's estimate of utility durations will be reviewed for baseline acceptance. Further utility duration changes beyond this point in time will be assessed in monthly schedule updates.

Monthly Updates – Monthly updates shall be made no later than 15 days following the most recent estimate and shall have a data date the same as the estimate period end date. Upon upload, the Contractor shall immediately notify the District Scheduler and the Resident Engineer via email that the CPM schedule has been submitted. Failure to submit acceptable schedule updates as required will result in the withholding of estimate payments. Updates shall include the following:

- Updated schedule to show actual progress on activities
- Updated schedule to show actual costs on activities
- Updated schedule to show actual completion on milestones
- Narrative to describe progress, planned activities, issues, adjustments to remedy any activities or milestones behind schedule, etc., in the format described in **Schedule Submissions**.

As-Built Schedule – A final As-Built Schedule shall be submitted within 45 days following substantial completion of the work or within 15 days following the contract completion, whichever is later.

Baseline Schedule Changes – Once the baseline schedule has been accepted, all subsequent schedules provided will be considered schedule updates and compared to the original baseline. A new baseline will only be considered when significant changes in contract scope, changes in SCDOT priorities, or delays beyond the control of the Contractor occur.

If a baseline change is needed, the Contractor shall provide, in writing, a request to the Resident Construction Engineer with the following information:

- An electronic copy of the proposed baseline schedule using the following naming convention and in accordance with **Schedule Types** (included previously)

| | |
|-----------------------------|----------------------------|
| Type of Schedule Submitted: | Updated Baseline |
| File Name Convention: | [File Number]ub[Data Date] |
| File Name Example: | 32.82571ub60201 |

- Narrative identifying changes warranting a new baseline

A decision for an updated baseline will be made jointly between the Resident Engineer and District Scheduler within 10 days of receipt of request.

Measurement and Basis of Payment

The Department will make partial payments according to Section 109, Standard Specifications for Highway Construction, and as modified by the following schedule:

| Basis of Payment | Percentage of Contract Unit Price of Item |
|---|---|
| After the Engineer has approved the CPM Baseline schedule | 60 |
| After the Engineer has approved the As-Built CPM schedule | 40 |

The Department will pay for the accepted quantities at the contract price as follows:

| Item | Description |
|---------|-----------------------|
| 1080300 | CPM Progress Schedule |

November 4, 2009

AS-BUILT CONSTRUCTION PLANS

GENERAL

The Contractor shall produce and deliver to the Department the final As-Built plans for this contract. This set of As-Built plans is not intended to document final quantities, but is intended to show approved revisions to the contract design including but not limited to: revised roadway profiles and cross sections, revised typical sections, revised drainage installations, any changes to the demolition and removal items and any other changes to the original design.

If any design changes occur during construction, the plan sheets (or any other "job site record document" with a seal) revised after award of contract shall include a complete accounting and detail of the revisions and design changes. The P.E. responsible for the revisions shall seal each altered plan sheet (or any other "job site record document" with a seal). This documented information is to be part of the As-Built Plan requirements.

The As-Built plans shall be neat, legible and of the correct size. Bridge projects and any road projects which include Plan, Profile and Cross-Section Sheets shall be full size. In general, if the job was let with full size plans (22" X 36"), the As-Built shall be full size. All revisions to the original plans shall be delineated in red, located properly on the drawing, they shall be legible and true to scale. Every As-Built Plan, Profile and Cross-section Sheet shall be designated as such by note or stamp "As-Built" in black. The As-Built plans shall be bound in the same manner as they were let, not combined. In other words, if a project includes road and bridge work and each is bound separately, keep them separate for As-Built, each with its own AB201 cover sheet.

In submitting As-Built plans, the Contractor, or person responsible for the work, shall be required to complete FORM AB205 or AB206 whichever is applicable, and submit the form with the required deliverables to the RCE. The items and notes on these forms that apply to this project establish the minimum requirements for As-Built Plans. The forms can be found on the SCDOT website at <http://www.scdot.org/doing/default.html>.

Changes to the state highway system by any outside agency also need to have their plans placed in the Plans Library for future reference. This includes but is not limited to: encroachment permit projects, enhancements, procurements, inter-governmental agreements (IGA), local public agency (LPA) projects and any other agency, private or public, making changes to the existing state highway system. When As-Let plans are provided, the person or agency responsible for the work shall supply the SCDOT As-Built Plans Office in headquarters a set of As-Built plans which meet the requirements of this specification. Regardless of whether or not as-let plans are provided, when any changes are made to or within existing ROW, the as-built plans office is to be notified so the changes can be documented in the plans library. Once notified, the as-built engineer and the person responsible for the work can determine what will best represent the work performed in the field. The as-built engineer will review and forward to the Plans Storage Office for archiving.

The final As-Built plans shall be submitted within forty-five (45) days following the substantial work complete date of the project.

July 1, 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 a 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 4, 2012

FINE GRADING

Fine Grading is the work necessary to bring the subgrade material into the final shape and compacted condition prescribed in the Contract documents. The area considered for Fine Grading is defined in **Section 208** of the 2007 SCDOT Standard Specifications.

To clarify the area for the item Fine Grading, modify the following subsections in **Section 208** as indicated below.

Subsection 208.4.3 Fine Grading

Delete the third paragraph and replace it with the following:

- 3 Fine Grading is defined as the work necessary to bring the subgrade material into the final shape and compacted condition prescribed in the Contract documents. The subgrade surface area paid for as Fine Grading is only the area under the permanent pavement structure plus 18 inch beyond the longitudinal edge of the permanent pavement structure. Except for the additional 18 inches beyond the permanent pavement structure, the area under existing pavement that remains in place, unpaved shoulders, driveways, curbs, gutters, sidewalks, multi-use paths, temporary pavement, and slopes is not included in the Fine Grading area.

Subsection 208.5 Measurement

Delete the first and second paragraphs and replace them with the following:

- 1 The quantity for the pay item Fine Grading is the surface area of the subgrade that is constructed and prepared for the intended pavement structure as defined in paragraph 3 of **Subsection 208.4.3** and is measured by the square yard (SY), complete, and accepted. The bid quantity will be considered the full amount to be paid unless work requiring fine grading is deleted, or additional work is added to the project that was not required by the original bid documents.
- 2 If the pay item Fine Grading is not included in the Contract, subgrade work is not measured for payment directly and is considered included in contract unit bid price of the various other items of work. When Fine Grading is included in the Contract, the subgrade work for areas under previously existing pavement, unpaved shoulders, driveways, curbs, gutters, sidewalks, temporary pavement, and slopes is not measured for payment directly and is considered included in contract unit bid price of the various other items of work.

March 1, 2016

Asphalt Binder and Additives

Delete Subsection 401.2.1.1, Binder and Additives, General of the Standard Specification in its entirety and replace it with the following:

401.2.1.1 Performance Graded (PG) Binder

Use PG 64-22 or PG 76-22 binder as required by the contract that conforms to all of the requirements of AASHTO M 320. Do not use any combination of "air blown" asphalt binders. Ensure that the asphalt binder supplier lists all types of modifiers and additives used in the production of their PG binders including source of Re-Refined Engine Oil Bottoms (REOB), polymers, ground tire rubber (GTR), polyphosphoric acid (PPA), silicone, and liquid anti-stripping agent (LASA) in their Quality Control Plans. Ensure that additives used for compaction aides or anti-strips such as silicones, WMA additives, and LASA products are listed on the Bill of Lading (BOL). Use PG asphalt binders and modifiers that are heat and storage stable. Thoroughly blend the composite materials at the asphalt terminal before being loaded into the transport vehicle. Asphalt terminals that either supply or produce PG binders must be able to store multiple tanker loads of PG and certify that their products meet AASHTO M 320 prior to transferring or shipping on the BOL and that all modifiers and additives are compatible. Ensure that all PG binders adhere to *SCDOT Qualified Products Policy No. 37-38*. Only use PG 64-22 and PG 76-22 binder from sources listed on the most recent edition of *SCDOT Qualified Product List 37*.

401.2.1.1.1 Modified Performance Graded Binder

When specified, use modified binder consisting of a neat binder modified with a polymer or other modifier producing a binder complying with the requirements of a PG 76-22 as specified in AASHTO M 320 with the addition of the Multiple Stress Creep Recovery (MSCR) test using AASHTO T 350. Ensure acceptable elastomeric polymer is used by using Non-recoverable Creep Compliance values plotted against Percent Recovery based on figure X1.1 found in AASHTO M 332 using RTFO aged material. Ensure that the MSCR test is performed at 64°C using the Very Heavy Traffic "V" Grade requirement in AASHTO M 332. Use elastomer polymer or modifier consisting of a styrene-butadiene (SB), styrene-butadiene-styrene (SBS), styrene-butadiene-rubber (SBR), or ground tire rubber (GTR). Polyphosphoric Acid (PPA) may also be added to the binder, but must not exceed 0.5% by weight of the asphalt binder. Varying blends of SB, SBS, SBR, GTR (7% min.), and PPA (0.5% max.) may be used, at the discretion of the AME, provided the end product meets all specified requirements for the PG 76-22. Perform the storage stability separation test ASTM D7173 to ensure the asphalt binder is homogenous. Ensure that all storage tanks on the asphalt plant site are clearly marked to prevent cross contamination of different PG binders.

401.2.1.1.1.1 Ground Tire Rubber (GTR) in Performance Graded Binder

Ensure that the Ground Tire Rubber (GTR) is terminally (no exceptions) blended with the neat asphalt to create a homogenous and storage stable PG 76-22 that meets all criteria as stated in 401.2.1.1.1, with the exception of Solubility requirement (AASHTO T 44). Blending the GTR modified binder at the asphalt plant during asphalt mixture production will not be permitted. Use a 2.0mm gap setting when using the DSR in accordance to AASHTO T 315 and AASHTO T 350. GTR materials must be free from excessive moisture when received from the tire recycling facility and stored in a dry location at the terminal to prevent blending issues with the binder modification process. A letter of compliance from the tire recycling facility will be required by the AME and the asphalt terminal stating that the GTR blend will meet this specification. The GTR must be free of loose metal particles, other foreign contaminating materials, with exception of embedded metal particles in the rubber. Mineral powder may be added to reduce sticking and caking of the GTR particles. Stabilizing or compatibility additive(s) can be used to achieve better particle distribution. Any additives used for this purpose must not be detrimental to the performance of the asphalt binder or mixture performance and must be accepted by the AME in the supplier's QC plan. Ensure that the GTR supplier provides certificates of compliance with each shipment certifying that all requirements of this specification are complied with for each production lot number and the end product is homogenous and shows no signs of separation or coagulation. In the event that the terminal changes supply sources of GTR type of grin(ambient or cryogenic), or particle size, the asphalt terminal must perform a complete binder analysis on their revised product, and also provide a split sample to the SCDOT to ensure specification compliance.

SUPPLEMENTAL SPECIFICATIONS

Provide all sources of GTR and grind type in the asphalt terminal's QC plan. SCDOT may obtain samples of the GTR particles, base binder, or the finished GTR modified asphalt binder to ensure specification compliance at any time.

| Physical Test | Test Procedure | Specification |
|--|------------------------------|---|
| Sampling of the GTR | ASTM E105 ASTM E122 | In accordance to random sampling procedures |
| GTR Supply | ASTM D5603 | Ambient or Cryogenic Grind |
| Dosage of GTR | Per COA & Supplier's QC Plan | Minimum of 7.0% by weight of the PG 64-22 base asphalt binder |
| GTR Specific Gravity | ASTM D5603 | 1.06 – 1.20 |
| GTR Particle Distribution | ASTM D5644 | 30 Mesh Maximum of 2.0% Retained |
| GTR Metal Content | ASTM D5603 | Maximum 0.01% |
| GTR Fiber Content | ASTM D5603 | Maximum 0.50% |
| GTR Moisture Content | ASTM D1509 | Maximum 0.75% |
| Mineral Filler –Talcum Powder (Optional) | ASTM M17 | Maximum of 4.0% |
| Stabilizing Additives (Optional) | - | Maximum of 4.5% by wt. of GTR |

| Chemical Test | Test Procedure | Specification |
|----------------------------|-----------------------|----------------------|
| Acetone Extract | ASTM D297 | Maximum 25.0% |
| Rubber Hydrocarbon Content | | 40.0 – 60.0 % |
| Ash Content | | Maximum 8.0 % |
| Carbon Black Content | | 20.0 – 40.0 % |
| Natural Rubber | | 16.0 – 45.0 % |

401.2.1.1.1.2 Ground Tire Rubber in Open Graded Friction Course Mixtures

Stabilizing fibers and fiber supply systems at the asphalt plant may not be necessary when the GTR binder is used as required by section 409.2.3 and 409.4.3 of the Standard Specifications. Perform the SC-T-90 drain-down procedure at 350°F when conducting the asphalt mix design, or otherwise directed by the AME. In the event that drain-down values are found to be excessive, then stabilizing fibers may be necessary as directed by the AME. No additional compensation will be paid for the fibers in the OGFC mixture.

401.2.1.1.1.3 Asphalt Plant Storage Requirements When Using Ground Tire Rubber

Use a dedicated storage tank for “terminal blended GTR asphalt binder” at the asphalt plant. This tank must be capable of providing continuous mixing, as well as recirculation of the GTR asphalt binder as needed. Ensure that this tank is heated and capable of maintaining the temperature of the homogeneous blend of asphalt binder and GTR at 300°F to 350°F. Ensure that GTR modified binders are not mixed with other modified PG 76-22 binder without permission of the AME.

March 3, 2009

ASPHALT BINDER ADJUSTMENT INDEX

General: The Bidder is advised that the Department will apply Asphalt Binder Adjustments *for specified items of work* when the Index for Asphalt Binder (PG64-22) varies more than 5% from the Base Index price established for the contract.

Index: The Department maintains an Index for Asphalt Binder, which is an average of quotations from current asphalt binder suppliers, effective on the 1st and 17th of each month. The resulting Index is posted in spreadsheet form on the Department’s Internet at <http://www.scdot.org/doing/monthlyindexes.asp>.

Base Index: The Department sets a Base Index date for each contract subject to Asphalt Binder adjustments with the date set prior to the highway letting. The Index for Asphalt Binder on that Base Index date sets the framework of the 5% adjustment increments to be used for the contract. Tables showing the adjustment increments are displayed in the above noted spreadsheet (AC Binder Chart tab).

Asphalt Binder content Factors: The following table shows the Asphalt Binder Content factor (tons of Asphalt Binder per unit of work) for SCDOT work items that are subject to this specification. In order 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 A.C. Binder Adjustments | Unit | AC Binder Tons |
|---|------|----------------|
| Liquid Asphalt Binder (PG64-22) | TON | 1.0000 |
| Liquid Asphalt Binder (PG76-22) | TON | 1.0000 |
| Full Depth Patching – 4” (AC Binder) | SY | 0.0110 |
| Full Depth Patching – 6” (AC Binder) | SY | 0.0165 |
| Full Depth Patching – 8” (AC Binder) | SY | 0.0220 |
| Full Depth Patching – 10” (AC Binder) | SY | 0.0275 |
| Full Depth Patching – 12” (AC Binder) | SY | 0.0330 |
| Single Treatment Type-1 (0.38 gal/sy AC) | SY | 0.0016 |
| Single Treatment Type-2 (0.38 gal/sy emulsion) | SY | 0.0011 |
| Single Treatment Type-3 (0.25 gal/sy emulsion) | SY | 0.0007 |
| Single Treatment Class-A (0.30 gal/sy emulsion) | SY | 0.0008 |
| Double Treatment Type-1 (0.82 gal/sy emulsion) | SY | 0.0023 |
| Double Treatment Type-2 (0.97 gal/sy emulsion) | SY | 0.0027 |
| Double Treatment Type-2 (0.55 gal/sy emulsion) | SY | 0.0015 |
| Double Treatment-Class A Special (0.66 gal/sy (emulsion) | SY | 0.0018 |
| Triple Treatment-Type 1 (0.85 gal/sy emulsion) | SY | 0.0024 |
| Triple Treatment-Type 2 (0.71 gal/sy emulsion) | SY | 0.0020 |
| Triple Treatment-Type 4 (0.82 gal/sy emulsion) | SY | 0.0023 |
| Asph Surf Trmt – Single Treatment (0.28 gal/sy mod. Emulsion) | SY | 0.0008 |
| Asph Surf Trmt – Double Treatment (0.48 gal/sy mod. Emulsion) | SY | 0.0013 |
| Microsurfacing, Type II | SY | 0.0007 |
| Microsurfacing, Type II – Leveling | TON | 0.0800 |
| Emulsion for High Performance Chip Seal (Macrosurfacing) | Gal | 0.0028 |

Per unit index adjustments are determined by multiplying the Asphalt Binder Content factor by the Asphalt Binder Index Change (minimum of incremented range). The resulting per unit amount is then applied to the construction estimate as a line item adjustment.

Additional Provisions:

- A. The Department will calculate and apply Asphalt Binder Index Adjustments to estimates based on Index values set at the beginning of the estimate period.

| |
|-----------------------------|
| SUPPLEMENTAL SPECIFICATIONS |
|-----------------------------|

- Districts 2, 3, and 5 – 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.
 - Districts 1, 4, 6, and 7 – Estimate period begins on the 17th of the month and ends on the 16th day of the following month. The 17th 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 asphalt binder adjustment) continues after expiration of the contract completion date, the asphalt binder index 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 <http://www.scdot.org/doing/monthlyindexes.asp>.

July 1, 2010

Subsection 401.4.17, Transportation and Delivery of Mixes, of the Standard Specification will be deleted in its entirety and replaced with the following:

Transport the HMA from the plant to the point of use in vehicles meeting the requirements of Subsection 401.3.7. Do not permit any load of HMA to leave the plant so late in the day that it cannot be spread, finished, and compacted during daylight of that same day unless an approved artificial lighting system is provided. Ensure that HMA mixtures containing the asphalt binder grades below are produced and delivered to the jobsite within the acceptance range listed in the table below with exception that Base C and D mixtures will be produced and delivered at a temperature range of 240°-275° F. The mix temperatures will be checked using SC-T-84. Ensure the HMA mixtures are held within the acceptance range based on Binder Performance Grade in the Job Mix Formula. Deliver mixture within the acceptance range for temperature to assist in obtaining density requirements which provide smooth riding pavements with uniform texture.

| Binder Performance Grade | Acceptance Range (°F) |
|--------------------------|-----------------------|
| PG 64-22 | 265°-325° |
| PG 70-22 | 285°-335° |
| PG 76-22 | 300°-350° |

Note: This temperature specification does not apply to WMA (SC-M-408). Refer to the HMA Contractor's QC Plan for mix acceptance range based on selected asphalt plant WMA technologies.

September 1, 2015

Delete Subsection 601.1.3 of the Standard Specifications in their entirety and replace them with the following:

601.1.3 Restrictions

1 **The Department prohibits lane closures on interstate highways during holiday weekends, extended holiday periods or special events as defined below unless otherwise directed by the Engineer.** The Department's holiday lane closure restrictions for holidays that are observed on a Monday will include the weekend and are considered a holiday weekend unless otherwise established by these specifications. The Department defines the typical Monday holiday weekend as from 6:00 am of the Friday before the weekend until 6:00 a.m. of the Tuesday after the holiday. Lane closures, road closures, shoulder closures, pacing operations or any operations that will impact the efficient flow of traffic or hinder normal traffic operations during these Monday holiday weekends as defined above are prohibited unless otherwise directed by the Engineer.

2 Easter and Thanksgiving holidays are varied and extended holiday periods of a holiday weekend. Easter holidays are defined as from 12:00 noon of the Thursday before Easter until 6:00 p.m. of the Monday after Easter. Thanksgiving holidays are defined as from 12:00 noon of the Wednesday before Thanksgiving Day until 6:00 a.m. of the Monday after Thanksgiving Day. Lane closures, road closures, shoulder closures, pacing operations or any operations that will impact the efficient flow of traffic or hinder normal traffic operations during the Easter and Thanksgiving holidays as defined above are prohibited unless otherwise directed by the Engineer.

3 The 4th of July holiday is considered an extended holiday period. Considering the progressive nature of the calendar, this extended holiday period will vary from year to year depending upon the day of the week the holiday occurs. See the table below. Lane closures, road closures, shoulder closures, pacing operations or any operations that will impact the efficient flow of traffic or hinder normal traffic operations during the 4th of July holiday as defined below are prohibited unless otherwise directed by the Engineer.

| 4th of JULY HOLIDAY | |
|---------------------------------------|--|
| DAY OF WEEK | DURATION |
| MONDAY | 6:00 AM FRIDAY, JULY 1 ST through 10:00 PM SUNDAY JULY 10 TH |
| TUESDAY | 6:00 AM FRIDAY, JUNE 30 TH through 10:00 PM SUNDAY JULY 9 TH |
| WEDNESDAY | 6:00 AM FRIDAY, JUNE 29 TH through 10:00 PM SUNDAY JULY 8 TH |
| THURSDAY | 6:00 AM FRIDAY, JUNE 28 TH through 10:00 PM SUNDAY JULY 7 TH |
| FRIDAY | 6:00 AM FRIDAY, JUNE 27 TH through 10:00 PM SUNDAY JULY 13 TH |
| SATURDAY | 6:00 AM FRIDAY, JUNE 26 TH through 10:00 PM SUNDAY JULY 12 TH |
| SUNDAY | 6:00 AM FRIDAY, JUNE 25 TH through 10:00 PM SUNDAY JULY 11 TH |

4 The Christmas holidays are considered an extended holiday period. Considering the progressive nature of the calendar, this extended holiday period will vary from year to year depending upon the day of the week the holiday occurs. See the table below. Lane closures, road closures, shoulder closures, pacing operations or any operations that will impact the efficient flow of traffic or hinder normal traffic operations during the Christmas holidays as defined below are prohibited unless otherwise directed by the Engineer.

| CHRISTMAS HOLIDAYS | |
|---------------------------|--|
| DAY OF WEEK | DURATION |
| MONDAY | 6:00 AM FRIDAY, DECEMBER 22 ND through 10:00 PM WEDNESDAY JANUARY 3 RD |
| TUESDAY | 6:00 AM FRIDAY, DECEMBER 21 ST through 10:00 PM THURSDAY JANUARY 3 RD |
| WEDNESDAY | 6:00 AM FRIDAY, DECEMBER 20 TH through 10:00 PM FRIDAY JANUARY 3 RD |
| THURSDAY | 6:00 AM TUESDAY, DECEMBER 23 RD through 10:00 PM SUNDAY JANUARY 4 TH |
| FRIDAY | 6:00 AM WEDNESDAY, DECEMBER 23 RD through 10:00 PM SUNDAY JANUARY 3 RD |
| SATURDAY | 6:00 AM THURSDAY, DECEMBER 23 RD through 10:00 PM MONDAY JANUARY 3 RD |
| SUNDAY | 6:00 AM FRIDAY, DECEMBER 23 RD through 10:00 PM TUESDAY JANUARY 3 RD |

5 Special events are events generating excessive traffic as determined by the Department. Lane closures, road closures, shoulder closures, pacing operations or any operation that would impact the efficient flow of traffic or hinder normal traffic operations during special events are prohibited unless otherwise directed by the Engineer.

September 1, 2012

TRAILER MOUNTED AUTOMATED FLAGGER ASSISTANCE DEVICE SYSTEM (AFAD)

1. Description:

This specification details the minimum requirements of all Automated Flagger Assistance Device Systems (AFAD) utilized and placed into operation on the roadways of the state of South Carolina.

An automated flagger assistance device system is a temporary traffic control device system for controlling the flow of traffic through temporary traffic control areas, typically work zones, that generate the requirement for two-way traffic to share a single travel lane. An automated flagger assistance device system shall consist of no less than 2 individual AFAD units linked and remotely controlled by wireless communications. A flagger(s), who has successfully completed a flagger training course sponsored by a South Carolina Department of Transportation approved work zone traffic control training provider, shall operate the system. Install, operate and maintain each AFAD unit as designated by these Supplemental Specifications, the manufacturer's specifications, the Standard Drawings for Road Construction, the Plans and the Engineer.

An automated flagger assistance device system acceptable for use on the roadways of the state of South Carolina shall be either a Type I "RED / YELLOW" Lens system or a Type II "STOP / SLOW" Sign system.

The automated flagger assistance device system shall comply with all requirements for Automated Flagger Assistance Devices as specified and directed by the MUTCD, latest edition, and this supplemental specification. An automated flagger assistance device system shall operate and comply with all requirements for flagging operations as specified and directed by the latest editions of the MUTCD, the South Carolina Flagger's Handbook and the Standard Specifications for Highway Construction. Also, an automated flagger assistance device system shall operate and comply with all requirements for flagging operations as specified and directed by the Standard Drawings for Road Construction, the special provisions, the plans and the Engineer.

2. Operations Requirements:

A. General: Automated flagger assistance device systems are only permitted for use on two-lane two-way roadways where each single travel lane of opposing traffic is required to utilize and share one travel lane. An AFAD system is PROHIBITED for use on multilane roadways with reduced numbers of travel lanes. An AFAD is not a traffic control signal and shall not be used as a temporary traffic control signal or to control traffic at any location with more than 2 opposing single travel lanes seeking to share one travel lane.

B. Documentation: Provide documentation to the SCDOT to verify that each operator of an automated flagger assistance device system has successfully completed instruction in the operation of a system by the manufacturer of that system. Also, provide documentation to verify that each operator has successfully completed a flagger training course sponsored by a South Carolina Department of Transportation approved work zone traffic control training provider.

1. **Work Conducted under Contract to SCDOT** - Provide documentation of proof of successful completion of training in the proper operation of the AFAD system by the manufacturer of the system and successful completion of training as a flagger by a South Carolina Department of Transportation approved work zone traffic control training provider to the Resident Engineer no less than 7 days prior to placing an automated flagger assistance device into operation.
2. **Work Conducted under Encroachment Permit** - Provide documentation of proof of successful completion of training in the proper operation of the AFAD system by the manufacturer of the system and successful completion of training as a flagger by a South Carolina Department of

Transportation approved work zone traffic control training provider along with submittal of the encroachment permit to the SCDOT.

C. Operator: The operator of the an automated flagger assistance device system shall be a recipient of and have successfully completed instruction in the operation of the system by the manufacturer of that system. The operator shall have successfully completed a flagger training course sponsored by a South Carolina Department of Transportation approved work zone traffic control training provider.

The South Carolina Department of Transportation only recognizes the following entities as acceptable providers of work zone traffic control training for organizations outside of the SCDOT who perform work activities within the highway rights-of-way in South Carolina under either contract to SCDOT or encroachment permit:

- American Traffic Safety Services Association (ATSSA)
- Institute for Transportation Research and Education at North Carolina State University (ITRE)
- Carolinas Association of General Contractors (AGC)
- National Safety Council South Carolina Chapter

The operator shall control the automated flagger assistance device system from a location with an unobstructed view of the AFAD unit as well as an unobstructed view of the approaching traffic. If a single operator is controlling more than one unit, the operator shall have an unobstructed view of traffic from both directions. At no time is the operator permitted to leave the AFAD unattended when the AFAD is operating.

D. Site Location: When sufficient shoulder space is available, place and position the AFAD unit on the shoulder of the roadway no closer than 1 foot from either the near edge line or the near edge of pavement when an edge line is absent to the near edge of the trailer when the gate arm is in the upright position. When sufficient shoulder space to attain the minimum 1 foot requirement is unavailable, minimal encroachment of the unit upon the adjacent travel lane is permitted.

Place and position the AFAD unit to allow the end of the gate arm, when in the down position, to reach the center of the adjacent travel lane being controlled by the unit. Encroachment by the gate arm when in the down position to a point less than to the center of the adjacent travel lane or into the opposing travel lane beyond the center of the roadway is PROHIBITED.

Install the advance warning signs required for typical flagging operations on each approach. In addition to the typical flagging operations sign array, also include and install a "Be Prepared To Stop" sign (W3-4-48) between the "Flagger" symbol sign (W20-7-48) and the AFAD unit on each approach. Therefore, the required advance warning signs for each approach are, "Be Prepared To Stop" (W3-4-48), "Flagger" symbol (W20-7-48), "One Lane Road Ahead" (W20-4-48-A) and "Road Work Ahead" (W20-1-48-A).

E. Nighttime AFAD Flagging Operations: During nighttime operations, illuminate each AFAD unit 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 operations, operators 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 a 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.

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

3. System Requirements:

SUPPLEMENTAL SPECIFICATIONS

A. General: An automated flagger assistance device system shall consist of a Main AFAD unit and a Remote AFAD unit, linked and remotely controlled by wireless communications. The individual trailer-mounted units shall have nesting capabilities to permit towing of both units in a single trailer configuration. When nested, all lights including stop, tail and turn signal lights of both units shall operate uniformly.

B. Power Source: The electrical power for operation of the sign shall be supplied by a 12 VDC power source or a 110 VAC or a 120 VAC power source. Provide and mount a D/C power source for the unit on the trailer. An adaptable 110 VAC or 120 VAC power source may be used when available and selected for use.

1. **D/C Powered:** Power the unit by means of a battery bank charged by photovoltaic solar panels and/or a built-in 110 VAC 10 amp battery charger. House the battery bank in a lockable heavy duty weatherproof box or cabinet. The battery bank shall have the capability to provide sufficient operating power to the unit for no less than 7 continuous days.
2. **A/C Powered:** Power the unit by means of a 110 VAC or 120 VAC power source. Equip the unit with ground fault circuit interrupter circuit breakers. Conduct all A/C power adaptations with UL approved equipment and methods.

C. Remote Control: Equip each AFAD unit with a controller capable of receiving and implementing instructions through wireless communications from a handheld transceiver. Also, equip each AFAD unit with a handheld transceiver that provides wireless communication with the unit controller to permit operation of the individual unit or the system by an operator or operators from remote locations. The system shall provide the capability for total system operation and control of both units by one operator from a primary handheld transceiver as well as allow independent unit operation by one operator per unit from unit specific handheld transceivers.

Monitor and verify data transmissions utilized to control the AFAD units. Digitally encode signal transmissions to minimize interference. Comply with all applicable requirements of the Federal Communications Commission. In the event communications are disrupted or lost, the system shall go into a "fail safe" mode and display the "Circular Red" / "STOP" indications and lower the gate arms.

D. Gate Arm: Equip each AFAD unit with an automated gate arm that descends to a down position across the travel lane that approaching traffic is operating in when the AFAD unit displays the condition for approaching traffic to stop. The automated gate arm shall ascend to an upright position when the AFAD unit displays the condition to allow stopped traffic to proceed past the location of the AFAD unit.

Acceptable operation of the gate arm shall require the gate arm to begin descent to the down position no less than 2 seconds or more than 4 seconds after the AFAD unit displays the condition for approaching traffic to stop. The gate arm shall begin ascent to the upright position not less than 1 second or more than 2 seconds prior to display of the condition to allow stopped traffic to proceed.

The gate arm shall measure no less than 8 feet in length and shall have a minimum vertical height of 4 inches when placed in the down position. Reflectorize both sides of the gate arm with a Type III Microprismatic retroreflective sheeting with vertical alternating red and white stripes at 16 inch intervals.

The gate arm shall deflect in the event an errant vehicle drives through and strikes the gate arm and then return to a functional position after the errant vehicle clears the gate arm.

E. Trailer: Fabricate and equip each trailer with a single axle, springs, support assembly and four (4) leveling or stabilizer jacks. Properly equip the trailer to comply with South Carolina Law governing motor vehicles. The minimum requirement for lights and reflectors shall include turn signals, dual tail lights, and brake lights. Equip each trailer with Safety chains meeting SAE J-697 standards and paint each trailer with Federal Standard No. 595, Orange No. 12246.

Each trailer mounted AFAD unit shall have the capability to withstand winds up to 80 MPH without overturning when in the operating configuration or position.

4. Type I “RED / YELLOW” Lens System:

A Type I “RED / YELLOW” Lens AFAD system shall alternately display a steadily illuminated Circular RED lens and a flashing Circular YELLOW lens to control traffic without the need for a “human flagger” in the immediate vicinity of the AFAD unit. The steadily illuminated Circular RED lens shall illuminate when approaching traffic is required to stop and the flashing Circular YELLOW lens shall illuminate when stopped or approaching traffic is permitted to proceed pass the location of the AFAD unit.

A RED / YELLOW Lens AFAD unit shall have no less than one set of Circular RED and Circular YELLOW lenses in a vertical configuration that have diameters of no less than 12 inches. Arrange the lenses to place the Circular RED above the Circular YELLOW and provide a minimum height of no less than 7 feet from the bottom of the apparatus housing the Circular YELLOW lens to the grade elevation of the travel lane under control of the AFAD unit. However, if the lenses are located over any portion of a travel lane in which traffic is operating and may pass underneath the lenses, the minimum mounting height shall be no less than 15 feet from the bottom of the apparatus housing the YELLOW lens to the grade elevation of the travel lane under control of the AFAD unit in which traffic is operating.

The gate arm shall begin its descent to the down position not less than 2 seconds or more than 4 seconds after the Circular RED lens is illuminated. The automated gate arm shall begin its ascent to the upright position not less than 1 second or more than 2 seconds prior to illumination of the flashing Circular YELLOW lens.

Install a “Stop Here On Red” sign (R10-6-36) or (R10-6a-30) on the right side of the approach at the point at which motorists are expected to stop when the Circular RED lens is illuminated.

Transition Between RED and YELLOW Conditions -

Transition to Circular RED condition - The flashing Circular YELLOW lens shall enter into a minimum 5 second steady illumination phase prior to transitioning to the steadily illuminated Circular RED condition. The gate arm shall begin its descent not less than 2 seconds or more than 4 seconds after the Circular RED lens is illuminated.

Transition to Circular YELLOW condition - The gate arm shall complete its ascent to the upright position not less than 1 second or more than 2 seconds prior to illumination of the flashing Circular YELLOW lens. The steadily illuminated Circular RED lens shall transition to the flashing Circular YELLOW lens.

The Type I “RED / YELLOW” Lens AFAD system shall include a fail-safe system with a conflict monitor or similar device to prevent display of conflicting indications between units. Also, the system shall provide indicators to notify the operators of power loss that may impede proper operation of the system.

5. Type II “STOP / SLOW” Sign System:

A Type II “STOP / SLOW” Sign AFAD system shall have a STOP / SLOW sign that alternately displays the STOP (R1-1-36) face and the SLOW (W20-8-36) face of a STOP / SLOW paddle to control traffic without the need for a “human flagger” in the immediate vicinity of the AFAD unit. The STOP sign face shall display when approaching traffic is required to stop and the SLOW sign face shall display when stopped or approaching traffic is permitted to proceed pass the location of the AFAD unit.

The STOP / SLOW sign, fabricated from a rigid material, shall have an octagonal shape with a minimum face size of 36 inches by 36 inches. Reflectorize each face of the sign with a Type VII, Type VIII or Type IX Prismatic Retroreflective sheeting included on the latest edition of the *SCDOT Qualified Products List 20*. The STOP sign face shall have a red background with white letters and border and the SLOW sign face shall have a diamond shaped orange background with black letters and border. The letters shall have a minimum height of 8 inches. The sign faces shall have a minimum mounting height of 7 feet from the bottom of the sign to the grade elevation of the travel lane under control of the AFAD unit.

SUPPLEMENTAL SPECIFICATIONS

Supplement the Type II "STOP / SLOW" Sign AFAD unit with active conspicuity devices. Include a steadily illuminated RED lens beacon to illuminate when the STOP sign face is displayed and a flashing YELLOW lens beacon to illuminate when the SLOW sign face is displayed. Each beacon shall have a 12 inch signal lens. Mount the RED lens beacon no more than 24 inches above the top of the STOP sign face and YELLOW lens beacon no more than 24 inches above the top or to the side of the SLOW sign face.

Type B warning lights are PROHIBITED as alternatives to the 12 inch signal lens beacons.

The gate arm shall begin its descent to the down position 2 seconds or more than 4 seconds after the transition to a complete display of the STOP sign face is accomplished and the illumination of the steadily illuminated RED lens beacon. The automated gate arm shall begin its ascent to the upright position not less than 1 second or more than 2 seconds prior to the initiation of the transition from the STOP sign face to the SLOW sign face.

Install a "Wait On Stop" sign (R1-7-30) and a "Go On Slow" sign (R1-8-30) either on the same support structure as the AFAD unit or immediately adjacent to the AFAD unit.

Transition Between STOP and SLOW Conditions -

Transition to STOP condition - The RED lens beacon shall enter into a "flashing mode" no less than 5 seconds prior to transitioning from the SLOW sign face to the STOP sign face. Immediately upon completion of the transition to complete display of the STOP sign face, the "flashing mode" of the RED lens beacon shall transition to a steadily illuminated condition. The gate arm shall begin its descent in not less than 2 seconds or more than 4 seconds after completion of the transition to a complete display of the STOP sign face and illumination of the steadily illuminated RED lens beacon.

Transition to SLOW condition - The STOP sign face shall begin the transition to the SLOW sign face. The gate arm shall begin its ascent to the upright position not less than 1 second prior to the initiation of the transition from the STOP sign face to the SLOW sign face. The RED lens beacon shall cease to illuminate and the flashing YELLOW lens beacon shall begin to illuminate immediately upon completion of the transition of the STOP sign face to the SLOW sign face and the ascent of the gate arm to its completed upright position.

The Type II "STOP / SLOW" Sign AFAD system shall include a fail-safe system with a conflict monitor or similar device to prevent display of conflicting indications between units. Also, the system shall provide indicators to notify the operators of power loss that may impede proper operation of the system.

3. Method of Measurement: Unless otherwise specified, Automated Flagger Assistance Device Systems (AFAD's) are not measured for separate payment but are included in the contract lump sum bid price item Traffic Control as specified in Subsections 107.12 and 601.5 of the *2007 Standard Specifications for Highway Construction*.

4. Basis of Payment: Unless otherwise specified, payment for an Automated Flagger Assistance Device System (AFAD) is included in the contract lump sum bid price item Traffic Control as specified in Subsections 107.12 and 601.5 of the *2007 Standard Specifications for Highway Construction*. The payment shall be full compensation for providing, installing, removing, and relocating as necessary, operating, and maintaining an Automated Flagger Assistance Device System (AFAD). Payment shall include furnishing all labor, hardware, equipment, tools, incidentals, and any miscellaneous items necessary for installing, operating, and maintaining the system.

September 1, 2013

WORK ZONE TRAFFIC CONTROL TRAINING REQUIREMENTS FOR CONTRACTORS/SUBCONTRACTORS

1. Description:

This specification details the work zone traffic control training requirements for employees and representatives of a contractor or subcontractor under contract to the South Carolina Department of Transportation (SCDOT) whose job duties include responsibilities relative to implementation and maintenance of the Transportation Management Plan (TMP). “Employees and representatives of a contractor or subcontractor” will henceforth be referred to as “employee” or “employees” and “contractor or subcontractor” will henceforth be referred to as “contractor”.

The SCDOT requires the contractor to provide documentation to substantiate successful completion and attainment of a passing score of a prescribed training course conducted by an SCDOT approved provider by those employees whose job duties categorize them as “designated trainees” as defined hereinafter.

2. Implementation:

These requirements for work zone traffic control training for employees of those entities under contract to the SCDOT whose job duties include responsibilities relative to implementation and maintenance of a TMP shall become effective on all projects let to contract after September 1, 2013.

3. Designated Trainees:

An employee whose job duty responsibilities, as designated hereto, impact or involve any of or all of the components of a TMP must successfully complete an advanced work zone traffic control training program. These components include the primary component, the “Temporary Traffic Control” plan, and the secondary components, the “Transportation Operations” plan and the “Public Information” plan.

An employee whose job duties include any of the following responsibilities regarding the TMP shall successfully complete an advanced work zone traffic control training program conducted by an SCDOT approved work zone traffic control training provider:

- Supervision of the field installation of any or all components of the TMP
- Supervision of the maintenance of any or all components of the TMP
- Supervision of the removal of any or all components of the TMP
- Design and development of revisions to an existing TMP
- Design and development of a new or alternate TMP
- Any decision-making responsibilities regarding the TMP

Those employees whose job duties do not include responsibilities relative to the TMP as stated above are not required to attend an advanced work zone traffic control training program. However, it is recommended that all employees whose job duties place them on the job site within the highway rights-of-way within 30 feet or less of a travel lane open to traffic should attend a basic work zone traffic control training course.

Also, an employee whose job duties include “flagger” shall successfully complete a “Flagger Training” course. However, regarding an employee whose job duties include “flagger” but does not involve any of the responsibilities listed above, successful completion of a “Flagger Training” course is the only mandatory work zone traffic control training course required for this employee; other work zone traffic control training courses are elective.

4. Approved Work Zone Traffic Control Training Providers:

The SCDOT recognizes the following organizations as acceptable providers of an advanced work zone traffic control training program, a “Flagger Training” course or the optional basic work zone traffic control training course:

American Traffic Safety Services Association (ATSSA)
Institute for Transportation Research and Education at North Carolina State University (ITRE)
Carolinas Association of General Contractors (AGC)
National Safety Council South Carolina Chapter

These organizations provide work zone traffic control training in compliance with the MUTCD and reference requirements specific to SCDOT. Therefore, work zone traffic control training provided by entities other than those listed above are not considered comparable and shall be unacceptable.

Specific course material for work zone traffic control training courses designated as “Basic”, “Advanced”, “Supervisor” or “Flagger” and any additional training courses not specified here is determined by the work zone traffic control training course provider and has undergone review and received acceptance by SCDOT. Also, the passing score for each training course is determined by the work zone traffic control provider.

5. Training Requirements / Qualifications:

Successful completion of an advanced work zone traffic control training program is defined as achieving a passing score in all courses, including any prerequisite courses, to attain a level considered “advanced”, “supervisor” or any other relative term as designated by the provider to imply the trainee has an understanding of the course material inclusive of design, implementation and maintenance of work zone traffic control scenarios. Upon successful completion of the program, the trainee should also possess an understanding for determining the need for and developing and implementing adjustments as necessary when applying typical work zone traffic control applications to non-typical work site conditions and scenarios.

The employee whose job duty responsibilities mandate successful completion of an advanced work zone traffic control training program shall do so prior to performing any job duties with responsibilities relative to design and development of a TMP or revisions of an existing TMP or any decision-making responsibilities regarding the TMP or supervision of the field installation and maintenance of any and all components of the TMP.

Also, an employee whose job duties mandate successful completion of a “Flagger” training course shall do so prior to performing any job duties relative to flagging traffic.

Each employee who has successfully completed an approved advanced work zone traffic control training program or a “Flagger” training course shall attend and complete a refresher course relative to the employee’s job duties on a 5-year incremental time frame.

6. Documentation:

The contractor shall provide proof of successful completion of an acceptable advanced work zone traffic control training class by those employees whose job duty responsibilities mandate successful completion of approved work zone traffic control training to the Resident Engineer prior to the employee performing the job duties that incorporate responsibilities which necessitate approved work zone traffic control training. For proof of successful completion of an approved work zone traffic control training class, provide a copy of the certificate of training from the organization who conducted the training to the Resident Engineer. Failure to provide the required documentation as specified shall prevent SCDOT acceptance of the employee as properly trained and acceptable for conducting those job duties that necessitate the prescribed work zone traffic control training.

| |
|-----------------------------|
| SUPPLEMENTAL SPECIFICATIONS |
|-----------------------------|

The contractor shall provide proof of successful completion of an acceptable "Flagger Training" course by all employees whose job duties require them to be the "Flagger" within a flagging operation to the Resident Engineer prior to the employee performing any "Flagger" job duties.

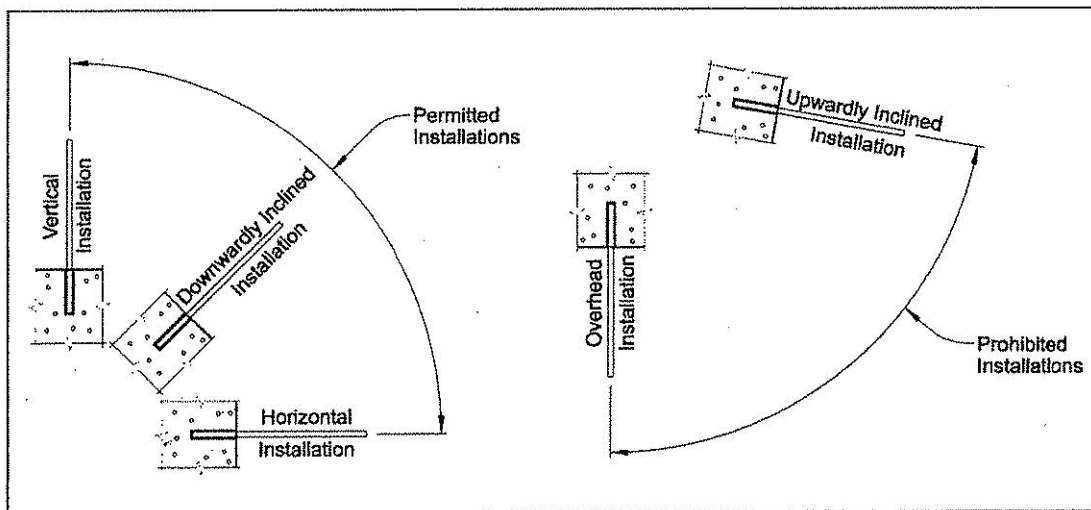
The contractor shall provide proof of successful completion of an acceptable advanced work zone traffic control refresher course for those employees no later than 60 days beyond the 5 year anniversary date of the employee's certificate date of completion of a previous advanced work zone traffic control training program.

Documentation of proof of completion of a basic work zone traffic control training course by employees whose job duties require their presence on the job site within the highway rights-of-way but exclude any responsibilities relative to the TMP is not required.

September 1, 2008

ADHESIVELY BONDED ANCHORS AND DOWELS**1.0 Adhesively Bonded Anchors and Dowels****1.1 Scope**

Furnish all required labor, equipment, and materials and perform all operations necessary for installing anchors and dowels in concrete using an adhesive bonding system in accordance with the details shown on the Plans and with the requirements of this Specification. Provide a material system specifically intended for use in structural applications for bonding anchors and dowels to hardened concrete. Limit applications to anchors and dowels installed in horizontal, vertical, and downwardly inclined positions. Do not use adhesive anchors in overhead or upwardly inclined installation. See Figure 1.1.

**Figure 1.1**

Submit a description of the proposed adhesive bonding system to the RCE for review, comments, and acceptance. Include in the description to anchor type, equipment, Manufacturer's recommended hole diameter, material specifications, and any other material, equipment or procedure not covered by the contract documents. List the properties of the adhesive, including density, minimum and maximum temperature application, setting time, shelf life, pot life, shear strength, bond strength, and compressive strength. If anchors or dowels containing a corrosion protective coating are required, provide an adhesive that does not contain any chemical elements that are detrimental to the coating and include a statement to this effect in the submittal concerning the contents as required by State or Federal Laws and Regulations.

Submit to the RCE Manufacturer's certification that the adhesive bonding system, when tested for tension pull-out according to ASTM E488 utilizing identical anchorages, embedment depths, and concrete strengths as those specified on the Plans, does not fail by any mode listed in Section 12 of ASTM E488 when loaded to the lesser of 85 percent of the specified bond strength (based on the nominal anchorage diameter and embedment depth) or 90 percent of the yield strength of the anchor. Also, submit to the RCE long term load (creep) test results performed in accordance with ASTM E1512, ICC-ES AC58, or ICC-ES AC308. When specified on the Plans, field testing will also be required for adhesive anchorages.

1.2 Materials

Provide adhesive bonding material systems for structural applications that meet the requirements of ASTM C881, Type IV, Grade 3, Class B or C (depending on site conditions). Do not use "Fast Set epoxy". Package components of the adhesive in containers of such size that one whole container of each component is used in mixing one batch of adhesive. Use containers of such design that all of the contents may be readily removed, and are well sealed to prevent leakage. Do not use material from containers which are damaged or have been previously opened. Use only full packages of components. Furnish adhesive material that requires hand mixing in two separate containers designated as Component A and Component B or in a self contained cartridge or capsule that consists of two components which will be automatically mixed as they are dispensed, as in the case of a cartridge, or drilled into, as in the case of a capsule.

Provide packages clearly marked by the Manufacturer with the following information:

- Manufacturer's name and address
- Product Name
- Date of Manufacture
- Expiration Date
- LOT Identification Number
- Storage and Handling Requirements

With each package include the Manufacturer's instructions for anchor and dowel installation. Include the following information with the instructions:

- Diameters of drilled holes for applicable anchor and dowel sizes.
- Cleaning procedure for drilled holes, including a description of permitted and prohibited equipment and techniques.
- Allowable temperature ranges for storage, installation and curing.
- Identification of acceptable mixing/dispensing nozzles.
- Fabrication requirements for anchors and dowels
- Description of tools permitted or required for installation.
- Method of identifying properly proportioned and mixed adhesive materials.
- Time and temperature schedule for initial set ('gel time') and full-strength cure.
- Requirements for special installation conditions such as horizontal or near horizontal orientation of the anchor or dowel.

1.3 Construction Requirements

1.3.1 Storage

Deliver the adhesive bonding material system to the job-site in original unopened containers with the Manufacturer's label identifying the product. Store materials delivered to the job-site in the original unopened containers within an appropriate facility capable of maintaining storage conditions consistent with the Manufacturer's recommendations.

1.3.2 Installation

Install the adhesive anchors and dowels perpendicular to the plane surface of the structural member, in accordance with Manufacturer's recommendations, and when the concrete is above 40 degrees Fahrenheit and has reached its 28 day strength. Install the anchorages before the adhesive's initial set ('gel time').

1.3.2.1 Drilling of Holes into Concrete

Ensure that concrete members receiving adhesive-bonded anchors or dowels are structurally sound and free of cracks in the vicinity of the anchor or dowel to be installed. When directed by the RCE, use a jig or fixture to ensure the holes are positioned and aligned correctly during the drilling process.

Use a metal detector specifically designed for locating steel in concrete to avoid conflicts with existing steel reinforcement whenever placement tolerances and edge clearances permit. Unless other equipment is recommended by the Manufacturer, drill holes to the diameter required by the Manufacturer using a rotary hammer drill and bit. Perform core drilling to clear existing steel reinforcement only when approved by the RCE. Dry the drilled holes completely prior to cleaning and installing the anchors or dowels. Clean and prepare drilled holes in accordance with the Manufacturer's recommendations, but as a minimum, use oil-free compressed air to remove loose particles from drilling, brush inside surface to free loose particles trapped in pores, then use compressed air again to remove the remaining loose particles. Use a non-metallic bristle brush and avoid over-brushing to prevent polishing the inside surface of the drilled hole. Check each hole with a depth gauge to ensure proper embedment depth. Repair spalled or otherwise damaged concrete using methods approved by the RCE.

1.3.2.2 Inspection of Holes

Inspect each hole immediately prior to placing the adhesive and the anchors/dowels. Ensure all holes are dry and free of dust, dirt, oil, and grease.

1.3.2.3 Mixing of Adhesive

Mix the adhesive in strict conformance with the Manufacturer's instructions.

1.3.2.4 Embedment of Anchors and Dowels

Remove all debris, oils, and any other deleterious material from the anchors and dowels to avoid contamination of the adhesive bonding material. Insert the anchor or dowel the specified depth into the hole and slightly agitate it to ensure wetting and complete encapsulation. After insertion of the anchor or dowel, strike off any excessive adhesive flush with the concrete face. Should the adhesive fail to fill the hole, add additional adhesive to the hole to allow a flush strike-off. Do not disturb the anchors and dowels while adhesive is hardening. For horizontal and inclined installation, provide temporary supports to maintain the alignment of the anchors or dowels until the adhesive bonding material has cured.

1.3.2.5 Field Testing

When specified on the Plans, field test the installed anchors and dowels. Perform field testing of the installed anchors and dowels in accordance with the applicable sections of ASTM E488. Inform the RCE and the Manufacturer when the tests will be performed at least 2 days prior to testing. For testing, use a calibrated hydraulic centerhole jack system that will not damage the anchor or dowel. Place the jack on a plate washer that has a hole at least 1/4" larger than the hole drilled into the concrete. Position the plate washer on center to allow an unobstructed pull. Position the anchors/dowels and the jack on the same axis. Have an approved testing agency calibrate the jack within 6 months prior to testing. Supply the RCE with a certificate of calibration.

Divide the anchors and dowels into LOTs for field testing and acceptance. A LOT consists of anchors or dowels of the same type, diameter, strength, embedment length, and adhesive bonding system. Prior to performing field tests, submit proposed testing locations to the RCE for review, comments, and acceptance. In the presence of the RCE, field test the anchors or dowels for each LOT in accordance with the following:

Test a minimum of 1 anchorage but not less than 10% of all anchors in the LOT to the test load shown on the Plans.

If less than 60 anchorages are to be installed: Install and test the minimum required number of anchorages prior to installing the remaining anchorages. After installing the remaining anchorages, test a minimum of 2 of these anchorages at random locations selected by the RCE.

If more than 60 anchorages are to be installed: Test the first 6 anchorages prior to installing the remaining anchorages. Then test, at random locations selected by the RCE, 10% of the number in excess of 60 anchorages.

For every failed field test, perform two additional field tests on adjacent untested anchors or dowels within the LOT. Continue additional field tests until no more test failures occur, or until all anchors and dowels within the LOT are tested.

Begin testing after the Manufacturer's recommended cure time has been reached. For testing, apply and hold the test load for three minutes. If the jack experiences any drop in gage reading, restart the test. For the anchorage to be deemed satisfactory, hold the test load for three minutes with no movement or drop in gage reading.

Remove all anchors and dowels that fail the field test, without damage to the surrounding concrete. Re-drill holes to remove adhesive bonding material residue and clean the hole in accordance with Subsection 1.3.2.1. For reinstalling replacement anchors or dowels, follow the same procedures as new installations. Do not reuse failed anchors or dowels unless approved by the RCE.

Determine failure of the field test in accordance with ASTM E488. Submit certified test reports to the RCE. Final acceptance of the adhesively anchored system is based on the conformance of the pull test to the requirements of this Specification. Failure to meet the criteria of this Specification is grounds for rejection.

1.4 Measurement

No separate measurement for payment will be made for furnishing, installing, and testing of adhesively bonded anchors and dowels.

1.5 Payment

Include all costs of adhesively bonded anchors and dowels in the contract unit price bid for the items to be anchored.

April 1, 2013

**Concrete Structures – Preformed
Joint Filler**

Delete Subsection 702.2.2.1 of the Standard Specifications in its entirety and replace it with the following:

702.2.2.1 Preformed Joint Filler

Use preformed joint material that meets AASHTO M 153 or AASHTO M 213 with the following exceptions:

1. Use only materials manufactured from rubber.
2. Use materials that require a load of not less than 340 kPa or greater than 5200 kPa to compress to 50% of its thickness when tested in accordance with AASHTO T 42.
3. Use materials that have a recovery of at least 70% when tested in accordance with AASHTO T 42.

Use preformed joint material that is listed on QPL 81.

Provide a manufacturer's certification that states that the material conforms to SCDOT specifications.

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 control devices should be coordinated with construction activities to maintain compliance with the above regulations and NPDES General Perm

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 or that may become due to the Contractor. In case no monies are due or available, the fines incurred will be charged against the Contractor's Surety.

J. SPECIAL PROVISIONS – DAVIS & FLOYD – PHASE 1E

(Begins Next Page)

SPECIAL PROVISIONS

JOB NUMBER

31588.00

COUNTY

Colleton

This project is to be constructed under the South Carolina Department of Transportation's Specifications For Highway Construction Edition of 2007, the South Carolina Department of Transportation's 2004 Construction Manual, the **Supplemental Technical Specifications** in effect at the time of the letting, and the following Special Provisions.

- (1) **ERRATA TO 2007 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION:**
See attached Supplemental Specification dated **January 1, 2018** on page **1 of Phase 1E Supplemental Specifications**.
- (2) **SUPPLEMENTAL TECHNICAL SPECIFICATIONS:**
This project will utilize all appropriate Supplemental Technical Specifications including but not limited to SC-M-400, SC-M-401, SC-M-402, SC-M-403, SC-M-714, SC-M-815-(2 & 8). These may be downloaded at the link below.
<https://www.scdot.org/business/road-technical-specs.aspx>
- (3) **SUBMITTALS:**
All submittals, regardless of origin, shall be stamped with the approval of the Contractor and identified with the name and number of this Contract, Contractor's name, and references to applicable specification paragraphs and Contract Drawings. Each submittal shall indicate the intended use of the item in the work. When catalog pages are submitted, applicable items shall be clearly identified and inapplicable data crossed out. The current revision, issue number, and date shall be indicated on all drawings and other descriptive data.
The Contractor shall be solely responsible for the completeness of each submittal. Contractor's stamp of approval is a representation to the Owner and Engineer that the Contractor accepts sole responsibility for determining and verifying all quantities, dimension, field construction criteria, materials, catalog numbers, and similar data, and that the Contractor shall reviewed and coordinated each submittal with the requirements of the work and the Contract Documents.

Engineer's review of submittals covers only general conformity to the Drawings and Specifications, external connections, and dimensions that affect layout; it does not indicate thorough review of all dimensions, quantities, and details of the material, equipment, device, or item covered. Engineer's review shall not relieve Contractor of sole responsibility for errors, omissions, or deviations in the drawings and data, nor of Contractor's sole responsibility for compliance with the Contract Documents.

Engineer's submittal review period shall be the consecutive number of calendar days as required (30) and shall commence on the first calendar day following receipt of the submittal in the Engineer's office. The time required to mail the submittal back to the Contractor shall not be considered a part of the submittal review period.
- (4) **MANUFACTURERS MATERIALS CERTIFICATIONS AND CERTIFIED TEST REPORTS:**
The contractor shall supply the Resident Engineer with all required materials certifications and manufacturers test reports for items to be permanently incorporated into the project. These material certifications shall be provided prior to the materials use in the project. The Authority will supply the Resident Engineer with a list of required certifications and manufacturers tests based on the pay items and special provisions included in the proposals. The Resident Engineer must

approve these certifications and reports before payment can be made to the contractor for these items.

(5) SECTION 101: STANDARD DRAWINGS:

The Bidders are hereby advised that this project will be constructed using the 2019 Standard Drawings with all updates effective at the time of letting. The Standard Drawings are available for download at <http://206.74.144.33/falconwebv3/default.aspx>. All drawings that are updated are labeled with the effective letting date in red.

The Standard Drawings are available to purchase through the SCDOT Engineering Publications Sales Center located in Room G-19 (basement level) of the SCDOT Headquarters Building, 955 Park Street, Columbia, South Carolina.

All references in the plans, standard specifications, supplemental specifications, supplemental technical specifications or special provisions to drawings under the previous numbering system 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.

(6) SECTION 106: QUALIFIED PRODUCT LISTINGS:

All references to "Approval Sheet" or "Approval Policy" are to be replaced with "Qualified Products Listing (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.

(7) SECTION 108: (PROSECUTION AND PROGRESS)

Section 108.9 (Failure to Complete the Work on Time)

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

"Authority and Contractor recognize that time is of the essence and that the traveling public and Department will suffer loss, inconvenience and other damage if the work is not substantially complete in accordance with the time(s) specified herein, which damages would be difficult if not impossible to ascertain. Accordingly, the Authority and the Contractor agree that as liquidated damages for delay (but not as a penalty) the Contractor shall pay the Authority the amounts stipulated below.

LIQUIDATED DAMAGES SCHEDULE

| | |
|---------------------------|----------------|
| <i>Liquidated Damages</i> | |
| <i>\$400</i> | <i>Per Day</i> |

(8) SECTION 103.8 CONTRACTOR'S LIABILITY INSURANCE:

Section 103.8 is hereby amended by adding the following sentence to the end of the last paragraph:

"The City of Walterboro shall be named as an additional insured."

Delete the second sentence in paragraph 4.

Delete the third sentence in paragraph 5, and replace it with the following sentence:

Ensure that all policies contain a provision that coverage afforded under the policies cannot be cancelled or reduced by the Contractor until at least 30 days prior written notice has been provided to SCDOT and that the policies cannot be cancelled for non-payment of premiums until at least 10 days prior written notice has been provided to SCDOT. Send Notice of Cancellations to Director of Construction Room 330, PO Box 191, Columbia, SC 29202.

Add the following as paragraph 6 at the end of Subsection 103.8:

By execution of the contract, the Contractor accepts the responsibility to provide the liability insurance policies and endorsements as specified herein. Failure of SCDOT to identify a deficiency in the Certificate of Insurance submitted by the Contractor's insurance agent as evidence of the specified insurance or to request other evidence of full compliance with the liability insurance specified shall not be construed as a waiver of the Contractor's obligation to provide and maintain the required insurance for the duration of the contract.

(9) SECTION 105: CONSTRUCTION STAKES, LINES AND GRADES:

Section 105.8.2 applies to this project. Payment for this work shall be made according to the following schedule:

| Percent Contract Complete | Percent of Stakes, Lines, and Grades bid amount to be paid |
|---------------------------|--|
| 1-5 | 20 |
| 6-15 | 40 |
| 16-29 | 60 |
| 30-49 | 70 |
| 50-69 | 80 |
| 70-89 | 90 |
| 90-100 | 100 |

(10) SECTION 107: 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. Due to the limited Right-of-Way available and the project utilizing an existing drainage system which can't be relocated, coordination with utility contractors on relocations and grade adjustments should be anticipated.

It is the responsibility of the Contractor to call South Carolina 811 (811) three (3) days prior to work so that existing utilities can be properly marked.

(11) SECTION 107.13 – LOW SHOULDER SIGNS:

In accordance with Section 107.13, the Engineer and the Contractor shall inspect the roads in this contract to determine low shoulder conditions. If low shoulder signs are needed, they will be measured and paid at the unit price bid for Permanent Construction Signs. If there is not a bid item for Permanent Construction Signs, a Supplemental Agreement will be required.

(12) SECTION 108: CRITICAL PATH METHOD CONSTRUCTION SCHEDULES:

See Attached Supplemental Specification dated **March 1, 2007** on page **5 of Phase 1E Supplemental Specifications**. The attached specification is hereby modified by changing the

first sentence in the section entitled "Submission, Review, and Acceptance Process – Monthly Updates" to the following:

"Monthly updates shall be made no later than 15 days following the most recent estimate period end date and shall have a data date the same as the most recent estimate period end date."

(13) SECTION 108: NOTICE TO PROCEED:

Section 108.2 is hereby revised to include the following:

A Notice to Proceed Date shall be determined at the Preconstruction Conference that will be held within thirty (30) calendar days of the Award Date. The Notice to Proceed Date shall not be more than forty-five (45) calendar days after the Date of Award unless extenuating circumstances such as utility conflicts occur which are beyond the control of the Contractor as determined by the Engineer.

(14) SECTION 109: RETAINAGE

The Engineer will retain 10 percent of the amount of each partial payment until final completion and acceptance of the work. After 50 percent of the work has been completed, the Contractor may request that the remaining partial payment be made in full and no retainage withheld. If the Engineer agrees that acceptable progress is being made additional retainage will not be withheld. All retainage, subject to any liquidated damages, will be paid to the Contractor with the final payment

(15) AS-BUILT CONSTRUCTION PLANS:

See attached Supplemental Specification dated **November 4, 2009** on page **10 of Phase 1E Supplemental Specifications**.

(16) PROMPT PAYMENT CLAUSE:

See attached Supplemental Specification dated **July 1, 2017** on page **11 of Phase 1E Supplemental Specifications**.

(17) SUBLETTING OF CONTRACTS (SPECIALTY ITEMS);

The following items of work, when not performed by the Prime Contractor, will be designated as Specialty Items in all contracts in which the item does not constitute thirty percent (30%) or more of the original contract value:

- | | |
|----------------------------------|-----------------------------|
| Pavement Markings | Permanent Roadway Signs |
| Guardrail | Signalization |
| Milling Asphalt Pavement | Electrical/Lighting |
| Grassing | Specialized Retaining Walls |
| Landscaping | Fencing |
| Erosion Control | Right of Way Surveying |
| Permanent Construction Signs | Railroad Track Work |
| Utilities | Jacking and Boring |
| Contaminated Soil & Tank Removal | Bridge Floor Grooving |
| Bridge Barrier Walls | Milled Rumble Strips |
| Traffic Count Stations | Buildings |
| Drilled Shafts & Casings | Navigational Lighting |
| Pier Fender Systems | Sound Barrier Walls |

(18) MAINTENANCE OF TRAFFIC:

In addition to the Contractor maintaining traffic throughout the length of this project as required by the Specification, it will also be necessary that the Contractor, prior to beginning any work, submit to the Resident Construction Engineer for approval his plan for constructing these projects. Because construction of the median will require the removal of existing concrete pavement, lane closures will be required and the installation of the medians will have to be scheduled around the construction of the sidewalk. At least one lane of traffic will have to be open at all times. During hurricane season; the contractor must have a plan to restore two lanes of traffic in the direction of evacuation with two days' notice from the City or SCDOT.

(19) REQUIRED MEDIA NOTIFICATION FOR CONSTRUCTION PROJECTS:

Contractors are encouraged to cooperate 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 cooperate with the media. However, the safety, security and construction schedule on site should not be disrupted in order to accomplish this.

(20) BORROW EXCAVATION:

Borrow pit location – Borrow material for this project shall not be obtained from wetlands, streams, or rivers.

(21) SECTION 305: MAINTENANCE STONE:

Maintenance Stone used on this project shall conform to the gradation requirements or Section 305, or to the gradation specified for Aggregate No. CR-14 in the Standard Specifications.

(22) SECTION 401: ASPHALT BINDER AND ADDITIVES

See attached Supplemental Specifications dated **March 1, 2016** on page **13 of Phase 1E Supplemental Specifications**.

(23) SECTION 401: ASPHALT BINDER ADJUSTMENT INDEX:

See attached Supplemental Specifications dated **March 3, 2009** on page **15 of Phase 1E Supplemental Specifications**. For this project the Basic Bituminous Material Index will be determined on the first calendar day of the month in which this project is let. The index and adjustment table will be available on the internet at www.scdot.org/doing/monthlyindexes.asp, or may be obtained from the office of the Contracts' Administrator.

All items of work included in this project, that are listed in the table entitled "Items of Work Eligible for A.C. Binder Adjustments" below paragraph 4 of the Supplemental Specification, will be subject to price adjustment.

(24) SECTION 401: TRANSPORTATION AND DELIVERY OF MIXES:

See attached Supplemental Specifications dated **July 1, 2010** on page **17 of Phase 1E Supplemental Specifications**.

(25) FULL DEPTH ASPHALT PAVEMENT PATCHING (8" UNIFORM):

Description: This work shall consist of the removal of a deteriorated pavement and replacing with a full depth asphalt plant mix patch.

Construction Process: The deteriorated pavement shall be removed to the width and length indicated by the Engineer, with the face of the cut being straight and vertical. The pavement shall be removed to the depth indicated in the plans. In the event unstable material is encountered at this point, then such additional material shall be removed as directed by the Engineer. The volume of material removed below the patch shall be backfilled with crushed stone and thoroughly compacted in 4-inch layers with vibratory compactors. Prior to placing the asphalt patch material in the hole, the sides of the existing asphalt pavement shall be thoroughly tacked. The patch material shall then be placed in layers not exceeding 3 inches with each layer being thoroughly compacted with a vibratory compactor. The patch material shall be an approved SCDOT Asphalt Concrete Binder Course Mix. The work shall be conducted so that the patches are removed and replaced each day, with the roadway being opened to traffic by late afternoon. The finished patch shall be smooth riding.

Measurement and Payment: The quantity to be measured for payment shall be the number of square yards (square Meters) of Full Depth Asphalt Pavement Patching completed and accepted. The price and payment shall be full compensation for furnishing all materials including plant mix, asphalt cement, excavating and disposing of all material, labor, equipment, tools, and incidentals necessary to complete the work.

Any crushed stone necessary for backfilling below the specified depth shall be measured and paid for at the contract price for Maintenance Stone.

(26) SECTION 401: MATERIAL FOR FULL DEPTH PATCHING:

Section 401.2.5 of the Standard Specifications is hereby deleted, and replaced with the following:

Section 401.2.5 Material for Full Depth Patching

Use an approved SCDOT Intermediate Type C Mix for all Full Depth Patching.

(27) DIVISION 600: TRAFFIC CONTROL – HOLIDAY RESTRICTIONS:

See attached Supplemental Specification dated **September 1, 2015** on page **18 of Phase 1E Supplemental Specifications**.

(28) DIVISION 600: 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 closures 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.

All signs mounted on portable sign supports shall have a minimum mounting height of 5' from the ground to the bottom of the sign. All signs mounted on ground mounted u-channel posts shall have a minimum mounting height of 7' from the ground to the bottom of the sign.

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. Install these signs no further than 500 feet in advance of the beginning of this pavement condition on primary routes with speed limits of 60 MPH or less and no less than 500 feet in advance of the beginning of this pavement condition on interstate routes. 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 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 107-2004 standard performance for Class 3 risk exposure or latest revisions and a 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".

LANE CLOSURE RESTRICTIONS -

The Contractor shall install all lane closures as directed by the 2007 Standard Specifications For Highway Construction, 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 roadways as directed by the typical traffic control standard drawings designated for lane closures on primary routes.

The Department prohibits lane closures on primary routes during any time of the day that traffic volumes exceed 800 vehicles per hour per direction. 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 restriction 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 restriction 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.

The Department reserves the right to suspend a lane closure if any resulting traffic backups are deemed by the Engineer. Maintain all lane closure restrictions as directed by the Standard Specifications, these special provisions, and the Engineer.

SHOULDER CLOSURE RESTRICTIONS -

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.

TYPICAL TRAFFIC CONTROL STANDARD DRAWINGS -

The typical traffic control standard drawings of the "Standard Drawings For Road Construction", although compliant with the MUTCD, shall take precedence over the MUTCD. The typical traffic control standard drawings of the "Standard Drawings For Road Construction" shall apply to all projects let to contract.

Install the permanent construction signs as shown on the typical traffic control standard drawings for permanent construction signing. Payment for the Permanent Construction Signs shown on these sheets shall be paid for under the Bid Item – Permanent Construction Signs per Square Foot. Signs not illustrated on the above sheets shall be considered temporary and shall be included in the lump sum price bid item for "Traffic Control" unless otherwise specified.

ADDENDUMS**(Addendums to the "2007 Standard Specifications for Highway Construction")****(A) Trailer-Mounted Changeable Message Signs -****Sub-section 606.5 Measurement (paragraph 2) -**

Trailer-mounted changeable message signs are included in the lump sum item for Traffic Control in accordance with **Subsections 107.12** and **601.5** of the "2007 Standard Specifications for Highway Construction". No separate measurement will be made for trailer-mounted changeable message signs unless the contract includes a specific pay item for trailer-mounted changeable message signs.

The Contractor shall provide, install, operate, and maintain the trailer-mounted changeable message sign per traffic control set-up as directed by the Plans, the "Standard Drawings for Road Construction", these Special Provisions, the Specifications, and the Engineer.

Sub-section 606.6 Payment (paragraph 2) -

In addition to **Subsections 107.12** and **601.6**, the payment for Traffic Control is full compensation for providing, installing, removing, relocating, operating, and maintaining trailer-mounted advance warning arrow panels and trailer-mounted changeable message signs as specified or directed and includes providing the units' primary power source; repairing or replacing damaged or malfunctioning units within the specified time; providing traffic control necessary for installing, operating, and maintaining the units; and all other materials, labor, hardware, equipment, tools, supplies, transportation, incidentals, and any miscellaneous items

necessary to fulfill the requirements of the pay item in accordance with the Plans, the Specifications, and other items of the Contract.

Sub-section 606.6 Payment (paragraph 3) -

Disregard this paragraph unless the Contract includes a specific pay item for trailer-mounted changeable message signs.

(B) Temporary Concrete Barrier –

Sub-section 605.2.3.2 Temporary Concrete Barrier (paragraph 6) -

Previously used temporary concrete barrier walls are subject to inspection and approval by the RCE before use. Ensure that previously used temporary concrete barrier walls are in good condition. Defects to a temporary concrete barrier wall that may disqualify a section of wall for use include gouges, cracks, chipped, or spalled areas. A defect that exposes reinforcing steel warrants immediate disqualification. A disqualification grade type defect shall consist of measurements in excess of 1 inch, entirely or partially within the boundaries of the end connection areas and the drainage slot areas as illustrated in the “Standard Drawings for Road Construction”, and/or in excess of 4 inches for all areas beyond the end connection areas. To warrant disqualification, these measurements shall exceed the specified dimensions in all three directions, width, height, and depth. A defect that exceeds the specified dimensions in only one or two of the three directions does not warrant disqualification.

Temporary concrete barrier walls with defects less than 6 inches in all three directions, width, height, and depth that do not expose reinforcing steel may be repaired in accordance with the following requirements. Repair is prohibited on temporary concrete barrier walls with defects 6 inches or greater in all three directions, width, height, and depth.

For repair of temporary concrete barrier walls with defects less than 6 inches in all three directions, width, height, and depth that do not expose reinforcing steel, repair the defect with a pre-manufactured patching material specifically fabricated for patching structural concrete. The strength of the patch must meet or exceed the design strength of the class 3000 concrete of the temporary concrete barrier wall. Perform the repair procedures in accordance with all requirements and instructions from the manufacturer of the patch material. Use a bonding compound between the patch material and the concrete unless specifically stated by the manufacturer that a bonding compound is not required. If the manufacturer states that application of a bonding compound is optional, SCDOT requires application of a bonding compound compatible with the patch material. If cracking occurs within the patched area, remove the patch material completely and repeat the repair process. The contractor shall submit documentation stating all repairs have been conducted in accordance with these requirements prior to installing any temporary concrete barrier walls with repairs. Utilization of temporary concrete barrier walls with repairs shall require approval by the RCE prior to installation.

The Contractor shall submit certification documents for the patch material utilized for repairs to the Engineer prior to placing temporary concrete barrier walls that have been repaired on the project site.

(C) Construction –

Sub-section 601.4.2 Construction Vehicles (paragraph 2) -

The Contractor shall have flaggers available to control all construction vehicles entering or crossing the travel lanes of secondary and primary routes. The RCE shall determine the necessity of these flaggers for control of these construction vehicles. The RCE shall consider sight distance, vertical and horizontal curves of the roadway, prevailing speeds of traffic, frequency of construction vehicles entering or crossing the roadway, and other site conditions that

may impact the safety of the workers and motorists when determining the necessity of these flaggers. Ensure that these flaggers do not stop traffic, cause traffic to change lanes, or affect traffic in any manner. The Contractor's vehicles may not disrupt the normal flow of traffic or enter the travel lane of the roadway until a sufficient gap is present.

(D) Category I Traffic Control Devices –

Sub-section 603.2.2 Oversized Traffic Cones (paragraph 6) -

Reflectorize each oversized traffic cone with 4 retroreflective bands: 2 orange and 2 white retroreflective bands. Alternate the orange and white retroreflective bands, with the top band always being orange. Make each retroreflective band not less than 6 inches wide. Utilize Type III – Microprismatic retroreflective sheeting for retroreflectorization on all projects let to contract after May 1, 2010 unless otherwise specified. Separate each retroreflective band with not more than a 2-inch non-reflectorized area. Do not splice the retroreflective sheeting to create the 6-inch retroreflective bands. Apply the retroreflective sheeting directly to the cone surface. Do not apply the retroreflective sheeting over a pre-existing layer of retroreflective sheeting.

Sub-section 603.2.3 Portable Plastic Drums (paragraph 3) -

Reflectorize each drum with Type III – Microprismatic retroreflective sheeting: 2 orange and 2 white retroreflective bands, 6 inches wide on all projects let to contract after May 1, 2010 unless otherwise specified. Alternate the orange and white retroreflective bands with the top band always being orange. Ensure that any non-reflectorized area between the orange and white retroreflective bands does not exceed 2 inches. Do not splice the retroreflective sheeting to create the 6-inch retroreflective bands. Apply the retroreflective sheeting directly to the drum surface. Do not apply the retroreflective sheeting over a pre-existing layer of retroreflective sheeting.

(E) Truck-Mounted Attenuator –

Sub-section 605.4.2.2 Truck-Mounted Attenuators (paragraph 6) -

Attach each truck-mounted attenuator to the rear of a truck with a minimum gross vehicular weight (GVM) of 15,000 pounds (actual weight). 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 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 part from the frame of the truck during an impact upon the attached 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 and shall not protrude from the steel structure in any manner.

(F) Flagging Operations-

Sub-section 610.4.1.11 Flagging Operations (paragraph 1) –

Use a flagging operation to control the flow of traffic when two opposing directions of traffic must share a common travel lane. A flagging operation may be necessary during a land closure on a two-lane two-way roadway, an intermittent ramp closure or an intermittent encroachment of equipment onto a portion of the roadway. Utilize flagging operations to direct traffic around work activities and maintain continuous traffic flow at reduced speeds when determined to be appropriate by the RCE. As stated above, flagging operations shall direct traffic around the work activities and maintain continuous traffic flow, therefore, stopped traffic shall not be required to stop for time durations greater than those listed below unless otherwise directed by the RCE.

SPECIAL PROVISIONS

| Length of Closure | Maximum time duration for Stopped Traffic |
|-------------------|---|
| 1 Mile or Less | 5 Minutes |
| 1 to 2 Miles | 7 ½ Minutes |

If the work activities require traffic to be stopped for periods greater than 5 to 7 ½ minutes as stated above, consider alternate work methods, conducting work activities during times of lowest traffic volumes such as during the hours of darkness or complete road closure with detour installation.

(29) DIVISION 600: TRAILER MOUNTED AUTOMATED FLAGGER ASSISTANCE DEVICE SYSTEM (AFAD):

See attached Supplemental Specification dated **September 1, 2012** on page **27 of Phase 1E Supplemental Specifications**.

(30) DIVISION 600: WORK ZONE TRAFFIC CONTROL TRAINING REQUIREMENTS FOR CONTRACTORS / SUBCONTRACTORS:

See attached Supplemental Specification dated **September 1, 2013** on page **20 of Phase 1E Supplemental Specifications**.

(31) DIVISION 600: ADHESIVELY BONDED ANCHORS AND DOWELS:

See attached Supplemental Specification dated **September 1, 2008** on page **23 of Phase 1E Supplemental Specifications**.

This Supplemental Specification applies when Adhesively Bonded Anchors or Dowels are called for in the Plans or Detailed Drawings.

The following Standard Drawings have been identified as showing Adhesively Bonded Anchors or Dowels:

| | |
|------------|---|
| 605-205-03 | Temporary Concrete Barrier |
| 605-210-04 | Temporary Concrete Barrier |
| 605-310-01 | Temporary Concrete Barrier |
| 605-315-00 | Temporary Concrete Barrier |
| 605-320-00 | Temporary Concrete Barrier |
| 605-325-00 | Temporary Concrete Barrier |
| 605-330-00 | Temporary Concrete Barrier |
| 651-105-00 | Barrier Mounted Sign Post |
| 657-100-00 | Overhead Sign Support Roadway Bridges |
| 722-105-01 | Box Culvert (Used to connect headwall, wingwalls, and for extensions) |
| 805-120-00 | Guardrail (W Beam) Base Plate Connection |
| 805-405-03 | Guardrail (Tubular Beam) Bridge Railing |
| 805-405-04 | Guardrail (Tubular Beam) Bridge Railing |
| 806-505-00 | Fence (Ornamental Steel Picket) |

It is the contractor's responsibility to determine if Adhesively Bonded Anchors or Dowels are a part of the project, and to comply with the provisions of the Supplemental Specification.

(32) DIVISION 600: MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES:

The Contractor is 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 be in compliance with 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. for use on all projects. All references to the South Carolina Manual on Uniform Traffic Control Devices (SCMUTCD) are hereby revised to read "MUTCD – 2009 Edition".

(33) SECTION 605: PERMANENT CONSTRUCTION SIGNS:

Utility locations must be performed prior to the placement of Permanent Construction Signs. State Law requires that the location of each sign be marked with a white line in the roadway or a stake in the shoulder. The locator company will mark 25 feet on either side of the location. The responsibility for marking the sign locations prior to the contractor calling PUPS for utility locate lies with the party responsible for lines and grades on the project. If Construction Lines and Grades is a pay item, then the Prime Contractor is responsible for marking the sign location. If this is not included, it is the Department's responsibility to mark the locations.

Prior to marking the sign location, care must be taken when marking the signs to ensure that there are no obstructions or other mitigating factors that will cause the sign to be moved outside of the 50 foot utility window. Any costs associated with staking out the sign locations are considered incidental to the cost of Permanent Construction Signs.

Requests for utility locates must be specific and isolated to the sign locations if no ground disturbing activities are occurring outside of the sign placement.

(34) SECTION 610: WORK ZONE TRAFFIC CONTROL PROCEDURES:

The first sentence of Section 610.3 of the 2007 Standard Specifications is hereby revised to:

"Ensure that background color of personal protective apparel is either fluorescent Yellow-Green or fluorescent Orange-Red, and meets ANSI Standard 107-2004 National Standard for High Visibility Apparel Class 2 (or Class 3 as necessary) Performance Criteria, or latest edition."

Note #12 of Standard Drawing 610-005-00 is hereby revised to:

"During nighttime flagging operations, flaggers shall wear a Safety Vest and Safety Pants meeting ANSI Standard 107-2004 National Standard for High Visibility Apparel Class 3 Performance Criteria, or Latest Edition, and a Hardhat. The color of the apparel background material shall be either fluorescent Yellow-Green or fluorescent Orange-Red."

(35) SEEDING AND EROSION CONTROL MEASURES:

In addition to all the erosion control measures specified in the Standard Specifications, the plans and these Special Provisions, the Contractor shall construct all erosion control devices promptly as directed by the Engineer. Sodding or seeding of all disturbed areas shall be carried out as the grading progresses. Failure of the Contractor to comply promptly and adequately with all the required erosion control measures and seeding will result in stopping all contract operations until corrective action has been taken.

(36) SECTION 810: PRE-CONSTRUCTION CONFERENCE CERTIFICATION FORM & CONTRACTOR CERTIFICATION FORM:

In accordance with the NPDES General Permit (effective January 1, 2013), all Contractors and Sub-contractors must attend a Pre-construction Conference and sign the Pre-Construction Conference Certification Form. The Contractor Certification Form must be completed by all Contractors and Sub-contractors prior to beginning work. Section A-C must be completed by the Contractor. Section C (Company Certifications) is required to be completed by all Sub-contractors. A Contractor or Sub-contractor that does not attend a Pre-Construction Conference and sign the contractor certification agreements will not be permitted to perform work on this project. No additional compensation will be made in association with this Conference or Certification.

(37) IMPRINTED AGGREGATE REINFORCED PREFORMED THERMOPLASTIC SYSTEM**GENERAL**

A. The Aggregate Reinforced Preformed Thermoplastic System is a thermoplastic surfacing system that provides a textured, highly attractive and durable topical treatment to the surface of asphalt pavement. Typically the system replicates, in relief, the grout lines common to brick or other types of unit pavers, but may also be used to create other patterns.

B. It is intended for use on asphalt pavements to create traffic calming solutions and decorative crosswalks, medians, intersections and through areas in parking lots.

C. It provides a seamless, aesthetic look without the trip hazards and ongoing maintenance often associated with pavers and stamped concrete.

D. The Aggregate Reinforced Preformed Thermoplastic System is applied to asphalt pavement using patented asphalt pavement reheating equipment. The asphalt surface is covered with 2 ft. x 2 ft. (.61m x .61m) panels of aggregated reinforced thermoplastic then heated to the required liquefaction temperature. Sand is applied at the end of the melting process to achieve added friction properties on the surface. As the material is cooling, it is imprinted with a template made from 3/8 in. (9.5 mm) flexible wire rope in the required design to create crisp, clean lines which define the pattern. For crosswalks, it is typically demarcated by applying white preformed thermoplastic transverse lines on both sides of the installation.

E. It is available in a variety of standard colors and patterns. Color can be used to create patterns within the crosswalk area to reflect the typical white crosswalk “ladder-bars” for additional visibility and awareness. Within certain limitations, custom patterns and colors are available upon request.

REFERENCES

A. ASTM D570 Standard Test Method for the Water Absorption of Plastics.

B. ASTM D792 Standard Test Methods for Density and Specific Gravity (relative density) Of Plastics by Displacement.

C. ASTM D2240 Standard Test Method for Rubber Property – Durometer Hardness.

D. ASTM D92 Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester.

E. ASTM D256, Mtd A Standard Test Methods for Determining the IZOD Pendulum Impact Resistance of Plastics.

F. AASHTO T250 Standard Method of Test for Thermoplastic Traffic Line Material.

G. ASTM D4541 Standard Test method for Bond Strength of Thermoplastic Traffic Marking Materials.

H. Manufacturer’s Substrate Guide

I. Manufacturer’s Recommended Application Procedure Guide

DEFINITIONS

A. “Accredited Applicator” is an applicator that is accredited and licensed by the manufacturer to perform the Work.

B. “Owner” refers to the representative person who has decision making authority for the application of the Aggregate Reinforced Preformed Thermoplastic System.

C. “Ambient air temperature” is the air temperature in the immediate surrounding area.

- D. "The Work" is as outlined in the Scope of Work and includes the execution of the Aggregate Reinforced Preformed Thermoplastic System.
- E. "ASTM" ASTM International.

REQUIRED BID SUBMITTAL DOCUMENTS

- A. Product Brochure
- B. Product Specification
- C. A copy of the current year certificate of accreditation as provided by the Manufacturer to the Accredited Applicator or written verification from the Manufacturer that the bidding applicator is qualified to perform this Work.

PRODUCTS

MATERIALS

The materials required for proper execution of the Aggregate Reinforced Preformed Thermoplastic System are listed as follows:

- A. The Aggregate Reinforced Preformed Thermoplastic is available in a variety of colors and provided in 2ft x 2ft (.61m x .61m) panels. This material is provided by the Accredited Applicator and is available only from Manufacturer. No substitutions.
- B. The Sand used in the process is packaged in 50 lb (22.68 kg) bags, is provided by the Accredited Applicator and is available only from the Manufacturer. No substitutions.
- C. Transverse lines for crosswalk applications. These are supplied as white, retroreflective preformed thermoplastic linear material 90 mils (2.3mm) or 125 mils (3.2mm) thick, and available in 6 in. (.15m), 8 in. (.20m) or 12 in. (.30m) widths. This material should be provided by the Accredited Applicator and is available from the preformed thermoplastic Manufacturer.

Characteristics of the Aggregate Reinforced Preformed Thermoplastic

- A. Aggregate Reinforced Preformed Thermoplastic consists of homogeneously mixed nonhazardous polymer resins, pigments, fillers consisting of TiO₂ and CaCO₃, and at least 12% coarse aggregate particles sized 6-14 mesh. This product is not a hazardous chemical as defined by the OSHA Hazard Communication Standard CFR TITLE 29 1910.1200 or the WHMIS Canadian Legislation.
- B. Aggregate Reinforced Preformed Thermoplastic has a negligible VOC level.
- C. Aggregate Reinforced Preformed Thermoplastic shall be supplied as 2' x 2' (.61m x .61m) panels at a standard thickness of ≥140 mils (3.6 mm).
- D. Upon heating to application temperature, it will flow and preserve the integrity of its properties including its color.
- E. Environmental and Chemical Resistance: it is resistant to deterioration when exposed to sunlight, gasoline, oil, salt, water or adverse weather conditions.
- F. Storage Life: it can be stored for a period of one year if stored indoors in its original packaging and protected from the elements.
- G. The following table provides typical characteristics of the Aggregate Reinforced Preformed Thermoplastic

TABLE 1

Characteristics for Aggregate Reinforced Preformed Thermoplastic

| Characteristic | Test Method | Typical Results of Traffic Patterns XD Thermoplastic Regular Formula |
|----------------------------------|------------------|--|
| Water Absorption | ASTM D570 | < 0.5% |
| Binder Content | AASHTO T250 | > 18.0% |
| Low Temp. Resistance | AASHTO T250 | No cracking |
| Specific Gravity | ASTM D792 | < 2.15 |
| Indentation resistance (Shore A) | ASTM D 2240 | >40 |
| Impact Resistance | ASTM D256, Mtd A | > 10 in.-lb |
| Flash Point | ASTM D92 | >475°F |
| Bond Strength | ASTM D4541 | > 180psi or cohesive failure |
| Friction | British Pendulum | BPN > 65 |

EQUIPMENT

The following equipment available from the preformed thermoplastic Manufacturer and is an integral part of the proper execution of the Aggregate Reinforced Preformed Thermoplastic System. Equipment substitutions are not permitted.

A. Template. The wire rope template is required in the execution of the Aggregate Reinforced Preformed Thermoplastic system. The template is used for imprinting to define the pattern once the preformed thermoplastic has been applied. The wire rope diameter for the imprinting template used for the specified pattern is 3/8 in. (9.5mm).

B. Pavement Heaters. The preformed thermoplastic Manufacturer offers three mobile pieces of equipment designed specifically to elevate the temperature of the thermoplastic without adversely affecting this material, or the underlying asphalt pavement. The primary pavement heaters each employ a bank of propane fired infrared heaters, mounted on a track device that allows it to reciprocate back and forth over a designated area, thereby allowing the operator to monitor the temperature during the heating process.

C. Another reheating device is the mobile pavement heater designed specifically to heat small areas that are inaccessible to the primary heaters. It may also be used to melt the white, preformed thermoplastic transverse lines in place. Similar to the primary heaters, the mobile heater allows the operator to monitor the temperature of the thermoplastic at all times during the heating process.

D. The recommended heat torch is a hand-held portable heating device to be used to heat isolated areas of the thermoplastic.

E. The Hand Held Finishing Tool enables the applicator to complete the stamping of the thermoplastic in areas around permanent structures, such as curbs and manhole covers, which may be inaccessible to the template.

F. An air powered sand spreader is used to spray the sand in a uniform manner.

G. Vibratory Plate Compactors in the size range from 700 – 900 pounds shall be used for pressing the template into the preformed thermoplastic. The preformed thermoplastic Manufacturer does not supply Vibratory Plate Compactors.

EXECUTION

GENERAL

The Aggregate Reinforced Preformed Thermoplastic system shall be supplied and installed only by an Accredited Applicator or an applicator authorized in writing by the Manufacturer for a specific project. The Aggregate Reinforced Preformed Thermoplastic shall be supplied and installed in accordance with the most recent Recommended Application Procedure Guide as provided by the Manufacturer. The work shall be carried out in accordance with the plans and specifications or as directed by the Owner. Do not begin installation without written confirmation of applicator accreditation or authorization.

PRECONDITIONS

A highly stable asphalt pavement free of defects is a prerequisite for the installation of the Aggregate Reinforced Preformed Thermoplastic system. Do not install over poor quality asphalt pavement. For further information, please refer to the Manufacturer's Substrate Guide.

Prerequisites for new asphalt pavement

A durable and stable asphalt pavement mix design installed, according to best practices, over a properly prepared and stable substrate is a prerequisite for all long-lasting asphalt pavement surfaces. The application of the Aggregate Reinforced Preformed Thermoplastic does not change this requirement. Generally, the asphalt pavement mix design for roadways as prescribed by the local jurisdiction will be sufficient for the application of Aggregate Reinforced Preformed Thermoplastic.

Prerequisites for existing asphalt pavement

Depending upon the condition and age, existing asphalt pavement may or may not be suitable for the successful installation of Aggregate Reinforced Preformed Thermoplastic. Minimally, the asphalt pavement must be free of all visible defects, including cracks, ruts or potholes, nor can it demonstrate any flushing, excessive raveling or like deficiencies. Heavily oxidized pavements and those that show polishing of the aggregates may require preformed thermoplastic primer. The Accredited Applicator can advise on the suitability of the asphalt pavement.

Pavement Marking Removal: recommended guidelines

Pavement markings may be removed by sandblasting, water-blasting, grinding, or other approved mechanical methods. The removal methods should, to the fullest extent possible, cause no significant damage to the pavement surface. Heavy duty equipment, such as a milling machine, will likely cause too much damage to the pavement. The Accredited Applicator can advise on the suitability of the asphalt pavement after the markings have been removed.

Recommended guidelines for Mill & Fill applications.

The Owner may decide to remove and replace the existing asphalt pavement. If so, a durable, stable mix design installed in accordance with best practices is a prerequisite. A minimum lift thickness of two inches is recommended. It is not generally recommended to proceed with a Mill & Fill pavement application when the outside air temperature is less than 50°F (10°C). Traffic may not ride on a milled surface for more than 5 calendar days. For further information, refer to the latest version of the Manufacturer's Substrate Guide.

SURFACE PREPARATION

The asphalt pavement surface shall be dry and free of all foreign matter, including but not limited to dirt, dust, de-icing materials, and chemical residue.

LAYOUT

Layout of the preformed thermoplastic shall be as per the drawings and specifications and in accordance with the pattern, dimensions and methods prescribed by the Accredited Applicator in conjunction with the Owner.

INSTALLING Aggregate Reinforced Preformed Thermoplastic

- A. The area must be thoroughly cleaned and dried before installing Aggregate Reinforced Preformed Thermoplastic.
- B. Do not install during periods of precipitation.
- C. Both the ambient air temperature and the pavement temperature must be above 45°F (7°C). Do not install when there is frost still on the ground.
- D. Place the preformed thermoplastic panels on the asphalt pavement. The panels are butted together without overlap and cover the entire area designated to receive the material.
- E. Using the recommended reciprocating heating equipment, heat is applied to the thermoplastic to gradually raise the temperature, so that the thermoplastic is thoroughly molten all the way through. It will begin to flow and fuse with both the surface of the asphalt pavement and the edges of the neighboring thermoplastic sheet.
- F. After the Aggregate Reinforced Preformed Thermoplastic starts to flow and adhesion to the pavement surface is achieved, the manufacturer-recommended sand is applied evenly using the sand hopper so it can be imbedded. The sand is applied until the thermoplastic stabilizes and stops accepting sand.
- G. Once cooled to the appropriate temperature, using the vibratory plate compactor, the thermoplastic is then stamped using the 3/8 in. (9.5mm) diameter wire rope template. The pattern will now be clearly defined.
- H. In areas difficult to get at with the template, or areas that have light print, the Hand Held Finishing Tool may be used to complete the imprint process.
- I. Aggregate Reinforced Preformed Thermoplastic crosswalks require boundary demarcation to be compliant with the MUTCD. These lines may be applied by the Accredited Applicator using white preformed thermoplastic retroreflective line striping material.

PROTECTION AND OPENING TO TRAFFIC

The molten thermoplastic is to be protected until it cools and hardens. Do not permit any debris such as dust, excessive water, pollen, etcetera to come in contact with the molten thermoplastic. The road may be opened to traffic once the thermoplastic has cooled to adjacent pavement temperature.

MEASUREMENT AND PAYMENT

Measurement

The measured area is the actual area of pavement that has received the Aggregate Reinforced Preformed Thermoplastic and (where applicable) transverse white lines, measured in place. No

| |
|--------------------|
| SPECIAL PROVISIONS |
|--------------------|

deduction will be made for the area(s) occupied by manholes, inlets, drainage structures, bollards or by any public utility apparatus within the area.

Payment

Payment will be full compensation for all work completed as per conditions set out in the contract. For unit price contracts, the payment shall be calculated using the measured area as determined above.

Pay items under this section include the following:

| Item No. | Description | Unit |
|----------|--|------|
| 4039013 | Asphalt Pavement Texturing – Herringbone (Brick) | SY |

END OF SPECIAL PROVISIONS

January 1, 2018

ERRATA TO 2007 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION

Make the changes listed below to correct errata in the SDCOT *2007 Standard Specifications for Highway Construction*:

DIVISION 100 GENERAL PROVISIONS

SECTION 101 DEFINITIONS AND TERMS

Subsection 101.2 Abbreviations and Acronyms

Amend the table of **SCDOT OFFICIALS AND OFFICES** as follows:

| DELETIONS | | REPLACEMENTS | |
|------------------|--|--------------|---|
| BDE* | Bridge Design Engineer | PSE* | Preconstruction Support Engineer |
| BDGE* | Bridge Design Geotechnical Engineer | GDSE* | Geotechnical Design Support Engineer |
| SHE* | State Highway Engineer | DSE* | Deputy Secretary for Engineering |

*Wherever it appears in the text, replace the deleted abbreviation with the new abbreviation.

SECTION 102 BIDDING REQUIREMENTS AND CONDITIONS

Subsection 102.8 Irregular Bids

Paragraph 2, item E, first sentence; delete the word "the" after the word "When".

SECTION 105 CONTROL OF WORK

Subsection 105.6 Cooperation with Utilities

Paragraph 1, last sentence; change the word "THE" to "the".

DIVISION 200 EARTHWORK

SECTION 202 REMOVAL OF STRUCTURES AND OBSTRUCTIONS

Subsection 202.5 Measurement

Paragraph 5, second bullet; change the words "Brick sidewalk" to "Concrete, brick or stone sidewalks".

SECTION 204 STRUCTURE EXCAVATION

Subsection 204.2.1.2 Structure Excavation for Culverts

Paragraph 1, at the end of the first sentence; change "**Subsection 204.4**" to "**Subsection 204.5**".

DIVISION 400 ASPHALT PAVEMENTS

SECTION 401 HOT MIXED ASPHALT (HMA) PAVEMENT

Subsection 401.2.1.2 Liquid Anti-Stripping Agent

Paragraph 1, first sentence; delete the period at the end of the sentence and add "and SC-M-406".

Subsection 401.2.5 Material for Full Depth Patching

Paragraph 1, delete and replace with the following:

SUPPLEMENTAL SPECIFICATIONS

"Use an approved SCDOT Intermediate Type C mix for all Full Depth Patching."

Subsection 401.5 Measurement

After paragraph 10, add the following paragraph:

11 The measurement of Prime Coat is the number of gallons of asphalt material applied to the completed and accepted base course.

Subsection 401.6 Payment

After paragraph 12, add the following paragraph:

13 "The payment for Prime Coat is at the contract unit price for Prime Coat and includes compensation for all labor, equipment, tools, maintenance, and incidentals necessary to complete that work."

Subsection 401.6 Payment

Paragraph 13, **Table of Pay Items**

Change paragraph reference number "13" to "14" and add the following Pay Item:

| Item No. | Pay Item | Unit |
|----------|------------|------|
| 4010005 | Prime Coat | GAL |

SECTION 403 HMA SURFACE COURSE

Subsection 403.5 Measurement

Paragraph 1, first sentence; change "HMA Intermediate Course" to "HMA Surface Course".

Subsection 403.6 Payment

Paragraph 1, first sentence; change "HMA Intermediate Course" to "HMA Surface Course".

SECTION 407 ASPHALT SURFACE TREATMENT – DOUBLE TREATMENT

Subsection 407.5 Measurement

Paragraph 1, first sentence; add the word "is" after "(Double Treatment Type (1, 2, 3, 4, or 5))".

SECTION 408 ASPHALT SURFACE TREATMENT – TRIPLE TREATMENT

Subsection 408.5 Measurement

Paragraph 1, first sentence; add the word "is" after "(Triple Treatment Type (1 or 2))".

DIVISION 600 MAINTENANCE AND TRAFFIC CONTROL

SECTION 625 PERMANENT PAVEMENT MARKINGS

FAST DRY WATERBOURNE PAINT

Subsection 625.2.2.4.11 Lead Content

Paragraph 1, first sentence; change 6% to 0.06%.

SECTION 627 THERMOPLASTIC PAVEMENT MARKINGS

Subsection 627.4.10 Inspection and Acceptance of Work

Paragraph 2, first sentence; change "period of 90 days" to "period of 180 days".

Subsection 627.4.10 Inspection and Acceptance of Work

Paragraph 2, second sentence; change "90-day observation period" to "180-day observation period".

Subsection 627.4.10 Inspection and Acceptance of Work

Paragraph 3, first sentence; change "90-day period" to "180-day period".

DIVISION 700 STRUCTURES

SECTION 709 STRUCTURAL STEEL

Subsection 709.4.3.5.2 Submittals and Notification

Paragraph 1, delete the last two sentences and replace them with, "The Department's review and acceptance are required before any field welding will be permitted."

Subsection 709.6.3 Pay Items (page 650)

Subsection heading number; change subsection heading number from "709.6.3" to "709.6.4".

SECTION 712 DRILLED SHAFTS AND DRILLED PILE FOUNDATIONS

Subsection 712.4.4 Dry Construction Method

Paragraph 2, last sentence in A; change "*Drilled Shaft Report*" to "*Drilled Shaft Log*".

Subsection 712.4.10.4 Excavation Cleanliness

Paragraph 1, last sentence; change "*Drilled Shaft Report*" to "*Drilled Shaft Log*".

Subsection 712.4.10.6 Shaft Load Test

Change first paragraph reference number from "2" to "1".

Subsection 712.6.10 Drilled Pile Set-Up

Insert paragraph reference number "1" to the left of the first paragraph.

SECTION 723 DECK JOINT STRIP SEAL

Subsection 723.1 Description

Insert paragraph reference number "3" to the left of the third paragraph.

SECTION 726 BRIDGE DECK REHABILITATION

Subsection 726.4.1 General

Insert paragraph reference number "1" to the left of the first paragraph.

Subsection 723.4.6 Full Depth Patching (page 790)

Subsection heading number; change subsection heading number from "723.4.6" to "726.4.6"

Subsection 726.6.8 Concrete Overlay (Latex) or (Portland Cement) (page 802)

Paragraph 2, the equation is changed to $AP=CP \times (ACS/RCS)^2$

SECTION 727 CROSSHOLE SONIC LOGGING OF DRILLED SHAFT FOUNDATIONS

Subsection 726.6 Payment (page 807)

Subsection heading number; change subsection heading number from "726.6" to "727.6"

DIVISION 800 INCIDENTAL CONSTRUCTION

SECTION 805 GUARDRAIL

Subsection 805.5 Measurement

Paragraph 4; amend as follows:

"The quantity for the pay item 8053000 Additional Length Guardrail Post is the length of required post installed in excess of the standard length post based on the system being installed, measured by the linear foot (LF), complete, and accepted."

SECTION 815 EROSION CONTROL

Subsection 815.1 Description

Paragraph 1, first sentence; change "temporary flexible pipe" to "temporary pipe".

Subsection 815.5 Measurement

Paragraph 13; delete the first sentence and replace it with the following sentence:

"The quantity for Temporary Pipe Slope Drains is measured and paid for in accordance with **Subsections 803.5** and **803.6** respectively."

Subsection 815.5 Measurement

Delete paragraph 19.

Subsection 815.6 Payment

After paragraph 15, add the following paragraph:

- 16 Payment for Removal of Silt Retained by Silt Fence is full compensation for removing and disposing of sediment deposits accumulated by silt fences as specified or directed and includes all materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to fulfill the requirements of the pay item in accordance with the Plans, the Specifications, and other terms of the Contract.

Subsection 815.6 Payment

Change original paragraph number "16" to "17".

Subsection 815.6 Payment

Pay Item table; change the Unit for Item No. 8156214 to "EA".

INDEX:

Amend as follows:

Page I-3, after "Bridge Deck Rehabilitation, measurement and payment:"

Delete page 807.

Page I-12, after "Letting:"

Replace page 19 with page 9.

Page I-13, after "Overhead Sign Structure:"

Replace page 488 with page 495.

Page I-15, after "Proof Rolling:"

Delete page 98.

Page I-18, after "Structural Steel, turned and ribbed bolts:"

Replace page 624 with page 625.

Page I-19, after "Waterproofing, bridge deck:"

Delete page 907.

Page I-20, after "Working Drawings:"

Replace page 543 with page 779.

March 1, 2007

CRITICAL PATH METHOD CONSTRUCTION SCHEDULES

General

This supplemental specification addresses the Critical Path Method (CPM) construction schedule requirements for SCDOT contracts. The Contractor will provide and update a construction schedule to the SCDOT, which will be used as a quantitative basis for:

- Monitoring and evaluating the Contractor’s progress in completing contracted work;
- Evaluating requests for additional contract time;
- Budgeting for construction estimate payments; and
- Managing SCDOT engineering and inspection personnel.

The Contractor’s construction schedule shall encompass the entire contract period, and be developed consistent with the contract milestones and the contract maintenance of traffic plan. Critical path activities shall be identified for the duration of the work.

The schedule shall reflect the utility relocations noted in the contract documents and include activities of appropriate duration for the utility adjustments. Where utility durations are unknown, the Contractor shall provide a reasonable estimate of duration. Utility durations will be reviewed in the baseline approval process as outlined in the section “Submission, Review, and Acceptance Process”. Utility durations will be presented at the Preconstruction Conference for concurrence by the utility provider. In the event that the utility representative cannot provide concurrence at the Preconstruction Conference, the Contractor, the Resident Construction Engineer, and the utility provider shall work diligently to reach acceptance durations. If there is no concurrence or input from the utility provider concerning the Contractor’s utility durations within 15 days following the Preconstruction Conference, the submission with the Contractor’s estimate of utility duration will be reviewed for baseline acceptance. Further utility duration changes beyond this point in time will be assessed in monthly schedule updates. Failure to include activities for any element of work or any known utility work will not relieve the Contractor from completing the work within the allotted contract time.

The schedule shall also include sufficient information as *outlined in this supplemental specification* to provide for monetary and quantitative tracking of the work by the SCDOT.

Schedule Types

Contractors shall maintain CPM schedules for all projects using Primavera 5.0 (or current version) or Primavera Contractor.

Templates for the CPM schedules are available to download at the SCDOT construction Extranet site (http://www.scdot.org/doing/const_extranet.shtml).

When submitting schedules to the SCDOT, the contractor shall assign file names to each schedule file (baseline and updates) according to the following conventions (dates are YYMMDD):

| Type of Schedule Submitted: | Baseline | Update |
|-----------------------------|---------------------------|---------------------------|
| File Name Convention: | [File Number]b[Data Date] | [File Number]u[Data Date] |
| File Name Example: | 32.82571b60201 | 32.82571u060201 |

Note on Data Dates – The initial Baseline Construction Schedule shall have a data date equal to the date of submission of the schedule and not include any work to date. Monthly schedule updates shall have a data date set the same as the most recent estimate period end date.

Schedule Submissions

All submissions shall be made within the time frames defined under “Submission, Review and Acceptance Process”.

Electronic File: Each baseline construction schedule and monthly update submission shall be uploaded to the SCDOT Construction Extranet site in .xer format. The site can be found at: (http://www.scdot.org/doing/const_extranet.shtml)

Hard Copies: A hard copy of each baseline construction schedule and monthly update submission shall be provided to the District Scheduler and the Resident Construction Engineer. Printout shall include the following columns on 11 inch x 17 inch paper: Activity ID, Activity Name, Early Start, Actual Start, Early Finish, Actual Finish, Schedule % Complete, Physical % Complete, Budgeted Total Cost, Actual Total Cost, Original Duration, Remaining Duration, and Total Float.

Schedule Narrative: Submit a Schedule Narrative Report with the baseline and each monthly update schedule describing current project schedule status and identifying potential delays. This report will include a description of the progress made since the previous schedule submission and objectives for the upcoming 30 calendar days.

- 1.) The report shall indicate if the project is *on schedule*, *ahead of schedule* or *behind schedule* as compared to the accepted baseline. If the project is ahead of schedule or behind schedule, the report shall include the specific number of calendar days. If the project is behind schedule, the report shall include a detailed recovery plan that will put the project back on schedule.
- 2.) The report will describe the *current critical path* of the project including the lowest total float value and indicate if this has changed in the last 30 calendar days. Discuss current successes or problems that have affected either the critical path’s length or have caused a shift in the critical path within the last 30 calendar days. Identify specific activities, progress, or events that may reasonably be anticipated to impact the critical path within the next 30 calendar days, either to affect its length or to shift it to an alternate path.
- 3.) List all schedule logic or duration changes that have been made to the schedule since the previous submission. Provide an explanation for any *constraint* used. For each change, describe the basis for the change and specifically identify the affected activities by identification number.
- 4.) Identify activities, either in progress or scheduled to occur within the following 30 days, that require Department participation, review, approval, etc.
- 5.) Identify any calendars used that are not DOT specific, and explain the details of those calendars.
- 6.) Identify schedule settings used.
- 7.) An explanation of lag for each activity lag is associated with.
- 8.) Description of how the schedule is organized (e.g. broken down by road or activity).
- 9.) Narrative will be submitted with a naming convention of [File Number]n[Data Date].doc (e.g. 32.82571n060201.doc). Contractor will upload the electronic copy [in .doc format] to the South Carolina Department of Transportation Construction Extranet site (http://www.scdot.org/doing.const_extranet.shtml).

Schedule Details

Data Date – The Baseline Construction Schedule shall have a data date equal to the date of submission of the schedule and not include any completed work to date. Monthly schedule updates shall have a data date set the same as the most recent estimate period end date.

Milestones - Schedule shall identify the following milestones as a minimum:

- **Notice to Proceed Date (NTP):** Issuance of this date indicates the project site is available to the Contractor and contract time has begun. The NTP is determined in coordination between the Engineer and the Contractor and shall be within 45 days of the Award Date unless extenuating circumstances warrant setting the NTP more than 45 days after the Award Date. Include any extenuating circumstances in the narrative. The Notice to Proceed Date shall be the first milestone in the schedule.
- **Work Begin Date:** Actual date that on-site work commences.
- **Interim Completion Dates or Interim Milestones:** When interim completion dates or interim milestones (associated with project stages) are included in the contract specifications.
- **Start of Paving:** Date paving production and placement is to start.
- **Substantial Work Complete Date:** Anticipated date that work will be substantial complete. Facility will be available for the safe and convenient use of motorists; only allowable work remaining at substantial completion is placement of permanent pavement markings and resolution of punch list items.
- **Contract Completion Data:** Date defined by the Department as the latest date for contract completion. This is the last milestone and will establish the finish date of the project schedule. The schedule may indicate a completion date in advance of the contract completion date. However, the Department will not be liable for the Contractor’s failure to complete the project prior to the Contract Completion Date. Any additional costs, including extended overhead incurred between the Contractor’s schedule completion date and the completion of the contract time, shall be the responsibility of the Contractor.

Activities – Each Activity shall be part of the logic driven network and include a predecessor (excepting the first activity) and a successor (excepting the last activity). Each activity duration shall be limited to 30 days. As a minimum, the schedule shall include the following activities when related work is part of the contract, but there shall be sufficient detail in included activities to determine monthly progress of work and forecast of inspection and cost. The Contractor shall use the Activity Codes provided in the template for organizing activities. Activities for deliverables and reviews shall be included in the schedule.

- **Mobilization:** Preparations for and moving of equipment, etc., to the project site.
- **Clearing & Grubbing:** Self-explanatory.
- **Utility Relocations:** The schedule must reflect the utility relocations noted in the contract documents and include activities of appropriate duration for the utility adjustments. Where utility durations are unknown, the Contractor shall provide a reasonable estimate of duration.
- **Earthwork:** Unclassified & borrow excavation, compaction, fine grading, etc.
- **Drainage:** Pipe, catch basins, manholes, etc.
- **Base Course:** Graded aggregate base courses, cement modified bases, etc.
- **Paving:** Hot mix asphalt base, intermediate, and surface courses; Portland cement concrete pavements, etc.
- **Structures:** Bridges, box culverts, retaining walls, etc.

The Department required retained logic be used in scheduling projects. In situations where a Contractor has to address activities out of sequence, the Contractor may request to use the “progress override” option. The monthly schedule update narrative shall provide justification for selecting this option and quantify any logic change(s).

Resources – The Department will not require any input to the resource component of the schedule by the Contractor.

Expenses – Contractor shall assign the SCDOT contract items as expenses to each activity. SCDOT contract items will be included as Expense Categories and will be made part of the SCDOT schedule template available to download from the construction Extranet site. These shall be the only expense categories associated with activities. Other fields under expenses that shall be populated included Budgeted Units, Price/Unit, and Actual Units.

Calendars – Contractor shall assign an appropriate SCDOT calendar to each activity in the schedule. Alternate calendars may be assigned, but specifics of the alternate calendars must be justified in the baseline narrative. Contractor shall assign all calendars as project specific. Acceptance of the alternate calendars is subject to review by the SCDOT. Considerations for weather shall be addressed within the activities – calendars shall not be modified to account for weather conditions. Calendars have been created to address established seasonal restrictions.

The Baseline Construction Schedule shall not extend beyond the number of working days or contract completion date originally provided in the contract.

Cost Loading – All schedule activities shall be cost loaded using the contract items and unit prices under “Expenses: in Primavera.

Float – Float is not for the exclusive use or benefit of either the Department or the Contractor. Initial baseline schedules shall not attribute negative float or negative lag to any activity.

Schedule Layout – Schedule shall be structured consistent with the phasing and staging noted in the contract documents. Activity Codes for area and stage are included in the template. These codes shall be used to organize each activity included in “Schedule Details – Activities” as appropriate to provide a detailed schedule layout. Activities shall not be allowed to cover more than one stage of the contract.

Default Values – Contractor shall use the following defaults, physical percent complete, retain logic, and longest path critical activities.

Submission, Review and Acceptance Process

Baseline Schedule – Contractor shall submit a Critical Path Method (CPM) Contract Schedule and Narrative to the District Scheduler within 30 calendar days after award of the Contract or 15 days prior to preconstruction conference, whichever is earlier. The CPM Schedule and narrative shall be submitted via upload to the Extranet. Upon upload, the Contractor shall immediately notify the District Scheduler and the Resident Engineer via email that the CPM schedule has been submitted.

Upon receipt of the CPM Construction Schedule, SCDOT shall review and provide comments to the Contractor within 10 days of receipt. The Contractor will have 5 business days to respond to SCDOT comments. This process will continue until the Engineer and the District Scheduler determine the construction schedule is acceptable.

The Contractor shall present their accepted schedule at the Preconstruction Conference. In the event the schedule has not been accepted (i.e. review process is ongoing), the most current schedule under review shall be presented.

Acceptance of the submitted schedule by the SCDOT will establish the baseline schedule for the contract. This acceptance by SCDOT does not serve to excuse any omissions or errors in the Contractor’s schedule (i.e. activities not included in baseline will not be considered in any time extensions).

Review and acceptance of baseline schedule is required prior to start of work. Delays in reaching this acceptance will not constitute a basis for granting additional contract time. If there is no concurrence or input from the utility provider concerning the Contractor's utility durations within 15 days following the Preconstruction Conference, the submission with the Contractor's estimate of utility durations will be reviewed for baseline acceptance. Further utility duration changes beyond this point in time will be assessed in monthly schedule updates.

Monthly Updates – Monthly updates shall be made no later than 15 days following the most recent estimate and shall have a data date the same as the estimate period end date. Upon upload, the Contractor shall immediately notify the District Scheduler and the Resident Engineer via email that the CPM schedule has been submitted. Failure to submit acceptable schedule updates as required will result in the withholding of estimate payments. Updates shall include the following:

- Updated schedule to show actual progress on activities
- Updated schedule to show actual costs on activities
- Updated schedule to show actual completion on milestones
- Narrative to describe progress, planned activities, issues, adjustments to remedy any activities or milestones behind schedule, etc., in the format described in **Schedule Submissions**.

As-Built Schedule – A final As-Built Schedule shall be submitted within 45 days following substantial completion of the work or within 15 days following the contract completion, whichever is later.

Baseline Schedule Changes – Once the baseline schedule has been accepted, all subsequent schedules provided will be considered schedule updates and compared to the original baseline. A new baseline will only be considered when significant changes in contract scope, changes in SCDOT priorities, or delays beyond the control of the Contractor occur.

If a baseline change is needed, the Contractor shall provide, in writing, a request to the Resident Construction Engineer with the following information:

- An electronic copy of the proposed baseline schedule using the following naming convention and in accordance with **Schedule Types** (included previously)

| | |
|-----------------------------|----------------------------|
| Type of Schedule Submitted: | Updated Baseline |
| File Name Convention: | [File Number]ub[Data Date] |
| File Name Example: | 32.82571ub60201 |

- Narrative identifying changes warranting a new baseline

A decision for an updated baseline will be made jointly between the Resident Engineer and District Scheduler within 10 days of receipt of request.

Measurement and Basis of Payment

The Department will make partial payments according to Section 109, Standard Specifications for Highway Construction, and as modified by the following schedule:

| Basis of Payment | Percentage of Contract Unit Price of Item |
|---|---|
| After the Engineer has approved the CPM Baseline schedule | 60 |
| After the Engineer has approved the As-Built CPM schedule | 40 |

The Department will pay for the accepted quantities at the contract price as follows:

| Item | Description |
|---------|-----------------------|
| 1080300 | CPM Progress Schedule |

November 4, 2009

AS-BUILT CONSTRUCTION PLANS

GENERAL

The Contractor shall produce and deliver to the Department the final As-Built plans for this contract. This set of As-Built plans is not intended to document final quantities, but is intended to show approved revisions to the contract design including but not limited to: revised roadway profiles and cross sections, revised typical sections, revised drainage installations, any changes to the demolition and removal items and any other changes to the original design.

If any design changes occur during construction, the plan sheets (or any other "job site record document" with a seal) revised after award of contract shall include a complete accounting and detail of the revisions and design changes. The P.E. responsible for the revisions shall seal each altered plan sheet (or any other "job site record document" with a seal). This documented information is to be part of the As-Built Plan requirements.

The As-Built plans shall be neat, legible and of the correct size. Bridge projects and any road projects which include Plan, Profile and Cross-Section Sheets shall be full size. In general, if the job was let with full size plans (22" X 36"), the As-Built shall be full size. All revisions to the original plans shall be delineated in red, located properly on the drawing, they shall be legible and true to scale. Every As-Built Plan, Profile and Cross-section Sheet shall be designated as such by note or stamp "As-Built" in black. The As-Built plans shall be bound in the same manner as they were let, not combined. In other words, if a project includes road and bridge work and each is bound separately, keep them separate for As-Built, each with its own AB201 cover sheet.

In submitting As-Built plans, the Contractor, or person responsible for the work, shall be required to complete FORM AB205 or AB206 whichever is applicable, and submit the form with the required deliverables to the RCE. The items and notes on these forms that apply to this project establish the minimum requirements for As-Built Plans. The forms can be found on the SCDOT website at <http://www.scdot.org/doing/default.html>.

Changes to the state highway system by any outside agency also need to have their plans placed in the Plans Library for future reference. This includes but is not limited to: encroachment permit projects, enhancements, procurements, inter-governmental agreements (IGA), local public agency (LPA) projects and any other agency, private or public, making changes to the existing state highway system. When As-Let plans are provided, the person or agency responsible for the work shall supply the SCDOT As-Built Plans Office in headquarters a set of As-Built plans which meet the requirements of this specification. Regardless of whether or not as-let plans are provided, when any changes are made to or within existing ROW, the as-built plans office is to be notified so the changes can be documented in the plans library. Once notified, the as-built engineer and the person responsible for the work can determine what will best represent the work performed in the field. The as-built engineer will review and forward to the Plans Storage Office for archiving.

The final As-Built plans shall be submitted within forty-five (45) days following the substantial work complete date of the project.

July 1, 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 a 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.

March 1, 2016

Asphalt Binder and Additives

Delete Subsection 401.2.1.1, Binder and Additives, General of the Standard Specification in its entirety and replace it with the following:

401.2.1.1 Performance Graded (PG) Binder

Use PG 64-22 or PG 76-22 binder as required by the contract that conforms to all of the requirements of AASHTO M 320. Do not use any combination of "air blown" asphalt binders. Ensure that the asphalt binder supplier lists all types of modifiers and additives used in the production of their PG binders including source of Re-Refined Engine Oil Bottoms (REOB), polymers, ground tire rubber (GTR), polyphosphoric acid (PPA), silicone, and liquid anti-stripping agent (LASA) in their Quality Control Plans. Ensure that additives used for compaction aides or anti-strips such as silicones, WMA additives, and LASA products are listed on the Bill of Lading (BOL). Use PG asphalt binders and modifiers that are heat and storage stable. Thoroughly blend the composite materials at the asphalt terminal before being loaded into the transport vehicle. Asphalt terminals that either supply or produce PG binders must be able to store multiple tanker loads of PG and certify that their products meet AASHTO M 320 prior to transferring or shipping on the BOL and that all modifiers and additives are compatible. Ensure that all PG binders adhere to *SCDOT Qualified Products Policy No. 37-38*. Only use PG 64-22 and PG 76-22 binder from sources listed on the most recent edition of *SCDOT Qualified Product List 37*.

401.2.1.1.1 Modified Performance Graded Binder

When specified, use modified binder consisting of a neat binder modified with a polymer or other modifier producing a binder complying with the requirements of a PG 76-22 as specified in AASHTO M 320 with the addition of the Multiple Stress Creep Recovery (MSCR) test using AASHTO T 350. Ensure acceptable elastomeric polymer is used by using Non-recoverable Creep Compliance values plotted against Percent Recovery based on figure X1.1 found in AASHTO M 332 using RTFO aged material. Ensure that the MSCR test is performed at 64°C using the Very Heavy Traffic "V" Grade requirement in AASHTO M 332. Use elastomer polymer or modifier consisting of a styrene-butadiene (SB), styrene-butadiene-styrene (SBS), styrene-butadiene-rubber (SBR), or ground tire rubber (GTR). Polyphosphoric Acid (PPA) may also be added to the binder, but must not exceed 0.5% by weight of the asphalt binder. Varying blends of SB, SBS, SBR, GTR (7% min.), and PPA (0.5% max.) may be used, at the discretion of the AME, provided the end product meets all specified requirements for the PG 76-22. Perform the storage stability separation test ASTM D7173 to ensure the asphalt binder is homogenous. Ensure that all storage tanks on the asphalt plant site are clearly marked to prevent cross contamination of different PG binders.

401.2.1.1.1.1 Ground Tire Rubber (GTR) in Performance Graded Binder

Ensure that the Ground Tire Rubber (GTR) is terminally (no exceptions) blended with the neat asphalt to create a homogenous and storage stable PG 76-22 that meets all criteria as stated in 401.2.1.1.1, with the exception of Solubility requirement (AASHTO T 44). Blending the GTR modified binder at the asphalt plant during asphalt mixture production will not be permitted. Use a 2.0mm gap setting when using the DSR in accordance to AASHTO T 315 and AASHTO T 350. GTR materials must be free from excessive moisture when received from the tire recycling facility and stored in a dry location at the terminal to prevent blending issues with the binder modification process. A letter of compliance from the tire recycling facility will be required by the AME and the asphalt terminal stating that the GTR blend will meet this specification. The GTR must be free of loose metal particles, other foreign contaminating materials, with exception of embedded metal particles in the rubber. Mineral powder may be added to reduce sticking and caking of the GTR particles. Stabilizing or compatibility additive(s) can be used to achieve better particle distribution. Any additives used for this purpose must not be detrimental to the performance of the asphalt binder or mixture performance and must be accepted by the AME in the supplier's QC plan. Ensure that the GTR supplier provides certificates of compliance with each shipment certifying that all requirements of this specification are complied with for each production lot number and the end product is homogenous and shows no signs of separation or coagulation. In the event that the terminal changes supply sources of GTR type of grin(ambient or cryogenic), or particle size, the asphalt terminal must perform a complete binder analysis on their revised product, and also provide a split sample to the SCDOT to ensure specification compliance.

SUPPLEMENTAL SPECIFICATIONS

Provide all sources of GTR and grind type in the asphalt terminal's QC plan. SCDOT may obtain samples of the GTR particles, base binder, or the finished GTR modified asphalt binder to ensure specification compliance at any time.

| Physical Test | Test Procedure | Specification |
|--|------------------------------|---|
| Sampling of the GTR | ASTM E105 ASTM E122 | In accordance to random sampling procedures |
| GTR Supply | ASTM D5603 | Ambient or Cryogenic Grind |
| Dosage of GTR | Per COA & Supplier's QC Plan | Minimum of 7.0% by weight of the PG 64-22 base asphalt binder |
| GTR Specific Gravity | ASTM D5603 | 1.06 – 1.20 |
| GTR Particle Distribution | ASTM D5644 | 30 Mesh Maximum of 2.0% Retained |
| GTR Metal Content | ASTM D5603 | Maximum 0.01% |
| GTR Fiber Content | ASTM D5603 | Maximum 0.50% |
| GTR Moisture Content | ASTM D1509 | Maximum 0.75% |
| Mineral Filler –Talcum Powder (Optional) | ASTM M17 | Maximum of 4.0% |
| Stabilizing Additives (Optional) | - | Maximum of 4.5% by wt. of GTR |

| Chemical Test | Test Procedure | Specification |
|----------------------------|-----------------------|----------------------|
| Acetone Extract | ASTM D297 | Maximum 25.0% |
| Rubber Hydrocarbon Content | | 40.0 – 60.0 % |
| Ash Content | | Maximum 8.0 % |
| Carbon Black Content | | 20.0 – 40.0 % |
| Natural Rubber | | 16.0 – 45.0 % |

401.2.1.1.1.2 Ground Tire Rubber in Open Graded Friction Course Mixtures

Stabilizing fibers and fiber supply systems at the asphalt plant may not be necessary when the GTR binder is used as required by section 409.2.3 and 409.4.3 of the Standard Specifications. Perform the SC-T-90 drain-down procedure at 350°F when conducting the asphalt mix design, or otherwise directed by the AME. In the event that drain-down values are found to be excessive, then stabilizing fibers may be necessary as directed by the AME. No additional compensation will be paid for the fibers in the OGFC mixture.

401.2.1.1.1.3 Asphalt Plant Storage Requirements When Using Ground Tire Rubber

Use a dedicated storage tank for “terminal blended GTR asphalt binder” at the asphalt plant. This tank must be capable of providing continuous mixing, as well as recirculation of the GTR asphalt binder as needed. Ensure that this tank is heated and capable of maintaining the temperature of the homogeneous blend of asphalt binder and GTR at 300°F to 350°F. Ensure that GTR modified binders are not mixed with other modified PG 76-22 binder without permission of the AME.

March 3, 2009

ASPHALT BINDER ADJUSTMENT INDEX

General: The Bidder is advised that the Department will apply Asphalt Binder Adjustments *for specified items of work* when the Index for Asphalt Binder (PG64-22) varies more than 5% from the Base Index price established for the contract.

Index: The Department maintains an Index for Asphalt Binder, which is an average of quotations from current asphalt binder suppliers, effective on the 1st and 17th of each month. The resulting Index is posted in spreadsheet form on the Department's Internet at <http://www.scdot.org/doing/monthlyindexes.asp>.

Base Index: The Department sets a Base Index date for each contract subject to Asphalt Binder adjustments with the date set prior to the highway letting. The Index for Asphalt Binder on that Base Index date sets the framework of the 5% adjustment increments to be used for the contract. Tables showing the adjustment increments are displayed in the above noted spreadsheet (AC Binder Chart tab).

Asphalt Binder content Factors: The following table shows the Asphalt Binder Content factor (tons of Asphalt Binder per unit of work) for SCDOT work items that are subject to this specification. In order 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 A.C. Binder Adjustments | Unit | AC Binder Tons |
|---|------|----------------|
| Liquid Asphalt Binder (PG64-22) | TON | 1.0000 |
| Liquid Asphalt Binder (PG76-22) | TON | 1.0000 |
| Full Depth Patching – 4" (AC Binder) | SY | 0.0110 |
| Full Depth Patching – 6" (AC Binder) | SY | 0.0165 |
| Full Depth Patching – 8" (AC Binder) | SY | 0.0220 |
| Full Depth Patching – 10" (AC Binder) | SY | 0.0275 |
| Full Depth Patching – 12" (AC Binder) | SY | 0.0330 |
| Single Treatment Type-1 (0.38 gal/sy AC) | SY | 0.0016 |
| Single Treatment Type-2 (0.38 gal/sy emulsion) | SY | 0.0011 |
| Single Treatment Type-3 (0.25 gal/sy emulsion) | SY | 0.0007 |
| Single Treatment Class-A (0.30 gal/sy emulsion) | SY | 0.0008 |
| Double Treatment Type-1 (0.82 gal/sy emulsion) | SY | 0.0023 |
| Double Treatment Type-2 (0.97 gal/sy emulsion) | SY | 0.0027 |
| Double Treatment Type-2 (0.55 gal/sy emulsion) | SY | 0.0015 |
| Double Treatment-Class A Special (0.66 gal/sy (emulsion) | SY | 0.0018 |
| Triple Treatment-Type 1 (0.85 gal/sy emulsion) | SY | 0.0024 |
| Triple Treatment-Type 2 (0.71 gal/sy emulsion) | SY | 0.0020 |
| Triple Treatment-Type 4 (0.82 gal/sy emulsion) | SY | 0.0023 |
| Asph Surf Trmt – Single Treatment (0.28 gal/sy mod. Emulsion) | SY | 0.0008 |
| Asph Surf Trmt – Double Treatment (0.48 gal/sy mod. Emulsion) | SY | 0.0013 |
| Microsurfacing, Type II | SY | 0.0007 |
| Microsurfacing, Type II – Leveling | TON | 0.0800 |
| Emulsion for High Performance Chip Seal (Macrosurfacing) | Gal | 0.0028 |

Per unit index adjustments are determined by multiplying the Asphalt Binder Content factor by the Asphalt Binder Index Change (minimum of incremented range). The resulting per unit amount is then applied to the construction estimate as a line item adjustment.

Additional Provisions:

- A. The Department will calculate and apply Asphalt Binder Index Adjustments to estimates based on Index values set at the beginning of the estimate period.

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| SUPPLEMENTAL SPECIFICATIONS |
|-----------------------------|

- Districts 2, 3, and 5 – 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.
 - Districts 1, 4, 6, and 7 – Estimate period begins on the 17th of the month and ends on the 16th day of the following month. The 17th 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 asphalt binder adjustment) continues after expiration of the contract completion date, the asphalt binder index 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 <http://www.scdot.org/doing/monthlyindexes.asp>.

July 1, 2010

Subsection 401.4.17, Transportation and Delivery of Mixes, of the Standard Specification will be deleted in its entirety and replaced with the following:

Transport the HMA from the plant to the point of use in vehicles meeting the requirements of Subsection 401.3.7. Do not permit any load of HMA to leave the plant so late in the day that it cannot be spread, finished, and compacted during daylight of that same day unless an approved artificial lighting system is provided. Ensure that HMA mixtures containing the asphalt binder grades below are produced and delivered to the jobsite within the acceptance range listed in the table below with exception that Base C and D mixtures will be produced and delivered at a temperature range of 240°-275° F. The mix temperatures will be checked using SC-T-84. Ensure the HMA mixtures are held within the acceptance range based on Binder Performance Grade in the Job Mix Formula. Deliver mixture within the acceptance range for temperature to assist in obtaining density requirements which provide smooth riding pavements with uniform texture.

| Binder Performance Grade | Acceptance Range (°F) |
|--------------------------|-----------------------|
| PG 64-22 | 265°-325° |
| PG 70-22 | 285°-335° |
| PG 76-22 | 300°-350° |

Note: This temperature specification does not apply to WMA (SC-M-408). Refer to the HMA Contractor's QC Plan for mix acceptance range based on selected asphalt plant WMA technologies.

September 1, 2015

Delete Subsection 601.1.3 of the Standard Specifications in their entirety and replace them with the following:

601.1.3 Restrictions

1 **The Department prohibits lane closures on interstate highways during holiday weekends, extended holiday periods or special events as defined below unless otherwise directed by the Engineer.** The Department’s holiday lane closure restrictions for holidays that are observed on a Monday will include the weekend and are considered a holiday weekend unless otherwise established by these specifications. The Department defines the typical Monday holiday weekend as from 6:00 am of the Friday before the weekend until 6:00 a.m. of the Tuesday after the holiday. Lane closures, road closures, shoulder closures, pacing operations or any operations that will impact the efficient flow of traffic or hinder normal traffic operations during these Monday holiday weekends as defined above are prohibited unless otherwise directed by the Engineer.

2 Easter and Thanksgiving holidays are varied and extended holiday periods of a holiday weekend. Easter holidays are defined as from 12:00 noon of the Thursday before Easter until 6:00 p.m. of the Monday after Easter. Thanksgiving holidays are defined as from 12:00 noon of the Wednesday before Thanksgiving Day until 6:00 a.m. of the Monday after Thanksgiving Day. Lane closures, road closures, shoulder closures, pacing operations or any operations that will impact the efficient flow of traffic or hinder normal traffic operations during the Easter and Thanksgiving holidays as defined above are prohibited unless otherwise directed by the Engineer.

3 The 4th of July holiday is considered an extended holiday period. Considering the progressive nature of the calendar, this extended holiday period will vary from year to year depending upon the day of the week the holiday occurs. See the table below. Lane closures, road closures, shoulder closures, pacing operations or any operations that will impact the efficient flow of traffic or hinder normal traffic operations during the 4th of July holiday as defined below are prohibited unless otherwise directed by the Engineer.

| 4th of JULY HOLIDAY | |
|---------------------------------------|--|
| DAY OF WEEK | DURATION |
| MONDAY | 6:00 AM FRIDAY, JULY 1 ST through 10:00 PM SUNDAY JULY 10 TH |
| TUESDAY | 6:00 AM FRIDAY, JUNE 30 TH through 10:00 PM SUNDAY JULY 9 TH |
| WEDNESDAY | 6:00 AM FRIDAY, JUNE 29 TH through 10:00 PM SUNDAY JULY 8 TH |
| THURSDAY | 6:00 AM FRIDAY, JUNE 28 TH through 10:00 PM SUNDAY JULY 7 TH |
| FRIDAY | 6:00 AM FRIDAY, JUNE 27 TH through 10:00 PM SUNDAY JULY 13 TH |
| SATURDAY | 6:00 AM FRIDAY, JUNE 26 TH through 10:00 PM SUNDAY JULY 12 TH |
| SUNDAY | 6:00 AM FRIDAY, JUNE 25 TH through 10:00 PM SUNDAY JULY 11 TH |

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The Christmas holidays are considered an extended holiday period. Considering the progressive nature of the calendar, this extended holiday period will vary from year to year depending upon the day of the week the holiday occurs. See the table below. Lane closures, road closures, shoulder closures, pacing operations or any operations that will impact the efficient flow of traffic or hinder normal traffic operations during the Christmas holidays as defined below are prohibited unless otherwise directed by the Engineer.

| CHRISTMAS HOLIDAYS | |
|---------------------------|--|
| DAY OF WEEK | DURATION |
| MONDAY | 6:00 AM FRIDAY, DECEMBER 22 ND through 10:00 PM WEDNESDAY JANUARY 3 RD |
| TUESDAY | 6:00 AM FRIDAY, DECEMBER 21 ST through 10:00 PM THURSDAY JANUARY 3 RD |
| WEDNESDAY | 6:00 AM FRIDAY, DECEMBER 20 TH through 10:00 PM FRIDAY JANUARY 3 RD |
| THURSDAY | 6:00 AM TUESDAY, DECEMBER 23 RD through 10:00 PM SUNDAY JANUARY 4 TH |
| FRIDAY | 6:00 AM WEDNESDAY, DECEMBER 23 RD through 10:00 PM SUNDAY JANUARY 3 RD |
| SATURDAY | 6:00 AM THURSDAY, DECEMBER 23 RD through 10:00 PM MONDAY JANUARY 3 RD |
| SUNDAY | 6:00 AM FRIDAY, DECEMBER 23 RD through 10:00 PM TUESDAY JANUARY 3 RD |

5

Special events are events generating excessive traffic as determined by the Department. Lane closures, road closures, shoulder closures, pacing operations or any operation that would impact the efficient flow of traffic or hinder normal traffic operations during special events are prohibited unless otherwise directed by the Engineer.

September 1, 2013

WORK ZONE TRAFFIC CONTROL TRAINING REQUIREMENTS FOR CONTRACTORS/SUBCONTRACTORS

1. Description:

This specification details the work zone traffic control training requirements for employees and representatives of a contractor or subcontractor under contract to the South Carolina Department of Transportation (SCDOT) whose job duties include responsibilities relative to implementation and maintenance of the Transportation Management Plan (TMP). "Employees and representatives of a contractor or subcontractor" will henceforth be referred to as "employee" or "employees" and "contractor or subcontractor" will henceforth be referred to as "contractor".

The SCDOT requires the contractor to provide documentation to substantiate successful completion and attainment of a passing score of a prescribed training course conducted by an SCDOT approved provider by those employees whose job duties categorize them as "designated trainees" as defined hereinafter.

2. Implementation:

These requirements for work zone traffic control training for employees of those entities under contract to the SCDOT whose job duties include responsibilities relative to implementation and maintenance of a TMP shall become effective on all projects let to contract after September 1, 2013.

3. Designated Trainees:

An employee whose job duty responsibilities, as designated hereto, impact or involve any of or all of the components of a TMP must successfully complete an advanced work zone traffic control training program. These components include the primary component, the "Temporary Traffic Control" plan, and the secondary components, the "Transportation Operations" plan and the "Public Information" plan.

An employee whose job duties include any of the following responsibilities regarding the TMP shall successfully complete an advanced work zone traffic control training program conducted by an SCDOT approved work zone traffic control training provider:

- Supervision of the field installation of any or all components of the TMP
- Supervision of the maintenance of any or all components of the TMP
- Supervision of the removal of any or all components of the TMP
- Design and development of revisions to an existing TMP
- Design and development of a new or alternate TMP
- Any decision-making responsibilities regarding the TMP

Those employees whose job duties do not include responsibilities relative to the TMP as stated above are not required to attend an advanced work zone traffic control training program. However, it is recommended that all employees whose job duties place them on the job site within the highway rights-of-way within 30 feet or less of a travel lane open to traffic should attend a basic work zone traffic control training course.

Also, an employee whose job duties include "flagger" shall successfully complete a "Flagger Training" course. However, regarding an employee whose job duties include "flagger" but does not involve any of the responsibilities listed above, successful completion of a "Flagger Training" course is the only mandatory work zone traffic control training course required for this employee; other work zone traffic control training courses are elective.

4. Approved Work Zone Traffic Control Training Providers:

The SCDOT recognizes the following organizations as acceptable providers of an advanced work zone traffic control training program, a “Flagger Training” course or the optional basic work zone traffic control training course:

American Traffic Safety Services Association (ATSSA)
Institute for Transportation Research and Education at North Carolina State University (ITRE) Carolinas Association of General Contractors (AGC)
National Safety Council South Carolina Chapter

These organizations provide work zone traffic control training in compliance with the MUTCD and reference requirements specific to SCDOT. Therefore, work zone traffic control training provided by entities other than those listed above are not considered comparable and shall be unacceptable.

Specific course material for work zone traffic control training courses designated as “Basic”, “Advanced”, “Supervisor” or “Flagger” and any additional training courses not specified here is determined by the work zone traffic control training course provider and has undergone review and received acceptance by SCDOT. Also, the passing score for each training course is determined by the work zone traffic control provider.

5. Training Requirements / Qualifications:

Successful completion of an advanced work zone traffic control training program is defined as achieving a passing score in all courses, including any prerequisite courses, to attain a level considered “advanced”, “supervisor” or any other relative term as designated by the provider to imply the trainee has an understanding of the course material inclusive of design, implementation and maintenance of work zone traffic control scenarios. Upon successful completion of the program, the trainee should also possess an understanding for determining the need for and developing and implementing adjustments as necessary when applying typical work zone traffic control applications to non-typical work site conditions and scenarios.

The employee whose job duty responsibilities mandate successful completion of an advanced work zone traffic control training program shall do so prior to performing any job duties with responsibilities relative to design and development of a TMP or revisions of an existing TMP or any decision-making responsibilities regarding the TMP or supervision of the field installation and maintenance of any and all components of the TMP.

Also, an employee whose job duties mandate successful completion of a “Flagger” training course shall do so prior to performing any job duties relative to flagging traffic.

Each employee who has successfully completed an approved advanced work zone traffic control training program or a “Flagger” training course shall attend and complete a refresher course relative to the employee’s job duties on a 5-year incremental time frame.

6. Documentation:

The contractor shall provide proof of successful completion of an acceptable advanced work zone traffic control training class by those employees whose job duty responsibilities mandate successful completion of approved work zone traffic control training to the Resident Engineer prior to the employee performing the job duties that incorporate responsibilities which necessitate approved work zone traffic control training. For proof of successful completion of an approved work zone traffic control training class, provide a copy of the certificate of training from the organization who conducted the training to the Resident Engineer. Failure to provide the required documentation as specified shall prevent SCDOT acceptance of the employee as properly trained and acceptable for conducting those job duties that necessitate the prescribed work zone traffic control training.

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|-----------------------------|
| SUPPLEMENTAL SPECIFICATIONS |
|-----------------------------|

The contractor shall provide proof of successful completion of an acceptable "Flagger Training" course by all employees whose job duties require them to be the "Flagger" within a flagging operation to the Resident Engineer prior to the employee performing any "Flagger" job duties.

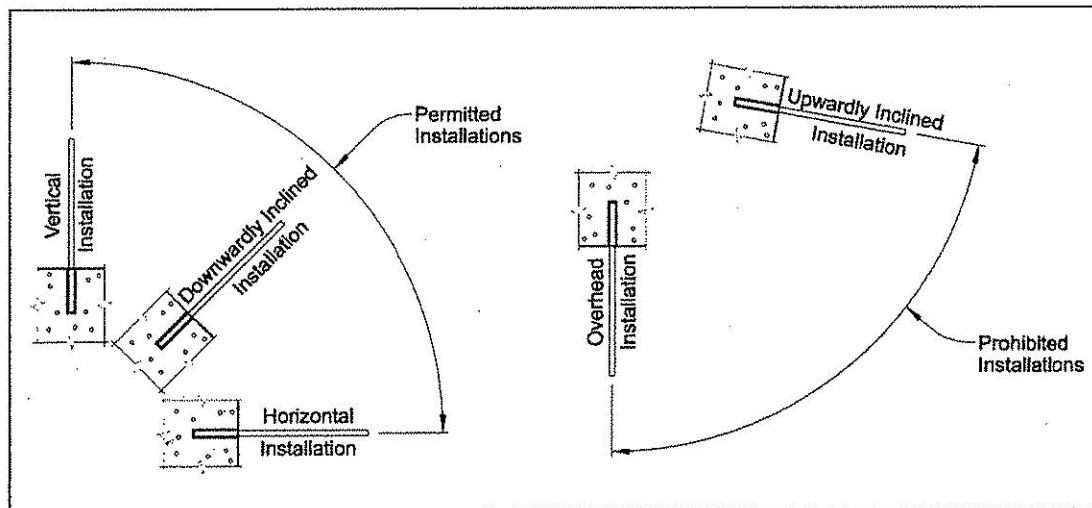
The contractor shall provide proof of successful completion of an acceptable advanced work zone traffic control refresher course for those employees no later than 60 days beyond the 5 year anniversary date of the employee's certificate date of completion of a previous advanced work zone traffic control training program.

Documentation of proof of completion of a basic work zone traffic control training course by employees whose job duties require their presence on the job site within the highway rights-of-way but exclude any responsibilities relative to the TMP is not required.

September 1, 2008

ADHESIVELY BONDED ANCHORS AND DOWELS**1.0 Adhesively Bonded Anchors and Dowels****1.1 Scope**

Furnish all required labor, equipment, and materials and perform all operations necessary for installing anchors and dowels in concrete using an adhesive bonding system in accordance with the details shown on the Plans and with the requirements of this Specification. Provide a material system specifically intended for use in structural applications for bonding anchors and dowels to hardened concrete. Limit applications to anchors and dowels installed in horizontal, vertical, and downwardly inclined positions. Do not use adhesive anchors in overhead or upwardly inclined installation. See Figure 1.1.

**Figure 1.1**

Submit a description of the proposed adhesive bonding system to the RCE for review, comments, and acceptance. Include in the description to anchor type, equipment, Manufacturer's recommended hole diameter, material specifications, and any other material, equipment or procedure not covered by the contract documents. List the properties of the adhesive, including density, minimum and maximum temperature application, setting time, shelf life, pot life, shear strength, bond strength, and compressive strength. If anchors or dowels containing a corrosion protective coating are required, provide an adhesive that does not contain any chemical elements that are detrimental to the coating and include a statement to this effect in the submittal concerning the contents as required by State or Federal Laws and Regulations.

Submit to the RCE Manufacturer's certification that the adhesive bonding system, when tested for tension pull-out according to ASTM E488 utilizing identical anchorages, embedment depths, and concrete strengths as those specified on the Plans, does not fail by any mode listed in Section 12 of ASTM E488 when loaded to the lesser of 85 percent of the specified bond strength (based on the nominal anchorage diameter and embedment depth) or 90 percent of the yield strength of the anchor. Also, submit to the RCE long term load (creep) test results performed in accordance with ASTM E1512, ICC-ES AC58, or ICC-ES AC308. When specified on the Plans, field testing will also be required for adhesive anchorages.

1.2 Materials

Provide adhesive bonding material systems for structural applications that meet the requirements of ASTM C881, Type IV, Grade 3, Class B or C (depending on site conditions). Do not use "Fast Set epoxy". Package components of the adhesive in containers of such size that one whole container of each component is used in mixing one batch of adhesive. Use containers of such design that all of the contents may be readily removed, and are well sealed to prevent leakage. Do not use material from containers which are damaged or have been previously opened. Use only full packages of components. Furnish adhesive material that requires hand mixing in two separate containers designated as Component A and Component B or in a self contained cartridge or capsule that consists of two components which will be automatically mixed as they are dispensed, as in the case of a cartridge, or drilled into, as in the case of a capsule.

Provide packages clearly marked by the Manufacturer with the following information:

- Manufacturer's name and address
- Product Name
- Date of Manufacture
- Expiration Date
- LOT Identification Number
- Storage and Handling Requirements

With each package include the Manufacturer's instructions for anchor and dowel installation. Include the following information with the instructions:

- Diameters of drilled holes for applicable anchor and dowel sizes.
- Cleaning procedure for drilled holes, including a description of permitted and prohibited equipment and techniques.
- Allowable temperature ranges for storage, installation and curing.
- Identification of acceptable mixing/dispensing nozzles.
- Fabrication requirements for anchors and dowels
- Description of tools permitted or required for installation.
- Method of identifying properly proportioned and mixed adhesive materials.
- Time and temperature schedule for initial set ('gel time') and full-strength cure.
- Requirements for special installation conditions such as horizontal or near horizontal orientation of the anchor or dowel.

1.3 Construction Requirements

1.3.1 Storage

Deliver the adhesive bonding material system to the job-site in original unopened containers with the Manufacturer's label identifying the product. Store materials delivered to the job-site in the original unopened containers within an appropriate facility capable of maintaining storage conditions consistent with the Manufacturer's recommendations.

1.3.2 Installation

Install the adhesive anchors and dowels perpendicular to the plane surface of the structural member, in accordance with Manufacturer's recommendations, and when the concrete is above 40 degrees Fahrenheit and has reached its 28 day strength. Install the anchorages before the adhesive's initial set ('gel time').

1.3.2.1 Drilling of Holes into Concrete

Ensure that concrete members receiving adhesive-bonded anchors or dowels are structurally sound and free of cracks in the vicinity of the anchor or dowel to be installed. When directed by the RCE, use a jig or fixture to ensure the holes are positioned and aligned correctly during the drilling process.

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|-----------------------------|
| SUPPLEMENTAL SPECIFICATIONS |
|-----------------------------|

Use a metal detector specifically designed for locating steel in concrete to avoid conflicts with existing steel reinforcement whenever placement tolerances and edge clearances permit. Unless other equipment is recommended by the Manufacturer, drill holes to the diameter required by the Manufacturer using a rotary hammer drill and bit. Perform core drilling to clear existing steel reinforcement only when approved by the RCE. Dry the drilled holes completely prior to cleaning and installing the anchors or dowels. Clean and prepare drilled holes in accordance with the Manufacturer's recommendations, but as a minimum, use oil-free compressed air to remove loose particles from drilling, brush inside surface to free loose particles trapped in pores, then use compressed air again to remove the remaining loose particles. Use a non-metallic bristle brush and avoid over-brushing to prevent polishing the inside surface of the drilled hole. Check each hole with a depth gauge to ensure proper embedment depth. Repair spalled or otherwise damaged concrete using methods approved by the RCE.

1.3.2.2 Inspection of Holes

Inspect each hole immediately prior to placing the adhesive and the anchors/dowels. Ensure all holes are dry and free of dust, dirt, oil, and grease.

1.3.2.3 Mixing of Adhesive

Mix the adhesive in strict conformance with the Manufacturer's instructions.

1.3.2.4 Embedment of Anchors and Dowels

Remove all debris, oils, and any other deleterious material from the anchors and dowels to avoid contamination of the adhesive bonding material. Insert the anchor or dowel the specified depth into the hole and slightly agitate it to ensure wetting and complete encapsulation. After insertion of the anchor or dowel, strike off any excessive adhesive flush with the concrete face. Should the adhesive fail to fill the hole, add additional adhesive to the hole to allow a flush strike-off. Do not disturb the anchors and dowels while adhesive is hardening. For horizontal and inclined installation, provide temporary supports to maintain the alignment of the anchors or dowels until the adhesive bonding material has cured.

1.3.2.5 Field Testing

When specified on the Plans, field test the installed anchors and dowels. Perform field testing of the installed anchors and dowels in accordance with the applicable sections of ASTM E488. Inform the RCE and the Manufacturer when the tests will be performed at least 2 days prior to testing. For testing, use a calibrated hydraulic centerhole jack system that will not damage the anchor or dowel. Place the jack on a plate washer that has a hole at least 1/4" larger than the hole drilled into the concrete. Position the plate washer on center to allow an unobstructed pull. Position the anchors/dowels and the jack on the same axis. Have an approved testing agency calibrate the jack within 6 months prior to testing. Supply the RCE with a certificate of calibration.

Divide the anchors and dowels into LOTs for field testing and acceptance. A LOT consists of anchors or dowels of the same type, diameter, strength, embedment length, and adhesive bonding system. Prior to performing field tests, submit proposed testing locations to the RCE for review, comments, and acceptance. In the presence of the RCE, field test the anchors or dowels for each LOT in accordance with the following:

Test a minimum of 1 anchorage but not less than 10% of all anchors in the LOT to the test load shown on the Plans.

If less than 60 anchorages are to be installed: Install and test the minimum required number of anchorages prior to installing the remaining anchorages. After installing the remaining anchorages, test a minimum of 2 of these anchorages at random locations selected by the RCE.

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| SUPPLEMENTAL SPECIFICATIONS |
|-----------------------------|

If more than 60 anchorages are to be installed: Test the first 6 anchorages prior to installing the remaining anchorages. Then test, at random locations selected by the RCE, 10% of the number in excess of 60 anchorages.

For every failed field test, perform two additional field tests on adjacent untested anchors or dowels within the LOT. Continue additional field tests until no more test failures occur, or until all anchors and dowels within the LOT are tested.

Begin testing after the Manufacturer's recommended cure time has been reached. For testing, apply and hold the test load for three minutes. If the jack experiences any drop in gage reading, restart the test. For the anchorage to be deemed satisfactory, hold the test load for three minutes with no movement or drop in gage reading.

Remove all anchors and dowels that fail the field test, without damage to the surrounding concrete. Re-drill holes to remove adhesive bonding material residue and clean the hole in accordance with Subsection 1.3.2.1. For reinstalling replacement anchors or dowels, follow the same procedures as new installations. Do not reuse failed anchors or dowels unless approved by the RCE.

Determine failure of the field test in accordance with ASTM E488. Submit certified test reports to the RCE. Final acceptance of the adhesively anchored system is based on the conformance of the pull test to the requirements of this Specification. Failure to meet the criteria of this Specification is grounds for rejection.

1.4 Measurement

No separate measurement for payment will be made for furnishing, installing, and testing of adhesively bonded anchors and dowels.

1.5 Payment

Include all costs of adhesively bonded anchors and dowels in the contract unit price bid for the items to be anchored.

**TRAILER MOUNTED
AUTOMATED FLAGGER ASSISTANCE DEVICE SYSTEM
(AFAD)**

1. Description:

This specification details the minimum requirements of all Automated Flagger Assistance Device Systems (AFAD) utilized and placed into operation on the roadways of the state of South Carolina.

An automated flagger assistance device system is a temporary traffic control device system for controlling the flow of traffic through temporary traffic control areas, typically work zones, that generate the requirement for two-way traffic to share a single travel lane. An automated flagger assistance device system shall consist of no less than 2 individual AFAD units linked and remotely controlled by wireless communications. A flagger(s), who has successfully completed a flagger training course sponsored by a South Carolina Department of Transportation approved work zone traffic control training provider, shall operate the system. Install, operate and maintain each AFAD unit as designated by these Supplemental Specifications, the manufacturer's specifications, the Standard Drawings for Road Construction, the Plans and the Engineer.

An automated flagger assistance device system acceptable for use on the roadways of the state of South Carolina shall be either a Type I "RED / YELLOW" Lens system or a Type II "STOP / SLOW" Sign system.

The automated flagger assistance device system shall comply with all requirements for Automated Flagger Assistance Devices as specified and directed by the MUTCD, latest edition, and this supplemental specification. An automated flagger assistance device system shall operate and comply with all requirements for flagging operations as specified and directed by the latest editions of the MUTCD, the South Carolina Flagger's Handbook and the Standard Specifications for Highway Construction. Also, an automated flagger assistance device system shall operate and comply with all requirements for flagging operations as specified and directed by the Standard Drawings for Road Construction, the special provisions, the plans and the Engineer.

2. Operations Requirements:

A. General: Automated flagger assistance device systems are only permitted for use on two-lane two-way roadways where each single travel lane of opposing traffic is required to utilize and share one travel lane. An AFAD system is PROHIBITED for use on multilane roadways with reduced numbers of travel lanes. An AFAD is not a traffic control signal and shall not be used as a temporary traffic control signal or to control traffic at any location with more than 2 opposing single travel lanes seeking to share one travel lane.

B. Documentation: Provide documentation to the SCDOT to verify that each operator of an automated flagger assistance device system has successfully completed instruction in the operation of a system by the manufacturer of that system. Also, provide documentation to verify that each operator has successfully completed a flagger training course sponsored by a South Carolina Department of Transportation approved work zone traffic control training provider.

1. **Work Conducted under Contract to SCDOT** - Provide documentation of proof of successful completion of training in the proper operation of the AFAD system by the manufacturer of the system and successful completion of training as a flagger by a South Carolina Department of Transportation approved work zone traffic control training provider to the Resident Engineer no less than 7 days prior to placing an automated flagger assistance device into operation.

2. **Work Conducted under Encroachment Permit** - Provide documentation of proof of successful completion of training in the proper operation of the AFAD system by the manufacturer of the system and successful completion of training as a flagger by a South Carolina Department of Transportation approved work zone traffic control training provider along with submittal of the encroachment permit to the SCDOT.

C. Operator: The operator of the an automated flagger assistance device system shall be a recipient of and have successfully completed instruction in the operation of the system by the manufacturer of that system. The operator shall have successfully completed a flagger training course sponsored by a South Carolina Department of Transportation approved work zone traffic control training provider.

The South Carolina Department of Transportation only recognizes the following entities as acceptable providers of work zone traffic control training for organizations outside of the SCDOT who perform work activities within the highway rights-of-way in South Carolina under either contract to SCDOT or encroachment permit:

American Traffic Safety Services Association (ATSSA)
 Institute for Transportation Research and Education at North Carolina State
 University (ITRE) Carolinas Association of General Contractors (AGC)
 National Safety Council South Carolina Chapter

The operator shall control the automated flagger assistance device system from a location with an unobstructed view of the AFAD unit as well as an unobstructed view of the approaching traffic. If a single operator is controlling more than one unit, the operator shall have an unobstructed view of traffic from both directions. At no time is the operator permitted to leave the AFAD unattended when the AFAD is operating.

D. Site Location: When sufficient shoulder space is available, place and position the AFAD unit on the shoulder of the roadway no closer than 1 foot from either the near edge line or the near edge of pavement when an edge line is absent to the near edge of the trailer when the gate arm is in the upright position. When sufficient shoulder space to attain the minimum 1 foot requirement is unavailable, minimal encroachment of the unit upon the adjacent travel lane is permitted.

Place and position the AFAD unit to allow the end of the gate arm, when in the down position, to reach the center of the adjacent travel lane being controlled by the unit. Encroachment by the gate arm when in the down position to a point less than to the center of the adjacent travel lane or into the opposing travel lane beyond the center of the roadway is PROHIBITED.

Install the advance warning signs required for typical flagging operations on each approach. In addition to the typical flagging operations sign array, also include and install a "Be Prepared To Stop" sign (W3-4-48) between the "Flagger" symbol sign (W20-7-48) and the AFAD unit on each approach. Therefore, the required advance warning signs for each approach are, "Be Prepared To Stop" (W3-4-48), "Flagger" symbol (W20-7-48), "One Lane Road Ahead" (W20-4-48-A) and "Road Work Ahead" (W20-1-48-A).

E. Nighttime AFAD Flagging Operations: During nighttime operations, illuminate each AFAD unit 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 operations, operators 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 a 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.

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

3. System Requirements:

A. General: An automated flagger assistance device system shall consist of a Main AFAD unit and a Remote AFAD unit, linked and remotely controlled by wireless communications. The individual trailer-mounted units shall have nesting capabilities to permit towing of both units in a single trailer configuration. When nested, all lights including stop, tail and turn signal lights of both units shall operate uniformly.

B. Power Source: The electrical power for operation of the sign shall be supplied by a 12 VDC power source or a 110 VAC or a 120 VAC power source. Provide and mount a D/C power source for the unit on the trailer. An adaptable 110 VAC or 120 VAC power source may be used when available and selected for use.

1. **D/C Powered:** Power the unit by means of a battery bank charged by photovoltaic solar panels and/or a built-in 110 VAC 10 amp battery charger. House the battery bank in a lockable heavy duty weatherproof box or cabinet. The battery bank shall have the capability to provide sufficient operating power to the unit for no less than 7 continuous days.
2. **A/C Powered:** Power the unit by means of a 110 VAC or 120 VAC power source. Equip the unit with ground fault circuit interrupter circuit breakers. Conduct all A/C power adaptations with UL approved equipment and methods.

C. Remote Control: Equip each AFAD unit with a controller capable of receiving and implementing instructions through wireless communications from a handheld transceiver. Also, equip each AFAD unit with a handheld transceiver that provides wireless communication with the unit controller to permit operation of the individual unit or the system by an operator or operators from remote locations. The system shall provide the capability for total system operation and control of both units by one operator from a primary handheld transceiver as well as allow independent unit operation by one operator per unit from unit specific handheld transceivers.

Monitor and verify data transmissions utilized to control the AFAD units. Digitally encode signal transmissions to minimize interference. Comply with all applicable requirements of the Federal Communications Commission. In the event communications are disrupted or lost, the system shall go into a "fail safe" mode and display the "Circular Red" / "STOP" indications and lower the gate arms.

D. Gate Arm: Equip each AFAD unit with an automated gate arm that descends to a down position across the travel lane that approaching traffic is operating in when the AFAD unit displays the condition for approaching traffic to stop. The automated gate arm shall ascend to an upright position when the AFAD unit displays the condition to allow stopped traffic to proceed past the location of the AFAD unit.

Acceptable operation of the gate arm shall require the gate arm to begin descent to the down position no less than 2 seconds or more than 4 seconds after the AFAD unit displays the condition for approaching traffic to stop. The gate arm shall begin ascent to the upright position not less than 1 second or more than 2 seconds prior to display of the condition to allow stopped traffic to proceed.

The gate arm shall measure no less than 8 feet in length and shall have a minimum vertical height of 4 inches when placed in the down position. Reflectorize both sides of the gate arm with a Type III Microprismatic retroreflective sheeting with vertical alternating red and white stripes at 16 inch intervals.

The gate arm shall deflect in the event an errant vehicle drives through and strikes the gate arm and then return to a functional position after the errant vehicle clears the gate arm.

E. Trailer: Fabricate and equip each trailer with a single axle, springs, support assembly and four (4) leveling or stabilizer jacks. Properly equip the trailer to comply with South Carolina Law governing motor vehicles. The minimum requirement for lights and reflectors shall include turn

signals, dual tail lights, and brake lights. Equip each trailer with Safety chains meeting SAE J-697 standards and paint each trailer with Federal Standard No. 595, Orange No. 12246.

Each trailer mounted AFAD unit shall have the capability to withstand winds up to 80 MPH without overturning when in the operating configuration or position.

4. Type I “RED / YELLOW” Lens System:

A Type I “RED / YELLOW” Lens AFAD system shall alternately display a steadily illuminated Circular RED lens and a flashing Circular YELLOW lens to control traffic without the need for a “human flagger” in the immediate vicinity of the AFAD unit. The steadily illuminated Circular RED lens shall illuminate when approaching traffic is required to stop and the flashing Circular YELLOW lens shall illuminate when stopped or approaching traffic is permitted to proceed pass the location of the AFAD unit.

A RED / YELLOW Lens AFAD unit shall have no less than one set of Circular RED and Circular YELLOW lenses in a vertical configuration that have diameters of no less than 12 inches. Arrange the lenses to place the Circular RED above the Circular YELLOW and provide a minimum height of no less than 7 feet from the bottom of the apparatus housing the Circular YELLOW lens to the grade elevation of the travel lane under control of the AFAD unit. However, if the lenses are located over any portion of a travel lane in which traffic is operating and may pass underneath the lenses, the minimum mounting height shall be no less than 15 feet from the bottom of the apparatus housing the YELLOW lens to the grade elevation of the travel lane under control of the AFAD unit in which traffic is operating.

The gate arm shall begin its descent to the down position not less than 2 seconds or more than 4 seconds after the Circular RED lens is illuminated. The automated gate arm shall begin its ascent to the upright position not less than 1 second or more than 2 seconds prior to illumination of the flashing Circular YELLOW lens.

Install a “Stop Here On Red” sign (R10-6-36) or (R10-6a-30) on the right side of the approach at the point at which motorists are expected to stop when the Circular RED lens is illuminated.

Transition Between RED and YELLOW Conditions -

Transition to Circular RED condition - The flashing Circular YELLOW lens shall enter into a minimum 5 second steady illumination phase prior to transitioning to the steadily illuminated Circular RED condition. The gate arm shall begin its descent not less than 2 seconds or more than 4 seconds after the Circular RED lens is illuminated.

Transition to Circular YELLOW condition - The gate arm shall complete its ascent to the upright position not less than 1 second or more than 2 seconds prior to illumination of the flashing Circular YELLOW lens. The steadily illuminated Circular RED lens shall transition to the flashing Circular YELLOW lens.

The Type I “RED / YELLOW” Lens AFAD system shall include a fail-safe system with a conflict monitor or similar device to prevent display of conflicting indications between units. Also, the system shall provide indicators to notify the operators of power loss that may impede proper operation of the system.

5. Type II “STOP / SLOW” Sign System:

A Type II “STOP / SLOW” Sign AFAD system shall have a STOP / SLOW sign that alternately displays the STOP (R1-1-36) face and the SLOW (W20-8-36) face of a STOP / SLOW paddle to control traffic without the need for a “human flagger” in the immediate vicinity of the AFAD unit. The STOP sign face shall display when approaching traffic is required to stop and the SLOW sign face shall display when stopped or approaching traffic is permitted to proceed pass the location of the AFAD unit.

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|-----------------------------|
| SUPPLEMENTAL SPECIFICATIONS |
|-----------------------------|

The STOP / SLOW sign, fabricated from a rigid material, shall have an octagonal shape with a minimum face size of 36 inches by 36 inches. Reflectorize each face of the sign with a Type VII, Type VIII or Type IX Prismatic Retroreflective sheeting included on the latest edition of the *SCDOT Qualified Products List 20*. The STOP sign face shall have a red background with white letters and border and the SLOW sign face shall have a diamond shaped orange background with black letters and border. The letters shall have a minimum height of 8 inches. The sign faces shall have a minimum mounting height of 7 feet from the bottom of the sign to the grade elevation of the travel lane under control of the AFAD unit.

Supplement the Type II "STOP / SLOW" Sign AFAD unit with active conspicuity devices. Include a steadily illuminated RED lens beacon to illuminate when the STOP sign face is displayed and a flashing YELLOW lens beacon to illuminate when the SLOW sign face is displayed. Each beacon shall have a 12 inch signal lens. Mount the RED lens beacon no more than 24 inches above the top of the STOP sign face and YELLOW lens beacon no more than 24 inches above the top or to the side of the SLOW sign face.

Type B warning lights are PROHIBITED as alternatives to the 12 inch signal lens beacons.

The gate arm shall begin its descent to the down position 2 seconds or more than 4 seconds after the transition to a complete display of the STOP sign face is accomplished and the illumination of the steadily illuminated RED lens beacon. The automated gate arm shall begin its ascent to the upright position not less than 1 second or more than 2 seconds prior to the initiation of the transition from the STOP sign face to the SLOW sign face.

Install a "Wait On Stop" sign (R1-7-30) and a "Go On Slow" sign (R1-8-30) either on the same support structure as the AFAD unit or immediately adjacent to the AFAD unit.

Transition Between STOP and SLOW Conditions -

Transition to STOP condition - The RED lens beacon shall enter into a "flashing mode" no less than 5 seconds prior to transitioning from the SLOW sign face to the STOP sign face. Immediately upon completion of the transition to complete display of the STOP sign face, the "flashing mode" of the RED lens beacon shall transition to a steadily illuminated condition. The gate arm shall begin its descent in not less than 2 seconds or more than 4 seconds after completion of the transition to a complete display of the STOP sign face and illumination of the steadily illuminated RED lens beacon.

Transition to SLOW condition - The STOP sign face shall begin the transition to the SLOW sign face. The gate arm shall begin its ascent to the upright position not less than 1 second prior to the initiation of the transition from the STOP sign face to the SLOW sign face. The RED lens beacon shall cease to illuminate and the flashing YELLOW lens beacon shall begin to illuminate immediately upon completion of the transition of the STOP sign face to the SLOW sign face and the ascent of the gate arm to its completed upright position.

The Type II "STOP / SLOW" Sign AFAD system shall include a fail-safe system with a conflict monitor or similar device to prevent display of conflicting indications between units. Also, the system shall provide indicators to notify the operators of power loss that may impede proper operation of the system.

3. Method of Measurement: Unless otherwise specified, Automated Flagger Assistance Device Systems (AFAD's) are not measured for separate payment but are included in the contract lump sum bid price item Traffic Control as specified in Subsections 107.12 and 601.5 of the *2007 Standard Specifications for Highway Construction*.

4. Basis of Payment: Unless otherwise specified, payment for an Automated Flagger Assistance Device System (AFAD) is included in the contract lump sum bid price item Traffic Control as specified in Subsections 107.12 and 601.5 of the *2007 Standard Specifications for Highway Construction*. The payment shall be full compensation for providing, installing, removing, and relocating as necessary, operating, and maintaining an Automated Flagger Assistance Device System (AFAD). Payment shall include furnishing all labor, hardware, equipment, tools, incidentals, and any

SUPPLEMENTAL SPECIFICATIONS

miscellaneous items necessary for installing, operating, and maintaining the system.

K. SUPPLEMENTAL SPECIFICATIONS – WOOD+PARTNERS

(Begins Next Page)

TABLE OF CONTENTS

**WALTERBORO, SOUTH CAROLINA
I-95 BUSINESS LOOP – PHASE 1B**

Division Section Title

DIVISION 01 - GENERAL REQUIREMENTS

015635 Tree Transplanting
015639 Tree Protection and Arborist Services

DIVISION 04 - MASONRY

042000 Unit Masonry

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

071113 Bituminous Dampproofing.....
071416 Cold Fluid-applied Waterproofing
079200 Joint Sealants

DIVISION 9 - FINISHES

093000 Tiling.....

DIVISION 12 - FURNISHINGS

129300 Site Furnishings

DIVISION 32 - EXTERIOR IMPROVEMENTS

321400 Unit Paving.....

END OF TABLE OF CONTENTS

SECTION 015635 – TREE TRANSPLANTING

GENERAL

RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

SUMMARY

This Section includes the following:

Relocating, storing, maintaining, protecting trees, pruning, vine clearing, injection and other measures needed to ensure health of transplanted trees.

QUALITY ASSURANCE

Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

PROJECT CONDITIONS

Coordinate work schedule with Owner, General Contractor and other trades and cooperate to insure optimum construction progress for overall project.

During work, keep work area in a clean and orderly condition.

Proceed with and complete work as rapidly as portions of site become available, working within seasonal limitations for each kind of work required.

PRODUCTS

TREE PROTECTION MATERIALS

Lumber for Holding Area Barricades: Southern yellow pine; used for holding area protection.

Safety Fence: Safety fence may be used as alternative to wood fencing. Height and other dimensions shall be as required to adequately protect trees, while allowing proper access for maintenance, etc. Install in accordance with manufacturer's recommendations.

INJECTION MATERIALS

Pesticides and Fertilizer: In accordance with accepted arboricultural practice in location of work. Conform to requirements of all authorities having jurisdiction over use of pesticides and other chemicals. Apply chemicals in accordance with label directions on chemical container.

Injection System: Provide system by Mauget or equivalent.

Transplant Enhancer: Mycorrhiza organic root enhancer.

EXECUTION

TREE TRANSPLANTING

Erect and maintain temporary fencing around holding zones before starting site clearing. Remove fence when construction is complete.

Do not store construction materials, debris, or excavated material within fenced area.
Do not permit vehicles, equipment, or foot traffic within fenced area.
Maintain fenced area free of weeds and trash.

Do not excavate within tree holding zones, unless otherwise indicated.

Pruning:

Conform to accepted horticultural practice for pruning. Make cuts vertically. Use pruning method which prevents splintering of bark.

Perform pruning work within seasonal limitations of each tree species.

Never remove more than 1/3 of any tree canopy.

Remove all dead wood, weak branches, branches that must be removed for buildings or landscape development, and other limbs necessary to ensure health of tree.

Vine Clearing: Remove all vines from existing trees to remain. Use removal method which prevents damage to tree.

Penalty: Contractor shall be responsible for the health and survival of relocated trees through the project warranty period. For losses beyond 10% of transplant total, replacement shall be provided at a rate of one (1) caliper inch replacement for every 1-inch caliper of loss. Tree replacement size to be no less than 2-1/2-inch caliper minimum per tree. Architect and Owner will determine species of replacement and final planting location(s) on site.

DISPOSAL

Disposal: Remove surplus plant materials and debris, and legally dispose of them off Owner's property.

END OF SECTION 015635

SECTION 015639 – TREE PROTECTION AND ARBORIST SERVICES

GENERAL

RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

SUMMARY

This Section includes the following:

Protecting trees, pruning, tree surgery, vine clearing, injection and other arborist measures needed to ensure health of existing trees.

SUBMITTALS

Arborist's Report: Submit written recommendation by qualified arborist of measures needed to ensure health of existing trees.

Qualification Data: For qualified arborist. Include list of similar projects completed by arborist demonstrating capabilities and experience. Include project names, addresses, and year completed, and include names and addresses of owners' contact persons.

QUALITY ASSURANCE

Arborist Qualifications: A qualified arborist who specializes in tree surgery.

Professional Membership: Arborist shall be a member in good standing of a recognized Arborist Society.

Arborist's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.

Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

PROJECT CONDITIONS

Coordinate work schedule with Owner, General Contractor and other trades and cooperate to insure optimum construction progress for overall project.

During work, keep work area in a clean and orderly condition. Unless notified in writing, all material taken from the trees becomes the property of the Contractor.

Proceed with and complete work as rapidly as portions of site become available, working within seasonal limitations for each kind of work required.

PRODUCTS

TREE PROTECTION MATERIALS

Lumber for Barricades: Southern yellow pine; dimensions indicated on drawings.

Safety Fence: Safety fence by Exxon or equivalent may be used as alternative to wood fencing. Height and other dimensions shall be same as for wood fence shown on plan. Install in accordance with manufacturer's recommendations.

INJECTION MATERIALS

Pesticides and Fertilizer: In accordance with accepted arboricultural practice in location of work. Conform to requirements of all authorities having jurisdiction over use of pesticides and other chemicals. Apply chemicals in accordance with label directions on chemical container.

Injection System: Provide system by Mauget or equivalent.

Transplant Enhancer: Mycorrhiza organic root enhancer.

EXECUTION

TREE PROTECTION

Erect and maintain temporary fencing around tree protection zones before starting site clearing. Remove fence when construction is complete.

Do not store construction materials, debris, or excavated material within fenced area.
Do not permit vehicles, equipment, or foot traffic within fenced area.
Maintain fenced area free of weeds and trash.

Do not excavate within tree protection zones, unless otherwise indicated.

Where excavation for new construction is required within tree protection zones, hand clear and excavate to minimize damage to root systems. Use narrow-tine spading forks, comb soil to expose roots, and cleanly cut roots as close to excavation as possible.

Cover exposed roots with burlap and water regularly.
Temporarily support and protect roots from damage until they are permanently redirected and covered with soil.
Coat cut faces of roots more than 1-1/2 inches in diameter with an emulsified asphalt or other approved coating formulated for use on damaged plant tissues.
Backfill with soil as soon as possible.

Repair or replace trees and vegetation indicated to remain that are damaged by construction operations, in a manner approved by Architect.

Employ an arborist, licensed in jurisdiction where Project is located, to submit details of proposed repairs and to repair damage to trees and shrubs.
Replace trees that cannot be repaired and restored to full-growth status, as determined by Architect.

ARBORIST SERVICES

Climbing: Spiked climbing shoes are prohibited. Use climbing method that ensures protection of trees and prevents scrapes, holes and wounds of any kind.

Pruning:

Conform to accepted horticultural practice for pruning. Make cuts vertically. Use pruning method which prevents splintering of bark.
Perform pruning work within seasonal limitations of each tree species.
Never remove more than 1/3 of any tree canopy.
Remove all dead wood, weak branches, branches that must be removed for buildings or landscape development, and other limbs necessary to ensure health of tree.

Vine Clearing: Remove all vines from existing trees to remain. Use removal method which prevents damage to tree.

Root Pruning: Where roots are to be removed due to site development, make vertical, clean cuts, minimizing wound area. Do not remove more than 1/3 of any tree roots. If needed, prune branches to equalize the loss of roots and canopy.

Injection and Other Measures:

Provide injection of nutrients and pesticides, along with other measures included in arborist's written recommendations.
Perform all work in accordance with accepted arboricultural practice in location of site. Conform to requirements of authorities having jurisdiction. Perform injection in accordance with manufacturer's directions and recommendations.

DISPOSAL

Disposal: Remove surplus plant materials and debris, and legally dispose of them off Owner's property.

END OF SECTION 015639

SECTION 042000 - UNIT MASONRY

GENERAL

RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

SUMMARY

This Section includes unit masonry assemblies consisting of the following:

- Concrete masonry units (CMUs).
- Face brick.
- Mortar and grout.
- Reinforcing steel.
- Masonry joint reinforcement.
- Ties and anchors.
- Embedded flashing.
- Miscellaneous masonry accessories.

DEFINITIONS

Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

PERFORMANCE REQUIREMENTS

Provide structural unit masonry that develops indicated net-area compressive strengths (f'_m) at 28 days.

Determine net-area compressive strength (f'_m) of masonry by testing masonry prisms according to ASTM C 1314.

SUBMITTALS

Product Data: For each type of product indicated.

Shop Drawings: For the following:

- Masonry Units: Show sizes, profiles, coursing, and locations of special shapes.
- Reinforcing Steel: Detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement." Show elevations of reinforced walls.

Samples for Verification: For each type and color of the following:

- Face brick, in the form of straps of five or more bricks.
- Special brick shapes.
- Accessories embedded in masonry.

Material Certificates: Include statements of material properties indicating compliance with requirements including compliance with standards and type designations within standards. Provide for each type and size of the following:

Masonry units.

Cementitious materials. Include brand, type, and name of manufacturer.

Preblended, dry mortar mixes. Include description of type and proportions of ingredients.

Grout mixes. Include description of type and proportions of ingredients.

Reinforcing bars.

Joint reinforcement.

Anchors, ties, and metal accessories.

Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.

Include test reports, per ASTM C 780, for mortar mixes required to comply with property specification.

Include test reports, per ASTM C 1019, for grout mixes required to comply with compressive strength requirement.

Cold-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with cold-weather requirements.

QUALITY ASSURANCE

Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, through one source from a single manufacturer for each product required.

Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from a single manufacturer for each cementitious component and from one source or producer for each aggregate.

Exterior Wall Mockup: Prior to starting exterior wall construction, build exterior wall mockup as directed by Architect. Mockup will verify selections made under sample Submittals and demonstrate aesthetic effects and qualities of materials and execution. Build mockups to comply with the following requirements, using materials indicated for the completed Work:

Locate mockup in the location as directed by Architect.

Build mockup of typical wall area as shown in the documents, including masonry veneer face with CMU backup and accessories. Include each type and color of exposed unit masonry and other exterior wall materials.

Clean exposed faces of mockups with masonry cleaner as indicated.

Notify Architect seven days in advance of dates and times when mockups will be constructed.

Protect accepted mockups from the elements with weather-resistant membrane.

Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.

Approval of mockups is for color, texture, and blending of masonry units; relationship of mortar and sealant colors to masonry unit colors; tooling of joints; and aesthetic qualities of workmanship.

Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

DELIVERY, STORAGE, AND HANDLING

Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.

Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

Deliver preblended, dry mortar mix in moisture-resistant containers designed for lifting and emptying into dispensing silo. Store preblended, dry mortar mix in delivery containers on elevated platforms, under cover, and in a dry location or in a metal dispensing silo with weatherproof cover.

Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

PROJECT CONDITIONS

Protection of Masonry: During construction, cover tops of walls with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.

Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.

Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.

Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and above and will remain so until masonry has dried, but not less than 7 days after completing cleaning.

Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

PRODUCTS

MASONRY UNITS, GENERAL

Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated in the standard. Do not use units where such defects will be exposed in the completed Work.

CONCRETE MASONRY UNITS

Shapes: Provide shapes indicated and as follows:

Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.

Concrete Masonry Units: ASTM C 90.

Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 1900 psi.

Density Classification: Lightweight, unless otherwise indicated.

Provide lightweight units free of organic impurities that will cause rusting, staining and pop outs, and free of combustible matter. The use of coal cinder aggregate/bottom ash, or similar waste products will not be allowed.

For lightweight units, use expanded shale, clay or slate aggregate, produced by the rotary kiln process, conforming to ASTM C 331 and graded to ensure constant texture.

Size (Width): Manufactured to dimensions 3/8 inch less than nominal dimensions.

Exposed Faces: Provide color and texture matching the range represented by Architect's sample.

BRICK

General: Provide shapes indicated and as follows:

For ends of sills and caps and for similar applications that would otherwise expose unfinished brick surfaces, provide units without cores or frogs and with exposed surfaces finished.

Provide special shapes for applications where stretcher units cannot accommodate special conditions, including those at corners, movement joints, bond beams, sashes, and lintels.

Provide special shapes for applications requiring brick of size, form, color, and texture on exposed surfaces that cannot be produced by sawing.

Provide special shapes for applications where shapes produced by sawing would result in sawed surfaces being exposed to view.

Face Brick: ASTM C 216, Grade SW, Type FBS.

Initial Rate of Absorption: Less than 20 g/30 sq. in. per minute when tested per ASTM C 67.

Efflorescence: Provide brick that has been tested according to ASTM C 67 and is rated "not effloresced."

Size (Standard Paver): 4 inches wide by 2-1/4 inches high by 8 inches long.

Basis-of-Design Product: "Georgetowne" by Old Carolina Brick Company, 475 Majolica Road, Salisbury, NC 28147, (704) 636-8850.

MORTAR AND GROUT MATERIALS

Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction.

Hydrated Lime: ASTM C 207, Type S.

Portland Cement-Lime Mix: Packaged blend of portland cement complying with ASTM C 150, Type I or Type III, and hydrated lime complying with ASTM C 207, Type S.

Mortar Cement: ASTM C 1329.

Aggregate for Mortar: ASTM C 144.

Aggregate for Grout: ASTM C 404.

Water: Potable.

REINFORCEMENT

Uncoated Steel Reinforcing Bars: ASTM A 615/A 615M or ASTM A 996/A 996M, Grade 60.

Masonry Joint Reinforcement, General: ASTM A 951/A 951M.

Interior Walls: Hot-dip galvanized, carbon steel.

Exterior Walls: Hot-dip galvanized, carbon steel.

Wire Size for Side Rods: W1.7 or 0.148-inch diameter.

Wire Size for Cross Rods: W1.7 or 0.148-inch diameter.

Provide in lengths of not less than 10 feet, with prefabricated corner and tee units where indicated.

Shall meet the Seismic Performing Requirements for seismic design Category "D" per ACI 530 latest addition.

Masonry Joint Reinforcement for Single-Wythe Masonry: Ladder type with single pair of side rods.

Masonry Joint Reinforcement for Multiwythe Masonry:

Ladder type with 1 side rod at each face shell of hollow masonry units more than 4 inches wide, plus 2 side rods at each wythe of masonry 4 inches wide or less.

TIES AND ANCHORS, GENERAL

General: Provide ties and anchors, specified in subsequent articles, made from materials that comply with this Article, unless otherwise indicated.

Hot-Dip Galvanized Carbon-Steel Wire: ASTM A 82; with ASTM A 153, Class B-2 coating.

Galvanized Steel Sheet: ASTM A 653/A 653M, G60, commercial-quality, steel sheet zinc coated by hot-dip process on continuous lines before fabrication.

Steel Sheet, Galvanized after Fabrication: ASTM A 366/A 366M cold-rolled, carbon-steel sheet hot-dip galvanized after fabrication to comply with ASTM A 153.

Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.

EMBEDDED FLASHING MATERIALS

Metal Flashing: Provide metal flashing complying with SMACNA's "Architectural Sheet Metal Manual" and as follows:

Stainless Steel: ASTM A 240/A 240M, Type 304, 0.016 inch thick.

Flashing Termination Bars: Stainless steel, 22 ga., with mounting holes spaced 16 inches o.c.

Adhesives, Primers, and Tapes for Flashings: Flashing manufacturer's standard products or products recommended by the flashing manufacturer for bonding flashing sheets to each other and to substrates.

MISCELLANEOUS MASONRY ACCESSORIES

Compressible Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene, urethane or PVC.

Preformed Control-Joint Gaskets: Made from styrene-butadiene-rubber compound, complying with ASTM D 2000, Designation M2AA-805 or PVC, complying with ASTM D 2287, Type PVC-65406 and designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.

Bond-Breaker Strips: Asphalt-saturated, organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).

Reinforcing Bar Positioners: Wire units designed to fit into mortar bed joints spanning masonry unit cells and hold reinforcing bars in center of cells. Units are formed from 0.148-inch steel wire, hot-dip galvanized after fabrication. Provide units designed for number of bars indicated.

Products: Subject to compliance with requirements, provide one of the following:

Dayton Superior Corporation, Dur-O-Wal Division; D/A 810, D/A 812 or D/A 817.

Heckmann Building Products Inc.; No. 376 Rebar Positioner.

Hohmann & Barnard, Inc.; #RB or #RB-Twin Rebar Positioner.

Wire-Bond; O-Ring or Double O-Ring Rebar Positioner.

Weep/Cavity Vent Products: Use the following unless otherwise indicated:

Mesh Weep/Vent: Free-draining mesh; made from polyethylene strands, full height and width of head joint and depth 1/8 inch less than depth of outer wythe; in color selected from manufacturer's standard.

Manufacturers: Subject to compliance with requirements, provide products by one of the following:

Advanced Building Products Inc.

CavClear/Archovations, Inc.

MASONRY CLEANERS

Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned. Masonry cleaners must be **approved in writing** by both the brick and mortar manufacturers prior to cleaning.

Manufacturers: Subject to compliance with requirements, provide appropriate products by one of the following:

Diedrich Technologies, Inc.
ProSoCo., Inc.
EaCo Chem, Inc.

MORTAR AND GROUT MIXES

General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.

Do not use calcium chloride in mortar or grout.

Use portland cement-lime or mortar cement mortar unless otherwise indicated.

Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.

Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.

Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification. Provide the following types of mortar for applications stated unless another type is indicated or needed to provide required compressive strength of masonry.

For masonry below grade, in contact with earth, and where indicated, use Type M.

For exterior, above-grade walls; use Type S.

For masonry veneer; use Type N.

Grout for Unit Masonry: Comply with ASTM C 476.

Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with Table 5 of ACI 530.1/ASCE 6/TMS 602 for dimensions of grout spaces and pour height.

Provide grout with a slump of 8 to 11 inches as measured according to ASTM C 143.

All reinforced cells shall be filled with 3,000 psi grout, at a minimum.

EXECUTION

EXAMINATION

Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of work.

Verify that foundations are within tolerances specified.

Verify that reinforcing dowels are properly placed.

Before installation, examine rough-in and built-in construction for piping systems to verify actual locations of piping connections.

Proceed with installation only after unsatisfactory conditions have been corrected.

INSTALLATION, GENERAL

Thickness: Build cavity walls and other masonry construction to full thickness shown. Build singlewythe walls to actual widths of masonry units, using units of widths indicated.

Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures.

Mix units from several pallets or cubes as they are placed.

Wetting of Brick: Wet brick before laying if initial rate of absorption exceeds 30 g/30 sq. in. per minute when tested per ASTM C 67. Allow units to absorb water so they are damp but not wet at time of laying.

TOLERANCES

Dimensions and Locations of Elements:

For dimensions in cross section or elevation do not vary by more than plus 1/2 inch or minus 1/4 inch.

For location of elements in plan do not vary from that indicated by more than plus or minus 1/2 inch.

For location of elements in elevation do not vary from that indicated by more than plus or minus 1/4 inch in a story height or 1/2 inch total.

Lines and Levels:

For bed joints and top surfaces of bearing walls do not vary from level by more than 1/4 inch in 10 feet, or 1/2 inch maximum.

For conspicuous horizontal lines, do not vary from level by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.

For vertical lines and surfaces do not vary from plumb by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2 inch maximum.

For conspicuous vertical lines, such as external corners, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.

For lines and surfaces do not vary from straight by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2 inch maximum.

For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet, or 1/2 inch maximum.

For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 1/16 inch except due to warpage of masonry units within tolerances specified for warpage of units.

Joints:

For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch.

For exposed bed joints, do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch.

For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch or minus 1/4 inch.

For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch. Do not vary from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch.

LAYING MASONRY WALLS

Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.

Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond; do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.

Lay concealed masonry with all units in a wythe in running bond. Bond and interlock each course of each wythe at corners. Do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.

Stopping and Resuming Work: Stop work by racking back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.

Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.

MORTAR BEDDING AND JOINTING

Lay hollow CMUs as follows:

With face shells fully bedded in mortar and with head joints of depth equal to bed joints.

With webs fully bedded in mortar in all courses of piers, columns, and pilasters.

With webs fully bedded in mortar in grouted masonry, including starting course on footings.

With entire units, including areas under cells, fully bedded in mortar at starting course on footings where cells are not grouted.

Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.

Tool exposed joints when thumbprint hard, in pattern indicated on Drawings.

MASONRY JOINT REINFORCEMENT

General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcement a minimum of 6 inches.

Space reinforcement not more than 16 inches o.c.

Space reinforcement not more than 8 inches o.c. in foundation walls and parapet walls.

Provide reinforcement not more than 8 inches above and below wall openings and extending 12 inches beyond openings in addition to continuous reinforcement.

Interrupt joint reinforcement at control and expansion joints unless otherwise indicated.

CONTROL AND EXPANSION JOINTS

General: Install control and expansion joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.

Form control joints in concrete masonry using one of the following methods:

Fit bond-breaker strips into hollow contour in ends of CMUs on one side of control joint. Fill resultant core with grout and rake out joints in exposed faces for application of sealant.

Install preformed control-joint gaskets designed to fit standard sash block.

Install interlocking units designed for control joints. Install bond-breaker strips at joint. Keep head joints free and clear of mortar or rake out joint for application of sealant.

Install temporary foam-plastic filler in head joints and remove filler when unit masonry is complete for application of sealant.

Form expansion joints in brick as follows:

Build flanges of metal expansion strips into masonry. Lap each joint 4 inches in direction of water flow. Seal joints below grade and at junctures with horizontal expansion joints if any.
Build flanges of factory-fabricated, expansion-joint units into masonry.
Build in compressible joint fillers where indicated.
Form open joint full depth of brick wythe and of width indicated, but not less than 3/8 inch for installation of sealant and backer rod specified in Division 07 Section "Joint Sealants."

FLASHING

General: Install embedded flashing in masonry obstructions to downward flow of water in wall, and where indicated.

Install flashing as follows unless otherwise indicated:

Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Where flashing is within mortar joint, place through-wall flashing on sloping bed of mortar and cover with mortar. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape as recommended by flashing manufacturer.

Install weep holes in veneers in head joints of first course of masonry immediately above embedded flashing.

Use specified weep/cavity vent products to form weep holes.
Space weep holes 24 inches o.c. unless otherwise indicated.

REINFORCED UNIT MASONRY INSTALLATION

Temporary Formwork and Shores: Construct formwork and shores as needed to support reinforced masonry elements during construction.

Construct formwork to provide shape, line, and dimensions of completed masonry as indicated. Make forms sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other loads that may be placed on them during construction.

Placing Reinforcement: Comply with requirements in ACI 530.1/ASCE 6/TMS 602.

Grouting: Do not place grout until entire height of masonry to be grouted has attained enough strength to resist grout pressure.

Comply with requirements in ACI 530.1/ASCE 6/TMS 602 for cleanouts and for grout placement, including minimum grout space and maximum pour height.
Limit height of vertical grout pours to not more than 60 inches.

FIELD QUALITY CONTROL

Testing and Inspecting: Owner will engage special inspectors to perform tests and inspections and prepare reports. Allow inspectors access to scaffolding and work areas, as needed to perform tests and inspections. Retesting of materials that fail to comply with specified requirements shall be done at Contractor's expense.

Testing Prior to Construction: One set of tests.

Testing Frequency: One set of tests for each 5000 sq. ft. of wall area or portion thereof.

Mortar Aggregate Ratio Test (Proportion Specification): For each mix provided, according to ASTM C 780.

Grout Test (Compressive Strength): For each mix provided, according to ASTM C 1019.

REPAIRING AND CLEANING

Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.

In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.

Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:

Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.

Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.

Protect adjacent nonmasonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.

Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.

Clean brick by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20.

Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2A applicable to type of stain on exposed surfaces.

MASONRY WASTE DISPOSAL

Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above, and other masonry waste, and legally dispose of off Owner's property.

END OF SECTION 042000

SECTION 071113 - BITUMINOUS DAMPPROOFING

GENERAL

RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

SUMMARY

Section Includes:

Cold-applied, emulsified-asphalt dampproofing.

SUBMITTALS

Product Data: For each type of product indicated. Include recommendations for method of application, primer, number of coats, and coverage or thickness.

Material Certificates: For each product, signed by manufacturers.

QUALITY ASSURANCE

Source Limitations: Obtain primary dampproofing materials and primers through one source from a single manufacturer. Provide secondary materials recommended by manufacturer of primary materials.

PROJECT CONDITIONS

Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit asphalt dampproofing to be performed according to manufacturers' written instructions.

PRODUCTS

MANUFACTURERS

Manufacturers: Subject to compliance with requirements, provide products by one of the following:

Cold-Applied, Emulsified-Asphalt Dampproofing:

[BASF Construction Chemicals - Construction Systems.](#)
[Euclid Chemical Company \(The\); an RPM company.](#)
[Henry Company.](#)
[W.R. Meadows, Inc.](#)

BITUMINOUS DAMPPROOFING

Cold-Applied, Emulsified-Asphalt Dampproofing:

Fibered Brush and Spray Coats: ASTM D 1227, Type II, Class 1.

EXECUTION

EXAMINATION

Examine substrates, with Applicator present, for compliance with requirements for surface smoothness and other conditions affecting performance of work.

Begin dampproofing application only after substrate construction and penetrating work have been completed and unsatisfactory conditions have been corrected.

PREPARATION

Protection of Other Work: Mask or otherwise protect adjoining exposed surfaces from being stained, spotted, or coated with dampproofing. Prevent dampproofing materials from entering and clogging weep holes and drains.

Clean substrates of projections and substances detrimental to work; fill voids, seal joints, and apply bond breakers if any, as recommended by prime material manufacturer.

APPLICATION, GENERAL

Comply with manufacturer's written recommendations unless more stringent requirements are indicated or required by Project conditions to ensure satisfactory performance of dampproofing.

Apply additional coats if recommended by manufacturer or required to achieve coverages indicated.

Allow each coat of dampproofing to cure 24 hours before applying subsequent coats.

Where dampproofing exterior face of inner wythe of exterior masonry cavity walls, lap dampproofing at least 1/4 inch onto flashing, masonry reinforcement, veneer ties, and other items that penetrate inner wythe.

Extend dampproofing over outer face of structural members and concrete slabs that interrupt inner wythe.

Lap dampproofing at least 1/4 inch onto shelf angles supporting veneer.

COLD-APPLIED, EMULSIFIED-ASPHALT DAMPPROOFING

Install dampproofing in accordance with manufacturer's written instructions.

CLEANING

Remove dampproofing materials from surfaces not intended to receive dampproofing.

END OF SECTION 071113

SECTION 071416 - COLD FLUID-APPLIED WATERPROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Modified polyurethane waterproofing at Fountain.
 - 2. Waterproof topcoating.

1.3 PERFORMANCE REQUIREMENTS

- A. Provide waterproofing membrane that prevents the passage of water.

1.4 SUBMITTALS

- A. Product Data: Include manufacturer's written instructions for evaluating, preparing, and treating substrate, technical data, and tested physical and performance properties of waterproofing.
- B. Shop Drawings: Show locations and extent of waterproofing. Include details for substrate joints and cracks, sheet flashings, penetrations, inside and outside corners, tie-ins with adjoining waterproofing, and other termination conditions.
- C. Samples for Verification: For waterproof topcoating, 6 inches square, applied to a rigid backing by Installer for this Project.
- D. Installer Certificates: Signed by manufacturers certifying that installers comply with requirements.
- E. Product Test Reports: From a qualified independent testing agency indicating and interpreting test results of waterproofing for compliance with requirements, based on comprehensive testing of current waterproofing formulations.
- F. Sample Warranty: Copy of special waterproofing manufacturer's and Installer's warranty stating obligations, remedies, limitations, and exclusions before starting waterproofing.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer who is authorized, approved, or licensed by waterproofing manufacturer to install manufacturer's products.
- B. Source Limitations: Obtain waterproofing materials through one source from a single manufacturer.
- C. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review requirements for waterproofing, including surface preparation specified under other Sections, substrate condition and pretreatment, minimum curing period, forecasted weather conditions, special details and sheet flashings, installation procedures, testing and inspection procedures, and protection and repairs.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver liquid materials to Project site in original containers with seals unbroken, labeled with manufacturer's name, product brand name and type, date of manufacture, shelf life, and directions for storing and mixing with other components.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by waterproofing manufacturer.
- C. Remove and replace liquid materials that cannot be applied within their stated shelf life.
- D. Protect stored materials from direct sunlight.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Apply waterproofing within the range of ambient and substrate temperatures recommended by waterproofing manufacturer. Do not apply waterproofing to a damp or wet substrate, when relative humidity exceeds 85 percent, or when temperatures are less than 5 deg F above dew point.
 - 1. Do not apply waterproofing in snow, rain, fog or mist, or when such weather conditions are imminent during application and curing period.
- B. Maintain adequate ventilation during application and curing of waterproofing materials.

1.8 WARRANTY

- A. Special Manufacturer's Warranty: Written warranty, signed by waterproofing manufacturer and Installer agreeing to repair or replace waterproofing that does not comply with requirements or that does not remain watertight within specified warranty period.
 - 1. Warranty does not include failure of waterproofing due to failure of substrate prepared and treated according to requirements or formation of new joints and cracks in substrate that exceed 1/16 inch in width.
 - 2. Warranty Period: Five years after date of Substantial Completion.
- B. Special Installer's Warranty: Written waterproofing Installer's warranty, signed by Installer, covering Work of this Section, for warranty period of two years.

PART 2 - PRODUCTS

2.1 WATERPROOFING MATERIALS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide **CIM 1000 by C.I.M. Industries, Inc.** or Architect approved comparable product:
- B. General: Provide waterproofing materials recommended by manufacturer to be compatible with one another and able to develop bond to substrate under conditions of service and application, as demonstrated by waterproofing manufacturer based on testing and field experience.
 - 1. Produce waterproofing materials suitable for application to vertical concrete substrate.
 - 2. Provide waterproofing materials with not less than 90 percent solids.
- C. Cold Fluid-Applied Waterproofing: Comply with ASTM C 836, with manufacturer's written physical requirements.

2.2 WATERPROOF TOPCOATING MATERIALS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide **Pebbletec by Pebble Technology International** or Architect approved comparable product:
- B. General: Provide aggregate pool finish materials recommended by manufacturer to be compatible with waterproof membrane and able to develop bond to substrate under conditions of service and application.
 - 1. Color: Midnight Blue.

2.3 AUXILIARY MATERIALS

- A. Primer: Manufacturer's standard, factory-formulated primer.
- B. Sheet Flashing: 50-mil- minimum, nonstaining uncured sheet neoprene.
 - 1. Adhesive: Manufacturer's recommended contact adhesive.
- C. Reinforcing Strip: Manufacturer's recommended fiberglass mesh or polyester fabric.
- D. Joint Sealant: Multicomponent polyurethane sealant, compatible with waterproofing, complying with ASTM C 920 Type M, Class 25; Grade NS for sloping and vertical applications or Grade P for deck applications; Use NT exposure; and as recommended by manufacturer for substrate and joint conditions.
 - 1. Backer Rod: Closed-cell polyethylene foam.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance.
 - 1. Verify that concrete has cured and aged for minimum time period recommended by waterproofing manufacturer.
 - 2. Verify that substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263.
 - 3. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 SURFACE PREPARATION

- A. Clean and prepare substrate according to manufacturer's written recommendations. Provide clean, dust-free, and dry substrate for waterproofing application.

- B. Mask off adjoining surfaces not receiving waterproofing to prevent spillage or overspray affecting other construction.
- C. Remove grease, oil, bitumen, form-release agents, paints, curing compounds, and other penetrating contaminants or film-forming coatings from concrete.
- D. Remove fins, ridges, and other projections and fill honeycomb, aggregate pockets, and other voids.

3.3 PREPARATION AT TERMINATIONS AND PENETRATIONS

- A. Prepare vertical and horizontal surfaces at terminations and penetrations through waterproofing and at expansion joints according to ASTM C 898 and manufacturer's written instructions.
- B. Prime substrate, unless otherwise instructed by waterproofing manufacturer.
- C. Apply a double thickness of waterproofing and embed a joint reinforcing strip in preparation coat when recommended by waterproofing manufacturer.
 - 1. Provide sealant cants around penetrations and at inside corners of deck-to-wall butt joints when recommended by waterproofing manufacturer.

3.4 JOINT AND CRACK TREATMENT

- A. Prepare, treat, rout, and fill joints and cracks in substrate according to ASTM C 898 and waterproofing manufacturer's written instructions. Remove dust and dirt from joints and cracks complying with ASTM D 4258 before coating surfaces.
 - 1. Comply with ASTM C 1193 for joint-sealant installation.
 - 2. Apply bond breaker between sealant and preparation strip.
 - 3. Prime substrate and apply a single thickness of preparation strip extending a minimum of 3 inches along each side of joint. Apply a double thickness of waterproofing and embed a joint reinforcing strip in preparation coat.
- B. Install sheet flashing and bond to substrates where indicated or required according to waterproofing manufacturer's written instructions.
 - 1. Extend sheet flashings onto perpendicular surfaces and other work penetrating substrate according to ASTM C 898.

3.5 WATERPROOFING APPLICATION

- A. Apply waterproofing according to ASTM C 898 and manufacturer's written instructions.
- B. Start installing waterproofing in presence of manufacturer's technical representative.
- C. Apply primer over prepared substrate.
- D. Mix materials and apply waterproofing by spray, roller, notched squeegee, trowel, or other application method suitable to slope of substrate.
 - 1. Apply one or more coats of waterproofing to obtain a seamless membrane free of entrapped gases, with an average dry film thickness of 60 mils and a minimum dry film thickness of 50 mils at any point.
 - 2. Apply waterproofing to prepared wall terminations and vertical surfaces.
 - 3. Verify wet film thickness of waterproofing every 100 sq. ft.
- E. Apply waterproof topcoat over prepared substrate in accordance with manufacturer's written instructions.

3.6 CURING, PROTECTING, AND CLEANING

- A. Cure waterproofing according to manufacturer's written recommendations, taking care to prevent contamination and damage during application stages and curing.
- B. Protect waterproofing from damage and wear during remainder of construction period.
- C. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 071416

SECTION 079200 - JOINT SEALANTS

PART 4 - GENERAL

4.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

4.2 SUMMARY

- A. This Section includes joint sealants for the applications indicated in the Joint-Sealant Schedule at the end of Part 3.

4.3 PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.

4.4 SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.
- C. Samples for Verification: For each type and color of joint sealant required, provide Samples with joint sealants in 1/2-inch- wide joints formed between two 6-inch- long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.
- D. Product Certificates: For each type of joint sealant and accessory, signed by product manufacturer.
- E. Product Test Reports: Based on comprehensive testing of product formulations performed by a qualified testing agency, indicating that sealants comply with requirements.
- F. Warranties: Special warranties specified in this Section.

4.5 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized Installer who is approved or licensed for installation of elastomeric sealants required for this Project.

- B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.
- C. Preconstruction Compatibility and Adhesion Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.
 - 1. Use ASTM C 1087 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
 - 2. Submit not fewer than eight pieces of each type of material, including joint substrates, shims, joint-sealant backings, secondary seals, and miscellaneous materials.
 - 3. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.
 - 4. For materials failing tests, obtain joint-sealant manufacturer's written instructions for corrective measures including use of specially formulated primers.
 - 5. Testing will not be required if joint-sealant manufacturers submit joint preparation data that are based on previous testing of current sealant products for adhesion to, and compatibility with, joint substrates and other materials matching those submitted.

4.6 PROJECT CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
 - 1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
 - 2. When joint substrates are wet.
 - 3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
 - 4. Contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

4.7 WARRANTY

- A. Special Installer's Warranty: Installer's standard form in which Installer agrees to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Two years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer's standard form in which elastomeric sealant manufacturer agrees to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period for Silicone Sealants: 20 years from date of Substantial Completion.
 - 2. Warranty Period for Urethane Sealants: 5 years from date of Substantial Completion.
- C. Special warranties specified in this Article exclude deterioration or failure of elastomeric joint sealants from the following:
 - 1. Movement of the structure resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression caused by structural settlement or errors attributable to design or construction.
 - 2. Disintegration of joint substrates from natural causes exceeding design specifications.
 - 3. Mechanical damage caused by individuals, tools, or other outside agents.
 - 4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 5 - PRODUCTS

5.1 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.
- B. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- C. Stain-Test-Response Characteristics: Where sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.

5.2 ELASTOMERIC JOINT SEALANTS

- A. Elastomeric Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- B. Stain-Test-Response Characteristics: Where elastomeric sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.

5.3 SILICONE JOINT SEALANTS

- A. Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 100/50, for Use NT.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Dow Corning Corporation; 790.
 - b. GE Advanced Materials - Silicones; SilPruf LM SCS2700.
 - c. Pecora Corporation; 890.
 - d. Sika Corporation, Construction Products Division; SikaSil-C990.
 - e. Tremco Incorporated; Spectrem 1.

5.4 URETHANE JOINT SEALANTS

- A. Single-Component, Pourable, Traffic-Grade, Urethane Joint Sealant: ASTM C 920, Type S, Grade P, Class 25, for Use T.
 - 1. Products:
 - a. BASF Building Systems; Sonolastic SL 1.
 - b. Bostik, Inc.; Chem-Calk 950.
 - c. Pecora Corporation; Urexpan NR-201.
 - d. Sika Corporation. Construction Products Division; Sikaflex - 1CSL.
 - e. Tremco Incorporated; Vulkem 45.
- B. Single-Component, Nonsag, Urethane Joint Sealant: ASTM C 920, Type S, Grade NS, Class 25, for Use NT.
 - 1. Products:
 - a. Sika Corporation, Inc.; Sikaflex - 1a.
 - b. BASF Building Systems; Sonolastic NP1.

5.5 JOINT-SEALANT BACKING

- A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin) or other type, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

5.6 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests. Prime all joint substrates unless indicated otherwise in writing by the Architect.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 6 - EXECUTION

6.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

6.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 - 2. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air.
 - 3. Remove laitance and form-release agents from concrete.

4. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.
- B. Joint Priming: Prime ALL joint substrates. If preconstruction joint-sealant-substrate tests have indicated that primer is not necessary, Architect will issue approval in writing that primer may be omitted. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

6.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 1. Do not leave gaps between ends of sealant backings.
 2. Do not stretch, twist, puncture, or tear sealant backings.
 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 1. Place sealants so they directly contact and fully wet joint substrates.
 2. Completely fill recesses in each joint configuration.
 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
 1. Remove excess sealant from surfaces adjacent to joints.
 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 3. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.

6.4 CLEANING

- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

6.5 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage

or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

6.6 JOINT-SEALANT SCHEDULE

- A. Exterior joints in horizontal traffic surfaces:
 - 1. Joint Sealant: Pourable urethane sealant.
 - 2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.
- B. Exterior joints in vertical surfaces and horizontal nontraffic surfaces:
 - 1. Joint Sealant: Single-component neutral-curing silicone sealant or single-component nonsag urethane sealant, as recommended by manufacturer.
 - 2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.

END OF SECTION 079200

SECTION 093000 - TILING

PART 7 - GENERAL

7.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

7.2 SUMMARY

- A. This Section includes the following:
 - 1. Scum tile at Fountain.

7.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Verification:
 - 1. Full-size units of tile and for each color and finish required.
 - 2. Grout sample.
- C. Qualification Data: For Installer.

7.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirement in ANSI A137.1 for labeling sealed tile packages.
- B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.

7.5 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

PART 8 - PRODUCTS

8.1 PRODUCTS, GENERAL

- A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1, "Specifications for Ceramic Tile," for types, compositions, and other characteristics indicated.
- B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI standards referenced in "Setting and Grouting Materials" Article.
- C. Colors, Textures, and Patterns: Where manufacturer's standard products are indicated for tile, grout, and other products requiring selection of colors, surface textures, patterns, and other appearance characteristics, provide specific products or materials complying with the following requirements:
- D. Factory Blending: For tile exhibiting color variations within ranges selected during Sample submittals, blend tile in factory and package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples.
- E. Mounting: For factory-mounted tile, provide back- or edge-mounted tile assemblies as standard with manufacturer, unless otherwise indicated.
 - 1. Where tile is indicated for installation in exterior fountains, do not use back- or edge-mounted tile assemblies unless tile manufacturer specifies in writing that this type of mounting is suitable for installation indicated and has a record of successful in-service performance.

8.2 TILE PRODUCTS

- A. Scum Tile.
 - 1. **Product:** Simulated Polished Travertine by National Pool Tile Group.
 - 2. **Composition:** Porcelain.
 - 3. **Face Size:** 6 by 6 inches.
 - 4. **Color:** Noce SPT-NOCE.
 - 5. **Grout Color:** As selected by Architect.

8.3 CRACK ISOLATION MEMBRANE

- A. General: Manufacturer's standard product, selected from the following, that complies with ANSI A118.12 for high performance and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.
- B. Fabric-Reinforced, Fluid-Applied Membrane: System consisting of liquid-latex rubber or elastomeric polymer and fabric reinforcement.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. [Bonsal American; an Oldcastle company; B 6000 Waterproof Membrane with Glass Fabric.](#)
 - b. [Custom Building Products; 9240 Waterproofing and Anti-Fracture Membrane.](#)
 - c. [Laticrete International, Inc.;](#) Laticrete Blue 92 Anti-Fracture Membrane.
 - d. [MAPEI Corporation;](#) Mapelastic HPG with MAPEI Fiberglass Mesh.

8.4 SETTING MATERIALS

- A. Improved Modified Dry-Set Mortar (Thinset): ANSI A118.15.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. [Bonsal American; an Oldcastle company.](#)
- b. [Custom Building Products.](#)
- c. [Laticrete International, Inc.](#)
- d. [MAPEI Corporation.](#)

8.5 GROUT MATERIALS

- A. High-Performance Tile Grout: ANSI A118.7.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. [Bonsal American; an Oldcastle company.](#)
 - b. [Custom Building Products.](#)
 - c. [Laticrete International, Inc.](#)
 - d. [MAPEI Corporation.](#)

8.6 MISCELLANEOUS MATERIALS

- A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.
- B. Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.
- C. Grout Sealer: Manufacturer's standard product for sealing grout joints and that does not change color or appearance of grout.

8.7 MIXING MORTARS AND GROUT

- A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.
- B. Add materials, water, and additives in accurate proportions.
- C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

PART 9 - EXECUTION

9.1 EXAMINATION

- A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.
 1. Verify that substrates for setting tile are firm; dry; clean; free of oil, waxy films, and curing compounds; and within flatness tolerances required by referenced ANSI A108 Series of tile installation standards for installations indicated.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

9.2 PREPARATION

- A. Remove coatings, including curing compounds and other substances that contain soap, wax, oil, or silicone, that are incompatible with tile-setting materials.

- B. Blending: For tile exhibiting color variations within ranges selected during Sample submittals, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

9.3 TILE INSTALLATION

- A. Comply with TCNA's "Handbook for Ceramic Tile Installation" for TCNA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 Series "Specifications for Installation of Ceramic Tile" that are referenced in TCNA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.
 - 1. For the following installations, follow procedures in the ANSI A108 Series of tile installation standards for providing 95 percent mortar coverage:
 - a. Tile in wet areas.
- B. Jointing Pattern: Lay tile in grid pattern unless otherwise indicated. Lay out tile work and center tile fields in both directions in each space or on each wall area. Lay out tile work to minimize the use of pieces that are less than half of a tile. Provide uniform joint widths unless otherwise indicated.
- C. Expansion Joints: Provide expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated. Form joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.
 - 1. Where joints occur in concrete substrates, locate joints in tile surfaces directly above them.
 - 2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."

9.4 WATERPROOFING INSTALLATION

- A. Refer to Section 071416 "Cold Fluid Applied Waterproofing" for waterproof membrane and topcoat. Ensure that tile installation materials are compatible with waterproofing materials.
- B. Do not install tile or setting materials over waterproofing until waterproofing has cured and been tested to determine that it is watertight.

9.5 CRACK ISOLATION MEMBRANE INSTALLATION

- A. Install crack isolation membrane to comply with ANSI A108.17 and manufacturer's written instructions to produce membrane of uniform thickness and bonded securely to substrate.
- B. Do not install tile or setting materials over crack isolation membrane until membrane has cured.

9.6 CLEANING AND PROTECTING

- A. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
 - 1. Remove grout residue from tile as soon as possible.
 - 2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions, but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.

9.7 EXTERIOR TILE INSTALLATION SCHEDULE

- A. Exterior Wall Installations, Masonry or Concrete:
 - 1. Ceramic Tile Installation: TCNA W202; thinset mortar.
 - a. Ceramic Tile Type: Scum tile.
 - b. Thinset Mortar: Improved modified dry-set mortar.
 - c. Grout: High-performance sanded grout.

END OF SECTION 093000

SECTION 129300 - SITE FURNISHINGS

PART 10 - GENERAL

10.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

10.2 SUMMARY

- A. This Section includes the following:
 - 1. Benches.
 - 2. Trash receptacles.
 - 3. Vehicular bollards.
- B. Related Sections include the following:
 - 1. Division 03 Section "Cast-in-Place Concrete" for installation of pipe sleeves cast in concrete footings.
 - 2. Division 31 Section "Earth Moving" for excavation for installation of concrete footings.

10.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Product Schedule: For site furnishings. Use same designations indicated on Drawings.

PART 11 - PRODUCTS

11.1 STRAIGHT-BACK BENCHES

- A. Basis-of-Design Product: Subject to compliance with requirements, provide **Charleston Waterfront Bench by J&M Foundry, Inc.** or Architect approved comparable product by the following:
 - 1. Victor Stanley.
- B. Legs and Arms: Cast iron.
- C. Seat and Back: Seat uses die-formed 10-gage mitered angle and plate steel brackets. Backs are constructed of 14 gage sheet steel. Framing consists of 1/8 by 1-1/4-inch strip steel for top and bottom edge.

1. Material: Ipe wood; formed into evenly spaced parallel slats.
2. Seat Height: As indicated.
3. Seat Surface Shape: Curved.
4. Overall Height and Depth: As indicated.
5. Overall Width: 6 feet.
6. Arms: Two, one at each end.

D. Finish: Powder-coat finish; black.

11.2 TRASH RECEPTACLES

A. Basis-of-Design Product: Subject to compliance with requirements, provide **Model #LR100 Receptacle by Stewart Iron Works** or Architect approved comparable product by the following:

1. Victor Stanley; Model S-42.

B. Legs: Wrought iron.

C. Facing Surrounds: Evenly patterned, parallel flat wrought iron straps.

D. Trash Receptacles:

1. Receptacle Shape and Form: Round cylinder; with opening for depositing trash in lid.
2. Lids: Steel, hinged or permanently secured.
 - a. Description: Flat rim ring lid with center opening.
3. Receptacle Height and Width: As indicated.
4. Inner Container: Corrosion-resistant container; designed to be removable and reusable.
5. Capacity: Not less than 30 gal.
6. Service Access: Removable lid or top; inner container and disposable liner lift or slide out for emptying.

E. Finish: Powder coat finish; black.

11.3 VEHICULAR BOLLARDS

A. Basis-of-Design Product: Subject to compliance with requirements, provide **Model #B-1 by Fairweather** or Architect approved comparable product by one of the following:

1. DuMor, Inc.
2. L. A. Steelcraft.
3. Reliance Foundry.

B. Bollard Construction:

1. Pipe OD: Not less than 5 inches.
 - a. Steel: Schedule 10 pipe, with Schedule 80 pipe decorative collars.
2. Style: Dome top.
3. Overall Height: 36 inches.
4. Installation Method: Cast in concrete.

C. Steel Finish: Polyester powder coated.

1. Color: Black.

11.4 MATERIALS

A. Steel and Iron: Free of surface blemishes and complying with the following:

1. Plates, Shapes, and Bars: ASTM A 36/A 36M.

2. Steel Pipe: Standard-weight steel pipe complying with ASTM A 53/A 53M, or electric-resistance-welded pipe complying with ASTM A 135/A 135M.
 3. Sheet: Commercial steel sheet complying with ASTM A 1011/A 1011M.
 4. Malleable-Iron Castings: ASTM A 47/A 47M, grade as recommended by fabricator for type of use intended.
 5. Gray-Iron Castings: ASTM A 48/A 48M, Class 200.
- B. Anchors, Fasteners, Fittings, and Hardware: Stainless steel; commercial quality.
- C. Nonshrink, Nonmetallic Grout: Premixed, factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107/C 1107M; recommended in writing by manufacturer, for exterior applications.
- D. Erosion-Resistant Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with potable water at Project site to create pourable anchoring, patching, and grouting compound; resistant to erosion from water exposure without needing protection by a sealer or waterproof coating; recommended in writing by manufacturer, for exterior applications.

11.5 FABRICATION

- A. Metal Components: Form to required shapes and sizes with true, consistent curves, lines, and angles. Separate metals from dissimilar materials to prevent electrolytic action.
- B. Welded Connections: Weld connections continuously. Weld solid members with full-length, full-penetration welds and hollow members with full-circumference welds. At exposed connections, finish surfaces smooth and blended so no roughness or unevenness shows after finishing and welded surface matches contours of adjoining surfaces.
- C. Pipes and Tubes: Form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain cylindrical cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of handrail and railing components.
- D. Exposed Surfaces: Polished, sanded, or otherwise finished; all surfaces smooth, free of burrs, barbs, and sharpness; all edges and ends rolled, rounded, or capped.
- E. Factory Assembly: Assemble components in the factory to greatest extent possible to minimize field assembly. Clearly mark units for assembly in the field.

11.6 GENERAL FINISH REQUIREMENTS

- A. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

11.7 STEEL AND GALVANIZED-STEEL FINISHES

- A. Baked-Enamel, Powder-Coat Finish: Manufacturer's standard, baked, polyester, powder-coat finish complying with finish manufacturer's written instructions for surface preparation, including pretreatment, application, baking, and minimum dry film thickness.

PART 12 - EXECUTION

12.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for correct and level finished grade, mounting surfaces, installation tolerances, and other conditions affecting performance.

- B. Proceed with installation only after unsatisfactory conditions have been corrected.

12.2 INSTALLATION, GENERAL

- A. Comply with manufacturer's written installation instructions, unless more stringent requirements are indicated. Complete field assembly of site and street furnishings, where required.
- B. Unless otherwise indicated, install site and street furnishings after landscaping and paving have been completed.
- C. Install site and street furnishings level, plumb, true, and securely anchored at locations indicated on Drawings.
- D. Post Setting: Set cast-in support posts in concrete footing with smooth top, shaped to shed water. Protect portion of posts above footing from concrete splatter. Verify that posts are set plumb or at correct angle and are aligned and at correct height and spacing. Hold posts in position during placement and finishing operations until concrete is sufficiently cured.
- E. Posts Set into Voids in Concrete: Form or core-drill holes for installing posts in concrete to depth recommended in writing by manufacturer of site and street furnishings and 3/4 inch larger than OD of post. Clean holes of loose material, insert posts, and fill annular space between post and concrete with nonshrink, nonmetallic grout or anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions, with top smoothed and shaped to shed water.

12.3 CLEANING

- A. After completing site and street furnishing installation, inspect components. Remove spots, dirt, and debris. Repair damaged finishes to match original finish or replace component.

END OF SECTION 129300

SECTION 321400 - UNIT PAVING

PART 13 - GENERAL

13.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

13.2 SUMMARY

- A. This Section includes the following:
 1. Brick pavers set in aggregate and mortar setting beds.
 2. Stone pavers set in aggregate setting beds.

13.3 SUBMITTALS

- A. Product Data: For materials other than water and aggregates.
- B. Samples for Verification:
 1. Full-size units of each type of unit paver indicated.
 2. Joint materials.

13.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain each type of unit paver, joint material, and setting material from one source with resources to provide materials and products of consistent quality in appearance and physical properties.
- B. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- C. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

13.5 DELIVERY, STORAGE, AND HANDLING

- A. Store pavers on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied.
- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

13.6 PROJECT CONDITIONS

- A. Cold-Weather Protection: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen subgrade or setting beds. Remove and replace unit paver work damaged by frost or freezing.
- B. Weather Limitations for Mortar and Grout:
 - 1. Cold-Weather Requirements: Protect unit paver work against freezing when ambient temperature is 40 deg F and falling. Heat materials to provide mortar and grout temperatures between 40 and 120 deg F. Provide the following protection for completed portions of work for 24 hours after installation when the mean daily air temperature is as indicated: below 40 deg F, cover with weather-resistant membrane; below 25 deg F, cover with insulating blankets; below 20 deg F, provide enclosure and temporary heat to maintain temperature above 32 deg F.
 - 2. Hot-Weather Requirements: Protect unit paver work when temperature and humidity conditions produce excessive evaporation of setting beds and grout. Provide artificial shade and windbreaks and use cooled materials as required. Do not apply mortar to substrates with temperatures of 100 deg F and higher.
 - a. When ambient temperature exceeds 100 deg F, or when wind velocity exceeds 8 mph and ambient temperature exceeds 90 deg F, set pavers within 1 minute of spreading setting-bed mortar.

PART 14 - PRODUCTS

14.1 BRICK PAVERS

- A. Brick Pavers: Light-traffic paving brick; ASTM C 902, Class SX, Type I, Application PX. Provide brick without frogs or cores in surfaces exposed to view in the completed Work.
 - 1. Basis-of-Design Product: The design for brick pavers is subject to compliance with requirements, provide the named product:

- a. Pine Hall Brick; English Edge Full Range Series.
 2. Thickness: 2-1/4 inches.
 3. Face Size: 4 by 8 inches.
 4. Color: Full-range.
- B. Brick Pavers: Heavy vehicular paving brick; ASTM C 1272, Type F, Application PX. Provide brick without frogs or cores in surfaces exposed to view in the completed Work.
1. Basis-of-Design Product: The design for brick pavers is subject to compliance with requirements, provide the named product:
 - a. Pine Hall Brick; English Edge Heavy Duty Series.
 2. Thickness: 2-3/4 inches.
 3. Face Size: 4 by 8 inches.
 4. Color: Full-range.
- C. Efflorescence: Brick shall be rated "not effloresced" when tested according to ASTM C 67.

14.2 STONE PAVERS

- A. Bluestone Pavers: Select hard and free of cracks, seams, starts, reeds or other defects which may impair its strength, durability and appearance.
1. Manufacturers:
 - a. Bergen Bluestone.
 - b. Robinson Flag Stone.
 - c. Johnston & Rhoads.
 2. Color: Full range of naturally occurring colors.
 3. Face: Natural cleft face; 90 degree corners.
 4. Edge: Rubble.
 5. Thickness: 1-1/2" nominal.
 6. Face Dimensions: Minimum 2'-0" wide and 3'-0" long.

14.3 AGGREGATE SETTING-BED MATERIALS

- A. Graded Aggregate for Base: Sound, crushed stone or gravel complying with ASTM D 2940, base material.
- B. Sand for Leveling Course: Sound, sharp, washed, natural sand or crushed stone complying with gradation requirements in ASTM C 33 for fine aggregate.
- C. Stone Screenings for Leveling Course: Sound stone screenings complying with ASTM D 448 for Size No. 10.
- D. Sand for Joints: Fine, sharp, washed, natural sand or crushed stone with 100 percent passing No. 16 sieve and no more than 10 percent passing No. 200 sieve.
1. Provide sand of color needed to produce required joint color.
- E. Separation Geotextile: Woven geotextile fabric, manufactured for separation applications; made from polyolefins or polyesters, with elongation less than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:
1. Survivability: Class 2; AASHTO M 288.
 2. Apparent Opening Size: No. 60 sieve, maximum; ASTM D 4751.
 3. Permittivity: 0.02 per second, minimum; ASTM D 4491.
 4. UV Stability: 50 percent after 500 hours' exposure; ASTM D 4355.

- F. Drainage Geotextile: Nonwoven needle-punched geotextile, manufactured for subsurface drainage applications, made from polyolefins or polyesters; with elongation greater than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:
 - 1. Survivability: Class 2; AASHTO M 288.
 - 2. Apparent Opening Size: No. 40 sieve, maximum; ASTM D 4751.
 - 3. Permittivity: 0.5 per second, minimum; ASTM D 4491.
 - 4. UV Stability: 50 percent after 500 hours' exposure; ASTM D 4355.
- G. Herbicide: Commercial chemical for weed control, registered with the EPA. Provide in granular, liquid, or wettable powder form.

14.4 MORTAR SETTING-BED MATERIALS

- A. Portland Cement: ASTM C 150, Type I or II.
- B. Hydrated Lime: ASTM C 207, Type S.
- C. Sand: ASTM C 144.
- D. Water: Potable.
- E. Reinforcing Wire: Galvanized, welded, 0.062-inch- diameter wire; 2-by-2-inch mesh; comply with ASTM A 185 and ASTM A 82 except for minimum wire size.

14.5 GROUT MATERIALS

- A. Sand-Portland Cement Grout: ANSI A108.10, composed of white or gray cement, unfading mineral pigments and white or colored sand as required to produce required color.
- B. Grout Colors: As selected by Architect from manufacturer's full range to match stone.
- C. Water: Potable.

14.6 MORTAR AND GROUT MIXES

- A. General: Comply with referenced standards and with manufacturers' written instructions for mix proportions, mixing equipment, mixer speeds, mixing containers, mixing times, and other procedures needed to produce setting-bed and joint materials of uniform quality and with optimum performance characteristics. Discard mortars and grout if they have reached their initial set before being used.
- B. Mortar-Bed Bond Coat: Mix neat cement or cement and sand with water to a creamy consistency.
- C. Portland Cement-Lime Setting-Bed Mortar: Type M complying with ASTM C 270, Proportion Specification.
- D. Job-Mixed Portland Cement Grout: Proportion and mix job-mixed portland cement and sand to match setting-bed mortar, except omit hydrated lime and use enough water to produce a pourable mixture.

PART 15 - EXECUTION

15.1 EXAMINATION

- A. Examine areas indicated to receive paving, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.
 - 1. Proceed with installation only after unsatisfactory conditions have been corrected.

2. Where pavers are to be installed over waterproofing, examine waterproofing installation, with waterproofing Installer present, for protection from paving operations. Examine areas where waterproofing system is turned up or flashed against vertical surfaces and horizontal waterproofing. Proceed with installation only after protection is in place.

15.2 PREPARATION

- A. Remove substances from concrete substrates that could impair mortar bond, including curing and sealing compounds, form oil, and laitance.
- B. Clean concrete substrates to remove dirt, dust, debris, and loose particles.
- C. Proof-roll prepared subgrade according to requirements in Division 31 Section "Earth Moving" to identify soft pockets and areas of excess yielding. Proceed with unit paver installation only after deficient subgrades have been corrected and are ready to receive unit pavers.

15.3 INSTALLATION, GENERAL

- A. Do not use unit pavers with chips, cracks, voids, discolorations, and other defects that might be visible in finished work.
- B. Mix pavers from several pallets or cubes, as they are placed, to produce uniform blend of colors and textures.
- C. Cut unit pavers with motor-driven masonry saw equipment to provide clean, sharp, unchipped edges. Cut units to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting where possible. Hammer cutting is not acceptable.
- D. Joint Pattern: As indicated.
- E. Tolerances: Do not exceed 1/16-inch unit-to-unit offset from flush (lippage) nor 1/8 inch in 24 inches and 1/4 inch in 10 feet from level, or indicated slope, for finished surface of paving.
- F. Expansion and Control Joints: Provide for sealant-filled joints at locations and of widths indicated. Provide foam filler as backing for sealant-filled joints, unless otherwise indicated; where unfilled joints are indicated, provide temporary filler until paver installation is complete. Install joint filler before setting pavers. Sealant materials and installation are specified in Division 07 Section "Joint Sealants."
- G. Expansion and Control Joints: Provide joint filler at locations and of widths indicated. Install joint filler before setting pavers. Make top of joint filler flush with top of pavers.
- H. Provide steps made of pavers as indicated. Install paver steps before installing adjacent pavers.

15.4 AGGREGATE SETTING-BED APPLICATIONS

- A. Compact soil subgrade uniformly to at least 95 percent of ASTM D 1557 laboratory density.
- B. Proof-roll prepared subgrade to identify soft pockets and areas of excess yielding. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.
- C. Place separation geotextile over prepared subgrade, overlapping ends and edges at least 12 inches.
- D. Place aggregate and base, compact by tamping with plate vibrator, and screed to depth indicated.
- E. Place aggregate base, compact to 100 percent of ASTM D 1557 maximum laboratory density, and screed to depth indicated.

- F. Place drainage geotextile over compacted base course, overlapping ends and edges at least 12 inches.
- G. Place leveling course and screed to a thickness of 1 to 1-1/2 inches, taking care that moisture content remains constant and density is loose and constant until pavers are set and compacted.
- H. Treat leveling course with herbicide to inhibit growth of grass and weeds.
- I. Set pavers with a minimum joint width of 1/16 inch and a maximum of 1/8 inch, being careful not to disturb leveling base. If pavers have spacer bars, place pavers hand tight against spacer bars. Use string lines to keep straight lines. Fill gaps between units that exceed 3/8 inch with pieces cut to fit from full-size unit pavers.
 - 1. When installation is performed with mechanical equipment, use only unit pavers with spacer bars on sides of each unit.
- J. Vibrate pavers into leveling course with a low-amplitude plate vibrator capable of a 3500- to 5000-lbf compaction force at 80 to 90 Hz. Perform at least three passes across paving with vibrator. Vibrate under the following conditions:
 - 1. After edge pavers are installed and there is a completed surface or before surface is exposed to rain.
 - 2. Before ending each day's work, fully compact installed concrete pavers to within 36 inches of the laying face. Cover pavers that have not been compacted, and leveling course on which pavers have not been placed, with nonstaining plastic sheets to protect them from rain.
- K. Spread dry sand and fill joints immediately after vibrating pavers into leveling course. Vibrate pavers and add sand until joints are completely filled, then remove excess sand. Leave a slight surplus of sand on the surface for joint filling.
- L. Do not allow traffic on installed pavers until sand has been vibrated into joints.
- M. Repeat joint-filling process 30 days later.

15.5 MORTAR SETTING-BED APPLICATIONS

- A. Saturate concrete subbase with clean water several hours before placing setting bed. Remove surface water about one hour before placing setting bed.
- B. Apply mortar-bed bond coat over surface of concrete subbase about 15 minutes before placing setting bed. Limit area of bond coat to avoid its drying out before placing setting bed. Do not exceed 1/16-inch thickness for bond coat.
- C. Apply mortar bed over bond coat immediately after applying bond coat. Spread and screed setting bed to uniform thickness at subgrade elevations required for accurate setting of pavers to finished grades indicated.
- D. Place reinforcing wire over concrete subbase, lapped at joints by at least one full mesh and supported so mesh becomes embedded in the middle of setting bed. Hold edges back from vertical surfaces approximately 1/2 inch.
- E. Place mortar bed with reinforcing wire fully embedded in middle of setting bed. Spread and screed setting bed to uniform thickness at subgrade elevations required for accurate setting of pavers to finished grades indicated.
- F. Mix and place only that amount of mortar bed that can be covered with pavers before initial set. Cut back, bevel edge, remove, and discard setting-bed material that has reached initial set before placing pavers.
- G. Wet brick pavers before laying if the initial rate of absorption exceeds 30 g/30 sq. in. per minute when tested per ASTM C 67. Allow units to absorb water so they are damp but not wet at time of laying.

- H. Place pavers before initial set of cement occurs. Immediately before placing pavers on setting bed, apply uniform 1/16-inch- thick, slurry bond coat to bed or to back of each paver with a flat trowel.
- I. Tamp or beat pavers with a wooden block or rubber mallet to obtain full contact with setting bed and to bring finished surfaces within indicated tolerances. Set each paver in a single operation before initial set of mortar; do not return to areas already set or disturb pavers for purposes of realigning finished surfaces or adjusting joints.
- J. Grout joints as soon as possible after initial set of setting bed.
 - 1. Force grout into joints, taking care not to smear grout on adjoining surfaces.
 - 2. Clean pavers as grouting progresses by dry brushing or rubbing with dry burlap to remove smears before tooling joints.
 - 3. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness, unless otherwise indicated.
 - 4. If tooling squeezes grout from joints, remove excess grout and smears by dry brushing or rubbing with dry burlap and tool joints again to produce a uniform appearance.
- K. Cure grout by maintaining in a damp condition for seven days, unless otherwise recommended by grout or liquid-latex manufacturer.

15.6 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace unit pavers that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Provide new units to match adjoining units and install in same manner as original units, with same joint treatment and with no evidence of replacement.
- B. Pointing: During tooling of joints, enlarge voids or holes and completely fill with grout. Point up joints at sealant joints to provide a neat, uniform appearance, properly prepared for sealant application.
- C. Cleaning: Remove excess grout from exposed paver surfaces; wash and scrub clean.

END OF SECTION 321400

L. BID FORMS



BID SUMMARY

BID FORM

BID NUMBER:

I-95 Loop Project
Streetscape Phases 1B & 1E

OPENING DATE & TIME:

January 24, 2019 at 11:00am

OPENING LOCATION:

CITY OF WALTERBORO
242 HAMPTON STREET
WALTERBORO, SC 29488

PHASE 1B \$ _____

PHASE 1E \$ _____

CONTRACTOR'S TOTAL BID: PHASE 1B + PHASE 1E \$ _____

CONTRACTOR: _____

SIGNATURE: _____ TITLE: _____

PRINT NAME: _____ DATE: _____

By signing this Bid form, the Contractor acknowledges that he/she has read this document and understands the provisions, agrees to be bound by its items and conditions, will adhere to scheduling requirements stated herein and is capable of providing all required products and/or services. The following Detailed Bid Forms for both Phase 1B and Phase 1E must also be submitted.

BID DETAIL – PHASE 1B**CITY OF WALTERBORO
I-95 BUSINESS LOOP
Phase 1B**

| ITEM NO. | DESCRIPTION | UNIT | QUANTITY | UNIT PRICE | TOTAL PRICE |
|----------|--|------|----------|------------|-------------|
| 1031000 | MOBILIZATION | LS | NEC | | |
| 1032010 | BONDS AND INSURANCE | LS | 1.00 | | |
| 1050800 | CONSTRUCTION STAKES, LINES & GRADES | EA | 1.00 | | |
| 1071000 | TRAFFIC CONTROL | LS | NEC | | |
| 1080300 | CPM PROGRESS SCHEDULE | LS | NEC | | |
| 1090200 | AS-BUILT CONSTRUCTION PLANS | LS | 1.00 | | |
| 2011000 | CLEARING & GRUBBING WITHIN RIGHT OF WAY | LS | NEC | | |
| 2022001 | REM.&DISP.ITEM NO. 1 | LS | 1.00 | | |
| 2022002 | REM.&DISP.ITEM NO. 2 | LS | 1.00 | | |
| 2022003 | REM.&DISP.ITEM NO. 3 | LS | 1.00 | | |
| 2022004 | REM.&DISP.ITEM NO. 4 | LS | 1.00 | | |
| 2022005 | REM.&DISP.ITEM NO. 5 | LS | 1.00 | | |
| 2022006 | REM.&DISP.ITEM NO. 6 | LS | 1.00 | | |
| 2022007 | REM.&DISP.ITEM NO. 7 | LS | 1.00 | | |
| 2022008 | REM.&DISP.ITEM NO. 8 | LS | 1.00 | | |
| 2022009 | REM.&DISP.ITEM NO. 9 | LS | 1.00 | | |
| 2022010 | REM.&DISP.ITEM NO. 10 | LS | 1.00 | | |
| 2022011 | REM.&DISP.ITEM NO. 11 | LS | 1.00 | | |
| 2022012 | REM.&DISP.ITEM NO. 12 | LS | 1.00 | | |
| 2022013 | REM.&DISP.ITEM NO. 13 | LS | 1.00 | | |
| 2022014 | REM.&DISP.ITEM NO. 14 | LS | 1.00 | | |
| 2022015 | REM.&DISP.ITEM NO. 15 | LS | 1.00 | | |
| 2022016 | REM.&DISP.ITEM NO. 16 | LS | 1.00 | | |
| 2022017 | REM.&DISP.ITEM NO. 17 | LS | 1.00 | | |
| 2022018 | REM.&DISP.ITEM NO. 18 | LS | 1.00 | | |
| 2022019 | REM.&DISP.ITEM NO. 19 | LS | 1.00 | | |
| 2022020 | REM.&DISP.ITEM NO. 20 | LS | 1.00 | | |
| 2022021 | REM.&DISP.ITEM NO. 21 | LS | 1.00 | | |
| 2022022 | REM.&DISP.ITEM NO. 22 | LS | 1.00 | | |
| 2023000 | REMOVAL & DISPOSAL OF EXISTING PAVEMENT | SY | 1,015.00 | | |
| 2031200 | SITE EXCAVATION | LS | NEC | | |
| 3069900 | MAINTENANCE STONE | TON | 50.00 | | |
| 6051120 | PERMANENT CONSTRUCTION SIGNS (GROUND MOUNTED) | SF | 272.00 | | |
| 6250015 | 8"WHITE SOLID LINES (CROSSWALK & CHANNELIZATION) FAST DRY PAINT | LF | 860.00 | | |
| 6250025 | 24" WHITE SOLID LINES (STOP/DIAGONAL LINES)-FAST DRY PAINT | LF | 200.00 | | |
| 6250110 | 4"YELLOW SOLID LINE (PVT.EDGE&NO PASSING ZONE)-FAST DRY PAINT | LF | 95.00 | | |

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|---------|--|----|----------|--|--|
| 6271015 | 8" WHITE SOLID LINES THERMOPLASTIC - 125 MIL. | LF | 860.00 | | |
| 6271025 | 24" WHITE SOLID LINES (STOP/DIAG LINES)-THERMO. -125 MIL | LF | 200.00 | | |
| 6271074 | 4" YELLOW SOLID LINES (PVT.EDGE LINES) THERMO-90 MIL. | LF | 95.00 | | |
| 6319505 | REMOVAL OF PAVEMENT MARKINGS | LF | 770.00 | | |
| 6510105 | FLAT SHEET, TYPE III, FIXED SZ. & MSG. SIGN | SF | 69.00 | | |
| 6513020 | MOUNTING ASSEMBLY FOR F.S. SIGN ERCTD ON MAST ARM | EA | 10.00 | | |
| 6531210 | U-SECTION POST FOR SIGN SUPPORTS - 3P | LF | 44.00 | | |
| 6750275 | FURNISH & INSTALL 1.0" SCHEDULE 80 PVC CONDUIT | LF | 295.00 | | |
| 6750278 | FURNISH & INSTALL 2.0" SCHEDULE 80 PVC CONDUIT | LF | 860.00 | | |
| 675027C | FURNISH & INSTALL 3.0" SCHEDULE 80 PVC CONDUIT | LF | 92.00 | | |
| 6760060 | FURNISH & INSTALL 2" SCHEDULE 80 HDPE CONDUIT (TRENCHLESS) | LF | 805.00 | | |
| 6770388 | FURNISH & INSTALL NO. 14 COPPER WIRE, 4 CONDUCTOR - BLACK | LF | 2,055.00 | | |
| 6770389 | FURNISH & INSTALL NO. 14 COPPER WIRE, 4 CONDUCTOR - GRAY | LF | 2,510.00 | | |
| 6770393 | FURNISH & INSTALL NO. 14 COPPER WIRE, 8 CONDUCTOR (BLACK) | LF | 3,000.00 | | |
| 6770394 | FURNISH & INSTALL NO. 14 COPPER WIRE, 8 CONDUCTOR (GRAY) | LF | 875.00 | | |
| 6770413 | FURNISH & INSTL NO. 14 COPPER WIRE,1-CONDUCTOR FOR LOOP WIRE | LF | 3,185.00 | | |
| 6780495 | SAWCUT FOR LOOP DETECTOR | LF | 1,295.00 | | |
| 6800500 | MOD. EXIST ELECTRICAL SERVICE FOR TRAFFIC SIGNAL | EA | 3.00 | | |
| 6800518 | F&I-13"X24"X18"D. ELEC.FLUSH UNDGRD.ENCLOS-(STR.POLY.CONC.) HD | EA | 15.00 | | |
| 6825118 | 21' STEEL POLE WITH 42' MAST ARM | EA | 1.00 | | |
| 6825119 | 21' STEEL POLE WITH 44' MAST ARM | EA | 2.00 | | |
| S000001 | 21'STL.POLE W/90D.ARMS-30'X36' | EA | 1.00 | | |
| S000002 | 21'STL.POLE W/90D.ARMS-46'X56' | EA | 1.00 | | |
| S000003 | 21'STL.POLE W/90D.ARMS-46'X66' | EA | 1.00 | | |
| 6825484 | FURNISH & INSTALL 10' BREAK-AWAY ALUM PEDESTAL POLE AND BASE | EA | 5.00 | | |
| 6845511 | F&I - CONTR 332/336 CABINET ASSEMBLY - BASE MOUNTED | EA | 3.00 | | |
| 6865710 | F&I - 12" 1-WAY-5 SEC (R.Y. YA.G.GA) VEHICLE TRAFFIC SI | EA | 2.00 | | |
| 6865722 | F&I - 12" 1-WAY-4 SECTION(RA.YA.YAF.GA) VEH TRAFFIC SIGNAL | EA | 3.00 | | |
| 6865723 | F&I - 12" 1-WAY-3 SECTION(RA.YA.YAF) VEH TRAFFIC SIGNAL | EA | 1.00 | | |
| 6865731 | F&I - 12" 1-WAY-3 SECTION(R.Y.G.) VEHICLE TRAFFIC SIGNAL | EA | 16.00 | | |
| 6865782 | F&I - 1-WAY-1SECT.HAND/MAN COUNTDOWN PEDESTRIAN SIGNAL HEAD | EA | 14.00 | | |
| 6865791 | F&I -PEDESTRIAN PUSH BUTTON STATION ASSEM AND SIGN (R-10-3E) | EA | 14.00 | | |
| 6865831 | VEHICLE TRAFFIC SIGNAL HEAD MOUNTING ASSEMBLY FOR MAST. ARM | EA | 22.00 | | |
| 6865834 | BACKPLATE W/ RETROREFL.BORDERS FOR TRAFF. SIG. | EA | 22.00 | | |

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|---------|--|------|----------|--|--|
| 6865840 | F&I-PEDESTRIAN TRAF. SIGNAL HEAD MOUNTING ASSEM FOR POST TOP | EA | 2.00 | | |
| 6865841 | F&I - PED TRAF. SIGNAL HEAD MOUNTING ASSEMBLY FOR SIDE POLE | EA | 6.00 | | |
| 6865842 | F&I-PED. TRAF. SIGNAL HEAD MOUNT. ASSY FOR DUAL POST TOP | EA | 3.00 | | |
| 6885991 | REMOVAL, SALVAGE, & DISP.OF EXISTING TRAF. SIGNAL EQUIPMENT | EA | 3.00 | | |
| 6885992 | TEMPORARY ADJUSTMENT OF TRAFFIC SIGNAL EQUIPMENT | LS | 1.00 | | |
| 6887951 | FURNISH & INSTALL CONCRETE CABINET FOUNDATION | EA | 3.00 | | |
| 6888255 | INSTALL LOOP DETECTOR AMPLIFIER | EA | 22.00 | | |
| 5000004 | F&I MAST ARM STYLE 56C LUMINAIRE ASSEMBLY | EA | 6.00 | | |
| 7201100 | CONCRETE CURB (TRANSITION) | LF | 6.00 | | |
| 7203210 | CONCRETE CURB AND GUTTER (2'-0") VERTICAL FACE | LF | 81.00 | | |
| 7204110 | CONCRETE SIDEWALK (4" UNIFORM) OYSTER SHELL FINISH | SY | 1,015.00 | | |
| 7204900 | DETECTABLE WARNING MATERIAL | SF | 87.50 | | |
| 7209000 | PEDESTRIAN RAMP CONSTRUCTION | SY | 175.00 | | |
| 8021204 | 4" PERFORATED PIPE UNDERDRAIN | LF | 192.00 | | |
| 8081001 | MOVING ITEM NO. 1 | LS | 1.00 | | |
| 8091010 | RIGHT OF WAY MARKER (REBAR AND CAP) | EA | 33.00 | | |
| 8091050 | RIGHT OF WAY PLAT | LS | 1.00 | | |
| 8100200 | TEMPORARY COVER | ACRE | 0.083 | | |
| 8109901 | MOWING | ACRE | 0.083 | | |
| 8131000 | SODDING | SY | 600.00 | | |
| 8151203 | HYDRAULIC EROSION CONTROL PRODUCT (HECP) - TYPE 3 | ACRE | 0.083 | | |
| 8152004 | INLET STRUCTURE FILTER - TYPE F (WEIGHTED) | LF | 70.00 | | |
| 8153000 | SILT FENCE | LF | 550.00 | | |
| 8156219 | INLET STRUCTURE FILTER - TYPE A | LF | 56.00 | | |
| 5000005 | CONCRETE DRIVEWAY (6" UNIFORM) OYSTER SHELL FINISH | EA | 330.00 | | |
| 5000006 | HISTORIC CONCRETE WALL | LF | 190.00 | | |
| 5000007 | FOUNTAIN UTILITY CONNECTIONS (WATER, SEWER, ELECTRICAL) | LS | 1.00 | | |
| 5000008 | TREE PROTECTION FENCING | LF | 940.00 | | |
| 5000009 | TREE MITIGATION | LS | 1.00 | | |
| 5000010 | BRICK PAVER PLAZA - HERRINGBONE PATTERN W/ DOUBLE ROW SOLDIER COURSE EDGES | SF | 1,936.00 | | |
| 5000011 | BRICK BANDS - DOUBLE ROW SOLDIER COURSE IN SIDEWALKS | SF | 1,019.00 | | |
| 5000012 | BLUESTONE PAVERS | SF | 311.00 | | |
| 5000013 | BRICK LANDSCAPE CURB | LF | 64.00 | | |
| 5000014 | BRICK SITE WALLS | LF | 42.00 | | |
| 5000015 | BRICK SITE WALL COLUMNS | EA | 4.00 | | |
| 5000016 | EXISTING WALL END REBUILD (SW CORNER PLAZA) | EA | 1.00 | | |
| 5000017 | BOLLARD (TO MATCH THOSE AT SE CORNER OF WASHINGTON ST) | EA | 14.00 | | |
| 5000018 | BENCH (TO MATCH THOSE AT SE CORNER OF WASHINGTON ST) | EA | 7.00 | | |

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|---------------------------|--|----|----------|--|--|
| S000019 | FOUNTAIN EQUIPMENT (SHEETS L20 THRU L30) | LS | 1.00 | | |
| S000020 | FOUNTAIN STRUCTURE (SHEETS L7 & L8) | LS | 1.00 | | |
| S000021 | AZALEA SOUTHERN INDICA HYBRID `FORMOSA` FORMOSA AZALEA | EA | 15.00 | | |
| S000022 | ROSA X `DOUBLE KNOCKOUT` DOUBLE KNOCKOUT ROSE | EA | 12.00 | | |
| S000023 | VIBURNUM DAVIDII DAVID VIBURNUM | EA | 30.00 | | |
| S000024 | ANNUALS (TO BE SELECTED BY CITY P&R DEPT.) | SF | 701.00 | | |
| S000025 | CU STRUCTURAL SOIL (12'X10'X2' PER TREE IN TREE WELL) | CY | 89.00 | | |
| 2031100 | ORGANIC TOPSOIL | CY | 27.00 | | |
| 8110221 | PINE STRAW MULCH, 3" DEPTH | SF | 620.00 | | |
| 811114B | LAGERSTROEMIA X FAUREI "NATCHEZ" (CRAPE MYRTLE) 10-12', 45 GAL | EA | 11.00 | | |
| 8111182 | SABAL PALMETTO 14" CAL 16' - 18' HEIGHT | EA | 19.00 | | |
| 8161510 | TRASH RECEPTACLE (OUTSIDE) | EA | 2.00 | | |
| 8115510 | IRRIGATION METER | EA | 1.00 | | |
| 8115510 | TAP FEE | EA | 1.00 | | |
| 8115510 | RAIN BIRD ESP-16LXME SERIES CONTROLLER | EA | 1.00 | | |
| 8115510 | IRRITROL WIRELESS RAIN/FREEZE SENSOR | EA | 1.00 | | |
| 8115510.1 | RAIN BIRD 100-PEB SERIES ELECTRIC VALVE | EA | 7.00 | | |
| 8115510.1 | RAIN BIRD #5RC SERIES 1" QUICK-COUPLING VALVE | EA | 2.00 | | |
| 8115510.1 | NIBCO 1" GATE VALVE | EA | 2.00 | | |
| 8115510.1 | WILKINS MODEL 950-XL 1" DOUBLE CHECK BACKFLOW PREVENTER | EA | 1.00 | | |
| 8115510.1 | 10" NDS PRO SERIES VALVE BOX | EA | 11.00 | | |
| 8115510.1 | JUMBO NDS PRO SERIES VALVE BOX | EA | 1.00 | | |
| 8115510.1 | RAIN BIRD 1812 SERIES 12" POP-UP SPRAYHEAD WITH NOZZLE | EA | 84.00 | | |
| 8115510.1 | HUNTER AFB SERIES PRESSURE COMPENSATING ADJUSTABLE BUBBLER | EA | 30.00 | | |
| 8115510.1 | 14-1 P.E. JACKETED CONTROL WIRE | LF | 3,500.00 | | |
| 8115510.1 | 1" LATERAL PR-200 PVC PIPE | LF | 1,620.00 | | |
| 8115510.2 | 1 1/4" LATERAL PR-160 PVC PIPE | LF | 80.00 | | |
| 8115510.2 | 1 1/2" MAINLINE PR-160 PVC PIPE | LF | 420.00 | | |
| 8115510.2 | 2" SLEEVE SCHEDULE 40 PVC PIPE | LF | 680.00 | | |
| 8115510.2 | 4" SLEEVE SCHEDULE 40 PVC PIPE | LF | 180.00 | | |
| Total Bid Phase 1B | | | | | |

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BID DETAIL – PHASE 1E

**CITY OF WALTERBORO
I-95 BUSINESS LOOP
Phase 1E**

| ITEM NO. | DESCRIPTION | UNIT | QUANTITY | UNIT PRICE | TOTAL PRICE |
|----------|--|------|-----------|------------|-------------|
| 1031000 | MOBILIZATION | LS | NEC | | |
| 1032010 | BONDS AND INSURANCE | LS | 1.00 | | |
| 1050800 | CONSTRUCTION STAKES, LINES & GRADES | EA | 1.00 | | |
| 1071000 | TRAFFIC CONTROL | LS | NEC | | |
| 1080300 | CPM PROGRESS SCHEDULE | LS | NEC | | |
| 1090200 | AS-BUILT CONSTRUCTION PLANS | LS | 1.00 | | |
| 4011004 | LIQUID ASPHALT BINDER PG64-22 | TON | 70.00 | | |
| 4012080 | FULL DEPTH ASPH. PAV. PATCHING 8" UNIF | SY | 100.00 | | |
| 4013990 | MILLING EXISTING ASPHALT PAVEMENT (VARIABLE) | SY | 13,550.00 | | |
| 4030320 | HOT MIX ASPHALT SURFACE COURSE TYPE B | TON | 1,225.00 | | |
| 4039013 | ASPHALT PAVEMENT TEXTURING - HERRINGBONE(BRICK) | SY | 585.00 | | |
| 6051120 | PERMANENT CONSTRUCTION SIGNS (GROUND MOUNTED) | SF | 392.00 | | |
| 6250005 | 4" WHITE BROKEN LINES - (GAPS EXCLUDED)-FAST DRY PAINT | LF | 2,356.00 | | |
| 6250010 | 4" WHITE SOLID LINES (PVT. EDGE LINES)-FAST DRY PAINT | LF | 520.00 | | |
| 6250015 | 8"WHITE SOLID LINES (CROSSWALK &CHANNELIZATION) FAST DRY PAINT | LF | 1,720.00 | | |
| 6250020 | 12" WHITE SOLID LINES - FAST DRY PAINT | LF | 300.00 | | |
| 6250025 | 24" WHITE SOLID LINES (STOP/DIAGONAL LINES)-FAST DRY PAINT | LF | 410.00 | | |
| 6250030 | WHITE SINGLE ARROW (LEFT, STRAIGHT, RIGHT)-FAST DRY PAINT | EA | 18.00 | | |
| 6250035 | WHITE WORD MESSAGE "ONLY"-FAST DRY PAINT | EA | 14.00 | | |
| 6250110 | 4"YELLOW SOLID LINE (PVT.EDGE&NO PASSING ZONE)-FAST DRY PAINT | LF | 8,660.00 | | |
| 6250112 | 6" YELLOW SOLID LINE ON CURB/MEDIAN - FAST DRY PAINT | LF | 1,100.00 | | |
| 6271005 | 4" WHITE BROKEN LINES (GAPS EXCL.) THERMOPLASTIC- 90 MIL. | LF | 1,178.00 | | |
| 6271010 | 4" WHITE SOLID LINES (PVT. EDGE LINES) THERMO. - 90 MIL. | LF | 260.00 | | |
| 6271015 | 8" WHITE SOLID LINES THERMOPLASTIC - 125 MIL. | LF | 860.00 | | |
| 6271020 | 12" WHITE SOLID LINES - THERMO. - 125 MIL. | LF | 150.00 | | |
| 6271025 | 24" WHITE SOLID LINES (STOP/DIAG LINES)-THERMO. -125 MIL | LF | 205.00 | | |
| 6271030 | WHITE SINGLE ARROWS (LT, STRGHT, RT) THERMO. -125 MIL. | EA | 9.00 | | |
| 6271035 | WHITE WORD MESSAGE "ONLY" -THERMOPLASTIC - 125 MIL. | EA | 7.00 | | |
| 6271074 | 4" YELLOW SOLID LINES (PVT.EDGE LINES) THERMO-90 MIL. | LF | 4,330.00 | | |
| 6280112 | 6"YELLOW SOLID LINES ON CURB/MED.-HIGH BUILD PAINT-25 MIL. | LF | 1,100.00 | | |
| 6300005 | PERMANENT CLEAR PAVEMENT MARKERS- MONO-DIR.- 4"X4" | EA | 70.00 | | |
| 6301100 | PERMANENT YELLOW PAVEMENT MARKERS BI-DIR.- 4"X4" | EA | 130.00 | | |
| 6510105 | FLAT SHEET, TYPE III, FIXED SZ. & MSG. SIGN | SF | 20.00 | | |

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|---------------------------|--|----|----------|--|--|
| 6531210 | U-SECTION POST FOR SIGN SUPPORTS - 3P | LF | 42.00 | | |
| 6750275 | FURNISH & INSTALL 1.0" SCHEDULE 80 PVC CONDUIT | LF | 65.00 | | |
| 6770413 | FURNISH & INSTL NO. 14 COPPER WIRE,1-CONDUCTOR FOR LOOP WIRE | LF | 3,185.00 | | |
| 6780495 | SAWCUT FOR LOOP DETECTOR | LF | 1,295.00 | | |
| 6885992 | TEMPORARY ADJUSTMENT OF TRAFFIC SIGNAL EQUIPMENT | LS | 1.00 | | |
| S000001 | CONCRETE MEDIAN WITH TEXTURING - HERRINGBONE(BRICK) | SY | 250.00 | | |
| Total Bid Phase 1E | | | | | |

THIS PAGE MUST BE COMPLETED AND SUBMITTED AS A PART OF YOUR BID

REFERENCE FORM

REFERENCE FORM

(Please use this form or similar copy)

Bidder shall include a list of three references for similar work with bid response. References shall include project name, brief description and location of project, completed dollar amount of project, date completed, contact person's name, phone, fax number, and email address of a similar job completed

1.) Name of Project Owner: _____
Brief Description Including Location _____

Completed Dollar Amount: \$ _____ Date Completed: _____
Contact Person's Name: _____
Contact Phone: (_____) _____ - _____ Contact Fax: (_____) _____ - _____
Contact E-mail: _____

2.) Name of Project Owner: _____
Brief Description Including Location _____

Completed Dollar Amount: \$ _____ Date Completed: _____
Contact Person's Name: _____
Contact Phone: (_____) _____ - _____ Contact Fax: (_____) _____ - _____
Contact E-mail: _____

3.) Name of Project Owner: _____
Brief Description Including Location _____

Completed Dollar Amount: \$ _____ Date Completed: _____
Contact Person's Name: _____
Contact Phone: (_____) _____ - _____ Contact Fax: (_____) _____ - _____
Contact E-mail: _____

4.) Name of Project Owner: _____
Brief Description Including Location _____

Completed Dollar Amount: \$ _____ Date Completed: _____
Contact Person's Name: _____
Contact Phone: (_____) _____ - _____ Contact Fax: (_____) _____ - _____
Contact E-mail: _____

THIS PAGE MUST BE COMPLETED AND SUBMITTED AS A PART OF YOUR BID

SUBCONTRACTOR FORM

SUBCONTRACTOR FORM

Subcontractor Name: _____
Address: _____
Description of Work to be Performed: _____

Dollar Value of Subcontractor's Work: \$ _____ Percentage of Contract Value: _____

Subcontractor Name: _____
Address: _____
Description of Work to be Performed: _____

Dollar Value of Subcontractor's Work: \$ _____ Percentage of Contract Value: _____

Subcontractor Name: _____
Address: _____
Description of Work to be Performed: _____

Dollar Value of Subcontractor's Work: \$ _____ Percentage of Contract Value: _____

Subcontractor Name: _____
Address: _____
Description of Work to be Performed: _____

Dollar Value of Subcontractor's Work: \$ _____ Percentage of Contract Value: _____

Subcontractor Name: _____
Address: _____
Description of Work to be Performed: _____

Dollar Value of Subcontractor's Work: \$ _____ Percentage of Contract Value: _____

Subcontractor Name: _____
Address: _____
Description of Work to be Performed: _____

Dollar Value of Subcontractor's Work: \$ _____ Percentage of Contract Value: _____

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DBE SUBCONTRACTOR FORM

DBE SUBCONTRACTOR FORM

DBE Subcontractor Name: _____
Address: _____
Description of Work to be Performed: _____

Dollar Value of Subcontractor's Work: \$ _____ Percentage of Contract Value: _____

Subcontractor Name: _____
Address: _____
Description of Work to be Performed: _____

Dollar Value of Subcontractor's Work: \$ _____ Percentage of Contract Value: _____

Subcontractor Name: _____
Address: _____
Description of Work to be Performed: _____

Dollar Value of Subcontractor's Work: \$ _____ Percentage of Contract Value: _____

Subcontractor Name: _____
Address: _____
Description of Work to be Performed: _____

Dollar Value of Subcontractor's Work: \$ _____ Percentage of Contract Value: _____

Total Dollar Value of Contract: \$ _____
Total Dollar Value of DBE Subcontract Work: \$ _____
DBE Percent of Contract Value: _____

The Contractor hereby commits to subcontract portions of the work to DBE subcontractors as indicated above or approved substitute DBE subcontractors.

CONTRACTOR: _____ DATE: _____
SIGNED: _____ TITLE: _____

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City of Walterboro

**CPST-14 Streetscape Phase 1B & 1E
CERTIFICATE OF FAMILIARITY**

The undersigned, having fully familiarized him/her with the information contained within this entire solicitation and applicable amendments, submits the attached response, and other applicable information to the City, which I verify to be true and correct to the best of my knowledge. I further certify that this response is made without prior understanding, agreement, or connection with any corporation, Contractor or person submitting a response for the same materials, supplies or equipment, and is in all respects, fair and without collusion or fraud. I agree to abide by all conditions set forth in this solicitation and certify that I have signature authority to bind the company listed herein.

MINORITY BUSINESS: Are you a minority business?

- ▶ Yes __ (___ Women-owned / __ Disadvantaged) If yes, please submit a copy of your certificate with your response.
- ▶ No _____

Mailing Address

Printed Name

City, State, Zip

Title

Date

Telephone Number Fax Number

REMITTANCE ADDRESS

Company Name

Authorized Signature (As registered with the IRS)

Address

E-Mail Address

City, State, Zip

Fax Number

Telephone Number

Toll Free Number

Federal Tax ID Number

Sales Tax Number

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City of Walterboro
CPST-14 Streetscape Phase 1B & 1E
ADDENDA ACKNOWLEDGEMENT

The Contractor has examined and carefully studied the proposal and the following Addenda, receipt of all of which is hereby acknowledged:

Addendum No. _____

Addendum No. _____

Addendum No. _____

Addendum No. _____

Authorized Official Name/Title (Print)

Date

Authorized Official Signature

THIS PAGE MUST BE COMPLETED AND SUBMITTED AS A PART OF YOUR BID



City of Walterboro
CPST-14 Streetscape Phase 1B & 1E
DEBARMENT

The Contractor is certifying that he/she are not currently debarred from responding to any request for bids by any agency or subdivision of the State of South Carolina or the United States Federal Government, nor are they an agent of any person or entity that is currently debarred from submitting bids on contracts by any agency or subdivision of the State of South Carolina.

SAM's No. _____

Cage Code. _____

DUN's No. _____

Authorized Representative (Signature)

Date

Authorized Representative/Title (Print or Type)

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