

BID DOCUMENTS

ALLISON ROAD PEDESTRIAN CONNECTOR (S-159)

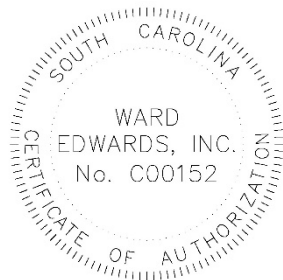
SCDOT PROJECT ID: PO27276

WARD EDWARDS PROJECT NUMBER: 130215F

CITY OF BEAUFORT, SOUTH CAROLINA



PREPARED BY WARD EDWARDS ENGINEERING



February 9, 2018

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CITY OF BEAUFORT
STATE OF SOUTH CAROLINA
INVITATION FOR BIDS
IFB NO. 2018-107



CITY OF BEAUFORT
ALLISON ROAD PEDESTRIAN CONNECTOR
PROJECT
DUE: FRIDAY MARCH 16, 2018 by 2:00 PM

CITY OF BEAUFORT, SC INVITATION FOR BIDS IFB NO. 2018-107

SEALED BIDS will be received in the Finance Department, 2nd Floor, City Hall, 1911 Boundary Street, Beaufort, South Carolina until **2:00 P.M. ET Friday, March 16, 2018**. All qualified contractors are invited to submit bids to the City of Beaufort for the following:

City of Beaufort ALLISON ROAD PEDESTRIAN CONNECTOR PROJECT

SUBMIT: One (1) unbound original and three (3) bound copies of all requested documentation must be received on or before **2:00 P.M. ET March 16, 2018**.

ADDRESS TO: City of Beaufort, City Hall, 2nd Floor Finance Department, Attention: Kathy Todd

MAILING ADDRESS: 1911 Boundary St., Beaufort, South Carolina 29902

OFFICE ADDRESS: 1911 Boundary St., Beaufort, South Carolina 29902

EMAIL ADDRESS: ktodd@cityofbeaufort.org

PHONE NUMBER: 843-525-7009

FAX NUMBER: 843-986-5606

MARK OUTSIDE ENVELOPE: "IFB NO. 2018-107 ALLISON ROAD PEDESTRIAN CONNECTOR PROJECT"

A MANDATORY PRE-BID MEETING WILL BE HELD AT 1:30 P.M. ET ON FEBRUARY 28, 2018, IN THE PLANNING CONFERENCE ROOM OF CITY HALL, LOCATED AT 1911 BOUNDARY STREET, BEAUFORT, SC 29902. ALL POTENTIAL OFFERORS ARE REQUIRED TO ATTEND.

DEADLINE ENFORCED

PROPOSALS DELIVERED AFTER THE TIME AND DATE SET FOR RECEIPT OF PROPOSALS SHALL NOT BE ACCEPTED AND WILL BE RETURNED UNOPENED TO THE OFFEROR. IT IS THE OFFEROR'S RESPONSIBILITY TO ENSURE TIMELY DELIVERY OF THEIR PROPOSALS. WEATHER, FLIGHT DELAYS, CARRIER ERRORS AND OTHER ACTS OF OTHERWISE EXCUSABLE NEGLIGENCE ARE RISKS ALLOCATED TO OFFERORS AND WILL NOT BE EXEMPTED FROM DEADLINE REQUIREMENTS. E-MAIL, TELEPHONE, OR FACSIMILE PROPOSALS WILL NOT BE ACCEPTED.

Any offer submitted as a result of this IFB shall be binding on the offeror for **NINETY (90)** calendar days following the specified opening date. Any proposal for which the offeror specifies a shorter acceptance period may be rejected.

Proprietary and/or Confidential Information

Your proposal package is a public document under the South Carolina Freedom of Information Act (FOIA), except as to information that may be treated as confidential as an exception to disclosure under the FOIA. If you cannot agree to this standard, please do not submit your qualification.

All information that is to be treated as confidential and/or proprietary must be **CLEARLY** identified, and each page containing confidential and/or proprietary information, in whole or in part, must be stamped and/or denoted as **CONFIDENTIAL**, in bold, in a font of at least 12 point type, in the upper right hand corner of the page. *All information not so denoted and identified shall be subject to disclosure by the City.*

This Request for Proposal is being issued by the City of Beaufort. Direct all questions or request for clarification of this IFB by email, mail, or fax to contact information listed above.

Offerors are specifically directed not to contact any other City personnel for meetings, conferences, or technical discussions related to this request unless otherwise stated in this IFB. Failure to adhere to this policy may be grounds for rejection of your proposal.

Offerors ARE CAUTIONED that any statement made by City staff persons that materially change any portion of this IFB shall not be relied upon unless they are subsequently ratified by a formal written amendment to this IFB. Any revisions to this IFB will be issued and distributed as an addendum. All addenda, additional communications, responses to questions, etc. pertaining to the Request for PROPOSAL may be accessed on the City of Beaufort website under Quick Links – “Bid Opportunities” at www.cityofbeaufort.org.

All Offerors should consult this website for updates before submitting bids.

THE DEADLINE FOR QUESTIONS IS: 4:00 P.M., MARCH 2, 2018 ANSWERS TO SUBMITTED QUESTIONS WILL BE POSTED ON THE CITY WEBSITE BY 4:00 PM ON MARCH 6, 2018

If the Offeror discovers any ambiguity, conflict, discrepancy, omission or other error in the IFB, Offeror shall immediately notify the City of such error in writing and request modification or clarification of the document. The Offeror is responsible for clarifying any ambiguity, conflict, discrepancy; omission or other error in the IFB or it shall be deemed waived.

The City of Beaufort reserves the right to reject any or all proposals, or any parts thereof, waive informalities, negotiate terms and conditions, and to select an Offeror that best meets the needs of the City of Beaufort and its employees.

Compliance with the South Carolina Illegal Immigration Reform Act

Any Contractor entering into a service contract with the City of Beaufort must certify to the City of Beaufort that the Contractor intends to verify any new employees’ status, and require any sub-consultants performing services under the service contract to verify their new employees’ status, per the terms of the South Carolina Illegal Immigration Reform Act, and as set out in Title 41, Chapter 8 of the Code of Laws of South Carolina, 1976.

POLICY CONCERNING MINORITY AND WOMAN OWNED BUSINESS ENTERPRISES

Intent

Businesses owned and operated by women and minority persons, in general, have been historically restricted from full participation in the nation's free enterprise system to a degree disproportionate to other businesses.

The City believes it is in the community's best interest to assist minority and woman owned businesses to develop fully, in furtherance of City's policies and programs which are designed to promote balanced economic and community growth.

The City, therefore, wishes to ensure that minority and woman owned businesses (M/WBEs) are afforded the opportunity to fully participate in the City's overall procurement process and will not be discriminated against on the grounds of race, color, sex, or national origin in consideration for an award.

Goal for Participation

The City adopts the State of South Carolina's goal for participation of M/WBEs: ten percent (10%) of annual controllable procurement expenditures which are defined as agreements between the City and a Vendor to provide or procure labor, materials, equipment, supplies and services to, for or on behalf of the City. However, a specific expectation has not been set for this IFB.

Required Forms

Contractors submitting proposals are required to include completed forms that are found at the end of the General Terms & Conditions. The City's General Terms & Conditions, a required component of all competitive procurement proposals, may be accessed on the City's website under Quick Links – Bid Opportunities – www.cityofbeaufort.org. All proposers are to certify that they have read the General Terms & Conditions and will adhere to them as a component of the contract documents.

Contractors should also be aware that, should a contract be awarded, the City will require reports of the utilization of any minority business enterprises to be filed along with requests for payment. The City reserves the right to audit accuracy of the utilization reports that are filed.

The City of Beaufort reserves the right to reject any or all bids; to waive any informality or irregularity not affected by law; to evaluate, in its absolute discretion, the bids submitted; to award the contract according to the bid which best serves the interests of the City; or to not award the contract if the City determines that it is not in its best interest to do so.

Proposals that are not signed will not be accepted as complete and shall not be considered. Proposals must be signed in ink (not typed) in the appropriate space(s) by an authorized officer or employee of the offeror.

The words "Bidder", "Offeror", "Proposer", "Vendor", "Operator", "Contractor", and "Company" are used interchangeably throughout this IFB, and are used in place of the person, vendor, or corporation submitting a bid.

INVITATION TO BID
CITY OF BEAUFORT
ALLISON ROAD PEDESTRIAN CONNECTOR PROJECT (IFB NO. 2018-107)

I. INTRODUCTION

The City of Beaufort (City), South Carolina, is requesting bids from the current SCDOT Prequalified Prime Contractor’s List for the construction of a ten (10) foot wide multi-use pathway along the quarter mile length of Allison Road.

II. SCOPE OF WORK

The intent of the Allison Road Pedestrian Connector project is to construct a 10-ft wide multi-use pathway along the quarter mile length of Allison Road, connecting the sidewalks along Ribaut Road on the east end to the Spanish Moss Trail on the west end. Construction of the pathway will require reconstructing Allison Road within the existing right-of-way, offsetting the centerline of the road to the south to allow room for the pathway on the north side of the road. Curb and gutter and associated drainage structures will be added to the road cross section to provide better drainage along the street, to provide a better streetscape and to encourage traffic calming along the roadway. The proposed road cross section will include 11-ft travel lanes, 18” curb & gutter, a 10-ft wide concrete multi-use path on the north side, and a 4-ft wide landscape strip separating the pathway from the travel lanes.

The construction of the project is to be performed in accordance with the current edition of the *South Carolina Department of Transportation’s Standard Specifications for Highway Construction*.

VICINITY MAP



III. ADDITIONAL DOCUMENTS

Additional documents are available online under “Appendix A.” Bidders are required to review and be familiar with these documents as they are a part of the IFB and will become part of the awarded contract. These documents also include the Bid Sheet (Attachment A), Site Plans (Attachment B) and Supplemental documents (Attachment C). These additional documents may be accessed on the City of Beaufort website under Quick Links – “Bid Opportunities” at www.cityofbeaufort.org.

IV. SUBMISSION REQUIREMENTS

- I. **Required content of bid:** The detailed requirements set forth in the Bid Format are recommended. Failure by any bidder to respond to a specific requirement may result in disqualification. Bidders are reminded that bids will be considered exactly as submitted. Points of clarification will be solicited from bidders at the discretion of the City. Those bids determined not to be in compliance with provisions of this IFB and the applicable law and/or regulations will not be processed. In addition to the information required as described below, a Respondent may submit supplemental information that it feels may be useful in evaluating its bid. This information may include documents such as a firm profile or brochure.

All costs incurred by the Proposer associated with IFB preparations and subsequent interviews and/or negotiations, which may or may not lead to execution of a contract, shall be the responsibility entirely and exclusively by the proposer.

- II. **Bid format:** The bid format requirements were developed to aid bidders in their bid development. They also provide a structured format so reviewers can systematically evaluate several bids. These directions apply to all bids submitted. Proposer’s proposal must address all the points outlined herein as required, in the following order.
 - a. **Transmittal Letter:** A transmittal letter must be submitted with a bidder’s bid which shall include:
 - i. Name of the firm responding, including mailing address, e-mail address, telephone number, and names of contact person.
 - ii. The name of the person or persons authorized to make representations on behalf of the bidder, binding the firm to a contract.
 - iii. Prepare an executive summary stating the respondent’s understanding of the project and opinion why the respondent’s firm should be chosen. Include any general information the proposer wishes the City to consider about the proposal.
 - iv. An affirmative statement that the proposer has read and agrees to the General Terms and Conditions and will adhere to them as a component of the contract documents.

b. Bidder's Work History and References:

- i. Provide client references (name, address, e-mail and phone number) for a minimum of three projects of a similar size and nature. References from South Carolina and the southeast United States are preferred.
- ii. Identify any additional or unique resources, options, capabilities or assets which the bidder would bring to this project.

c. Bid Sheet

- i. Cost Proposals are requested and shall be submitted with your bid using the form provided in Attachment A. The bid sheet can be printed online where the additional documents are listed.
- ii. Bidders are encouraged to review the Site Plans (Attachment B) in its entirety. If the bid sheet is missing an item or have an invalid quantity based on Attachment B, the bidder should notify the City contact immediately. Once submitted, the bidder must abide by the base bid submitted. Once the bids are opened, the City will have a pre-construction meeting with the awarded contractor. Should the contractor bring up a missing item or invalid quantity, the contractor must provide what it takes to complete the project at no additional costs as it was contractor's responsibility to review and compare Attachment B to the bid sheet for accuracy. Bidders must be certain their submitted bid sheet has all the necessary items to complete the job in its entirety.

d. Required Forms:

- i. Bids must include the required forms.
 1. Certificates of Insurance showing present coverage as described in the "Insurance" section of the General Terms and Conditions.
 2. Ethics in Public Contracting Certification
 3. Non-Collusion Affidavit
 4. Small / Woman-Owned / Minority Business Enterprise Form
 5. Non-Resident Taxpayer Affidavit (S.S. Department of Revenue I-312)
 6. IFB Signature page (must be signed in ink)
 7. Price Summary Form (Attachment A)

e. Other Information to Provide:

- i. List any lawsuits or arbitration proceedings that have been initiated by or against your company in the past five years. Briefly describe the nature of the action and the outcome.
- ii. Bidder shall be responsible for providing a Bid Bond in the amount of 5% of the total cost. Failure to submit the necessary bond requirements with the proposal will cause rejection

of the proposal. Bid Bonds of the unsuccessful contractors will be returned upon award of the bid. Fax copies are unacceptable.

- iii. Bidder shall be responsible for providing a letter from the surety company that would issue Performance and Payment bonds for the Contractor included on your team, providing information on the Contractor's bonding capacity. Performance and Payment bonds are required.

CITY OF BEAUFORT
SOUTH CAROLINA
IFB SIGNATURE PAGE
IFB NO. 2018-107

PROPOSER'S NAME: _____

The undersigned, having become familiar with the existing conditions and the Proposal Scope of Services hereby proposed, agrees to complete the work as described in accordance with the Request for Proposal and Contract Documents.

Proposer warrants that no gratuities, in the form of gifts, entertainment, or otherwise, were offered or given by the **Proposer**, to any officer or employee of the City with a view toward securing the contract or securing favorable treatment with respect to any determination concerning the performance of the contract.

This offer is genuine and not made in interest of or on behalf of any undisclosed person, vendor or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; **Proposer** has not directly induced or solicited any other **Proposer** to submit false or sham bid; **Proposer** has not solicited or sought by collusion to obtain for itself any advantage over any other **Proposer** or other **Owner**.

The words "Bidder", "Offeror", "Proposer", "Vendor", and "Company" are used interchangeably throughout this solicitation, and are used in place of the person, vendor, or corporation submitting a solicitation.

Proposer has examined copies of all documents and of the following addenda (if applicable):

Addendum No.	Date
_____	_____
_____	_____
_____	_____

Address: Post Office Box: _____ Zip: _____
Street: _____ Zip: _____
City: _____ State: _____
Telephone: _____ Fax: _____
Email: _____

*Signature: _____ Title: _____

Proposal will not be accepted unless signed in ink (not typed) in the appropriate space by an authorized officer or employee of the bidder.

Printed Name: _____ Date: _____

CONTRACT DOCUMENTS

NOTICE OF AWARD

Date of Issuance:

Owner: City of Beaufort, South Carolina Owner's Contract No.:
Engineer: Ward Edwards Inc. Engineer's Project No.: 130215F
Project: Allison Road Pedestrian Connector Contract Name:

Bidder:

Bidder's Address:

TO BIDDER:

You are notified that Owner has accepted your Bid dated [_____] for the above Contract, and that you are the Successful Bidder and are awarded a Contract for:

_____ .
[describe Work, alternates, or sections of Work awarded]

The Contract Price of the awarded Contract is: \$ _____ *[note if subject to unit prices, or cost-plus]*

unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award, or has been transmitted or made available to Bidder electronically. *[revise if multiple copies accompany the Notice of Award]*

a set of the Drawings will be delivered separately from the other Contract Documents.

You must comply with the following conditions precedent within 15 days of the date of receipt of this Notice of Award:

1. Deliver to Owner [_____] counterparts of the Agreement, fully executed by Bidder.
2. Deliver with the executed Agreement(s) the Contract security *[e.g., performance and payment bonds]* and insurance documentation as specified in the Instructions to Bidders and General Conditions, Articles 2 and 6.
3. Other conditions precedent (if any):

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Agreement, together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.

Owner:

Authorized Signature

By:

Title:

Copy: Engineer

**AGREEMENT BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)**

THIS AGREEMENT is by and between The City of Beaufort, South Carolina
(Owner) and _____
(Contractor).

Owner and Contractor, in consideration of the mutual covenants set forth herein, agree as follows:

ARTICLE 1 - WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

Construct a 10-ft wide multi-use pathway along the quarter mile length of Allison Road, connecting the sidewalks along Ribaut Road on the east end to the Spanish Moss Trail on the west end.

ARTICLE 2 - THE PROJECT

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

Construction of the pathway will require reconstructing Allison Road within the existing right-of-way, offsetting the centerline of the road to the south to allow room for the pathway on the north side of the road. Curb and gutter and associated drainage structures will be added to the road cross section to provide better drainage along the street, to provide a better streetscape and to encourage traffic calming along the roadway. The proposed road cross section will include 11-ft travel lanes, 18" curb & gutter, a 10-ft wide concrete multi-use path on the north side, and a 4-ft wide landscape strip separating the pathway from the travel lanes.

ARTICLE 3 - ENGINEER

3.01 The Project has been designed by

Ward Edwards Inc.

(Engineer), who is to act as Owner's representative regarding technical information related to the project design and the associated construction documents, and have the rights and authority assigned to Engineer in the Contract Documents in connection with requests for information related to the original design intent. Inspections will be performed by a qualified engineering/inspection firm hired by the City of Beaufort, who will have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 - CONTRACT TIMES

4.01 Time of the Essence

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

4.02 Days to Achieve Substantial Completion and Final Payment

A. The Work will be substantially completed within 210 days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions within 30 days after the date when the Contract Times commence to run.

4.03 Liquidated Damages

A. Contractor and Owner recognize that time is of the essence of this Agreement and that Owner will suffer financial loss if the Work is not completed within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty), Contractor shall pay Owner \$600 for each day that expires after the time specified in Paragraph 4.02 for Substantial Completion until the Work is substantially complete. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by Owner, Contractor shall pay Owner \$600 for each day that expires after the time specified in Paragraph 4.02 for completion and readiness for final payment until the Work is completed and ready for final payment.

ARTICLE 5 - CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to Paragraphs 5.01.A below:

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

ARTICLE 6 - PAYMENT PROCEDURES

6.01 Submittal and Processing of Payments

A. Contractor shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 Progress Payments; Retainage

A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the 25th day of each month during performance of the Work as provided in Paragraphs 6.02.A.1 and 6.02.A.2 below. All such payments will be measured by the schedule of values established as provided in Paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements:

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Engineer may determine or Owner may withhold, including but not limited to liquidated damages, in accordance with Paragraph 14.02 of the General Conditions:

a. 90 percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, Owner, on recommendation of Engineer, may determine that as long as the character and progress of the Work remain satisfactory to them, there will be no additional retainage; and

b. 90 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

2. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 95 percent of the Work completed, less such amounts as Engineer shall determine in accordance with Paragraph 14.02.B.5 of the General Conditions and less 100 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the tentative list of items to be completed or corrected attached to the certificate of Substantial Completion.

6.03 Final Payment

A. Upon final completion and acceptance of the Work in accordance with Paragraph 14.07 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 14.07.

ARTICLE 7 - INTEREST

7.01 Omitted

ARTICLE 8 – CONTRACTOR’S REPRESENTATIONS

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

A. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.

B. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Contractor is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Contractor does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.

E. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.

F. Contractor has correlated the information known to Contractor, information and observations obtained from visits to the Site, reports and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.

G. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

H. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 9 - CONTRACT DOCUMENTS

9.01 Contents

A. The Contract Documents consist of the following:

1. This Agreement (pages 1 to 5, inclusive).
2. Performance bond (pages 1 to 2, inclusive).
3. Payment bond (pages 1 to 2, inclusive).
4. General Conditions (pages 1 to 41, inclusive).
5. Supplementary Conditions (pages 1 to 5, inclusive).
6. SCDOT Standard Specifications
7. Supplemental Specifications
8. Storm Water Pollution Prevention Plan.
9. Drawings listed on attached sheet index.

10. Addenda (numbers _____ to _____, inclusive).
 11. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid Form (pages 1 to 2, inclusive).
 - b. Documentation submitted by Contractor prior to Notice of Award (pages _____ to _____, inclusive).
 12. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
 - a. Notice to Proceed
 - b. Work Change Directives.
 - c. Change Order(s).
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in Paragraph 3.04 of the General Conditions.

ARTICLE 10 - MISCELLANEOUS

10.01 Terms

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

10.02 Assignment of Contract

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

10.03 Successors and Assigns

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

10.04 Severability

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

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement in duplicate. One counterpart each has been delivered to Owner and Contractor. All portions of the Contract Documents have been signed or identified by Owner and Contractor or on their behalf.

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

OWNER:

CONTRACTOR:

City of Beaufort, South Carolina

By: _____

By: _____

Title: _____

Title: _____

[CORPORATE SEAL]

[CORPORATE SEAL]

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

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

License No.: _____
(Where applicable)

Agent for service or process: _____

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

NOTICE TO PROCEED

Owner: City of Beaufort, South Carolina Owner's Contract No.:

Contractor: Contractor's Project No.:

Engineer: Ward Edwards Inc. Engineer's Project No.: 130215F

Project: Allison Road Pedestrian Connector Contract Name:

Effective Date of Contract:

TO CONTRACTOR:

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on [_____, 20__]. [see Paragraph 4.01 of the General Conditions]

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work shall be done at the Site prior to such date. In accordance with the Agreement, [the date of Substantial Completion is _____, and the date of readiness for final payment is _____] **or** [the number of days to achieve Substantial Completion is _____, and the number of days to achieve readiness for final payment is _____].

Before starting any Work at the Site, Contractor must comply with the following:
[Note any access limitations, security procedures, or other restrictions]

Owner:

Authorized Signature

By:

Title:

Date Issued:

Copy: Engineer

PERFORMANCE BOND

CONTRACTOR *(name and address):*

SURETY *(name and address of principal place of business):*

OWNER *(name and address):*

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location):*

BOND

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract):*

Amount:

Modifications to this Bond Form: None See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

Contractor's Name and Corporate Seal *(seal)*

Surety's Name and Corporate Seal *(seal)*

By: _____
Signature

By: _____
Signature *(attach power of attorney)*

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.

3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after:

3.1 The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;

3.2 The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

3.3 The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a

qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:

7.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

7.2 additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and

7.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.

9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.

10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

11. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

14. Definitions

14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper

payments made to or on behalf of the Contractor under the Construction Contract.

14.2 Construction Contract: The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

14.3 Contractor Default: Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

14.4 Owner Default: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

14.5 Contract Documents: All the documents that comprise the agreement between the Owner and Contractor.

15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

16. Modifications to this Bond are as follows:

PAYMENT BOND

CONTRACTOR *(name and address)*:

SURETY *(name and address of principal place of business)*:

OWNER *(name and address)*:

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location)*:

BOND

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract)*:

Amount:

Modifications to this Bond Form: None See Paragraph 18

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

Contractor's Name and Corporate Seal

Surety's Name and Corporate Seal

By: _____
Signature

By: _____
Signature *(attach power of attorney)*

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond shall arise after the following:
 - 5.1 Claimants who do not have a direct contract with the Contractor,
 - 5.1.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - 5.1.2 have sent a Claim to the Surety (at the address described in Paragraph 13).
 - 5.2 Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
 - 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
 - 7.2 Pay or arrange for payment of any undisputed amounts.
 - 7.3 The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
8. The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the

Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

16. Definitions

16.1 **Claim:** A written statement by the Claimant including at a minimum:

1. The name of the Claimant;
2. The name of the person for whom the labor was done, or materials or equipment furnished;
3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
4. A brief description of the labor, materials, or equipment furnished;
5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
7. The total amount of previous payments received by the Claimant; and
8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

16.2 **Claimant:** An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

16.3 **Construction Contract:** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

16.4 **Owner Default:** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

16.5 **Contract Documents:** All the documents that comprise the agreement between the Owner and Contractor.

17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

18. Modifications to this Bond are as follows:

Contractor's Application For Payment No. _____

	Application Period:	Application Date:
To (Owner):	From (Contractor):	Via (Engineer)
Project:	Contract:	
Owner's Contract No.:	Contractor's Project No.:	Engineer's Project No.:

APPLICATION FOR PAYMENT

Change Order Summary

Approved Change Orders		
Number	Additions	Deductions
TOTALS		
NET CHANGE BY CHANGE ORDERS		

1. ORIGINAL CONTRACT PRICE \$ _____
2. Net change by Change Orders..... \$ _____
3. CURRENT CONTRACT PRICE (Line 1 ± 2)..... \$ _____
4. TOTAL COMPLETED AND STORED TO DATE
(Column F on Progress Estimate) \$ _____
5. RETAINAGE:
 - a. _____ % x \$ _____ Work Completed \$ _____
 - b. _____ % x \$ _____ Stored Material..... \$ _____
 - c. Total Retainage (Line 5a + Line 5b) \$ _____
6. AMOUNT ELIGIBLE TO DATE (Line 4 - Line 5c) \$ _____
7. LESS PREVIOUS PAYMENTS (Line 6 from prior Application) \$ _____
8. AMOUNT DUE THIS APPLICATION \$ _____
9. BALANCE TO FINISH, PLUS RETAINAGE
(Column G on Progress Estimate + Line 5 above)..... \$ _____

CONTRACTOR'S CERTIFICATION

The undersigned Contractor certifies that: (1) all previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with Work covered by prior Applications for Payment; (2) title of all Work, materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to Owner at time of payment free and clear of all Liens, security interests and encumbrances (except such as are covered by a Bond acceptable to Owner indemnifying Owner against any such Liens, security interest or encumbrances); and (3) all Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

By:	Date:
-----	-------

Payment of:	\$ _____	(Line 8 or other - attach explanation of other amount)
is recommended by:	_____	_____
	(Engineer)	(Date)
Payment of:	\$ _____	(Line 8 or other - attach explanation of other amount)
is approved by:	_____	_____
	(Owner)	(Date)
Approved by:	_____	_____
	Funding Agency (if applicable)	(Date)

CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner: City of Beaufort, South Carolina	Owner's Contract No.:
Contractor:	Contractor's Project No.:
Engineer: Ward Edwards Inc.	Engineer's Project No.: 130215F
Project: Allison Road Pedestrian Connector	Contract Name:

This [preliminary] [final] Certificate of Substantial Completion applies to:

All Work The following specified portions of the Work:

Date of Substantial Completion

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Work or portion thereof designated above is hereby established, subject to the provisions of the Contract pertaining to Substantial Completion. The date of Substantial Completion in the final Certificate of Substantial Completion marks the commencement of the contractual correction period and applicable warranties required by the Contract.

A punch list of items to be completed or corrected is attached to this Certificate. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance, and warranties upon Owner's use or occupancy of the Work shall be as provided in the Contract, except as amended as follows: *[Note: Amendments of contractual responsibilities recorded in this Certificate should be the product of mutual agreement of Owner and Contractor; see Paragraph 15.03.D of the General Conditions.]*

Amendments to Owner's responsibilities: None
 As follows

Amendments to Contractor's responsibilities: None
 As follows:

The following documents are attached to and made a part of this Certificate: *[punch list; others]*

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents, nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract.

EXECUTED BY ENGINEER:	RECEIVED:	RECEIVED:
By: _____ (Authorized signature)	By: _____ Owner (Authorized Signature)	By: _____ Contractor (Authorized Signature)
Title: _____	Title: _____	Title: _____
Date: _____	Date: _____	Date: _____

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By



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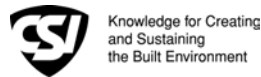
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Construction Specifications Institute

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These General Conditions have been prepared for use with the Suggested Forms of Agreement Between Owner and Contractor Nos. C-520 or C-525 (2002 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the EJCDC Construction Documents, General and Instructions (No. C-001) (2002 Edition). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (No. C-800) (2002 Edition).

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GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*--Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement*--The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.

3. *Application for Payment*--The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Asbestos*--Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. *Bid*--The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. *Bidder*--The individual or entity who submits a Bid directly to Owner.

7. *Bidding Documents*--The Bidding Requirements and the proposed Contract Documents (including all Addenda).

8. *Bidding Requirements*--The Advertisement or Invitation to Bid, Instructions to Bidders, bid security of acceptable form, if any, and the Bid Form with any supplements.

9. *Change Order*--A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

10. *Claim*--A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. *Contract*--The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*-- Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor's submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.

13. *Contract Price*--The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times*--The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any, (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.

15. *Contractor*--The individual or entity with whom Owner has entered into the Agreement.

16. *Cost of the Work*--See Paragraph 11.01.A for definition.

17. *Drawings*--That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.

18. *Effective Date of the Agreement*--The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

19. *Engineer*--The individual or entity named as such in the Agreement.

20. *Field Order*--A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

21. *General Requirements*--Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

22. *Hazardous Environmental Condition*--The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

23. *Hazardous Waste*--The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

24. *Laws and Regulations; Laws or Regulations*--Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

25. *Liens*--Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

26. *Milestone*--A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

27. *Notice of Award*--The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.

28. *Notice to Proceed*--A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.

29. *Owner*--The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.

30. *PCBs*--Polychlorinated biphenyls.

31. *Petroleum*--Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

32. *Progress Schedule*--A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.

33. *Project*--The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.

34. *Project Manual*--The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

35. *Radioactive Material*--Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

36. *Related Entity* -- An officer, director, partner, employee, agent, consultant, or subcontractor.

37. *Resident Project Representative*--The authorized representative of Engineer who may be assigned to the Site or any part thereof.

38. *Samples*--Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

39. *Schedule of Submittals*--A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.

40. *Schedule of Values*--A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

41. *Shop Drawings*--All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.

42. *Site*--Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.

43. *Specifications*--That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain

administrative requirements and procedural matters applicable thereto.

44. *Subcontractor*--An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.

45. *Substantial Completion*--The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

46. *Successful Bidder*--The Bidder submitting a responsive Bid to whom Owner makes an award.

47. *Supplementary Conditions*--That part of the Contract Documents which amends or supplements these General Conditions.

48. *Supplier*--A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or any Subcontractor.

49. *Underground Facilities*--All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

50. *Unit Price Work*--Work to be paid for on the basis of unit prices.

51. *Work*--The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

52. *Work Change Directive*--A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times

but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 Terminology

A. The following words or terms are not defined but, when used in the Bidding Requirements or Contract Documents, have the following meaning.

B. Intent of Certain Terms or Adjectives

1. The Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action or determination will be solely to evaluate, in general, the Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

C. Day

1. The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.

D. Defective

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:

- a. does not conform to the Contract Documents, or
- b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents, or
- c. has been damaged prior to Engineer's - recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

E. Furnish, Install, Perform, Provide

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.

F. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 - PRELIMINARY MATTERS

2.01 Delivery of Bonds and Evidence of Insurance

A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.

B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

2.02 Copies of Documents

A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 Commencement of Contract Times; Notice to Proceed

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement

or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 Starting the Work

A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 Before Starting Construction

A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule; indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.06 Preconstruction Conference

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

2.07 Initial Acceptance of Schedules

A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

A. The Contract Documents are complementary; what is required by one is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to Owner.

C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

3.02 *Reference Standards*

A. Standards, Specifications, Codes, Laws, and Regulations

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or

responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, or Engineer, or any of, their Related Entities, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. Reporting Discrepancies

1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor may discover and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.

2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor knew or reasonably should have known thereof.

B. Resolving Discrepancies

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

a. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work

(unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:

1. A Field Order;

2. Engineer's approval of a Shop Drawing or Sample; (Subject to the provisions of Paragraph 6.17.D.3); or

3. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

A. Contractor and any Subcontractor or Supplier or other individual or entity performing or furnishing all of the Work under a direct or indirect contract with Contractor, shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or Engineer's consultants, including electronic media editions; or

2. reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaption by Engineer.

B. The prohibition of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.06 *Electronic Data*

A. Copies of data furnished by Owner or Engineer to Contractor or Contractor to Owner or Engineer that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's

sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party..

C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

4.01 *Availability of Lands*

A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 *Subsurface and Physical Conditions*

A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Contract Documents; and

2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that Engineer has used in preparing the Contract Documents.

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or

2. is of such a nature as to require a change in the Contract Documents; or

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *Engineer's Review:* After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer's findings and conclusions.

C. Possible Price and Times Adjustments

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and

b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:

a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or

c. Contractor failed to give the written notice as required by Paragraph 4.03.A.

3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, Owner and Engineer, and any of their Related Entities shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data; and

2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:

a. reviewing and checking all such information and data,

b. locating all Underground Facilities shown or indicated in the Contract Documents,

c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction, and

d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will

promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.05 *Reference Points*

A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 *Hazardous Environmental Condition at Site*

A. *Reports and Drawings:* Reference is made to the Supplementary Conditions for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the Engineer in the preparation of the Contract Documents.

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.

D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any.

E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered to Contractor written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.

F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to

entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06. G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 - BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified

in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.

B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent must be accompanied by a certified copy of the agent's authority to act.

C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 *Certificates of Insurance*

A. Contractor shall deliver to Owner, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.

B. Owner shall deliver to Contractor, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.

5.04 *Contractor's Liability Insurance*

A. Contractor shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection

from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;

2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;

3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:

a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or

b. by any other person for any other reason;

5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance required by this Paragraph 5.04 shall:

1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insured (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;

5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);

6. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment.

a. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 *Owner's Liability Insurance*

A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

5.06 *Property Insurance*

A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;

2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, (other than caused by flood) and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;

5. allow for partial utilization of the Work by Owner;

6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

B. Owner shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.

D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any

deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

5.07 *Waiver of Rights*

A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insured or additional insured (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.

B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.

C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order .

B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

5.09 *Acceptance of Bonds and Insurance; Option to Replace*

A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract

Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances. The superintendent will be Contractor's representative at the Site and shall have authority to act on behalf of Contractor. All communications given to or

received from the superintendent shall be binding on Contractor.

6.02 *Labor; Working Hours*

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner's written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 *Progress Schedule*

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05 *Substitutes and "Or-Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.

1. "*Or-Equal*" Items: If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that:

1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole,

3) it has a proven record of performance and availability of responsive service; and

b. Contractor certifies that, if approved and incorporated into the Work:

1) there will be no increase in cost to the Owner or increase in Contract Times, and

2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. Substitute Items

a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. Contractor shall submit sufficient information as provided below to allow Engineer to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.

c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented in the General Requirements and as Engineer may decide is appropriate under the circumstances.

d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

1) shall certify that the proposed substitute item will:

a) perform adequately the functions and achieve the results called for by the general design,

b) be similar in substance to that specified, and

c) be suited to the same use as that specified;

2) will state:

a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time;

b) whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and

c) whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;

3) will identify:

a) all variations of the proposed substitute item from that specified, and

b) available engineering, sales, maintenance, repair, and replacement services;

4) and shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change,

B. Substitute Construction Methods or Procedures: If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.

C. Engineer's Evaluation: Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.

D. Special Guarantee: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

E. Engineer's Cost Reimbursement: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute item so proposed or submitted by Contractor, Contractor shall reimburse Owner for the charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the charges of Engineer for making changes in the Contract

Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

F. Contractor's Expense: Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.06 Concerning Subcontractors, Suppliers, and Others

A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.

C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity, nor

2. shall anything in the Contract Documents create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual

or entity except as may otherwise be required by Laws and Regulations.

D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.

E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.

F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.07 *Patent Fees and Royalties*

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of Owner or Engineer its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 *Permits*

A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 *Laws and Regulations*

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

6.10 *Taxes*

A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.11 *Use of Site and Other Areas*

A. Limitation on Use of Site and Other Areas

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

B. Removal of Debris During Performance of the Work: During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. Cleaning: Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. Loading Structures: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 *Record Documents*

A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner.

6.13 *Safety and Protection*

A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

C. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Draw-

ings or Specifications or to the acts or omissions of Owner or Engineer or , or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

D. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 *Shop Drawings and Samples*

A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the acceptable Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

1. Shop Drawings

a. Submit number of copies specified in the General Requirements.

b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples*: Contractor shall also submit Samples to Engineer for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals.

a. Submit number of Samples specified in the Specifications.

b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals , any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. Submittal Procedures

1. Before submitting each Shop Drawing or Sample, Contractor shall have determined and verified:

a. all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

b. the suitability of all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;

c. all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto; and

d. shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents

with respect to Contractor's review and approval of that submittal.

3. With each submittal, Contractor shall give Engineer specific written notice of any variations, that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawing's or Sample Submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. Engineer's Review

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. Resubmittal Procedures

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

6.18 Continuing the Work

A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or

disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 Contractor's General Warranty and Guarantee

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its Related Entities shall be entitled to rely on representation of Contractor's warranty and guarantee.

B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:

1. observations by Engineer;

2. recommendation by Engineer or payment by Owner of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. use or occupancy of the Work or any part thereof by Owner;

5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;

6. any inspection, test, or approval by others; or

7. any correction of defective Work by Owner.

6.20 Indemnification

A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or

arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable .

B. In any and all claims against Owner or Engineer or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, partners, employees, agents, consultants and subcontractors arising out of:

1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

6.21 *Delegation of Professional Design Services*

A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.

B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal

shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

ARTICLE 7 - OTHER WORK AT THE SITE

7.01 *Related Work at Site*

A. Owner may perform other work related to the Project at the Site with Owner's employees, or via other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to Contractor prior to starting any such other work; and

2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.

B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and shall properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and

properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.

C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;

2. the specific matters to be covered by such authority and responsibility will be itemized; and

3. the extent of such authority and responsibilities will be provided.

B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

7.03 *Legal Relationships*

A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.

B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's actions or inactions.

C. Contractor shall be liable to Owner and any other contractor for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's action or inactions.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

8.02 *Replacement of Engineer*

A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

8.03 *Furnish Data*

A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

8.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

A. Owner's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by Engineer in preparing the Contract Documents.

8.06 *Insurance*

A. Owner's responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility in respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

A. If and to the extent Owner has agreed to furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents, Owner's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *Owner's Representative*

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents and will not be changed without written consent of Owner and Engineer.

9.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep

Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Authorized Variations in Work*

A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 *Rejecting Defective Work*

A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 *Shop Drawings, Change Orders and Payments*

A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.

B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.

C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.

D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

9.08 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question

B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believe that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.

C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.

D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show

partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to, the Resident Project Representative, if any, and assistants, if any.

ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall

promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.B.

10.03 *Execution of Change Orders*

A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:

1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

10.04 *Notification to Surety*

A. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any bond to be given to a surety, the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

10.05 *Claims*

A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.

B. *Notice:* Written notice stating the general nature of each Claim, shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).

C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:

1. deny the Claim in whole or in part,

2. approve the Claim, or

3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.

D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.

E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.

F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

ARTICLE 11 - COST OF THE WORK;
ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items, and shall not include any of the costs itemized in Paragraph 11.01.B.

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and

Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.

4. Costs of special consultants (including but not limited to Engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have

resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expresses, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

B. Costs Excluded: The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.

2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.

4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A and 11.01.B.

C. Contractor's Fee: When all the Work is performed on the basis of cost-plus, Contractor's fee shall

be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.

D. Documentation: Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

11.02 Allowances

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. Cash Allowances

1. Contractor agrees that:

a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. Contingency Allowance

1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 Unit Price Work

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:

1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

2. there is no corresponding adjustment with respect any other item of Work; and

3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an

allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).

C. *Contractor's Fee:* The Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;

b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;

c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and

f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted

by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.03 *Delays*

A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.

D. Owner, Engineer and the Related Entities of each of them shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of Engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 *Notice of Defects*

A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 *Access to Work*

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's Site safety procedures and programs so that they may comply therewith as applicable.

13.03 *Tests and Inspections*

A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;

2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in said Paragraph 13.04.C; and

3. as otherwise specifically provided in the Contract Documents.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to

be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, it must, if requested by Engineer, be uncovered for observation.

F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.

B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.

C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.

D. If, the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.05 *Owner May Stop the Work*

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

A. Promptly after receipt of notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. repair such defective land or areas; or
2. correct such defective Work; or
3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.

B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.

C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications .

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 *Owner May Correct Defective Work*

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.

C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress

payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A. Applications for Payments

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations on the Site of the executed Work as an experienced and qualified design professional and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and to any other qualifications stated in the recommendation); and

c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or

b. that there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

a. to supervise, direct, or control the Work, or

b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or

c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or

d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or

e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent

inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:

- a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
- b. the Contract Price has been reduced by Change Orders;
- c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
- d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. Payment Becomes Due

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. Reduction in Payment

1. Owner may refuse to make payment of the full amount recommended by Engineer because:

- a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;
- b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
- c. there are other items entitling Owner to a set-off against the amount recommended; or
- d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.

2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor corrects to Owner's satisfaction the reasons for such action.

3. If it is subsequently determined that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1.

14.03 Contractor's Warranty of Title

A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.04 Substantial Completion

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.

B. Promptly after Contractor's notification, , Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will within 14 days after submission of the tentative certificate to Owner notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will within said 14 days execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial

Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.

E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to complete or correct items on the tentative list.

14.05 *Partial Utilization*

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions.

1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor will certify to Owner and Engineer that such part of the Work is substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals

that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. Application for Payment

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:

a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.7;

b. consent of the surety, if any, to final payment;

c. a list of all Claims against Owner that Contractor believes are unsettled; and

d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner or Owner's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

B. *Engineer's Review of Application and Acceptance*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations

under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. Payment Becomes Due

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and , will be paid by Owner to Contractor.

14.08 *Final Completion Delayed*

A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance

with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 *Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.02 *Owner May Terminate for Cause*

A. The occurrence of any one or more of the following events will justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);

2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;

3. Contractor's disregard of the authority of Engineer; or

4. Contractor's violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:

1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion),

2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and

3. complete the Work as Owner may deem expedient.

C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph Owner shall not be required to obtain the lowest price for the Work performed.

D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.

E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.

F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B, and 15.02.C.

15.03 *Owner May Terminate For Convenience*

A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. reasonable expenses directly attributable to termination.

B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

ARTICLE 16 - DISPUTE RESOLUTION

16.01 *Methods and Procedures*

A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be

governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.

B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.

C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:

1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions, or

2. agrees with the other party to submit the Claim to another dispute resolution process, or

3. gives written notice to the other party of their intent to submit the Claim to a court of competent jurisdiction.

ARTICLE 17 - MISCELLANEOUS

17.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or

2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.05 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

17.06 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

DOCUMENT 00800

SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract, EJCDC C-700, and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

SC-1.01.A Add the following new paragraph immediately after paragraph 1.01.A.33

33A. Products: Means materials and equipment that Contractor furnishes and provides, other than labor and services.

SC-2.05.A.3 Delete Paragraph 2.05.A.3 in its entirety.

SC-2.06 Add the following at the end of Paragraph 2.06.A:

The Owner, Contractor and Engineer may be required to attend additional Preconstruction Conferences with agencies having jurisdiction over portions of the work.

SC-2.07.A.3 Delete Paragraph 2.07.A.3 in its entirety.

SC-4.02 Delete Paragraphs 4.02.A and 4.02.B in their entirety and insert the following:

A. No reports of explorations or tests of subsurface conditions at or contiguous to the Site are known to the Owner or Engineer.

SC-4.06 Delete Paragraphs 4.06.A and 4.06.B in their entirety and insert the following:

A. No reports of explorations or tests for Hazardous Environmental Conditions at or contiguous to the Site are known to the Owner or Engineer.

SC-5.01.B Add the following new paragraphs immediately after paragraph 5.01.B:

1. Furnish Performance Bond on EJCDC C-610 bond form.

2. Furnish Payment Bond on EJCDC C-615 bond form.

SC-5.03 Add the following new paragraphs immediately after Paragraph 5.03.B:

C. Failure of Owner to demand such certificates or other evidence of full compliance with these insurance requirements or failure of Owner to identify a deficiency from evidence provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

D. By requiring such insurance and insurance limits herein, Owner does not represent that coverage and limits will necessarily be adequate to protect Contractor, and such coverage and limits shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner in the Contract Documents.

SC-5.04 Add the following new paragraph immediately after paragraph 5.04.B:

Article 6.06 Add the following language at the end of paragraph 6.06.A

Contractor shall submit a list of Subcontractors and Suppliers proposed for employment in the work to the Owner in accordance with the Instructions to Bidders. Subcontractors and suppliers must be acceptable to the Beaufort-Jasper Water and Sewer Authority.

SC-6.08 Add the following new paragraphs immediately after Paragraph 6.08.A:

B. Owner will obtain and pay all fees in connection with obtaining the following permits required for the construction of the project:

1. OCRM land disturbance permit
2. SCDHEC permits to construct water and sanitary sewer
3. SCDOT encroachment permits
4. Permanent and temporary easements
5. NPDES General Permit For Storm Water Discharges From Large and Small Construction Activities, SCR100000 from South Carolina Department of Health and Environmental Control.

a. The NPDES General Permit will be limited to the construction site and the Contractor will be responsible for obtaining any permits required for construction activities relating to this project and conducted at locations away from the project construction site.

C. If the construction for this project is subject to the provisions of a NPDES General Permit, the Contractor shall:

1. Accept designation as co-permittee in accordance with the provisions of the NPDES General Permit, and
2. Require that all Subcontractors whose activities at the site may impact storm water discharges or controls at the site accept designation as co-permittees in accordance with the provisions of the NPDES General Permit.

SC-6.09 Add the following new paragraphs immediately after Paragraph 6.09.C:

D. The following, as required in 29 CFR, Subpart A--Davis-Bacon and Related Acts Provisions and Procedures, Sec. 5.5(a), apply to this contract:

(1) Minimum wages.

(i) All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), 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 (a)(1)(iv) 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 Sec. 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 (a)(1)(ii) 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.

(ii)(A) 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:

- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) 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.

(C) 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 Administrator for determination. The 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.

D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii) (B) or (C) 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.

(iii) 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.

(iv) 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 (write in name of Federal Agency or the loan or grant recipient) 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 (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, the (Agency) may, after written notice to the contractor, sponsor, applicant, or owner, 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.

(i) 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 (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). 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.

(ii)(A) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the (write in name of appropriate Federal agency) if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant, sponsor, or owner, as the case may be, for transmission to the (write in name of agency). The payrolls submitted shall set out accurately and completely all of the information required to be maintained under Sec. 5.5(a)(3)(i) of Regulations, 29 CFR part 5. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U.S. Government Printing Office, Washington, DC 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors

(B) 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

(1) That the payroll for the payroll period contains the information required to be maintained under Sec. 5.5(a)(3)(i) of Regulations, 29 CFR part 5 and that such information is correct and complete;

(2) 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;

(3) 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.

(C) 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 (a)(3)(ii)(B) of this section.

(D) 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. (iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the (write the name of the agency) 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 Federal agency may, after written notice to the contractor, sponsor, applicant, or owner, 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.

(i) Apprentices. 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.

(ii) Trainees. 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.

(iii) 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.

(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 in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the (write in the name of the Federal agency) may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses 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.

(i) 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).

(ii) 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).

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

E. The following, as required in 29 CFR, Subpart A--Davis-Bacon and Related Acts Provisions and Procedures, Sec. 5.5(b), apply to this contract:

(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 (b)(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 (b)(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 (b)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The (write in the name of the Federal agency or the loan or grant recipient) 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 (b)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in

paragraph (b)(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 (b)(1) through (4) of this section.

F. COMPLIANCE WITH AIR AND WATER ACTS. In compliance with the Clean Air Act, as amended, 42 U.S.C. 1857 et. seq., The Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et. seq., and the regulations of the Environmental Protection Agency with respect thereto, at 40 CFR Part 15, as amended from time to time, the Contractor agrees that:

- (a) Any facility to be utilized in the performance of this contract or any subcontract shall not be a facility listed on the EPA List of Violating Facilities pursuant to 40 CFR 15.20.
- (b) He will comply with all requirements of Section 114 of the Clean Air Act, as amended (42 U.S.C. 1857c-8) and Section 308 of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251) relating to inspection, monitoring entry, reports, and information, as well as all other requirements specified in said Section 114 and Section 308, and all regulations and guidelines issued thereunder.
- (c) He will promptly notify the Owner of any notification received from the Director, Office of Federal Activities, EPA, indicating that a facility utilized or to be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.
- (d) He will include or cause to be included the provisions of paragraphs (a) through (d) of this section in every non-exempt subcontract and that he will take such action as the government may direct as a means of enforcing such provisions.

G. EQUAL EMPLOYMENT OPPORTUNITY AND AFFIRMATIVE ACTION

(a) Equal Opportunity Clause. If the contract amount exceeds \$10,000.00 during the performance of this contract, the Contractor agrees as follows:

1. The Contractor will not discriminate against any employee or the applicant for employment because of race, color, religion, sex or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; lay-off or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Owner setting forth the provisions of this non-discrimination clause.

2. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

3. The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided by the Contract Compliance

Officer advising the said labor union or workers' representative of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

4. The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations and relevant orders of the Secretary of Labor.
5. The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the Department and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
6. In the event of the Contractor's noncompliance with the non-discrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be cancelled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
7. The Contractor will include the portion of the sentence immediately preceding paragraph 1 and the provision of paragraphs 1 through 7 in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each Subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the department may direct as a means of enforcing such provisions, including sanctions for non-compliance; Provided, however, that in the event a Contractor becomes involved in, or is threatened with litigation with a Subcontractor or vendor as a result of such direction by the Department, the Contractor may request the United States to enter into such litigation to protect the interest of the United States.

(b) Affirmative Action Clause. If the Contract amount exceeds \$10,000.00, the following Conditions shall apply:

"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. "Employment identification number" means the Federal Social Security number used on the Employer's 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 and 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 obligation 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 the 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 make 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 7p) 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 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 notice form, and such notices may be obtained from any office of Federal Contract Compliance Programs or from the 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 nonworking 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 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 or 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 and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' 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 such 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 therefore, along with whatever additional actions the Contractor may have taken.
- d) Provide immediate written notification to the director when the 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 its 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 or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources specified under 7b) above.
- f) Disseminate the Contractor's EEO policy by providing notice of the 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 in 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, assignments, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Foreman, etc. prior to the initiation 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 send 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 the Contractor's workforce.
 - 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 seniority practices, job classifications, work assignments and other personnel practices, do not have 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 7p)]. 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 7p) 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 workforce 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 to 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 substantially desperate manner (for example, even though the Contractor has achieved its goals for women generally 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 Government contracts pursuant to Executive Order 11246.
12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination, and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out sanctions and penalties shall be in violation of these 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 locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that 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 established 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).

(c) Non-Segregated Facilities:

- 1 The Contractor certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The Contractor covenants that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not

permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. As used in this paragraph, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurant and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated on the basis of race, creed, color, or national origin, because of habit, local custom, or otherwise.

- 2 The Contractor agrees that prior to award of subcontracts exceeding \$10,000.00 which are not exempt from the provisions of the Equal Opportunity Clause, he will obtain identical certificates from each subcontractor, and that he will obtain identical certificates from each subcontractor, and that he will retain such certifications in his files.

H. AFFIRMATIVE ACTION REQUIREMENTS TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY

- (a) The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Timetables	Goals for minority participation for each trade	Goals for female participation in each trade
Until further notice	N/A	N/A

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..

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 its 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 or 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 regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed

- (b) 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 \$10,000.00 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, 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.

DOCUMENT 00910

ADDENDA

ADDENDUM NUMBER _____

DATE: _____

PROJECT: Allison Road Pedestrian Connector

PROJECT NUMBER: 130215F

OWNER: City of Beaufort

ENGINEER: Ward Edwards

TO: Prospective Bidders

This Addendum forms a part of the Contract Documents and modifies the Bidding Documents dated _____, Addendum Number ___ issued _____, and Addendum Number ___ issued _____, with amendments and additions noted below.

Acknowledge receipt of this Addendum in the space provided in the Bid Form. Failure to do so may disqualify the Bidder.

This Addendum consists of _____ pages and the following Drawings:

No.	Drawing Title	Issue Date
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

CHANGES TO ADDENDUM NUMBER 1 - Issued _____

CHANGES TO THE DRAWINGS

END OF DOCUMENT

Work Change Directive No.

Date of Issuance: _____ Effective Date: _____
 Owner: City of Beaufort, South Carolina Owner's Contract No.: _____
 Contractor: _____ Contractor's Project No.: _____
 Engineer: Ward Edwards Inc. Engineer's Project No.: 130215F
 Project: Allison Road Pedestrian Connector Contract Name: _____

Contractor is directed to proceed promptly with the following change(s):
 Description:

Attachments: *[List documents supporting change]*

Purpose for Work Change Directive:

Directive to proceed promptly with the Work described herein, prior to agreeing to changes on Contract Price and Contract Time, is issued due to: *[check one or both of the following]*

- Non-agreement on pricing of proposed change.
- Necessity to proceed for schedule or other Project reasons.

Estimated Change in Contract Price and Contract Times (non-binding, preliminary):

Contract Price \$ _____ [increase] [decrease].
 Contract Time _____ days [increase] [decrease].

Basis of estimated change in Contract Price:

- Lump Sum Unit Price
- Cost of the Work Other

RECOMMENDED:

AUTHORIZED BY:

RECEIVED:

By: _____	By: _____	By: _____
Engineer (Authorized Signature)	Owner (Authorized Signature)	Contractor (Authorized Signature)
Title: _____	Title: _____	Title: _____
Date: _____	Date: _____	Date: _____

Approved by Funding Agency (if applicable)

By: _____ Date: _____
 Title: _____

Change Order No. _____

Date of Issuance:	Effective Date:
Owner: City of Beaufort, South Carolina	Owner's Contract No.:
Contractor:	Contractor's Project No.:
Engineer: Ward Edwards Inc.	Engineer's Project No.: 130215F
Project: Allison Road Pedestrian Connector	Contract Name:

The Contract is modified as follows upon execution of this Change Order:

Description:

Attachments: *[List documents supporting change]*

CHANGE IN CONTRACT PRICE	CHANGE IN CONTRACT TIMES <i>[note changes in Milestones if applicable]</i>
Original Contract Price: \$ _____	Original Contract Times: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
[Increase] [Decrease] from previously approved Change Orders No. ___ to No. ___: \$ _____	[Increase] [Decrease] from previously approved Change Orders No. ___ to No. ___: Substantial Completion: _____ Ready for Final Payment: _____ _____ days
Contract Price prior to this Change Order: \$ _____	Contract Times prior to this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
[Increase] [Decrease] of this Change Order: \$ _____	[Increase] [Decrease] of this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
Contract Price incorporating this Change Order: \$ _____	Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for Final Payment: _____ days or dates

RECOMMENDED:	ACCEPTED:	ACCEPTED:
By: _____ Engineer (if required)	By: _____ Owner (Authorized Signature)	By: _____ Contractor (Authorized Signature)
Title: _____	Title _____	Title _____
Date: _____	Date _____	Date _____

Approved by Funding Agency (if
applicable)

By: _____

Date:

Title: _____

CITY OF BEAUFORT GENERAL TERMS AND CONDITIONS

CITY OF BEAUFORT GENERAL TERMS AND CONDITIONS

PUBLIC RECORD

After an award is made, copies of the proposals will be available for public inspection, under the supervision of the City's Purchasing Division from 8:00 a.m. to 5:00 p.m., Monday through Friday, at 1911 Boundary Street, 2nd Floor, City Hall, Beaufort, South Carolina 29902.

PROPRIETARY INFORMATION

The Proposers are asked for any restriction on the use of data contained in their responses and told that proprietary information will be handled in accordance with applicable laws, regulations and policies of the City of Beaufort, South Carolina. All proprietary information shall be labeled as such in the proposal.

BACKGROUND CHECK

The City reserves the right to conduct a background inquiry of each proposer which may include the collection of appropriate criminal history information, contractual business associates and practices, employment histories and reputation in the business community. By submitting a proposal to the City, the proposer consents to such an inquiry and agrees to make available to the City such books and records as the City deems necessary to conduct the inquiry.

REQUIREMENTS

The successful vendor shall comply with all instructions and shall perform services in a manner to commensurate with the highest professional standards by qualified and experienced personnel.

JURISDICTION

This agreement shall be governed by the laws of the state of South Carolina.

ASSIGNMENT

The successful vendor shall not assign, transfer, convey, sublet, or otherwise dispose of any or all of its rights, title, or interest therein, without prior written consent of the City.

ACCEPTANCE OF PROPOSAL CONTENT

Before submitting a proposal, each proposer shall make all investigations and examinations necessary to ascertain all site conditions and requirements affecting the performance of the contract and to verify any representations made by the City upon which the offer will rely. If the proposer receives an award as a result of its proposal, failure to have made such investigations and examinations will in no way relieve the proposer from its obligation to comply in every detail with all provisions and requirements of the contract documents, nor will a plea of ignorance of such conditions and requirements be accepted as a basis for any claim whatsoever by the proposer for additional compensation.

COMPETITIVE NEGOTIATION SOLICITATION

Negotiations shall be conducted, beginning with the proposer ranked first. If a contract satisfactory and advantageous to the City can be negotiated at a price considered fair and reasonable, the award shall be made to that proposer. Otherwise, negotiations with the proposer ranked firsts shall be formally terminated and negotiations with the proposer ranked second shall be conducted. The City reserves the right to cease contract negotiations if it is determined that the lowest responsible bidder cannot perform services specified in their response.

FORCE MAJEURE

The successful vendor shall not be held responsible for failure to perform the duties and responsibilities imposed by the contract due to legal strikes, fires, riots, rebellions, and acts of God beyond the control of the consultant, unless otherwise specified in the contract.

FAILURE TO ENFORCE

Failure by the City at any time to enforce the provisions of the contract shall not be construed as a waiver of any provisions. The failure to enforce shall not affect the validity of the contract or any part or the right of the City to enforce any provision at any time in accordance with its terms.

FAILURE TO DELIVER

Awarded Company cannot enter into another professional services contract within the City of Beaufort without the express written approval from City Council. The contract may be terminated by the City in whole or in part whenever the City determines, in its sole discretion that the Awarded Company has entered into another professional services contract within the City of Beaufort without the express written approval from City Council.

CONFLICT OF INTEREST

In the event of failure of the successful vendor to deliver services in accordance with the contract terms and conditions, the City, after due oral or written notice, may procure the services from other sources and hold the successful vendor responsible for any resulting additional purchase and administrative costs. This remedy shall be in addition to any other remedies that the City may have.

EMPLOYMENT DISCRIMINATION

During the performance of the contract, the successful vendor agrees not to discriminate against any employee or applicant for employment because of race, religion, color, sex, age, handicap, or national origin; however, some conditions may be a bona fide occupational qualification reasonably necessary for the normal operations of the successful vendor. The successful vendor agrees to post in conspicuous places, visible to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.

DETERMINATION OF RESPONSIBILITY

The City may make such investigation as it deems necessary to determine the ability of a proposer to furnish the required services, and the proposer will furnish to the City requested information and data for this purpose. The City reserves the right to reject any proposer if the evidence submitted by or investigation of the proposer fails to satisfy the City that such proposer is properly qualified to carry out the obligations of a Contract, and to deliver the services contemplated herein. Proposer will fully inform themselves as to conditions, requirements, and scope and manner of services before submitting their proposal. Failure to do so will be at the proposer's own risk.

INDEMNIFICATION

The successful vendor covenants to save, defend, keep harmless, and indemnify the City and all of its officers, departments, agencies, agents, and employees from and against all claims, loss, damage, injury, fines, penalties, and costs, including court costs, attorney's fees, charges, liability, and exposure, however, caused, resulting from, arising out of, or in any way connected to the successful vendor's negligent performance or nonperformance of the terms of the contract.

INSURANCE

The vendor shall not commence any work in connection with the contract until the vendor has obtained all of the following types of insurance, nor shall the vendor allow any subcontractor to commence work on a subcontract until all similar insurance required of the subcontractor has been so obtained.

Prior to the actual contract award vendor must supply certificates of insurance and certified copies of all policies and endorsements to the City Clerk. The City shall be exempt from, and in no way liable for, any sums of money which may represent a deductible in any insurance policy. The payment of such deductible shall be the sole responsibility of the vendor or subcontractor providing such insurance.

The vendor agrees to indemnify, defend and hold harmless the City and its authorized agents, officers, volunteers and employees against any and all claims whatsoever arising from this agreement and any cost or expenses incurred by the City or vendor on account of any claim therefore. In order to accomplish the indemnification herein provided for, but without limiting vendor's liability, the vendor shall secure and maintain throughout the term of the contact the following types of insurance with at least the limits shown.

All coverage shall be primary and shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability. Original certificates, signed by a person authorized to bind coverage on its behalf, shall be furnished to the City by the successful vendor.

Certificates of insurance must be included in the proposal.

- a) Commercial General Liability: The successful vendor shall maintain insurance for protection against all claims arising from injury to person or persons not in the employ of the successful vendor and against all claims resulting from damage to any property due to any act or omission of the successful vendor, his agents, or employees in the operation of the work or the execution of this contract.

Where the work to be performed involves excavation or other underground work or construction, the property damage insurance provided shall cover all claims due to destruction of subsurface property such as wire, conduits, pipes, etc., caused by the successful vendor's operation. The minimum shall be as follows:

Bodily Injury (Injury or Accidental Death) and Property Damage..... \$1,000,000 per occurrence

- b) Fidelity – Blanket Employee Dishonesty

The successful vendor shall maintain insurance for protection against all claims for the purpose of covering the Company, its agents or employees, in an amount not less than \$100,000 per employee.

- c) Theft, Disappearance, and Destruction Coverage

The successful vendor shall maintain insurance for protection against all claims for the purpose of protecting against loss of money and securities, inside the premises and outside the premises in the care of and custody of a messenger in an amount not less than..... \$500,000 per incident

d) Comprehensive Automobile Liability: The successful vendor shall maintain Automobile Liability Insurance for protection against all claims arising from the use of vehicles, rented vehicles, or any other vehicle in the production of the work included in this contract. Such insurance shall cover the use of automobiles and trucks on and off the site of the project. The minimum amounts of Automobile Liability Insurance shall be as follows:

Bodily Injury (Injury or Accidental Death) and Property Damage..... \$1,000,000 Combined Single Limit

e) South Carolina Workers' Compensation Insurance: The successful vendor shall maintain Workers' Compensation Insurance for all of his employees who are in any way connected with the performance under this agreement. Such insurance shall comply with all applicable state laws.

South Carolina Workers' Compensation - Statutory Limits
Employers Liability Insurance - \$500,000 - Each Accident
\$500,000 - Disease Each Employee
\$500,000 - Disease Policy Limit

f) Professional Liability Insurance: If providing a professional service, the successful vendor shall maintain Professional Liability Insurance to cover errors, acts of omission by the vendor, its agents and representations in the performance of its obligations herein:\$1,000,000 per occurrence.

The successful vendor shall provide the City with a Certificate of Insurance showing proof of insurance acceptable to the City. Certificates containing wording that releases the insurance company from liability for non-notification of cancellation of the insurance policy are not acceptable.

The successful vendor and/or its insurers are responsible for payment of any liability arising out of Workers' Compensation, unemployment or employee benefits offered to its employees.

Insurance is to be placed with insurers with a current A.M. Best's rating of not less than A:VII, and licensed to operate in South Carolina by the South Carolina Department of Insurance, unless otherwise acceptable to the City.

Workers' Compensation policy is to be endorsed to include a waiver of subrogation in favor of the City, its officers, officials, employees, and agents.

The successful vendor shall maintain the Automobile Liability and General Liability insurance, naming the City, its officers, officials, employees and agents as Additional Insured as respects liability arising out of the activities performed in connection with this request for proposal. It shall be an affirmative obligation upon the successful vendor to advise the City at fax number 843-525-7013 or by e-mail within two days of the cancellation or substantive change of any insurance policy/coverage required above. Failure to do so shall be construed to be a breach of contract.

Should successful vendor cease to have insurance as required during any time, all work by the successful vendor pursuant to this agreement shall cease until insurance acceptable to the City is provided.

Deductibles, Co-Insurance Penalties, & Self-Insured Retention: The successful vendor shall agree to be fully and solely responsible for any costs or expenses as a result of a coverage deductible, co-insurance penalty, or self-insured retention; including any loss not covered because of the operation of such deductible, co-insurance penalty, or self-insured retention.

Sub-consultant's Insurance: The successful vendor shall agree to cause each sub-consultant employed by the successful vendor to purchase and maintain insurance of the type specified herein, unless the successful vendor's insurance provides coverage on behalf of the sub-consultant. When requested by the City, the successful vendor shall agree to obtain and furnish copies of certificates of insurance evidencing coverage for each sub-consultant.

CITY BUSINESS LICENSE

The successful vendor must obtain all business license(s) required by the Beaufort City Code and ordinances. A Business License is not required to submit a statement of proposals. However, any vendor that receives an award under this RFQ shall be required to obtain a City Business License before work can begin. All subcontractors that are involved in the project must obtain a City of Beaufort business license. Anyone who is not classified and paid as a W-2 employee for the successful bidder must obtain a City of Beaufort business license. For further information on the provisions of The City Business License Regulations and their applicability to this contract, contact the Beaufort City Business License Department at (843) 525-7025.

TERMINATION FOR CONVENIENCE OR FOR CAUSE

The performance of work under the contract may be terminated by the City in whole or in part whenever the City determines that termination is in the City's best interest. Any such termination shall be affected by the delivery to the successful vendor of a written notice of termination at least ninety (90) days before the date of termination, specifying the extent to which performance of the work under the contract is terminated and the date upon which such termination becomes effective.

The performance of work under the contract may be terminated by the City in whole or in part whenever the City determines, in its sole discretion that the successful vendor is not performing as set out in the contract. Any such termination shall be affected by the delivery to the successful vendor of a written notice of termination at least seven (7) days before the date of termination, specifying the extent to which performance of the work under the contract is terminated and the date upon which such termination becomes effective.

After receipt of a notice of termination, except as otherwise directed, the successful vendor shall stop work on the date of receipt of the notice of termination or other date specified in the notice; place no further order or subcontracts for materials, services, or facilities except as necessary for completion of such portion of the work not terminated; terminate all vendors and subcontracts; and settle all outstanding liabilities and claims.

COMPLIANCE WITH LAWS

The successful vendor shall, in the performance of work under this contract, fully comply with all applicable Federal, State, County, or City Laws, Rules, Regulations, or Ordinances and shall hold the City harmless from any liability resulting from failure of such compliance.

RIGHTS RESERVED BY CITY

This RFQ is not a tender and does not commit the City in any way to select a Proposer, or to proceed to negotiations for a Contract, or to award any Contract. The right is reserved by the City to reject any or all proposals; to waive any informality or irregularity not affected by law; to evaluate, in its absolute discretion, the proposals submitted; and to award the contract based on the established criteria and according to the proposal which best serves the interest of the City.

NON-COLLUSION AFFIDAVIT

As part of the Respondent's proposal, the proposer shall include the attached Non-Collusion Affidavit duly signed by a principal of the vendor certifying that it is not a party to any collusive action or any action that may be in violation of the Sherman Antitrust Act. Any or all proposals shall be rejected if there is any reason for believing that collusion exists among the Proposers. The City may or may not, at its discretion, accept future proposals for the same work from participants in such collusion.

ETHICS IN PUBLIC CONTRACTING

To comply with the provision of Section 8-13-100 et seq., Code of Laws of South Carolina, the proposer shall certify in writing and include with its proposal that its offer was made without fraud; that it has not offered or received any kickbacks or inducements from any other proposer, supplier, manufacturer, or sub-consultant in connection with the offer; and that it has not conferred on any public employee, public member, or public official having official responsibility for this procurement transaction any payment, loan, subscription, advance, deposit of money services, or anything of more than nominal value.

The proposer shall certify further that no relationship exists between itself and the City, another person, or organization that interferes with fair competition or constitutes a conflict of interest with respect to a contract with the City.

MINORITY/DISADVANTAGED SMALL BUSINESS PARTICIPATION

It is the policy of the City of Beaufort to undertake every effort to increase opportunity for utilization of small, disadvantaged, and minority businesses in all aspects of procurement to the maximum extent feasible. In connection with the performance of this contract, the successful vendor agrees to use their best effort to carry out this policy and insure that small, disadvantaged, and minority businesses shall have the maximum practicable opportunity to compete for subcontract work under this contract consistent with efficient performance of this contract. To this end, every proposer with the City is required to complete the S/WO/M BUSINESS ENTERPRISE FORM.

NON-RESIDENT TAXPAYER REGISTRATION AFFIDAVIT

Nonresident Proposers receiving income from business conducted in South Carolina are required to pay taxes to the state on that income. To facilitate this requirement, a nonresident proposer must register with the South Carolina Secretary of State or the South Carolina Department of Revenue. In compliance with South Carolina Code Section 12-8-540 and 12-8-550, a proposer located outside of South Carolina that receives a contract from the City, must furnish to the City Form 1-312 (Rev.5/8/15), Nonresident Taxpayer Registration Affidavit Income Tax Withholding, properly executed and signed. The form can be found online at:

<http://www.sctax.org/forms/withholding/i-312-form>

If your company is not presently registered with the appropriate state office, you may indicate the intent to do so should your company be awarded a contract. Questions concerning this form may be directed to the South Carolina Department of Revenue.

NON-APPROPRIATION

Any contract entered into by the City resulting from this RFQ shall be subject to cancellation without damages or further obligation when funds are not appropriate or otherwise made available to support continuation of performance in a subsequent fiscal period or appropriated year.

ETHICS IN PUBLIC CONTRACTING AFFIDAVIT

STATE OF _____)

COUNTY OF _____)

_____, being first duly sworn, deposes and says that:

1. He/She is _____(title) for/of _____ (company/business), the Proposer that has submitted the attached Statement of Proposals;
2. He/She is legally qualified and capable of signing this affidavit and is authorized to do so by Proposer;
3. He/She is fully informed regarding the preparation and contents of the attached Statement of Proposal and of all pertinent circumstances respecting such Proposal;
4. Such Proposal is genuine and is made without fraud;
5. Neither the said Proposer, nor any of its officers, partners, owners, agents, representatives, employees, or parties in interest has offered or received any kickbacks or inducements from any offeror, suppliers, manufacturer, or subCompany in connection with the offer, and they have not conferred on any public employee, public member, or public official having official responsibility for this procurement or transaction, any payment, loan, subscription, advance, deposit of money, services, or anything of value as defined in Section 8-13-100 of the South Carolina Code of Laws; and
6. Furthermore, neither the Proposer, nor any of its officers, partners, owners, agents, representatives, employees or parties in interest has any relationship with the City, another person, or organization that interferes with fair competition or that constitutes a conflict of interest with respect to a contract with the City.

DATE

COMPANY/BUSINESS

BY: _____
SIGNATURE

PRINTED NAME

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

ITS: _____
TITLE

Notary Public for _____(state)
My commission expires: _____
By: _____
(signature)

NONCOLLUSION AFFIDAVIT OF PRIME PROPOSER

STATE OF _____)

COUNTY OF _____)

_____, being first duly sworn, deposes and says that:

1. He/She is _____ of _____, the Proposer that has submitted the attached proposal;
2. He/She is fully informed respecting the preparation and contents of the attached proposal and of all pertinent circumstances respecting such proposal;
3. Such Proposal is genuine and is not a collusive or sham proposal;
4. Neither the said Proposer nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived, or agreed, directly or indirectly with any other Proposer, company or person to submit a collusive or sham Proposal in connection with the Contract for which the attached Proposal has been submitted or to refrain from proposing in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other proposer, company or person to fix the price or prices in the attached Proposal or of any other proposer, or to secure through any other proposal, or to fix any overhead, profit or cost element of the bid price or the bid price of any other proposer, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the City of Beaufort, SC or any person interested in the proposed contract.

(signed)

(title)

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

Notary Public for _____(state)

My commission expires: _____

By: _____
(signature)

SMALL/WOMAN-OWNED/MINORITY BUSINESS ENTERPRISE FORM

YOUR COMPANY'S CURRENT STATUS	SUPPLIER BUSINESS CLASSIFICATIONS
<p>Is this a small business?</p> <p>Yes No</p>	<p>A small business is a business which is independently owned and operated, not dominant in its field of operation, and can qualify under criteria concerning number of employees, average annual receipts, or other criteria as outlined by the Small Business Administration. (See CFR Title 13, Part 121, as amended)</p>
<p>Is this a woman-owned business?</p> <p>Yes No</p>	<p>A woman-owned business is a business which is at least 51% owned by a woman or women who also control and operate the business.</p>
<p>Is this a minority-owned business?</p> <p>Yes No</p> <p>If Yes, please indicate minority group: <input type="checkbox"/> Asian American <input type="checkbox"/> Black American <input type="checkbox"/> Hispanic American <input type="checkbox"/> Native American</p>	<p>A minority-owned business is a business which is at least 51% owned, controlled and operated by socially and economically disadvantaged individuals. The following groups are among those presumed to be socially and economically disadvantaged: Asian Americans, Black Americans, Hispanic Americans, and Native Americans.</p>
<p>Is this a disabled-owned business?</p> <p>Yes No</p>	<p>A disabled-owned business is a business which is at least 51% owned, controlled and operated by an individual or individuals who are disabled.</p>
<p>Is this a veteran-owned business?</p> <p>Yes No</p>	<p>A veteran-owned business a business which is at least 51% owned, controlled and operated by an individual or individuals who are U.S. veterans.</p>
<p>Is this a disabled veteran-owned business?</p> <p>Yes No</p>	<p>A disabled veteran-owned business is a business which is at least 51% owned, controlled and operated by an individual or individuals who are U.S. veterans and disabled.</p>
<p>Are the individuals who own, control and operate this business U.S. citizens?</p>	<p>Yes No</p>
<p>Is this business a non-profit organization?</p>	<p>Yes No</p>
<p>Is this business incorporated?</p>	<p>Yes No</p>

SPECIAL PROVISIONS

1) Ownership

- a) The City of Beaufort is the project owner. In the Specifications where the term “South Carolina Department of transportation” or the “Department” or other like terms that are used to describe the facility ownership, it shall be interpreted as meaning The City of Beaufort, as appropriate.

2) City’s Representative

- a) The South Carolina Department of Transportation is the City’s Representative for this project.

3) City’s Designee

- a) The term “City’s Designee” means the person or firm identified as such in the agreement, including the **ENGINEER** or **INSPECTOR** acting on the City’s behalf.

4) Progress and Job Site Meetings

- a) A **mandatory** Construction Progress Meeting attended by the **CONTRACTOR** will be conducted two weeks after the Notice To Proceed has been issued to the **CONTRACTOR**, followed by **weekly** progress meetings. The meeting time and place will be determined at the Preconstruction meeting prior to the start of construction.

5) Supervision and Superintendence

The work and the work site shall be under the direct charge and direction of the **CONTRACTOR**. The **CONTRACTOR** shall give sufficient superintendence to the Work, using the best skill and attention. The **CONTRACTOR** shall at all-time keep on the site, during its progress, a necessary Forepersons and Assistants, all satisfactory to the **CITY**. The Superintendent shall represent and have full authority to act for the **CONTRACTOR** in the latter’s absence, and the directions given to the Superintendent shall be as binding as though given to the **CONTRACTOR**. The same shall apply to the Forepersons during the absence of both the **CONTRACTOR** and the Superintendent. The Superintendent shall not be changed during the performance of the Work covered by the Contract Documents except with written consent of the **CITY**, unless the Superintendent proves to be unsatisfactory to the **CONTRACTOR** and ceases to be in its employ.

- a) Should the **CITY**, at any time, give notice in writing to the **CONTRACTOR** or its representative on the Work that any employee is insolent, disorderly, careless, unobservant of the instructions, dishonest, or in any way a detriment to the satisfactory progress of the Work, such employee shall at once be removed from the Project and not again be allowed to engage in any part of the Work.
- b) **The NPDES Stormwater Construction Compliance Inspection.** The **Contractor** is required to become a co-permittee under the NPDES permit, and is responsible to provide a certified SCDHEC inspector to perform and document the weekly NPDES Stormwater Construction Compliance Inspection.
- c) The **CONTRACTOR** shall be required to organize, manage, and supervise its own work and to coordinate the work of its subcontractors. On all multi-contract projects, all prime contractors shall be required to organize, manage, and supervise their own work. On all multi-contract

projects, all prime contractors shall cooperate with the City and other prime contractors in the overall coordination and supervision of the project.

6) Construction Notes All Referenced Roads

- a) **Material** – Contractor shall coordinate with Public Works to receive excess fill material or provide fill material if none are available at Public Works.
- b) **CONTRACTOR** to contract all utility companies before any work commences. Verify utilities within project area.
- c) All work shall conform to the applicable Federal, State, and Local requirements and codes.
- d) Temporary control of storm water drainage shall be the responsibility of the general contractor, and shall be maintained throughout the period of the construction.
- e) Where existing pavement is shown to be matched, edge or contract face with existing pavement shall be saw cut to a real vertical line.
- f) Adjustment, relocation, or replacement of existing telephone, electric, cable television, and other private utilities shall be done in conjunction with the time frame of the contract schedule; this work shall be coordinated by the **CONTRACTOR**.
- g) The **CONTRACTOR** shall be responsible for coordinating with the owners and occupants the closure of driveways to residences and businesses. The **CONTRACTOR** is to maintain access to driveways at all times. The **CONTRACTOR** shall provide adequate notice to the owners of his schedule for driveway improvements and allow for access to the driveway for the property owner as needed at any time.
- h) All traffic control devices shall be in accordance with: *FHWA Manual on Uniform Traffic Control Devices for Streets and Highways*, current Edition.
- i) In the event of a conflict with a sewer, water, drainage, or other utility lines or services, the **CONTRACTOR** shall coordinate with the affected utility and the **CITY** and shall field adjust as directed.
- j) Any utilities that are damaged and are not to be removed shall be paid for or replaced at the **CONTRACTOR'S** expense.
- k) Location, existence, or nonexistence of any utility does not constitute responsibility of the **CITY**.
- l) The location of any shown utilities is approximate.
- m) Should the **CONTRACTOR** find any discrepancies in the drawings or in the field prior to beginning work or during construction, the **CONTRACTOR** shall immediately notify the **CITY**.
- n) The **CONTRACTOR** is responsible to replace/reset any property corner by a registered land surveyor that is lost or disturbed.
- o) All watercourse ditch excavation quantities will be monitored by the **CITY**.

7) Existing Water, Sewer & Gas Location

CONTRACTOR to coordinate existing water, sewer, and gas location with the following agencies:

Beaufort Jasper Water & Sewer Authority – (843) 9879220

South Carolina Electric and Gas – (843) 2177620

8) Other Pertinent Utility Agencies For This Contract

a) SCE&G (electric) – (843) 525–7742

b) Century Link (Telephone) – (912) 408–2117

c) Hargray (telephone and Cable) – (843)815–1698

9) Maintenance and Maintaining Traffic

a) Unless otherwise provided, an existing road while undergoing improvement shall be kept open to all traffic by the **CONTRACTOR**. The **CONTRACTOR** will be required, without direct compensation, to maintain in good condition and satisfactory to the **CITY**, the entire section or sections of ROAD, within the limits of the contract from the time he first begins work until all work has been completed and accepted. **All work requiring lane closures will be coordinated with the CITY and SCDOT and performed at night or possibly on weekends. Specific work hours will be determined on a case by case basis.**

b) Lane Closure

The City reserves the right to suspend a lane closure if any resulting traffic backups are deemed excessive by the City. Maintain all lane closure restrictions as directed by the plans, these special provisions, and the Engineer.

c) Work Zone Traffic Control (Special Events)

The City reserves the right to restrict the installation of lane closures on high volume primary routes when the presence of a lane closure will seriously hinder normal traffic flow during special event periods. An extended special event period is hereby defined as those days preceding and following the special event that experience significant increases in the volume of traffic due to the special event as determined by the City. Also, the City reserves the right to increase an extended special event period if excessive traffic disruptions occur during those days prior to and after the established extended special event period. Extended special event periods include but are not limited to the week of the Beaufort Water Festival (late July). The City recommends the Contractor submit inquiries to the Engineer regarding specific days of a special event period 90 days prior to the holiday. The Contractor should make these inquiries annually due to the progressive nature of the calendar.

10) RIGHT OF WAY AVAILABILITY AND STAGING REQUIREMENTS.

The Contractor is to make themselves aware of the temporary slope permissions and work within the acquire permission areas. Staging areas are to be determined by the Contractor and coordinated with the City.

11) Work by Others.

Utilities such as electrical power, natural gas, telephone, cable, water and sewer are to be relocated as indicated in the Construction Plans and in keeping with the policies and procedures of the companies owning the respective utilities. The Contractor is to coordinate all require utility relocations with the utility companies. All relocations are to be completed in conjunction and within the contract schedule.

12) Hourly Restrictions for Lane Closure on Multilane Primary and Secondary Routes.

The Department prohibits the installation of lane closures, flagging operations, road closures, shoulder closures, pacing operations or any operations that will impact the efficient flow of traffic or hinder normal traffic operations on the roads of the South Carolina state highway system during those times listed below, peak travel hours, holidays, holiday weekends, extended holiday periods, weekends, special events or any time traffic volumes are high.

Do not close travel lanes on high volume highways during peak traffic periods or any time traffic volumes exceed the numerical values determined to be acceptable by the Department. Do not close travel lanes or roads with high volume commuter traffic during peak traffic periods. The Department reserves the right to modify these restrictions as listed as conditions warrant and as directed by the Engineer.

In accordance with **Engineering Directive Number 32, Hourly Restrictions for Lane Closures on Interstate and Primary Routes**, all Department forces and all entities contracted by the Department will not install lane closures or interfere with or impact normal traffic operations on primary and secondary routes during those times of the day when traffic volumes in the travel lanes remaining open to traffic exceed 800 vehicles per hour per lane per direction.

In addition to the multilane primary and secondary routes included in this list, ALL multilane primary and secondary routes with traffic volumes that exceed 800 vehicles per hour per lane per direction are subject to hourly lane closure restrictions.

For questions regarding these restrictions, contact the District Traffic Engineer in that engineering district unless otherwise directed.

BEAUFORT COUNTY

ROAD NUMBER	TERMINI FROM	TERMINI TO	HOURLY LANE CLOSURE PROHIBITIONS
US 21	SC 281 (Ribaut Road)	Road S-23 (Grober Hill Road)	MON-FRI: 6AM - 7PM SAT: 6AM - 7PM SUN: 6AM - 7PM
US 21	US 21 Business	Road S-71 (Clarendon Road)	MON-FRI: 6AM - 7PM SAT: 6AM - 7PM SUN: 6AM - 7PM
US 21 Business	US 21 (Parris Island Gateway)	US 21 (Lady's Island Drive)	MON-FRI: 6AM - 7PM SAT: 6AM - 7PM SUN: 6AM - 7PM
US 278	Jasper County Line	US 278 Business	MON-FRI: 6AM - 10PM SAT: 6AM - 10PM SUN: 6AM - 10PM
US 278	US 278 Business	End of US 278 (Hilton Head Island)	MON-FRI: 6AM - 9AM 3PM - 7PM SAT: 6AM - 9AM 3PM - 7PM SUN: 6AM - 9AM 3PM - 7PM
US 278 Business	US 278	End of US 278 Business (Road S-80)	MON-FRI: 6AM - 9PM SAT: 6AM - 9PM SUN: 6AM - 9PM
SC 46	Jasper County Line	US 278	MON-FRI: 6AM - 7PM SAT: 6AM - 7PM SUN: 6AM - 7PM
SC 128	SC 170	US 21	MON-FRI: 6AM - 7PM SAT: 6AM - 7PM SUN: 6AM - 7PM
SC 170	US 278	SC 462	MON-FRI: 6AM - 7PM SAT: 6AM - 7PM SUN: 6AM - 7PM
SC 170	SC 462	US 21 Business	MON-FRI: 12PM (Noon) - 7PM SAT: 12PM (Noon) - 7PM SUN: 12PM (Noon) - 7PM
SC 281	US 21 Business	US 21	MON-FRI: 6AM - 7PM SAT: 6AM - 7PM SUN: 6AM - 7PM

SC 802	US 21	End of SC 802 (Road S-673)	MON-FRI: 6AM - 7PM SAT: 6AM - 7PM SUN: 6AM - 7PM
Road S-6 (Bay Street)	SC 281 (Ribaut Road)	US 21 Business (Carteret Street)	MON-FRI: 6AM - 9AM 3PM - 7PM SAT: 6AM - 9AM 3PM - 7PM SUN: 6AM - 9AM 3PM - 7PM
Road S-29 (Buck Island Road)	SC 46	US 278	MON-FRI: 6AM - 9AM 3PM - 7PM SAT: 6AM - 9AM 3PM - 7PM SUN: 6AM - 9AM 3PM - 7PM
Road S-80 (Palmetto Bay Road)	US 278	End of Road S-80	MON-FRI: 6AM - 7PM SAT: 6AM - 7PM SUN: 6AM - 7PM
Road S-163 (Burnt Church Road)	Road S-13 (Bridge / Alljoy)	US 278	MON-FRI: 6AM - 9AM 3PM - 7PM SAT: 6AM - 9AM 3PM - 7PM SUN: 6AM - 9AM 3PM - 7PM
Road S-474 (Simmons ville Road)	US 278	Road S-29 (Buck Island Road)	MON-FRI: 6AM - 9AM 3PM - 7PM SAT: 6AM - 9AM 3PM - 7PM SUN: 6AM - 9AM 3PM - 7PM

SUPPLEMENTAL CONDITIONS AND SPECIFICATIONS

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(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 **18**.

(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.

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:
 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.

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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 **22**.

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

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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 **22**.

(11) SECTION 107: CRANE SAFETY:

See attached Supplemental Specification dated August 1, 2013 on page **24**.

(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 **25**.

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

The DBE goal for the project is as follows:

DISADVANTAGE BUSINESS ENTERPRISES CONTRACT GOAL 13 %

See attached Supplemental Specification entitled special provision "Disadvantaged Business Enterprises (DBE)" dated **July 26, 2016** on page **26** 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 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 **38**.

(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:

"(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) SECTION 203: BORROW EXCAVATION:

Section 203.2.1.8 of the Standard Specifications is amended as follows:

Ensure that all borrow material placed on embankments meet the following minimum requirements:

- Effective internal friction angle of xx degrees or greater as determined from either direct shear (AASHTO T236) or triaxial (AASHTO T297) testing on remolded specimens performed by the Contractor.
- Effective cohesion of xx psf or greater as determined by triaxial (AASHTO T297) testing on remolded specimens performed by the Contractor.

Remold all samples to 95 percent of the maximum dry density as determined by the Standard Proctor test (AASHTO T99) and test at normal/consolidation stresses of 2, 5, and 8 ksf. Conduct shear strength and soil classification testing (AASHTO M145) at the initial selection of the borrow pit, any subsequent changes in borrow pits, and for every 50,000 cy of materials placed. This testing is in addition to the normal embankment and borrow sampling and testing requirements for classification and compaction in accordance with Section 205 of the SCDOT Construction Manual that are used for daily acceptance.

Perform additional shear strength testing at no additional cost to the Department when the Department deems that the materials being placed appear to be different from those originally tested. Submit all test results to the RCE for approval prior to use in embankment construction. The RCE will also submit copies of the test reports to the Quality Assurance Engineer at the Office of Materials and Research. Use only qualified laboratories that are appropriately accredited by AASHTO to perform the test procedures required by this specification.

Do not use material derived from Unclassified Excavation to construct embankments unless that material meets the requirements for Borrow Material as stated above.

(20) SECTION 208.4.3: 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

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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.

(21) SECTION 305: GRADED AGGREGATE BASE

Amend Section 305 GRADED AGGREGATE BASE to include the following:

Sampling of Graded Aggregate Base Material: This specification establishes procedures for sampling of graded aggregate base materials as defined in Section 305 of the Standard Specifications and other supplemental specifications and special provisions as applicable. The procedures contained herein apply when the base material will be paid for a square yard basis and supersedes references to sampling, measurement and payment in previous versions of this specification that conflict with this document.

Each 24'x1000' (or equivalent area if width varies from 24') section of base or fraction thereof will be considered a lot for acceptance and payment purposes. When the base is ready for sampling (after mixing, shaping and correction of any visibly segregated areas, but prior to initial compaction), notify the South Carolina Department of Transportation (SCDOT) certified earthwork and base inspector. The SCDOT inspector will use SC-T-100 to determine 3 random sampling locations along the length of that lot. Only the longitudinal coordinate of the sample will be determined by SCT- 100 since the sample will be taken from three places across the roadway as described below. The first sampling location determined will be considered the acceptance sample for that lot. The remaining 2 samples will be the check samples for that lot.

Provide an SCDOT-certified earthwork and base technician to obtain samples according to SC-T-1 at the locations determined by the SCDOT inspector. The SCDOT inspector will observe the technician obtaining all samples. Obtain the samples by taking 3 portions for the full depth of the layer, one from near the centerline and one approximately 2 feet from either edge and mixing together to comprise one sample. Take care to avoid sampling from edges or joints where segregation can occur. The SCDOT inspector will take possession of all samples immediately upon completion of sampling. Only samples taken under the direct observation of the SCDOT inspector are acceptable.

Do not initiate compaction of the graded aggregate base material in a particular lot until all required sampling for that lot is completed. Samples obtained after compaction has been initiated will be considered invalid for acceptance or check sample purposes. Once the material has been initially sampled, no changes to the composition of the material will be considered in determining specification compliance of the gradation of the material and compaction of that lot may proceed at the risk of the gradation testing resulting in a removal and replacement outcome.

Within 3 business days of the date of sampling, the SCDOT inspector will submit the acceptance samples to the Office of Materials and Research (OMR) for testing. The check samples will be stored by the Resident Construction Engineer (RCE) until the acceptance sample testing has been completed. If the acceptance sample does not comply with applicable specifications, the check samples for that lot will be submitted to the OMR for testing. If the acceptance sample does comply with applicable specifications, the check samples for that lot may be discarded.

If the acceptance sample complies with the specifications, payment for that lot of graded aggregate base material based on gradation will be 100% of the contract unit price per square yard. If the acceptance sample does not comply with the specifications, the check samples will be tested. If both check samples for that lot comply with the specifications, payment for that lot based on gradation will be 100% of the contract unit price per square yard. If one or both check samples do not comply with the specifications, then the total absolute deviation from the specifications for all sieve sizes of the acceptance and the check samples will be determined.

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A price reduction for the contract unit price per square yard will be applied to the unit price for that lot based on the total absolute deviation from the specifications according to the following chart:

Price Reduction for Total Absolute Deviation from Specifications	
Combined Range from Specifications	Reduction in Unit Price per Square Yard
2-9	5%
10-21	10%
22-36	25%
37-51	50%
52+	Remove and Replace

Example:

Sieve	Acceptance Sample	Check Sample 1	Check Sample 2
2 inch	100	100	100
1 ½ inch	99	98	98
1 inch	95	91	94
½ inch	74	72	72
No. 4	57	56	55
No. 30	35 (X+5)	35 (X+5)	32 (X+2)
NO. 200	8	8	8

The total deviation from specifications for this set of samples is 12 (5+5+2). This example would result in a 10% price reduction for the square yards in that particular lot.

(22) 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"."

(23) DIVISION 600: TRAFFIC CONTROL:

See attached Supplemental Specification dated **September 1, 2015** on page **39**.

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

See attached Supplemental Specification dated **September 1, 2008** on page **41**.

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)

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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.

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

(AFAD):

See attached Supplemental Specification dated **September 1, 2012** on page **45**.

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

See attached Supplemental Specification dated **September 1, 2013** on page **50**.

(27) 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.

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

See attached Supplemental Specification dated **April 1, 2013** on page **53**.

(29) SECTION 714: SMOOTH WALL PIPE:

REFERENCE:

SCDOT Supplemental Technical Specification SC-M-714

DESCRIPTION:

When bid items for smooth wall pipe are listed in the EBS file and/or proposal, the SCDOT will allow the use of reinforced concrete pipe, spiral ribbed aluminum pipe or high density polyethylene pipe in accordance with the specifications found in SC-M-714 (latest edition), the Standard Drawings, and this Special Provision. The plans may indicate reinforced concrete pipe only and are hereby superseded by this Special Provision.

MATERIALS:

Smooth wall pipe is either Reinforced Concrete Pipe (RCP: 714-205-XX), Spiral Ribbed Aluminum Pipe (SRAP: 714-605-XX), or High Density Polyethylene pipe (HDPE: 714-705-XX) as described in SCDOT Supplemental Technical Specification SC-M-714 and in the SCDOT Standard Drawings. Use smooth wall pipe culvert from manufacturers listed on Qualified Product Lists 30, 68, or 69. No value engineering application is required in order to use alternate pipe. For the following counties: Berkeley, Beaufort, Charleston, Colleton, Dorchester, Georgetown, Horry, and Jasper, provide pipe joints meeting AASHTO M 315 for RCP or passing the 13 psi pressure test as indicated on the QPL for SRAP or HDPE. Take care to properly lubricate and equalize pipe gaskets as indicated in the **SCDOT Standard Drawings** and **SC-M-714** to prevent gaskets from "rolling" during installation. For all other counties, provide pipe joints meeting AASHTO M 198, M 315, or passing the minimum 10 psi pressure test unless specific pipe joints are indicated in the plans or special provisions.

No other pipe type will be accepted as an alternate.

CONSTRUCTION REQUIREMENTS:

Use only pipe that conforms to the minimum and maximum fill height limitations indicated on the appropriate standard drawing. Unless indicated otherwise in the plans, determine pipe fill height based on the following formula:

Fill Height = Elevation (top of curb or max grade above pipe) – Elevation (pipe crown)

For all locations where new pipe is being attached to an existing system, use one of the following options:

1. Any existing pipe may be extended using any acceptable alternate pipe type by using a drainage structure at the interface between the different pipe types. The drainage structure* may consist of standard junction boxes, manholes, catch basins, drop inlets, or circular drainage structures detailed on **SCDOT Standard Drawings**. For larger diameter pipe, custom drainage structures may be required. Field cut existing pipe to remove damaged joint (if applicable) and install new drainage structure at the field cut interface. Always fully clean existing pipe and pipe joints before installing joint sealant or gaskets and attaching new pipe.
2. For locations where existing pipe properties cannot be directly matched, use a custom designed interface* (concrete collar, proprietary mastic wrap, custom coupling band, etc.) appropriate to interface the existing pipe to the new pipe of the same type. Submit interface drawings and design for review by the Engineer of Record and the Design Standards Engineer. Always fully clean existing pipe and pipe joints before installing joint sealant or gaskets and attaching new pipe. Replace existing pipe that has joint damage before connecting new pipe to the system.
3. Any existing pipe may be extended using new pipe with the same joint profile and wall properties of the existing pipe. Always fully clean existing pipe and pipe joints before installing joint sealant or gaskets and attaching new pipe. Verify* the following parameters before ordering new pipe:
 - a. For RCP to RCP, confirm wall thickness, joint profile shape, and compatibility with existing manufacturer's pipe. Replace existing pipe that has joint damage before connecting new pipe to the system.
 - b. For SRAP to SRAP, replace existing pipe that has joint damage before connecting new pipe to the system.
 - c. For HDPE to HDPE, confirm the manufacturer of the existing pipe and the joint compatibility with the new pipe. Provide a new gasket when connecting to existing spigot end of HDPE pipe. Replace existing pipe that has joint damage before connecting new pipe to the system.
 - d. For CAAP to CAAP, confirm the type and size of end corrugations of the pipe. When existing pipe has full helical corrugations, provide new connecting pipe with one end fully helical and fully helical coupling band. When end corrugation size does not match the corrugation size shown on SCDOT Standard Drawings, provide a drainage structure (described above) at the interface. Replace existing pipe that has joint damage before connecting new pipe to the system. Do not install CAAP as smooth wall pipe; however, use these requirements when plans specify installing new CAAP.

The **RCE** will verify that connections between existing pipe and new installed pipe have been handled with one of the options listed above. Repair or replace all existing to new joint interfaces that do not meet the requirements above at no additional cost to **SCDOT**.

In all installations, provide the RCE with a complete pipe table indicating the following: Plan Pay Item, Plan Pipe Description, Plan Quantity, Installed Pipe (diameter, type, class/gage), Installed Quantity, and description of interface used to join new pipe to existing pipe for each occurrence.

SPECIAL PROVISIONS

In cases where 2 or more different pipe types are installed, provide a copy of the proposed installation layout on the drainage/plan sheets to the RCE indicating which pipe is installed at each location.

MEASUREMENT:

Measure smooth wall pipe in accordance with methods specified in SC-M-714 for the pipe material installed.

*No measurement will be made for drainage structure, designed interface, or field verification performed at each interface between existing pipe and new pipe unless drainage structure/interface is specified in the plans.

PAYMENT:

Payment will be made for smooth wall pipe regardless of the type of material installed. Payment for smooth wall pipe is as specified in SC-M-714 for the pipe material installed.

*Include all costs for work related to connecting new pipe to existing pipe in the unit bid price of the new pipe. This connection work includes: drainage structure at the interface, custom designed interface, field verification of existing pipe and compatibility with new pipe, new gaskets, new joint sealant, new coupling bands, removal, and disposal of damaged sections of existing pipe.

ITEM NO.	DESCRIPTION	UNIT
7143XXX	X" SMOOTH WALL PIPE	LF
7143XXX	X"x X" SMOOTH WALL PIPE CUL.TEE	EA
714XXX	X" x X" SMOOTH WALL PIPE CUL.WYE	EA
7144XXX	X" SMOOTH WALL PIPE X DEG BEND	EA
7144XXX	SMOOTH WALL PIPE INCR.- X" TO X"	EA

(30) SECTION 714: PIPE END TREATMENTS (2/5/2010)
REFERENCE: SCDOT Supplemental Technical Specification SC-M-714

DESCRIPTION:

For exposed pipe culvert ends, provide an end treatment in accordance with this special provision.

MATERIALS:

Rigid pipe culvert is Reinforced Concrete Pipe (RCP: 714-205-00). Flexible pipe culvert is either Spiral Ribbed Aluminum Pipe (SRAP: 714-610-00), High Density Polyethylene pipe (HDPE: 714-705-00), or Corrugated Aluminum Alloy Pipe (CAAP: 714-605-00).

Use minimum Class B riprap for pipe up to 84" diameter. Use minimum Class C riprap for pipe 84" diameter or larger.

Use minimum Class 4000 concrete (4000P for precast).

Use ASTM A-706 grade 60, low-alloy steel deformed rebar.

Use minimum AASHTO M-196 Alclad 3004-H32 alloy aluminum.

Use Type M Mortar Grout unless specified otherwise.

CONSTRUCTION REQUIREMENTS:

Use one of the following end treatments as specified in the plans or special provisions:



For all exposed crossline pipe ends, when an end treatment is not specified in the plans, use **Pipe Riprap Protection** (804-3xx-xx). For flexible pipe larger than 24" diameter, install pipe straight headwall, pipe end structure, flared end section, or wingwall section in addition to riprap. For all exposed driveway pipe ends where no end treatment is specified in the plans, use **Pipe Riprap Protection** (804- 3xx-xx) unless directed otherwise by the engineer.



Use **Beveling of Pipe End** (719-610-00) when specified in the plans or special provisions. Beveled ends may only be used on flexible pipe up to 24" diameter and on rigid pipe up to 60" diameter. When beveling of pipe ends is specified on flexible pipe larger than 24" diameter, install pipe straight headwall, pipe end structure, flared end section, or wingwall section. Use factory fabricated beveled ends for all pipe types unless approved by the Engineer.



Use **Pipe Straight Headwall** (719-605-00) when specified in the plans or special provisions. Use straight headwall only in locations where pipe exposed end does not face the direction of traffic.

SPECIAL PROVISIONS



Use **Pipe End Structure** (719-615-00) when specified in the plans or special provisions. Use pipe end structure in locations where pipe exposed end faces the direction of traffic. Pipe end structures may be used in other locations if approved by the RCE.



Use **Pipe Flared End Section** when specified in the plans or special provisions.





Use **Pipe Wingwall Section** when specified in the plans or special provisions.

Completely seal interface between pipe and end treatment with grout. If bricks or shims are used to place pipe, take care to remove all air pockets and voids when grouting.

For systems not designed in the SCDOT Standard Drawings, provide shop drawings, installation procedure and design calculations for review by RCE. Design must include provision to control erosion around the structure and prevent the separation of the end treatment from the pipe system. Design must provide for a proper seal at all construction joints including the interface between the pipe and the structure. Design must be self-supporting and not induce any additional loads on the pipe. Submit designs for consideration as new standard drawings to the Design Standards Engineer at the address listed in the SCDOT Standard Drawings book.

MEASUREMENT:

Measure pipe in accordance with SC-M-714

Measure end treatments in accordance with Standard Specifications, Standard Drawings, or Special Provisions.

PAYMENT:

Beveling of pipe ends will be in addition to the standard pipe pay item. Payment for the item Beveling of Pipe Ends includes all labor required to factory (or field, if approved) fabricate a bevel on one end of pipe.

Pipe culvert and end treatments, measured as provided in **SC-M-714 Subsection x.4**, are paid for at the contract unit price for the respective items, which price and payment is compensation for furnishing all material, labor, equipment, tools including hauling and placing all pipe sections and materials, excavation of the entire standard trench, bedding, and pipe backfill as described in the measurement section (both structural and embankment backfill in this region), removal of existing pipe to be replaced, constructing pipe joints, removal of old end treatments, cleaning out pipe, disposal of surplus materials, all visual inspection, and all incidentals necessary to complete the work.

Add the following paragraph to SC-M-714 subsections x.5:

Payment for riprap and geotextile for erosion control under riprap as measured in subsection x.4 includes all direct and indirect costs and expenses necessary to complete the work.

SPECIAL PROVISIONS

- (31) **SECTION 815: EROSION CONTROL MEASURES:**
See attached Supplemental Specification dated **January 1, 2009**, on page **54**.

- (32) **SECTION 815: EROSION CONTROL:**
See attached Supplemental Specification Dated **July 1, 2011**, on page **56**.

- (33) **SECTION 714: SMOOTH WALL PIPE:**
See attached Supplemental Specification on page **50**.

- (34) **SECTION 714: PIPE END TREATMENTS:**
See attached Supplemental Specification Dated February 5, 2010 on page **53**.

- (35) **SECTION 810: CO-PERMITTEE AGREEMENT & CONTRACTOR CERTIFICATION:**
See attached Supplemental Specification on page **56**.

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:

"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 allowed that are, or are likely to become noxious, odious, or foul to collect or remain on the borrow pit. Suitable drainage ditches, conduits, or surface gradient shall be constructed to avoid collection of noxious, odious, or foul pools of water unless the borrow pit is to be reclaimed into a lake or pond.

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

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

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

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

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

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

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

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

The 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.

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 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

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.

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.

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.

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.

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.

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.

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.

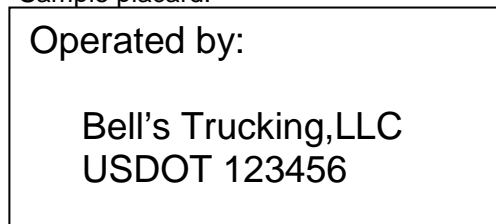
D. Special Rules for Trucking Companies. SCDOT will use the following rules to determine whether a DBE trucking company is performing a commercially useful function and what portion of the DBE work can be counted toward DBE goals:

- (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.

- (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.

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.

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.

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

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.

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.

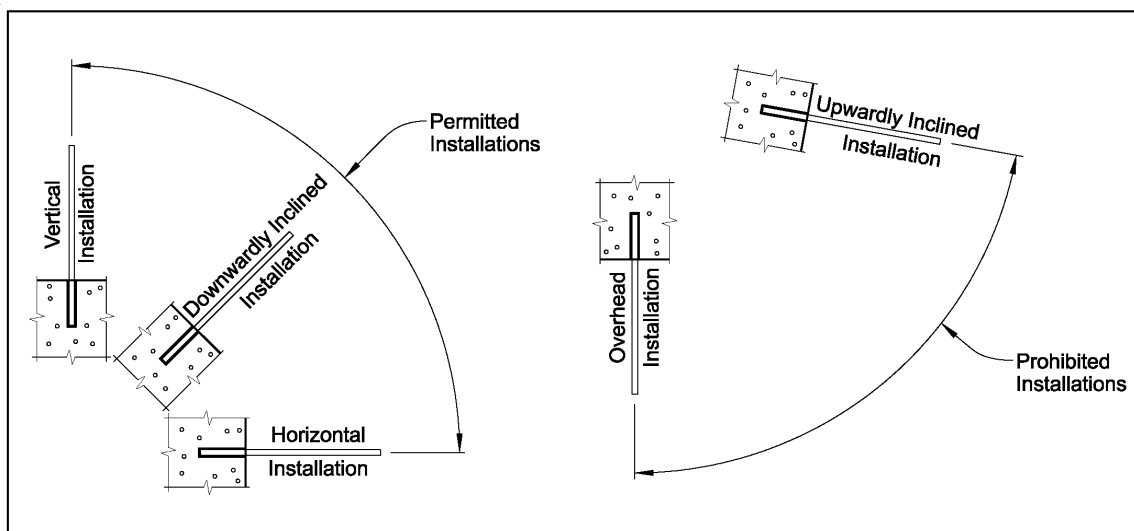


Figure 1.1

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.

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.

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.

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 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.

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.

**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.

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 contractors 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.

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.

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.

SECTION 714: SMOOTH WALL PIPE:

REFERENCE:

SCDOT Supplemental Technical Specification SC-M-714

DESCRIPTION:

When bid items for smooth wall pipe are listed in the EBS file and/or proposal, the SCDOT will allow the use of reinforced concrete pipe, spiral ribbed aluminum pipe or high density polyethylene pipe in accordance with the specifications found in SC-M-714 (latest edition), the Standard Drawings, and this Special Provision. The plans may indicate reinforced concrete pipe only and are hereby superseded by this Special Provision.

MATERIALS:

Smooth wall pipe is either Reinforced Concrete Pipe (RCP: 714-205-XX), Spiral Ribbed Aluminum Pipe (SRAP: 714-605-XX), or High Density Polyethylene pipe (HDPE: 714-705-XX) as described in SCDOT Supplemental Technical Specification SC-M-714 and in the SCDOT Standard Drawings. Use smooth wall pipe culvert from manufacturers listed on Qualified Product Lists 30, 68, or 69. No value engineering application is required in order to use alternate pipe.

For the following counties: Berkeley, Beaufort, Charleston, Colleton, Dorchester, Georgetown, Horry, and Jasper, provide pipe joints meeting AASHTO M 315 for RCP or passing the 13 psi pressure test as indicated on the QPL for SRAP or HDPE. Take care to properly lubricate and equalize pipe gaskets as indicated in the **SCDOT Standard Drawings** and **SC-M-714** to prevent gaskets from "rolling" during installation. For all other counties, provide pipe joints meeting AASHTO M 198, M 315, or passing the minimum 10 psi pressure test unless specific pipe joints are indicated in the plans or special provisions.

No other pipe type will be accepted as an alternate.

CONSTRUCTION REQUIREMENTS:

Use only pipe that conforms to the minimum and maximum fill height limitations indicated on the appropriate standard drawing. Unless indicated otherwise in the plans, determine pipe fill height based on the following formula:

Fill Height = Elevation (top of curb or max grade above pipe) - Elevation (pipe crown)

For all locations where new pipe is being attached to an existing system, use one of the following options:

1. Any existing pipe may be extended using any acceptable alternate pipe type by using a drainage structure at the interface between the different pipe types. The drainage structure* may consist of standard junction boxes, manholes, catch basins, drop inlets, or circular drainage structures detailed on **SCDOT Standard Drawings**. For larger diameter pipe, custom drainage structures may be required.

Field cut existing pipe to remove damaged joint (if applicable) and install new drainage structure at the field cut interface. Always fully clean existing pipe and pipe joints before installing joint sealant or gaskets and attaching new pipe.

2. For locations where existing pipe properties cannot be directly matched, use a custom designed interface* (concrete collar, proprietary mastic wrap, custom coupling band, etc.) appropriate to interface the existing pipe to the new pipe of Page 16 SPECIAL PROVISIONS the same type. Submit interface drawings and design for review by the Engineer of Record and the Design Standards Engineer. Always fully clean existing pipe and pipe joints before installing joint sealant or gaskets and attaching new pipe.

Replace existing pipe that has joint damage before connecting new pipe to the system.

3. Any existing pipe may be extended using new pipe with the same joint profile and wall properties of the existing pipe. Always fully clean existing pipe and pipe joints before installing joint sealant or gaskets and attaching new pipe. Verify* the following parameters before ordering new pipe:

a. For RCP to RCP, confirm wall thickness, joint profile shape, and compatibility with existing manufacturer's pipe. Replace existing pipe that has joint damage before connecting new pipe to the system.

b. For SRAP to SRAP, replace existing pipe that has joint damage before connecting new pipe to the system.

c. For HDPE to HDPE, confirm the manufacturer of the existing pipe and the joint compatibility with the new pipe. Provide a new gasket when connecting to existing spigot end of HDPE pipe. Replace existing pipe that has joint damage before connecting new pipe to the system.

d. For CAAP to CAAP, confirm the type and size of end corrugations of the pipe. When existing pipe has full helical corrugations, provide new connecting pipe with one end fully helical and fully helical coupling band. When end corrugation size does not match the corrugation size shown on SCDOT Standard Drawings, provide a drainage structure (described above) at the interface. Replace existing pipe that has joint damage before connecting new pipe to the system. Do not install CAAP as smooth wall pipe; however, use these requirements when plans specify installing new CAAP.

The **RCE** will verify that connections between existing pipe and new installed pipe have been handled with one of the options listed above. Repair or replace all existing to new joint interfaces that do not meet the requirements above at no additional cost to **SCDOT**.

In all installations, provide the RCE with a complete pipe table indicating the following: Plan Pay Item, Plan Pipe Description, Plan Quantity, Installed Pipe (diameter, type, class/gage), Installed Quantity, and description of interface used to join new pipe to existing pipe for each occurrence.

In cases where 2 or more different pipe types are installed, provide a copy of the proposed installation layout on the drainage/plan sheets to the RCE indicating which pipe is installed at each location.

MEASUREMENT:

Measure smooth wall pipe in accordance with methods specified in SC-M-714 for the pipe material installed.

* No measurement will be made for drainage structure, designed interface, or field verification performed at each interface between existing pipe and new pipe unless drainage structure/interface is specified in the plans.

PAYMENT:

Payment will be made for smooth wall pipe regardless of the type of material installed. Payment for smooth wall pipe is as specified in SC-M-714 for the pipe material installed.

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* Include all costs for work related to connecting new pipe to existing pipe in the unit bid price of the new pipe. This connection work includes: drainage structure at the interface, custom designed interface, field verification of existing pipe and compatibility with new pipe, new

gaskets, new joint sealant, new coupling bands, removal, and disposal of damaged sections of existing pipe.

ITEM NO. DESCRIPTION UNIT

7143XXX X" SMOOTH WALL PIPE LF
7143XXX X"x X" SMOOTH WALL PIPE CUL.TEE EA
714XXXX X" x X" SMOOTH WALL PIPE CUL.WYE EA
7144XXX X" SMOOTH WALL PIPE X DEG BEND EA
7144XXX SMOOTH WALL PIPE INCR.- X" TO X" EA

SECTION 714: PIPE END TREATMENTS (2/5/2010)

REFERENCE: SCDOT Supplemental Technical Specification SC-M-714

DESCRIPTION:

For exposed pipe culvert ends, provide an end treatment in accordance with this special provision.

MATERIALS:

Rigid pipe culvert is Reinforced Concrete Pipe (RCP: 714-205-00). Flexible pipe culvert is either Spiral Ribbed Aluminum Pipe (SRAP: 714-610-00), High Density Polyethylene pipe (HDPE: 714-705-00), or Corrugated Aluminum Alloy Pipe (CAAP: 714-605-00).

Use minimum Class B riprap for pipe up to 84" diameter. Use minimum Class C riprap for pipe 84" diameter or larger.

Use minimum Class 4000 concrete (4000P for precast).

Use ASTM A-706 grade 60, low-alloy steel deformed rebar.

Use minimum AASHTO M-196 Alclad 3004-H32 alloy aluminum.

Use Type M Mortar Grout unless specified otherwise.

CONSTRUCTION REQUIREMENTS:

Use one of the following end treatments as specified in the plans or special provisions: For all exposed crossline pipe ends, when an end treatment is not specified in the plans, use **Pipe Riprap Protection** (804-3xx-xx). For flexible pipe larger than 24" diameter, install pipe straight headwall, pipe end structure, flared end section, or wingwall section in addition to riprap. For all exposed driveway pipe ends where no end treatment is

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SPECIAL PROVISIONS specified in the plans, use **Pipe Riprap Protection** (804-3xx-xx) unless directed otherwise by the engineer.

Use **Beveling of Pipe End** (719-610-00) when specified in the plans or special provisions. Beveled ends may only be used on flexible pipe up to 24" diameter and on rigid pipe up to 60" diameter. When beveling of pipe ends is specified on flexible pipe larger than 24" diameter, install pipe straight headwall, pipe end structure, flared end section, or wingwall section. Use factory fabricated beveled ends for all pipe types unless approved by the Engineer.

Use **Pipe Straight Headwall** (719-605-00) when specified in the plans or special provisions. Use straight headwall only in locations where pipe exposed end does not face the direction of traffic.

Use **Pipe End Structure** (719-615-00) when specified in the plans or special provisions. Use pipe end structure in locations where pipe exposed end faces the direction of traffic. Pipe end structures may be used in other locations if approved by the RCE.

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SPECIAL PROVISIONS

Use **Pipe Flared End Section** when specified in the plans or special provisions.

Use **Pipe Wingwall Section** when specified in the plans or special provisions.

Completely seal interface between pipe and end treatment with grout. If bricks or shims are used to place pipe, take care to remove all air pockets and voids when grouting. For systems not designed in the SCDOT Standard Drawings, provide shop drawings, installation procedure and design calculations for review by RCE. Design must include provision to control erosion around the structure and prevent the separation of the end treatment from the pipe system. Design must provide for a proper seal at all construction joints including the interface between the pipe and the structure. Design must be self-supporting and not induce any additional loads on the pipe. Submit designs for consideration as new standard drawings to the

Design Standards Engineer at the address listed in the SCDOT Standard Drawings book.

MEASUREMENT:

Measure pipe in accordance with SC-M-714

Measure end treatments in accordance with Standard Specifications, Standard Drawings, or Special Provisions.

PAYMENT:

Beveling of pipe ends will be in addition to the standard pipe pay item. Payment for the item Beveling of Pipe Ends includes all labor required to factory (or field, if approved) fabricate a bevel on one end of pipe.

Pipe culvert and end treatments, measured as provided in **SC-M-714 Subsection x.4**, are paid for at the contract unit price for the respective items, which price and payment is compensation for furnishing all material, labor, equipment, tools including hauling and placing all pipe sections and materials, excavation of the entire standard trench, bedding, and pipe backfill as described in the measurement section (both structural and

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SPECIAL PROVISIONS embankment backfill in this region), removal of existing pipe to be replaced, constructing pipe joints, removal of old end treatments, cleaning out pipe, disposal of surplus materials, all visual inspection, and all incidentals necessary to complete the work.

Add the following paragraph to SC-M-714 subsections x.5:

Payment for riprap and geotextile for erosion control under riprap as measured in subsection x.4 includes all direct and indirect costs and expenses necessary to complete the work.

SECTION 810: CO-PERMITTEE AGREEMENT & CONTRACTOR CERTIFICATION

See attached Co-Permittee Agreement & Contractor Certification Form on page 76. In accordance with the NPDES General Permit (effective September 1, 2006), all Contractors and Sub-contractors must sign the Co-Permittee Agreement or the Contractor Certification, based on work being performed, prior to beginning work. Section 1 of the form must be signed by all Contractors and Sub-contractors performing land disturbing activities. This applies to all clearing and grubbing, grading operations, drainage installation, curb and gutter, sidewalk, bridge construction, culvert construction, erosion control, seeding, utilities, etc. Section 2 must be signed by all Contractors and Sub-contractors performing non-land disturbing activities. A Contractor or Sub-contractor that has not signed the agreement will not be permitted to perform work on this project. No additional compensation will be made in association with this agreement. **July 1, 2011**

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 _____

My commission expires: _____ Title: _____

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,	
Dorchester.....	\$ 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.

=====

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 union or non-union.

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Survey wage rates will remain in effect and will not change until a new survey is conducted.

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

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- * 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:

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

=====

END OF GENERAL DECISION

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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=====

END OF GENERAL DECISION

General Decision Number: SC170043 01/06/2017 SC43

Superseded General Decision Number: SC20160043

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: Executive Order (EO) 13658 establishes an hourly minimum wage of \$10.20 for 2015 that applies to all contracts subject to the Davis-Bacon Act for which the solicitation is 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 \$10.20 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number Publication Date
0 01/06/2017

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.

=====

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)).

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indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date. Survey wage rates will remain in effect and will not change until a new survey is conducted.

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

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=====

END OF GENERAL DECISION

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

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=====

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=====

END OF GENERAL DECISION

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

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=====

END OF GENERAL DECISION

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,
Chester, Greenwood,
Lancaster, McCormick,
Oconee, Union.....\$ 14.58
Chesterfield, Clarendon,
Dillon, Lee, Marion,
Marlboro.....\$ 13.39

3.40

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.

=====

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 union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters, PLUM, indicate the international union and the four-digit number, 0198, that follows 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. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rate.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007

5/13/2010. SU indicates the rates are not union rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

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

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

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END OF GENERAL DECISION

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

- I. General
- II. Nondiscrimination
- III. Non-segregated 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 Government wide 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.

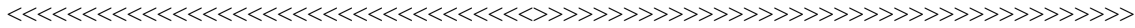
3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification 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).

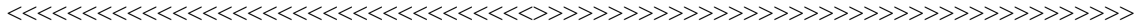


ESTABLISHMENT OF A DRUG FREE WORK PLACE

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



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

PERMANENT PIPE CULVERTS

SCDOT Designation: SC-M-714 (08/09)

APPROVED: <u>August 10, 2009</u> Division Administrator By: <u>David B. Law</u> FEDERAL HIGHWAY ADMINISTRATION

1 Reinforced Concrete Pipe Culvert (RCP)

1.1 Description (RCP)

This section contains specifications for the materials, construction, measurement, and payment for furnishing reinforced concrete pipe culverts (RCP) of the size, shape, type, and dimensions indicated on the plans and installing them to provide drainage structures at places designated on the plans or by the **RCE** in accordance with these specifications and true to the lines and grades shown on the plans or otherwise given by the **RCE**. This work includes the furnishing and installing of necessary tee, wye, elbow, and bend joints, and making connections to existing and/or new structures, including drilling and chipping as is necessary to complete the work.

1.2 Materials (RCP)

Use only materials specified herein for the several items that constitute the finished pipe culvert. Use only RCP from a qualified manufacturer as indicated on **SCDOT Qualified Product List 69**. Use only joint sealant specified on **SCDOT Qualified Product List 69** with the pipe supplied.

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

Use circular RCP conforming to the applicable requirements of **AASHTO M 170**, for the specified diameters, shapes, types, and strength classes except for the modifications stated herein and on **SCDOT Standard Drawings**. Provide the **RCE** with certification that pipe meets the requirements of **AASHTO M 170**. When a strength class is not specified in the plans, use minimum Class III pipe. Furnish pipe in manufactured lengths from 4 to 12 feet.

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

If special designed pipe is required (beyond the fill height limits of the **SCDOT Standard Drawings**), have the manufacturer submit to the **OMR** and the appropriate Structures Engineer a design that meets or exceeds the loading criteria specified on **SCDOT Instructional Bulletin 2007-04** for the design cover height for the project and the pipe material chosen.

Ensure that Portland cement conforms to the requirements of **SCDOT Standard Specifications Subsection 701.2.1**.

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

- A. Fly ash meets **AASHTO M 295** for Type F or C with a maximum Na_2O of 1.5%. Water-granulated blast-furnace slag meets the requirements of **AASHTO M 302**, Grade 100 or better.
- B. Cement may be replaced by fly ash or water-granulated blast-furnace slag in accordance with **AASHTO M 170**.
- C. Fly ash is allowed only from sources listed on the latest edition of **SCDOT Qualified Product List 3**. Slag is allowed only from sources listed on the latest edition of **SCDOT Qualified Product List 6**. Certified mill test reports are furnished with each shipment to verify compliance requirements.
- D. The manufacturer provides a qualified **OMR** mix design in advance of batching. The submittal indicates the amount of cement removed and the material replacing it.
- E. Storage bins, conveying devices and weighing equipment and procedures to ensure accurate batching provided for each material (fly ash or slag) used.

Use only circular reinforcement as listed in **AASHTO M 170** for standard pipe. Make certain that steel reinforcement conforms to the requirements of **AASHTO M 32**, **AASHTO M 55**, **AASHTO M 221**, or **AASHTO M 225** for wire reinforcement as applicable. Use only steel that conforms with the parameters used in the pipe structural calculations supplied for **SCDOT Standard Drawings**. For custom pipe requiring deformed billet steel, use circular reinforcement that conforms to **ASTM A 706** Grade 60. Ensure that steel conforming to **ASTM A 706** comes from a source listed on **SCDOT Qualified Product List 60**.

Ensure that Rubber Gasket Joint Material meets the requirements of **AASHTO M 315**. Ensure that Preformed Flexible Joint Sealant meets the requirements of **AASHTO M 198**. Use only gasket sources that appear on **SCDOT Qualified Product List 69** with the supplied pipe. Obtain qualification by furnishing the **OMR** a certified affidavit with test results made in a recognized laboratory confirming that the material meets **AASHTO M 198** for preformed flexible joint sealant and **AASHTO M 315** for rubber gaskets, along with complete instructions for installation of the material.

Make certain water meets the requirements of **SCDOT Standard Specifications Subsection 701.2.11**.

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

When geotextile for drainage filtration is required, follow **SCDOT Standard Specifications subsection 804.2.11** and **SCDOT Standard Drawings**.

Use tees, wyes, elbows, bends, reducers, and increasers with strength matching or exceeding the strength of the strongest pipe being connected and with the same joint profile of the connecting pipe. Use tees, wyes, elbows, bends, reducers, and increasers with joint profiles that match connected pipe.

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

1. Stabilize reinforcement by satisfactory means to ensure that it does not shift or rotate during the manufacturing process
2. Provide a stencil on the inside and outside shell indicating "CUSTOM PIPE NON CIRCULAR REINFORCEMENT TOP OF PIPE" and a mark "X" indicating exact top of pipe.
3. Provide a stencil on the inside and outside shell indicating designed fill height.
4. Provide to RCE and follow manufacturer guidelines for proper handling and installation instructions. Use installation procedure and materials that meet or exceed the limitations of this specification.

1.3 Construction Requirements (RCP)

1.3.1 Handling and Storage (RCP)

Inspect pipe before it is installed. Check pipe for proper markings and for signs of damage due to fabrication or shipment. Pipe may be rejected due to improper marking, incorrect pipe class, size, or strength. Pipe may also be rejected due to damage which may include, but is not limited to fractures or cracks passing through the wall or extending the entire length of the pipe, spalling, chips, breaks, or honeycombing that would adversely affect the strength or function of the pipe. Damage to the end of the pipe including broken tongues or grooves or ends that are not normal to the walls or centerline of the pipe that prevent satisfactory joint installation may also be cause for rejection. Defective or damaged joint sealant or gaskets may require replacement, but are not cause for rejection of pipe that meets the above requirements.

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

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

1.3.2

Trench for Pipe (RCP)

Lay the pipe in a trench where possible. Excavate trenches to the required grade and to a width sufficient to allow for proper jointing of the pipe and for thorough compaction of the structural backfill material under and around the pipe. Excavate the trench to a width which is the greatest of:

1. $1.5 \times \text{Pipe OD} + 12''$
2. $\text{Pipe OD} + 24''$
3. $3 \times \text{Pipe OD}$ (only in sections where foundation improvement is required in the plans or by the **RCE**)
4. The width required to safely fit compaction equipment and personnel between the pipe and the trench walls.

When using controlled low strength material (CLSM) backfill, excavate the trench to a minimum width of the outside diameter of the pipe plus 12 inches. Make certain that the trench bottom gives full support to the pipe throughout its length.

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

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

Follow OSHA's excavation regulations found in Subpart P of 29 CFR 1926 for safety requirements of trench excavations and protection systems. The Contractor shall employ an onsite Competent Person (as defined by SC OSHA as follows: one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. In order to be a competent person for the purpose of this standard one must have had specific training in, and be knowledgeable about, soils analysis, the use of protective systems, and the requirements of this standard) during all trenching operations. Provide the RCE with the name and contact information of the responsible Competent Person for each installation. If trench widths or wall slopes are changed due to safety requirements, backfill the trench outside of the vertical trench dimensions with materials meeting the minimum requirements of the embankment (or pipe structural backfill for shallow installations) as described in Subsection 1.3.6. Ensure that the support of the pipe and its embedment are maintained throughout the installation.

If trench boxes (shields, etc.) are required, follow 29 CFR 1926.652, trench box manufacturer, and industry standards for trench installations not exceeding 20 feet. When trench boxes are required for trenches exceeding 20 feet deep, the Contractor shall submit to the RCE designs, plans and supporting calculations for protective systems and shoring equipment sealed by a Professional Engineer who is licensed in South Carolina unless provided in the plans. When trench boxes are moved, the previously placed pipe and structural backfill shall not be disturbed. Move trench box in increments during the installation process to permit placement and compaction of structural backfill

material for the full width of the trench while continuing to follow Subpart P of 29 CFR 1926 OSHA Standards. Voids that are created by movement of the trench box shall be filled and compacted with structural backfill described in Subsection 1.3.6. If necessary to prevent movement, restrain the pipe using methods that do not damage the pipe.

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

Provide for temporary diversion of water or pumping as may be necessary in order to permit dry installation of the culvert. Keep trenches free from water until any joint sealant material has hardened sufficiently.

1.3.2.1 Foundation for Pipe (RCP)

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

Use the soil boring Standard Penetration Test SPT "N" values and recommendations of **SCDOT Standard Drawings** to determine if additional work is required to prepare an improved foundation. When an improved foundation is required, remove unstable material at least 1 diameter on each side of the pipe. Excavate deep enough to install nonwoven geotextile for drainage filtration and pipe foundation material as indicated on **SCDOT Standard Drawings**. If Type P1 biaxial geogrid is used with the foundation material and geotextile for drainage filtration, the additional foundation undercut may be reduced as indicated on **SCDOT Standard Drawings**. When pipe foundation material is indicated, use the same material that is used for the bedding and pipe structural backfill. Compact the pipe foundation material in accordance with methods used for pipe structural backfill. Provide trench suitable to accommodate site conditions and obstructions.

If poor material is encountered that was not indicated in the plans, contact the **Preconstruction Regional Production Group Design Manager** for instructions on foundation preparation.

1.3.3 Bed for Pipe (RCP)

For bedding material, use either:

1. Well graded A-1 (**AASHTO M 145**) soils
2. Screenings meeting A-1 (**AASHTO M 145**)

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

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

The materials marked as (wrapped) require geotextile wrap to control migration of fines into open voids. In all cases, use a geotextile that prevents the transmission of the smallest soil particles present in both the in-situ soil and the soil used for bedding and structural backfill. Wrap the entire bedding and backfill envelope and provide a minimum overlap of 2 feet at all geotextile splices. For shallow installations, provide a cover of 6 inches of soil between geotextile and hot mix asphalt.

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

Ensure that trenches are free of water when placing bedding.

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

Compact bedding material that is outside of the middle third pipe diameter in order to ensure proper support of the pipe. Ensure that bedding material outside the middle third of pipe is compacted to a minimum of 95.0% of the maximum dry density when measured in accordance to **SC-T-29**. Ensure that compaction of bedding material does not cause the pipe to move.

Vibrate angular stone in place using a minimum of 2 passes with a vibratory plate tamp in lifts not to exceed 12 inches.

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

1.3.4

Laying Pipe (RCP)

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

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

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

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

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

1.3.5 Joints (RCP)

Use a joint material supplied with the pipe and made by a manufacturer listed on **SCDOT Qualified Product List 69** that corresponds with the type of joint specified in the plans or provided by the pipe manufacturer. Submit joint material manufacturer installation recommendations to **RCE** before installation of pipe. Follow joint material manufacturer's recommendations for installation procedure. Follow pipe manufacturer's recommendations for maximum joint opening to meet tightness requirements specified in the plans or contract documents. Order pipe and appropriate joint material from pipe manufacturer. Install pipe using **AASHTO M 198** joints unless specified in the plans, contract documents, or pay items.

1.3.5.1 **AASHTO M 198** Preformed Flexible Joint Sealant

Use a combination of pipe and joint material that meets performance requirements of the **AASHTO M 198**, including the laboratory 10 psi pressure test. The laboratory test (which may be performed using vertical joints as indicated in AASHTO) is not intended to indicate field performance of the joint, but rather to indicate the proper sealant size to joint detail configuration as well as performance of the joint under ideal laboratory conditions. Carefully clean all dirt and foreign substances from the jointing surface of the groove end already laid and tongue end of the pipe being added. Allow jointing surfaces to dry completely before application of the joint material. If required by site conditions or manufacturer recommendations, apply an adhesive primer specified by the flexible sealant manufacturer. During cold weather, warm flexible sealant as directed by the manufacturer before application. Apply material in a single strip as specified by pipe manufacturer (typically from within 1 inch of the tongue end to approximately the middle of the tongue on pipe) for up to 48 inch diameter pipe. For pipe larger than 48 inch

diameter, place half of the sealant on the top side of the tongue end and the other half on the bottom side of the groove end of the two pipes being homed. Provide between 1" and 3" overlap of the installed joint sealant by laying the edges of the sealant side by side. Do not twist ends of sealant around each other or stack one end on top of the other. Leave protective paper on outside of flexible sealant to protect during pipe alignment. Apply enough flexible sealant to fill the annular joint space. Align the tongue and groove or bell and spigot ends of the pipes before homing (closing) the joint. Remove any remaining protective paper from outside surface of flexible sealant. Make sure that the flexible sealant is in contact with the entry taper around the entire circumference of the pipe. Confirm that the pipe is aligned properly. Seat the pipe completely before installing next pipe section.

1.3.5.2 **AASHTO M 315** Rubber Gasket Joint Material

When specified in the plans, use a combination of pipe and joint material that meets performance requirements of the **AASHTO M 315 (ASTM C 443)**, including the laboratory 13 psi pressure test. The laboratory test is not intended to indicate field performance of the joint, but rather to indicate the proper gasket size to joint detail configuration as well as performance of the joint under ideal laboratory conditions. Carefully clean all dirt and foreign substances from the jointing surface of the groove end already laid and tongue end of the pipe being added. Follow pipe manufacturer's recommendations for lubrication of joint and/or gasket. Fit the gasket on the tongue recess. Equalize the rubber gasket by running a smooth round object (such as a screwdriver shaft) between the gasket and the pipe. Complete this equalization procedure at least 3 times around the entire length of each gasket (see detail on standard drawing for reinforced concrete pipe). Ensure proper seating of the gasket before proceeding with installation. Align the tongue and groove ends of the pipes before homing (closing) the joint. Make sure that the gasket is in contact with the entry taper around the entire circumference and that the pipe is aligned properly. Seat pipe completely before installing next pipe section.

1.3.6 Pipe Structural Backfill (RCP)

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

For structural backfill, use the same material as the pipe bedding (**Subsection 1.3.3**) unless controlled low strength material is used as described below. When materials are used that require geotextile wrap, cover the entire bedding and structural backfill envelope as described in **Subsection 1.3.3**.

Controlled low strength material (CLSM) and controlled density fill are flowable fills that may be used for structural backfill in the haunch area and above. Select a flowable fill mix design that can be excavated. When using CLSM backfill excavate the trench to a width that is a minimum of the outside pipe diameter plus 12 inches but no wider than the outside pipe diameter plus 20 inches. Do not use CLSM when placing perforated pipe.

When using CLSM ensure that the pipe is not displaced and does not float while using methods that do not damage the pipe.

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

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

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

Ensure that the compaction of structural backfill is a minimum of 95.0% of the maximum dry density when measured in accordance with **SC-T-29**.

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

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

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

Vibrate angular stone backfills in place using methods that properly lock the angular stone in place around the pipe and do not damage the pipe, typically 2 passes with a vibratory plate tamp for each 12 inch lift.

Complete structural backfill installation up to the minimum cover elevation above the pipe for typical installations. When installing pipe under pavement and within 3 feet of the subgrade, complete structural backfill installation up to the top of the subgrade. Confirm that structural backfill material in pipe trench meets or exceeds the embankment compaction requirements before applying pavement structure.

1.3.7 Cover Height (RCP)

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

1.3.8 Construction Loads (RCP)

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

1.3.9 Structures and End Treatments (RCP)

When not included in the plans, follow **SCDOT Standard Drawings** for connections of pipe to drainage structures, manholes, end treatments, or other buried structures.

Construct end treatment at each exposed end of pipe. Follow **Pipe End Treatments Special Provision** or **SC-M-719 Pipe End Treatments** and **SCDOT Standard Drawings** to determine required end treatment.

Unless shown otherwise in the plans, use a minimum end treatment of a straight pipe end with Class B or C riprap and geotextile for erosion control as shown in the **SCDOT Standard Drawings**. When specified in the plans, use end treatments such as pipe beveled end, concrete slab, straight headwall for pipe, pipe end structure, or pipe wingwall and apron system in accordance with **SCDOT Standard Drawings** or plan structure details.

When scour issues are observed on site, construct a cast in place concrete cut-off wall a minimum of two feet below the scour depth to protect the end treatment and pipe or as directed by the **RCE**.

1.3.10

Installation Inspection (RCP)

All traffic control necessary to perform the installation and post construction inspections will be provided by the Prime Contractor. No separate payment will be made for this traffic control.

Construction Inspection:

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

When improper installation or damage is noted during the construction inspection of the pipe, repairs must be made to the satisfaction of the RCE. Additional inspections may be performed until confidence is restored that the installation has been performed in accordance with these specifications.

Post Construction Inspection (Acceptance):

The **RCE** will collect survey data for 100% of installed pipe. Survey data will be collected electronically to establish a pipe inventory. Survey data will include latitude, longitude, station, offset, elevation, and coordinates of the flow line for each pipe end. Survey data collected will also include at a minimum pipe diameter, pipe material, and description or survey data for drainage structures and end treatments.

The **RCE** will inspect 100% of pipe under the roadbed, 100% of pipe in a closed drainage system, and a minimum of 10.0% (random locations) of all other locations. These inspections will be performed to ensure proper jointing, clear flow, and that line, grade, and deformations (if applicable) do not exceed allowable limits. The **RCE** will perform these inspections with a combination of either:

- A. Video Camera (condition, jointing, & obstructions) & Laser Profiler/Deflectometer (line, grade & shape)
- B. Video Camera (condition, jointing, & obstructions) & Direct Measurement (line & grade) & either 9-Fin Mandrel (shape) for pipes 48-inch diameter and smaller or Direct Measurement (shape) for pipes larger than 48-inch diameter.

These inspections will be performed and submitted by a **SCDOT certified Earthwork, Drainage, & Base Technician**. Inspections of completed pipe installations will be performed after the embankment is in place and all non-asphalt bases and/or subgrades have been completed for at least 30 days. In cases where the Contractor's accepted CPM Schedule indicates that paving operations will be conducted in less than 30 days, an early inspection may be performed for acceptance. If early inspections are performed

and the paving does not commence as scheduled, an additional inspection may be performed at the **RCE's** discretion.

When third party surveys and inspections are performed on behalf of the **RCE**, a report will be submitted with the survey and inspection results. This report will include a copy of all video taken from each video camera inspection, pipe location identification, equipment used for inspection, inspector name, inspector field notes, measurements from the pipe inspection (at a minimum to include the following: deviation from design grade, deviation from line, deflection [expressed in inches and % of pipe diameter]), and survey data for all installed pipe.

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

For concrete pipe, when signs of distress, such as differential movement, efflorescence, spalling, rust stains or cracks wider than 0.01 inch are present in the pipe, prepare a report for submittal to the **RCE**. This report must address: structural integrity, environmental conditions, design service life of the pipe, and recommended remediation. The **RCE** must accept both the remediation report and recommended repair procedure. At a minimum, seal cracks having widths equal to or greater than 0.01 inch and considered to be detrimental by the **RCE** in accordance with manufacturer's instructions. Replace pipes having cracks greater than 0.1 inch determined to be beyond satisfactory structural repair. Repair or replace pipes having displacement across the crack. Repair or replace pipes exhibiting spalls or delaminations.

1.3.11 Installing Pipe Culvert Under Existing Pavement (RCP)

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

1.3.12 Placing Pipe Under Railroads and Other Transportation Facilities (RCP)

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

1.3.13 Cleaning Out Pipe (RCP)

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

1.3.14

Trench Backfill for Expedited Construction (RCP)

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

CLSM, also known as flowable fill, can be placed to a height not to exceed the subgrade elevation. The remaining pavement structure must be installed according to the pavement typical section. Measurements for payment will be made based on the neat line at a trench width (pipe outside diameter + 12") for the pipe type being installed. Any material used beyond these dimensions is considered incidental to the pipe installation. CLSM shall be installed in accordance with manufacturer's recommendations to prevent pipe displacement and uplift during CLSM placement.

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

When CLSM is specified by the RCE during construction, all CLSM used in the trench above the pipe springline will be paid for at the contract unit price for Controlled Low Strength Material.

1.4

Measurement (RCP)

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

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

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

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

Measure the quantity for riprap placed around pipe end or end treatment in tons based on the quantity required to complete installation in accordance with the **SCDOT Standard Drawing** and **Instructional Bulletin 2009-2** for the pipe end treatment used.

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

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

The quantity of pipe additional foundation work is measured in linear feet along the centerline of the pipe as shown in the **SCDOT Standard Drawings**. Dispose of any unstable material in the manner outlined in **SCDOT Standard Specifications Subsection 203.2.1.5**.

For typical and maximum cover installations shown on **SCDOT Standard Drawings**, no measurement will be made for backfill material shown within the pipe embedment zone, and payment for this material will be included in the cost of the pipe. For shallow and minimum cover installations shown on **SCDOT Standard Drawings**, no measurement will be made for backfill within the pipe trench, and payment for this material will be included in the cost of the pipe.

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

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

1.5

Payment (RCP)

Pipe culvert and end treatments, measured as provided in **Subsection 1.4**, are paid for at the contract unit price for the respective items, which price and payment is compensation for furnishing all material, labor, equipment, tools including hauling and placing all pipe sections and materials, excavation of the entire standard trench, bedding, and pipe backfill as described in the measurement section (both structural and embankment backfill in this region), removal of existing pipe to be replaced, constructing pipe joints, removal of old end treatments, cleaning out pipe, disposal of surplus materials, all visual inspection, traffic control for all inspections, and all incidentals necessary to complete the work.

All traffic control necessary to perform the installation and post construction inspections will be provided by the Prime Contractor. No separate payment will be made for this traffic control.

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

Payment for riprap and geotextile for erosion control under riprap as measured in **Subsection 1.4** includes all direct and indirect costs and expenses necessary to complete the work.

The quantities for the items pipe culvert tees, wyes, elbows, bends, reducers, and increasers measured as provided in **Subsection 1.4**, are paid for as each.

The quantity of pipe additional foundation work, measured as provided for in **Subsection 1.4**, is paid for at the contract unit price, which price and payment is compensation for furnishing all material (foundation, extra bedding, extra structural backfill, extra geotextile, etc.), labor (additional trench excavation, compaction, etc.), equipment, tools, hauling, and disposal (of poor material) to complete construction of the pipe foundation, and wider trench as specified in the **SCDOT Standard Drawings**, the plans, or by the **RCE**.

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

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

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

Pay items are listed in **Subsection 5**.

1.6

Referenced Documents (RCP)

SCDOT Standard Specifications for Highway Construction

SCDOT Supplemental Technical Specifications:

SC-T-29

SCDOT Qualified Product Lists:

Qualified Product List 1

Qualified Product List 2

Qualified Product List 3

Qualified Product List 60

Qualified Product List 69

SCDOT Instructional Bulletins:

SCDOT Instructional Bulletin 2007-04

AASHTO Standard Specifications for Transportation Materials & Methods of Sampling and Testing:

AASHTO M 32

AASHTO M 55

AASHTO M 145

AASHTO M 170

AASHTO M 198

AASHTO M 207

AASHTO M 221

AASHTO M 225

AASHTO M 295

AASHTO M 302

AASHTO M 315

AASHTO T 96

AASHTO T 104

ASTM Standard Specifications:

ASTM A 706

ASTM C 443

Websites:

www.osha.gov

www.llr.state.sc.us/labor/osha/

www.concrete-pipe.org

www.precast.org

2 - **Corrugated Aluminum Alloy & Spiral Ribbed Aluminum Pipe (CAAP&SRAP)**

2.1 Description (CAAP&SRAP)

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

2.2 Materials (CAAP&SRAP)

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

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

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

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

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

When geotextile for drainage filtration is required, follow **SCDOT Standard Specifications subsection 804.2.11** and **SCDOT Standard Drawings**.

If special designed pipe is required (beyond the fill height limits of the **SCDOT Standard Drawings**), have the manufacturer submit to the **OMR** and the appropriate Structures Engineer a design that meets or exceeds the loading criteria specified on **SCDOT Instructional Bulletin 2007-04** for the design cover height for the project and the pipe material chosen.

Use tees, wyes, elbows, bends, reducers, and increasers with strength matching or exceeding the strength of the strongest pipe being connected and with the same joint profile of the connecting pipe. Use tees, wyes, elbows, bends, reducers, and increasers with joint profiles that match connected pipe.

2.3 Construction Requirements (CAAP&SRAP)

2.3.1 Handling and Storage (CAAP&SRAP)

Inspect pipe before it is installed. Check pipe for proper markings and for signs of damage due to fabrication or shipment. Pipe may be rejected due to improper marking, incorrect pipe gage, corrugation, size, or strength. Pipe may also be rejected due to damage which may include, but is not limited to dents, tears, gaps, or deformations that would adversely affect the strength or function of the pipe. Damage to the end of the pipe including open seams (particularly at rerolled ends) or ends not normal to the walls or centerline of the pipe that prevent satisfactory joint installation may also be rejected. Defective or damaged gaskets may require replacement, but are not cause for rejection of pipe that meets the above requirements.

Handle and store pipe such that no damage occurs to the pipe. Unload the pipe at a site that is relatively flat and level, free of debris, and away from construction traffic. Ensure that fittings and other components are lifted and moved safely using appropriate unloading and handling equipment.

2.3.2 Trench for Pipe (CAAP&SRAP)

Lay the pipe in a trench where possible. Excavate trenches to the required grade and to a width sufficient to allow for proper jointing of the pipe and for thorough compaction of the structural backfill material under and around the pipe. Excavate the trench to a width which is the greatest of:

1. $1.5 \times \text{Pipe OD} + 12''$
2. $\text{Pipe OD} + 24''$
3. $3 \times \text{Pipe OD}$ (only in sections where foundation improvement is required in the plans or by the **RCE**)
4. The width required to safely fit compaction equipment and personnel between the pipe and the trench walls.

When using controlled low strength material (CLSM)-backfill, excavate the trench to a minimum width of the outside diameter of the pipe plus 12 inches. Make certain that the trench bottom gives full support to the pipe throughout its length.

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

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

Follow OSHA's excavation regulations found in Subpart P of 29 CFR 1926 for safety requirements of trench excavations and protection systems. The Contractor shall employ an onsite Competent Person (as defined by SC OSHA as follows: one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. In order to be a competent person for the purpose of this standard one must have had specific training in, and be knowledgeable about, soils analysis, the use of protective systems, and the requirements of this standard) during all trenching operations. Provide the RCE with the name and contact information of the responsible Competent Person for each installation. If trench widths or wall slopes are changed due to safety requirements, backfill the trench outside of the vertical trench dimensions with materials meeting the minimum requirements of the embankment (or pipe structural backfill for shallow installations) as described in Subsection 2.3.6. Ensure that the support of the pipe and its embedment are maintained throughout the installation.

If trench boxes (shields, etc.) are required, follow 29 CFR 1926.652, trench box manufacturer, and industry standards for trench installations not exceeding 20 feet. When trench boxes are required for trenches exceeding 20 feet deep, the Contractor shall submit to the RCE designs, plans and supporting calculations for protective systems and shoring equipment sealed by a Professional Engineer who is licensed in South Carolina unless provided in the plans. When trench boxes are moved, the previously placed pipe and structural backfill shall not be disturbed. Move trench box in increments during the installation process to permit placement and compaction of structural backfill material for the full width of the trench while continuing to follow Subpart P of 29 CFR 1926 OSHA Standards. Voids that are created by movement of the trench box shall be filled and compacted with structural backfill described in Subsection 2.3.6. If necessary to prevent movement, restrain the pipe using methods that do not damage the pipe.

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

Provide for temporary diversion of water or pumping as may be necessary in order to permit dry installation of the culvert. Keep trenches free from water until any joint sealant material has hardened sufficiently.

2.3.2.1

Foundation for Pipe (CAAP&SRAP)

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

Use the soil boring Standard Penetration Test SPT "N" values and recommendations of **SCDOT Standard Drawings** to determine if additional work is required to prepare an improved foundation. When an improved foundation is required, remove unstable material at least 1 diameter on each side of the pipe. Excavate deep enough to install nonwoven geotextile for drainage filtration and pipe foundation material as indicated on **SCDOT Standard Drawings**. If Type P1 biaxial geogrid is used with the foundation material and geotextile for drainage filtration, the additional foundation undercut may be reduced as indicated on **SCDOT Standard Drawings**. When pipe foundation material is indicated, use the same material that is used for the bedding and pipe structural backfill. Compact the pipe foundation material in accordance with methods used for pipe structural backfill. Provide trench suitable to accommodate site conditions and obstructions.

If poor material is encountered that was not indicated in the plans, contact the **Preconstruction Regional Production Group Design Manager** for instructions on foundation preparation.

2.3.3

Bed for Pipe (CAAP&SRAP)

For bedding material, use either:

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

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

The materials marked as (wrapped) require geotextile wrap to control migration of fines into open voids. In all cases, use a geotextile that prevents the transmission of the smallest soil particles present in both the in-situ soil and the soil used for bedding and structural backfill. Wrap the entire bedding and backfill envelope and provide a minimum overlap of 2 feet at all geotextile splices. For shallow installations, provide a cover of 6 inches of soil between geotextile and hot mix asphalt.

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

Ensure that trenches are free of water when placing bedding.

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

Compact bedding material that is outside of the middle third pipe diameter in order to ensure proper support of the pipe. Ensure that bedding material outside the middle third of pipe is compacted to a minimum of 95.0% of the maximum dry density when measured in accordance to **SC-T-29**. Ensure that compaction of bedding material does not cause the pipe to move.

Vibrate angular stone in place using a minimum of 2 passes with a vibratory plate tamp in lifts not to exceed 12 inches.

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

2.3.4

Laying Pipe (CAAP&SRAP)

Begin pipe laying at the downstream end of the culvert.

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

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

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

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

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

2.3.5

Joints (CAAP&SRAP)

For CAAP & SRAP, submit joint material manufacturer installation recommendations to **RCE** before installation of pipe. Follow joint material manufacturer's recommendations for installation procedure. Follow pipe manufacturer's recommendations for maximum joint opening to meet tightness requirements specified in the plans or contract documents. Order pipe and appropriate joint material from pipe manufacturer.

ASTM D 1056 Joints (CAAP&SRAP)

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

Manufacturer must certify that the pipe, coupling band, and gasket combination meets the laboratory 10 psi pressure test. Each manufacturer may also elect to test their pipe joints to 13 psi for use in locations where RCP AASHTO M 315 joints are currently specified. Both 10 psi and 13 psi tests are to be conducted in straight alignment with the pipe deflected 5%. The laboratory tests are not intended to indicate field performance of the joint, but rather to indicate the proper sealant size to joint detail configuration as well as performance of the joint under ideal laboratory conditions. Make certain that the strip or sleeve gaskets are at least as wide as the coupling band (12 inches minimum) and approximately 3/8 inch thick minimum. Rubber O-ring gaskets are not allowed since they are not visible from the inside of the pipe after installation.

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

2.3.6

Pipe Structural Backfill (CAAP&SRAP)

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

For structural backfill, use the same material as the pipe bedding (**Subsection 2.3.3**) unless controlled low strength material is used as described below. When materials are used that require geotextile wrap, cover the entire bedding and structural backfill envelope as described in **Subsection 2.3.3**.

Controlled low strength material (CLSM) and controlled density fill are flowable fills that may be used for structural backfill in the haunch area and above. Select a flowable fill mix design that can be excavated. When using CLSM backfill excavate the trench to a width that is a minimum of the outside pipe diameter plus 12 inches but no wider than the outside pipe diameter plus 20 inches. Do not use CLSM when placing perforated pipe. When using CLSM ensure that the pipe is not displaced and does not float while using methods that do not damage the pipe.

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

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

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

Ensure that the compaction of structural backfill is a minimum of 95.0% of the maximum dry density when measured in accordance with **SC-T-29**.

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

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

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

Vibrate angular stone backfills in place using methods that properly lock the angular stone in place around the pipe and do not damage the pipe, typically 2 passes with a vibratory plate tamp for each 12 inch lift.

Complete structural backfill installation up to the minimum cover elevation above the pipe for typical installations. When installing pipe under pavement and within 3 feet of the subgrade, complete structural backfill installation up to the top of the subgrade. Confirm that structural backfill material in pipe trench meets or exceeds the embankment compaction requirements before applying pavement structure.

2.3.7 Cover Height (CAAP&SRAP)

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

2.3.8 Construction Loads (CAAP&SRAP)

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

2.3.9 Structures and End Treatments (CAAP&SRAP)

When not included in the plans, follow **SCDOT Standard Drawings** for connections of pipe to drainage structures, manholes, end treatments, or other buried structures.

Construct end treatment at each exposed end of pipe. Follow **Pipe End Treatments Special Provision** or **SC-M-719 Pipe End Treatments** and SCDOT Standard Drawings to determine required end treatment.

Unless shown otherwise in the plans, use a minimum end treatment of a straight pipe end with Class B or C riprap and geotextile for erosion control as shown in the **SCDOT Standard Drawings**. When specified in the plans, use end treatments such as pipe beveled end, concrete slab, straight headwall for pipe, pipe end structure, or pipe wingwall and apron system in accordance with **SCDOT Standard Drawings** or plan structure details.

When scour issues are observed on site, construct a cast in place concrete cut-off wall a minimum of two feet below the scour depth to protect the end treatment and pipe or as directed by the **RCE**.

2.3.10 Installation Inspection (CAAP&SRAP)

All traffic control necessary to perform the installation and post construction inspections will be provided by the Prime Contractor. No separate payment will be made for this traffic control.

Construction Inspection:

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

When improper installation or damage is noted during the construction inspection of the pipe, repairs must be made to the satisfaction of the RCE. Additional inspections may be performed until confidence is restored that the installation has been performed in accordance with these specifications.

Post Construction Inspection (Acceptance):

The **RCE** will collect survey data for 100% of installed pipe. Survey data will be collected electronically to establish a pipe inventory. Survey data will include latitude, longitude, station, offset, elevation, and coordinates of the flow line for each pipe end. Survey data collected will also include at a minimum pipe diameter, pipe material, and description or survey data for drainage structures and end treatments.

The **RCE** will inspect 100% of pipe under the roadbed, 100% of pipe in a closed drainage system, and a minimum of 10.0% (random locations) of all other locations. These inspections will be performed to ensure proper jointing, clear flow, and that line, grade,

and deformations (if applicable) do not exceed allowable limits. The **RCE** will perform these inspections with a combination of either:

- A. Video Camera (condition, jointing, & obstructions) & Laser Profiler/Deflectometer (line, grade & shape)
- B. Video Camera (condition, jointing, & obstructions) & Direct Measurement (line & grade) & either 9-Fin Mandrel (shape) for pipes 48-inch diameter and smaller or Direct Measurement (shape) for pipes larger than 48-inch diameter.

These inspections will be performed and submitted by a **SCDOT certified Earthwork, Drainage, & Base Technician**. Inspections of completed pipe installations will be performed after the embankment is in place and all non-asphalt bases and/or subgrades have been completed for at least 30 days. In cases where the Contractor's accepted CPM Schedule indicates that paving operations will be conducted in less than 30 days, an early inspection may be performed for acceptance. If early inspections are performed and the paving does not commence as scheduled, an additional inspection may be performed at the **RCE's** discretion.

When third party surveys and inspections are performed on behalf of the **RCE**, a report will be submitted with the survey and inspection results. This report will include a copy of all video taken from each video camera inspection, pipe location identification, equipment used for inspection, inspector name, inspector field notes, measurements from the pipe inspection (at a minimum to include the following: deviation from design grade, deviation from line, deflection [expressed in inches and % of pipe diameter]), and survey data for all installed pipe.

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

For aluminum pipe, when pipe distress such as cracking, wall damage (dents, bulges, creases, cracks and tears) and deflection or poorly shaped cross-section are present in the pipe, prepare a report for submittal to the **RCE**. This report must address: structural integrity, environmental conditions, design service life of the pipe, and recommended remediation. Upon acceptance of the report by the **RCE**, and at a minimum, implement the following: Replace, repair or remediate locations as recommended in the report or by the **RCE**.

For aluminum pipe, when installed pipe deflections exceed 5.0% of the inside diameter, prepare a report for submittal to the **RCE**. This report must address: structural integrity, environmental conditions, design service life of the pipe, and recommended remediation. Upon acceptance by the **RCE**, and at a minimum, implement the following: Replace the pipe at locations where the measured deflection exceeds 7.5% of the nominal inside diameter of the pipe. Repair or remediate locations as recommended in the report or by the **RCE**. Replace locations where directed by the **RCE**.

2.3.11 Installing Pipe Culvert Under Existing Pavement (CAAP&SRAP)

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

2.3.12 Placing Pipe Under Railroads and Other Transportation Facilities (CAAP&SRAP)

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

2.3.13 Cleaning Out Pipe (CAAP&SRAP)

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

2.3.14 Trench Backfill for Expedited Construction (CAAP&SRAP)

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

CLSM can be placed to a height not to exceed the subgrade elevation. The remaining pavement structure must be installed according to the pavement typical section. Measurements for payment will be made based on the neat line at a trench width (pipe outside diameter + 12") for the pipe type being installed. Any material used beyond these dimensions is considered incidental to the pipe installation. CLSM shall be installed in accordance with manufacturer's recommendations to prevent pipe displacement and uplift during CLSM placement.

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

When CLSM is specified by the **RCE** during construction, all CLSM used in the trench above the pipe springline will be paid for at the contract unit price for Controlled Low Strength Material.

Measurement (CAAP&SRAP)

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

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

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

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

Measure the quantity for riprap placed around pipe end or end treatment in tons based on the quantity required to complete installation in accordance with the **SCDOT Standard Drawing and Instructional Bulletin 2009-2** for the pipe end treatment used.

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

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

The quantity of pipe additional foundation work is measured in linear feet along the centerline of the pipe as shown in the **SCDOT Standard Drawings**. Dispose of any unstable material in the manner outlined in **SCDOT Standard Specifications Subsection 203.2.1.5**.

For typical and maximum cover installations shown on **SCDOT Standard Drawings**, no measurement will be made for backfill material shown within the pipe embedment zone, and payment for this material will be included in the cost of the pipe. For shallow and minimum cover installations shown on **SCDOT Standard Drawings**, no measurement will be made for backfill within the pipe trench, and payment for this material will be included in the cost of the pipe.

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

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

2.5

Payment (CAAP&SRAP)

Pipe culvert and end treatments measured as provided in **Subsection 2.4**, are paid for at the contract unit price for the respective items, which price and payment is compensation for furnishing all material, labor, equipment, tools including hauling and placing all pipe sections and materials, excavation of the entire standard trench, bedding, and pipe structural backfill as described in the measurement section, removal of existing pipe to be replaced, constructing pipe joints, removal of old end treatments, cleaning out pipe, disposal of surplus materials, all visual inspection, traffic control for all inspections, and all incidentals necessary to complete the work.

All traffic control necessary to perform the installation and post construction inspections will be provided by the Prime Contractor. No separate payment will be made for this traffic control.

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

Payment for riprap and geotextile for erosion control under riprap as measured in **Subsection 2.4** includes all direct and indirect costs and expenses necessary to complete the work.

The quantities for the items pipe culvert tees, wyes, elbows, bends, reducers, and increasers measured as provided in **Subsection 2.4**, are paid for as each.

The quantity of pipe additional foundation work, measured as provided for in **Subsection 2.4**, is paid for at the contract unit price, which price and payment is compensation for furnishing all material (foundation, extra bedding, extra structural backfill, extra geotextile, etc.), labor (additional trench excavation, compaction, etc.), equipment, tools, hauling, and disposal (of poor material) to complete construction of the pipe foundation, and wider trench as specified in the **SCDOT Standard Drawings**, the plans, or by the **RCE**.

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

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

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

Pay items are listed in **Subsection 5**.

2.6

Referenced Documents (CAAP&SRAP)

SCDOT Standard Specifications for Highway Construction

SCDOT Supplemental Technical Specifications:

SC-T-29

SCDOT Instructional Bulletins:

SCDOT Instructional Bulletin 2007-04

SCDOT Qualified Product List:

Qualified Product List 2

Qualified Product List 68

AASHTO Standard Specifications for Transportation Materials & Methods of Sampling and Testing:

AASHTO M 145

AASHTO M 196

AASHTO M 197

ASTM Standard Specifications:

ASTM A 307

ASTM B 666

ASTM D 1056

Websites:

www.osha.gov

www.llr.state.sc.us/labor/osha/

3 Corrugated High Density Polyethylene Pipe Culvert (HDPE)

3.1 Description (HDPE)

This section contains specifications for the materials, construction, measurement, and payment for furnishing corrugated high density polyethylene pipe culvert (HDPE) of the size, shape, type, and dimensions indicated on the plans and installing them to provide drainage structures at places designated on the plans or by the **RCE** in accordance with these specifications and true to the lines and grades shown on the plans or otherwise given by the **RCE**. This work includes the furnishing and installing of necessary tee, wye, elbow, and bend joints, and making connections to existing and/or new structures, including drilling and chipping as is necessary to complete the work.

3.2 Materials (HDPE)

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

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

Use only materials from sources complying with the **SCDOT Qualified Product Policy 30** and appearing on the **SCDOT Qualified Product List 30**.

Have manufacturer furnish with each shipment of materials a certification showing brand name, the shipping date and to whom it is shipped, and the quantity and size of pipe represented. Ensure that the certificate contains a statement that the material meets the **SCDOT** specifications and is essentially the same as that qualified by the Department. Ensure that the shipped pipe is plainly marked with the manufacturer's name, trademark, nominal size, specification designation **AASHTO M 294**, plant designation code, the date of manufacture or an appropriate code, and certification stamp from NTPEP. Ensure that the shipped fittings are plainly marked with the manufacturer's identification symbol and specification designation **AASHTO M 294**. Furnish a materials safety data sheet and installation instructions with each shipment. Ensure that all HDPE pipe is certified by **AASHTO NTPEP** third party certification programs.

When geotextile for drainage filtration is required, follow **SCDOT Standard Specifications subsection 804.2.11** and **SCDOT Standard Drawings**.

If special designed pipe is required (beyond the fill height limits of the **SCDOT Standard Drawings**), have the manufacturer submit to the **OMR** and the appropriate Structures Engineer a design that meets or exceeds the loading criteria specified on **SCDOT Instructional Bulletin 2007-04** for the design cover height for the project and the pipe material chosen.

Use tees, wyes, elbows, bends, reducers, and increasers with strength matching or exceeding the strength of the strongest pipe being connected and with the same joint profile of the connecting pipe. Use tees, wyes, elbows, bends, reducers, and increasers with joint profiles that match connected pipe.

3.3 Construction Requirements (HDPE)

3.3.1 Handling and Storage (HDPE)

Inspect pipe before it is installed. Check pipe for proper markings and for signs of damage due to fabrication or shipment. Pipe may be rejected due to improper marking, incorrect pipe type, size, or strength. Pipe may also be rejected due to damage which may include, but is not limited to cuts, gouges, delaminations, bulges, flat areas, bubbles, dents, tears, breaks, gaps, missing or malformed corrugations, or deformations that would adversely affect the strength or function of the pipe. Damage to the end of the pipe including damage to bell or spigot, or ends that are not normal to the walls or centerline of the pipe that prevent satisfactory joint installation may also be rejected. Defective or damaged gaskets may require replacement, but are not cause for rejection of pipe that meets the above requirements.

Handle and store pipe such that no damage occurs to the pipe. Unload the pipe at a site that is relatively flat and level, free of debris, and away from construction traffic.

3.3.2 Trench for Pipe (HDPE)

Lay the pipe in a trench where possible. Excavate trenches to the required grade and to a width sufficient to allow for proper jointing of the pipe and for thorough compaction of the structural backfill material under and around the pipe. Excavate the trench to a width which is the greatest of:

1. $1.5 \times \text{Pipe OD} + 12''$
2. $\text{Pipe OD} + 24''$
3. $3 \times \text{Pipe OD}$ (only in sections where foundation improvement is required in the plans or by the **RCE**)
4. The width required to safely fit compaction equipment and personnel between the pipe and the trench walls.

When using controlled low strength material (CLSM) backfill, excavate the trench to a minimum width of the outside diameter of the pipe plus 12 inches. Make certain that the trench bottom gives full support to the pipe throughout its length.

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

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

Follow OSHA's excavation regulations found in Subpart P of 29 CFR 1926 for safety requirements of trench excavations and protection systems. The Contractor shall employ an onsite Competent Person (as defined by SC OSHA as follows: one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. In order to be a competent person for the purpose of this standard one must have had specific training in, and be knowledgeable about, soils analysis, the use of protective systems, and the requirements of this standard) during all trenching operations. Provide the RCE with the name and contact information of the responsible Competent Person for each installation. If trench widths or wall slopes are changed due to safety requirements, backfill the trench outside of the vertical trench dimensions with materials meeting the minimum requirements of the embankment (or pipe structural backfill for shallow installations) as described in Subsection 3.3.6. Ensure that the support of the pipe and its embedment are maintained throughout the installation.

If trench boxes (shields, etc.) are required, follow 29 CFR 1926.652, trench box manufacturer, and industry standards for trench installations not exceeding 20 feet. When trench boxes are required for trenches exceeding 20 feet deep, the Contractor shall submit to the RCE designs, plans and supporting calculations for protective systems and shoring equipment sealed by a Professional Engineer who is licensed in South Carolina unless provided in the plans. When trench boxes are moved, the previously placed pipe and structural backfill shall not be disturbed. Move trench box in increments during the installation process to permit placement and compaction of structural backfill material for the full width of the trench while continuing to follow Subpart P of 29 CFR 1926 OSHA Standards. Voids that are created by movement of the trench box shall be filled and compacted with structural backfill described in Subsection 3.3.6. If necessary to prevent movement, restrain the pipe using methods that do not damage the pipe.

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

Provide for temporary diversion of water or pumping as may be necessary in order to permit dry installation of the culvert. Keep trenches free from water until any joint sealant material has hardened sufficiently.

3.3.2.1

Foundation for Pipe (HDPE)

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

Use the soil boring Standard Penetration Test SPT "N" values and recommendations of **SCDOT Standard Drawings** to determine if additional work is required to prepare an

improved foundation. When an improved foundation is required, remove unstable material at least 1 diameter on each side of the pipe. Excavate deep enough to install nonwoven geotextile for drainage filtration and pipe foundation material as indicated on **SCDOT Standard Drawings**. If Type P1 biaxial geogrid is used with the foundation material and geotextile for drainage filtration, the additional foundation undercut may be reduced as indicated on **SCDOT Standard Drawings**. When pipe foundation material is indicated, use the same material that is used for the bedding and pipe structural backfill. Compact the pipe foundation material in accordance with methods used for pipe structural backfill. Provide trench suitable to accommodate site conditions and obstructions.

If poor material is encountered that was not indicated in the plans, contact the **Preconstruction Regional Production Group Design Manager** for instructions on foundation preparation.

3.3.3

Bed for Pipe (HDPE)

For bedding material, use either:

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

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

The materials marked as (wrapped) require geotextile wrap to control migration of fines into open voids. In all cases, use a geotextile that prevents the transmission of the smallest soil particles present in both the in-situ soil and the soil used for bedding and structural backfill. Wrap the entire bedding and backfill envelope and provide a minimum overlap of 2 feet at all geotextile splices. For shallow installations, provide a cover of 6 inches of soil between geotextile and hot mix asphalt.

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

Ensure that trenches are free of water when placing bedding.

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

Compact bedding material that is outside of the middle third pipe diameter in order to ensure proper support of the pipe. Ensure that bedding material outside the middle third of pipe is compacted to a minimum of 95.0% of the maximum dry density when measured in accordance to **SC-T-29**. Ensure that compaction of bedding material does not cause the pipe to move.

Vibrate angular stone in place using a minimum of 2 passes with a vibratory plate tamp in lifts not to exceed 12 inches.

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

3.3.4 Laying Pipe (HDPE)

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

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

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

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

3.3.5 Joints (HDPE)

Submit joint material manufacturer installation recommendations to **RCE** before installation of pipe. Follow joint material manufacturer's recommendations for installation procedure. Follow pipe manufacturer's recommendations for proper joint seating. Follow **ASTM D 2321** for joint installation procedures. Order pipe and appropriate joint material from pipe manufacturer.

3.3.5.1

Standard Joint

Use a bell and spigot type connection with an elastomeric rubber seal meeting **ASTM F477** and meeting the requirements specified in the plan and by the pipe manufacturer. Ship pipe with gasket installed. Certify that the pipe and gasket system meet or exceed the laboratory 10 psi internal pressure test of **ASTM D 3212**. Each manufacturer may also elect to test their pipe joints to 13 psi for use in locations where RCP AASHTO M 315 joints are currently specified. Both 10 psi and 13 psi tests are to be conducted in straight alignment with the pipe deflected 5%. The laboratory tests are not intended to indicate field performance of the joint, but rather to indicate the proper sealant size to joint detail configuration as well as performance of the joint under ideal laboratory conditions. Provide, to the **RCE**, manufacturer's certification that gaskets are manufactured in accordance with the requirements of **ASTM F 477** and do not have any visible cracking when tested according to **ASTM D 1149**. Store bell and spigot type pipe in alternating rows to prevent bell flattening. Cover gaskets with a protective wrap during storage to prevent damage to the gasket. Inspect pipe to ensure that pipe joint components are clean and free from damage or defect before installation. Mark or verify that the pipe ends are marked to indicate the insertion stop position. If pipe bell is manufactured separately from pipe, ensure it is securely installed before proceeding with installation. Lubricate inside and leading edge of bell with a lubricant, specified by the pipe manufacturer, that does not cause damage or deterioration to the gasket material. Use installation methods that do not damage pipe, bell, spigot or gasket. Push the spigot end of the pipe being laid into the bell end of the pipe already installed up to the marked insertion stop point while maintaining true line and grade. Follow manufacturer recommendations on construction devices to use to prevent damage to the pipe. Do not use excessive force that may result in over-assembled joints or dislodged gaskets. If pipe is not fully installed to the marked insertion point, disassemble joints, clean and reinstall joint as described above. Ensure that pipe installed has proper line and grade before installing next pipe section.

3.3.5.2

Field Fabricated Joint

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

Wrap entire joint with a geotextile for drainage filtration to prevent the migration of soils into the pipe or to meet a silt tight designation per **AASHTO M 294**. Geotextile fabric shall extend 12 inches either side of the joint and overlap at least 18 inches. No additional payment will be made for the use and installation of split coupler bands.

3.3.6

Pipe Structural Backfill (HDPE)

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

For structural backfill, use the same material as the pipe bedding (**Subsection 3.3.3**) unless controlled low strength material is used as described below. When materials are

used that require geotextile wrap, cover the entire bedding and structural backfill envelope as described in **subsection 3.3.3**.

Controlled low strength material (CLSM) and controlled density fill are flowable fills that may be used for structural backfill in the haunch area and above. Select a flowable fill mix design that can be excavated. When using CLSM backfill excavate the trench to a width that is a minimum of the outside pipe diameter plus 12 inches but no wider than the outside pipe diameter plus 20 inches. Do not use CLSM when placing perforated pipe. When using CLSM ensure that the pipe is not displaced and does not float while using methods that do not damage the pipe.

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

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

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

Ensure that the compaction of structural backfill is a minimum of 95.0% of the maximum dry density when measured in accordance with **SC-T-29**.

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

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

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

Vibrate angular stone backfills in place using methods that properly lock the angular stone in place around the pipe and do not damage the pipe, typically 2 passes with a vibratory plate tamp for each 12 inch lift.

Complete structural backfill installation up to the minimum cover elevation above the pipe for typical installations. When installing pipe under pavement and within 3 feet of the subgrade, complete structural backfill installation up to the top of the subgrade. Confirm that structural backfill material in pipe trench meets or exceeds the embankment compaction requirements before applying pavement structure.

3.3.7 Cover Height (HDPE)

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

3.3.8 Construction Loads (HDPE)

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

3.3.9 Structures and End Treatments (HDPE)

When not included in the plans, follow **SCDOT Standard Drawings** for connections of pipe to drainage structures, manholes, end treatments, or other buried structures.

Construct end treatment at each exposed end of pipe. Follow **Pipe End Treatments Special Provision** or **SC-M-719 Pipe End Treatments** and **SCDOT Standard Drawings** to determine required end treatment.

Unless shown otherwise in the plans, use a minimum end treatment of a straight pipe end with Class B or C riprap and geotextile for erosion control as shown in the **SCDOT Standard Drawings**. When specified in the plans, use end treatments such as pipe beveled end, concrete slab, straight headwall for pipe, pipe end structure, or pipe wingwall and apron system in accordance with **SCDOT Standard Drawings** or plan structure details.

When scour issues are observed on site, construct a cast in place concrete cut-off wall a minimum of two feet below the scour depth to protect the end treatment and pipe or as directed by the **RCE**.

3.3.10 Installation Inspection (HDPE)

All traffic control necessary to perform the installation and post construction inspections will be provided by the Prime Contractor. No separate payment will be made for this traffic control.

Construction Inspection:

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

When improper installation or damage is noted during the construction inspection of the pipe, repairs must be made to the satisfaction of the RCE. Additional inspections may be performed until confidence is restored that the installation has been performed in accordance with these specifications.

Post Construction Inspection (Acceptance):

The **RCE** will collect survey data for 100% of installed pipe. Survey data will be collected electronically to establish a pipe inventory. Survey data will include latitude, longitude, station, offset, elevation, and coordinates of the flow line for each pipe end. Survey data collected will also include at a minimum pipe diameter, pipe material, and description or survey data for drainage structures and end treatments.

The **RCE** will inspect 100% of pipe under the roadbed, 100% of pipe in a closed drainage system, and a minimum of 10.0% (random locations) of all other locations. These inspections will be performed to ensure proper jointing, clear flow, and that line, grade, and deformations (if applicable) do not exceed allowable limits. The **RCE** will perform these inspections with a combination of either:

- A. Video Camera (condition, jointing, & obstructions) & Laser Profiler/Deflectometer (line, grade & shape)
- B. Video Camera (condition, jointing, & obstructions) & Direct Measurement (line & grade) & either 9-Fin Mandrel (shape) for pipes 48-inch diameter and smaller or Direct Measurement (shape) for pipes larger than 48-inch diameter.

These inspections will be performed and submitted by a **SCDOT certified Earthwork, Drainage, & Base Technician**. Inspections of completed pipe installations will be

performed after the embankment is in place and all non-asphalt bases and/or subgrades have been completed for at least 30 days. In cases where the Contractor's accepted CPM Schedule indicates that paving operations will be conducted in less than 30 days, an early inspection may be performed for acceptance. If early inspections are performed and the paving does not commence as scheduled, an additional inspection may be performed at the **RCE's** discretion.

When third party surveys and inspections are performed on behalf of the **RCE**, a report will be submitted with the survey and inspection results. This report will include a copy of all video taken from each video camera inspection, pipe location identification, equipment used for inspection, inspector name, inspector field notes, measurements from the pipe inspection (at a minimum to include the following: deviation from design grade, deviation from line, deflection [expressed in inches and % of pipe diameter]), and survey data for all installed pipe.

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

For HDPE pipe, when installed pipe deflections exceed 5.0% of the inside diameter, prepare a report for submittal to the **RCE**. This report must address: structural integrity, environmental conditions, design service life of the pipe, and recommended remediation. Upon acceptance by the **RCE**, and at a minimum, implement the following: Replace the pipe at locations where the measured deflection exceeds 7.5% of the nominal inside diameter of the pipe. Repair or remediate locations as recommended in the report or by the **RCE**. Replace locations where directed by the **RCE**.

3.3.11 Installing Pipe Culvert Under Existing Pavement (HDPE)

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

3.3.12 Placing Pipe Under Railroads and Other Transportation Facilities (HDPE)

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

3.3.13 Cleaning Out Pipe (HDPE)

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

3.3.14

Trench Backfill for Expedited Construction (HDPE)

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

CLSM can be placed to a height not to exceed the subgrade elevation. The remaining pavement structure must be installed according to the pavement typical section. Measurements for payment will be made based on the neat line at a trench width (pipe outside diameter + 12") for the pipe type being installed. Any material used beyond these dimensions is considered incidental to the pipe installation. CLSM shall be installed in accordance with manufacturer's recommendations to prevent pipe displacement and uplift during CLSM placement.

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

When CLSM is specified by the **RCE** during construction, all CLSM used in the trench above the pipe springline will be paid for at the contract unit price for Controlled Low Strength Material.

3.4

Measurement (HDPE)

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

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

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

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

Measure the quantity for riprap placed around pipe end or end treatment in tons based on the quantity required to complete installation in accordance with the **SCDOT Standard Drawing and Instructional Bulletin 2009-2** for the pipe end treatment used.

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

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

The quantity of pipe additional foundation work is measured in linear feet along the centerline of the pipe as shown in the **SCDOT Standard Drawings**. Dispose of any unstable material in the manner outlined in **SCDOT Standard Specifications Subsection 203.2.1.5**.

For typical and maximum cover installations shown on **SCDOT Standard Drawings**, no measurement will be made for backfill material shown within the pipe embedment zone, and payment for this material will be included in the cost of the pipe. For shallow and minimum cover installations shown on **SCDOT Standard Drawings**, no measurement will be made for backfill within the pipe trench, and payment for this material will be included in the cost of the pipe.

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

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

3.5

Payment (HDPE)

Pipe culvert and end treatments measured as provided in **Subsection 3.4**, are paid for at the contract unit price for the respective items, which price and payment is compensation for furnishing all material, labor, equipment, tools including hauling and placing all pipe sections and materials, excavation of the entire standard trench, bedding, and pipe structural backfill as described in the measurement section, removal of existing pipe to be replaced, constructing pipe joints, removal of old end treatments, cleaning out pipe, disposal of surplus materials, all visual inspection, traffic control for all inspections, and all incidentals necessary to complete the work.

All traffic control necessary to perform the installation and post construction inspections will be provided by the Prime Contractor. No separate payment will be made for this traffic control.

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

Payment for riprap and geotextile for erosion control under riprap as measured in **Subsection 3.4** includes all direct and indirect costs and expenses necessary to complete the work.

The quantities for the items pipe culvert tees, wyes, elbows, bends, reducers, and increasers measured as provided in **Subsection 3.4**, are paid for as each.

The quantity of pipe additional foundation work, measured as provided for in **Subsection 3.4**, is paid for at the contract unit price, which price and payment is compensation for furnishing all material (foundation, extra bedding, extra structural backfill, extra geotextile, etc.), labor (additional trench excavation, compaction, etc.), equipment, tools, hauling, and disposal (of poor material) to complete construction of the pipe foundation, and wider trench as specified in the **SCDOT Standard Drawings**, the plans, or by the **RCE**.

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

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

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

Pay items are listed in **Subsection 5**.

3.6 Referenced Documents (HDPE)

SCDOT Standard Specifications for Highway Construction

SCDOT Supplemental Technical Specifications:

SC-T-29

SCDOT Qualified Product Lists:

Qualified Product List 2

Qualified Product List 30

SCDOT Instructional Bulletins:

SCDOT Instructional Bulletin 2007-04

AASHTO Standard Specifications for Transportation Materials & Methods of Sampling and Testing:

AASHTO M 145

AASHTO M 294

ASTM Standard Specifications:

ASTM D 1149

ASTM D 2321

ASTM D 3212

ASTM F 477

Websites:

www.osha.gov

www.llr.state.sc.us/labor/osha/

www.plasticpipe.org

www.ntpep.org

4 **Pipe Maintenance (All Existing Pipe)**

This section contains specifications for the materials, construction, measurement, and payment of maintenance on existing pipe infrastructure. This work includes cleaning existing pipe to restore hydraulic performance to pipe being retained as well as removal or abandoning of pipe that will not be replaced by a new culvert.

4.1 **Cleaning Out of Existing Pipe (All Existing Pipe)**

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

4.1.1 **Measurement of Existing Pipe Cleaning (All Existing Pipe)**

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

4.1.2 **Payment of Existing Pipe Cleaning (All Existing Pipe)**

Cleaning of existing pipe, as measured in **Subsection 4.1.1**, is paid for at the contract unit price for Cleaning Existing Pipe, which price and payment is full compensation for all work and costs of cleaning, debris removal, transporting, disposing of all obstructions within the pipe that is to be cleaned and within two pipe diameters of each pipe end.

4.2 **Removing of Existing Pipe (All Existing Pipe)**

Remove existing pipe in accordance with the provisions of **SCDOT Standard Specifications Subsection 202.4.3**. Backfill and compact fill material to the same grade and slope of the area before the pipe was removed.

4.2.1 **Measurement of Existing Pipe Removal (All Existing Pipe)**

The quantity for the excavation necessary for the removal of existing pipe culverts that are not to be replaced by new culverts is measured in cubic yards as set forth in **SCDOT Standard Specifications Subsection 202.5**.

4.2.2 **Payment of Existing Pipe Removal (All Existing Pipe)**

The excavation for the removal of existing pipe as measured in **Subsection 4.2.1**, is paid for at the contract unit price for Unclassified Excavation as specified in **SCDOT Standard Specifications Subsection 202.6**, which price and payment is full compensation for all work and costs of removal, transporting, and storing or disposing of existing pipe that is not to be replaced by a new structure and re-installation and compaction of fill material to restore embankment to original grade.

4.3 Abandoning Pipe (All Existing Pipe)

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

4.3.1 Measurement Pipe Abandoning (All Existing Pipe)

Measurement for pipe abandoning will be paid for as CLSM in accordance with **SCDOT Standard Specifications Subsection 210.5**.

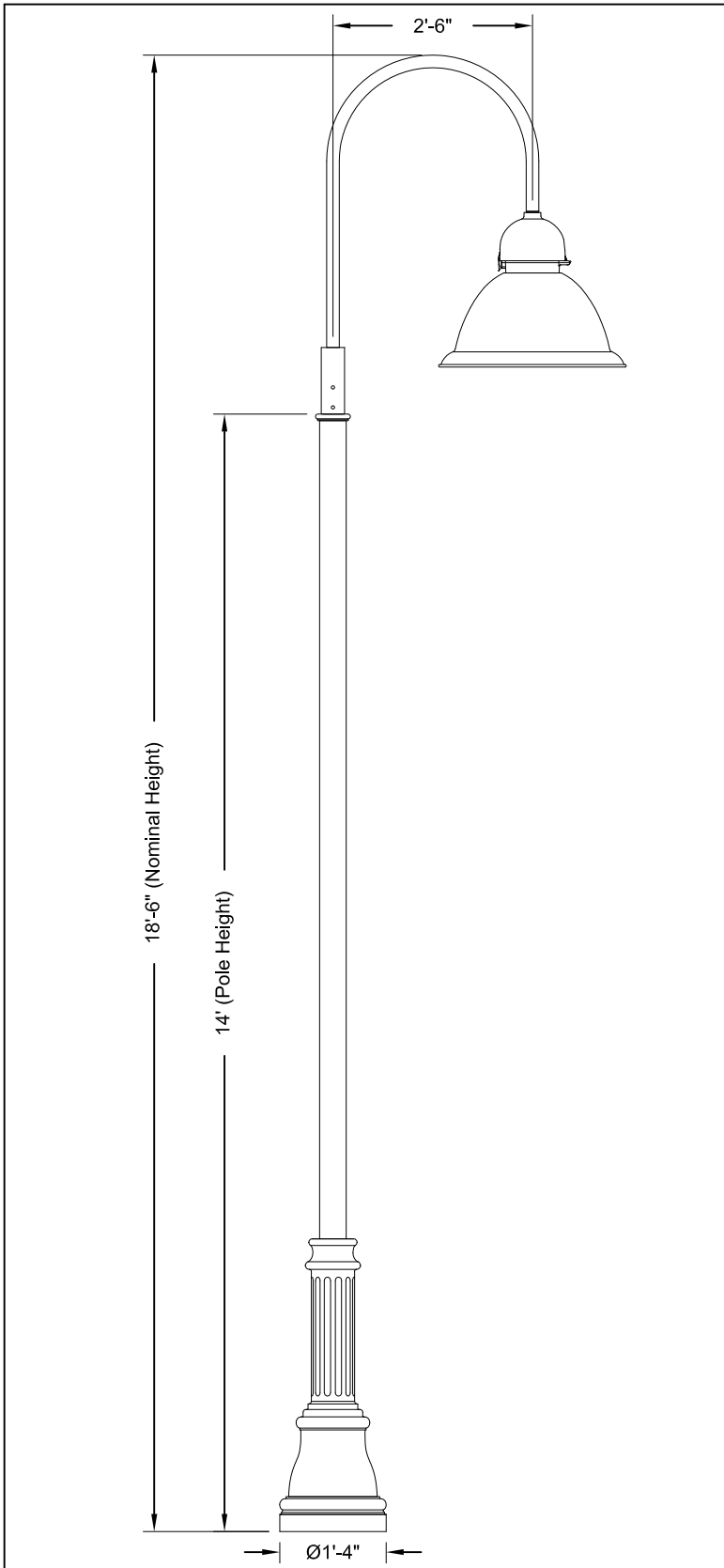
4.3.2 Payment Pipe Abandoning (All Existing Pipe)

Payment for pipe abandoning will be in accordance with **SCDOT Standard Specifications Subsection 210.6**, which price and payment is full compensation for all work and costs of materials, labor, and construction costs to abandon the pipe. No additional pay items will be made for this work regardless of the method chosen.

5- Pay Items

Pay items under this Supplemental Technical Specification include the following:

Item No.	Pay Item	Unit
714XXXX	<i>(size)</i> Smooth Wall Pipe Culvert	LF
714XXXX	<i>(size)</i> Corrugated Wall Pipe Culvert	LF
714XXXX	<i>(size)</i> RC Pipe Culvert (RCP) - <i>(class)</i>	LF
714XXXX	<i>(size)</i> RC Pipe Culvert (RCP) - <i>(class)</i> AASHTO M315	LF
714XXXX	<i>(size)</i> Corr. Alum. Alloy Pipe Culvert (CAAP) - <i>(gage)</i>	LF
714XXXX	<i>(size)</i> Spiral Rib. Alum. Pipe Culvert (SRAP) - <i>(gage)</i>	LF
714XXXX	<i>(size)</i> Corr. Polyethylene Pipe Culvert (HDPE) – Type S	LF
714XXXX	<i>(size)</i> <i>(kind)</i> Pipe Culvert Flared End Section <i>(class or thickness)</i>	EA
714XXXX	<i>(size)</i> <i>(kind)</i> Pipe Culvert Tee	EA
714XXXX	<i>(size)</i> <i>(kind)</i> Pipe Culvert Wye	EA
714XXXX	<i>(size)</i> <i>(kind)</i> Pipe Culvert <i>(degree)</i> Bend	EA
714XXXX	<i>(size)</i> <i>(kind)</i> Increaser <i>(size)</i> to <i>(size)</i> Diameter	EA
7149999	Cleaning Existing Pipe	LF



Specifications

DESCRIPTION

The lighting post shall be all aluminum, one-piece construction, with a classic tapered and fluted base design. The post shall be provided with (1) Bishop's Crook arm, 30" from post center to luminaire center.

MATERIALS

The base and fluted tapered cast shaft shall be heavy wall, cast aluminum produced from certified ASTM 356.1 ingot per ASTM B-179-95a or ASTM B26-95. The straight shafts shall be extruded from aluminum, ASTM 6061 alloy. All hardware shall be stainless steel. Anchor bolts to be completely hot dip galvanized.

CONSTRUCTION

The shaft shall be double welded to the base casting and shipped as one piece for maximum structural integrity. The shaft shall be welded inside the base casting at the top of the access door, and externally where the shaft exits the base. All welding shall be per ANSI/AWS

DIMENSIONS

The post shall be 14'-0" in height with a 16" diameter base. The shaft diameter shall be 4". At the top of the post, an integral Ø3"x6" tenon with a transitional donut shall be provided for luminaire mounting. The bolt circle base shall accept Ø1" bolts.

INSTALLATION

The post shall be provided with four, hot dip galvanized L-type anchor bolts. A door shall be provided in the base for anchorage and wiring access. A grounding screw shall be provided inside the base opposite the door.

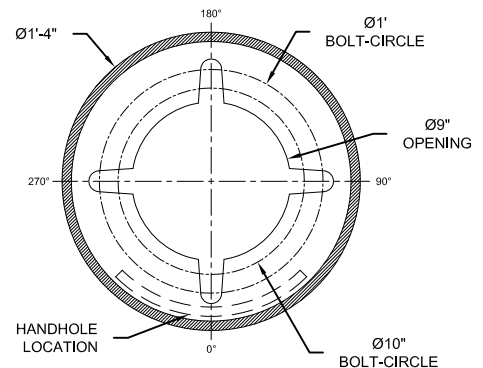
FINISH

The post shall have a standard Holophane black finish.

LUMINAIRE

- Bern GlasWerks LED
- 550mA Drive Current - 5000 Series CCT - Auto-Sensing Voltage (120-277)
- Pendant 1.5 NPT mount - Black finish - Type 3 Asymmetric Full Cutoff LED

Anchorage Detail



DO NOT USE TO SET ANCHOR BOLTS
CONTACT CUSTOMER SERVICE FOR TEMPLATE

Catalog #'s:

- Pole: CHA14S4C16P09ABGBK
- Roadway Arm: 1BC90R15FBK
- Fixture: GBLF2P3050KAS3BL3

Customer Signature

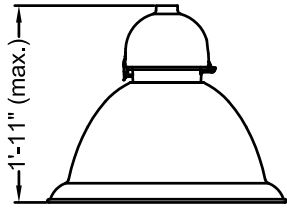
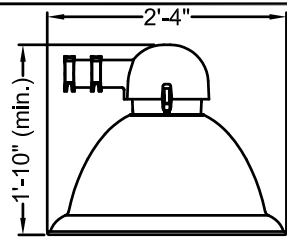
Date



Allison Rd
Beaufort, SC

ORDER #: 2338-16-11297-0	TYPE:	DRAWING #:
REVISION:	REVISION DATE:	TSG 010229
DRAWN: MAB	ORIGIN DATE: 05/31/17	

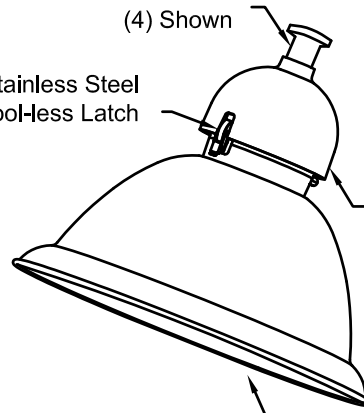
THIS DRAWING, WHEN APPROVED, SHALL BECOME THE COMPLETE SPECIFICATION FOR THE MATERIAL TO BE FURNISHED BY HOLOPHANE ON THE ORDER NOTED ABOVE. A UNIT OF SIMILAR DESIGN MAY BE SUPPLIED, BUT ONLY AFTER APPROVAL BY THE CUSTOMER IN WRITING. ON POLE ORDERS AN ANCHOR BOLT TEMPLATE PRINT WILL BE SUPPLIED WITH EACH ANCHOR BOLT ORDER TO MATCH THE POLE PROVIDED. THIS PRINT IS THE PROPERTY OF HOLOPHANE AND IS LOANED SUBJECT TO RETURN UPON DEMAND AND UPON EXPRESS CONDITION THAT IT WILL NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO OUR INTERESTS, AND ONLY IN CONNECTION WITH MATERIAL FURNISHED BY HOLOPHANE.



Maximum Effective Projected Area - 1.2 ft²
Maximum Weight - 46 lbs.

Quick Lock Stem Mount
 (4) Shown

Stainless Steel
 Tool-less Latch

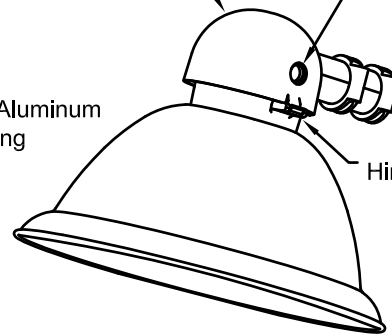


Cast Aluminum
 Housing

Spun Aluminum
 Cover

Optional NEMA
 Twist-Off Photocontrol
 Receptacle

Arm Mount



Hinge

GlasWerks® LED 2
Bern®

**DESIGNER
 OUTDOOR**

EXAMPLE: GBLF2 053 4K AS 4 B L3

GBLF2

COVER TYPE
 GBLF2 =
 BERN

COLOR TEMP.
 AM = TRUE
 AMBER**
 3K = 3000K
 4K = 4000K
 5K = 5000K

VOLTAGE
 AS = AUTO-SENSING
 120-277V
 AH = AUTO-SENSING
 347-480V

MOUNTING STYLE
 1 = ARM
 4 = QUICK LOCK STEM
 MOUNT

COLOR
 A = AS SPECIFIED
 B = BLACK
 D = DARK BLUE
 G = GRAY
 H = GRAPHITE
 N = GREEN
 P = PRIME PAINT
 S = SILVER
 W = WHITE
 Z = BRONZE
 TDC = TIGER DRYLAC
 COLOR (RAL ***)
 CMC = CUSTOM MATCH
 COLOR

SOURCE & WATTAGE
 053 = 530mA DRIVER (70W)
 070 = 700mA DRIVER (100W)
 105 = 1050mA DRIVER (140W)

ORDERING INFORMATION:

****NOTE:** AM (TRUE AMBER) ONLY AVAILABLE WITH 530mA DRIVER

OPTICS
 L3 = ASYMMETRIC FULL CUTOFF LED
 L5 = SYMMETRIC FULL CUTOFF LED

OPTIONS:

- AO = FIELD ADJUSTABLE OUTPUT
- D = ROAM 0-10V DIMMING CONTROL
- B = BI-LEVEL 0-10V DIMMING CONTROL
- H = NEMA TWISTLOCK PHOTOCONTROL RECEPTACLE ONLY
- PCS = DTL TWISTLOCK PHOTOCONTROL 120-277 VOLT
- P34 = DTL TWISTLOCK PHOTOCONTROL 347V
- P48 = DTL TWISTLOCK PHOTOCONTROL 480 VOLT
- PSC = SHORTING CAP
- P5 = DIMMING PHOTOCONTROL RECEPTACLE - 5 PIN
- P7 = DIMMING PHOTOCONTROL RECEPTACLE - 7 PIN
- L03 = 3 FEET OF PREWIRED LEADS
- L10 = 10 FEET OF PREWIRED LEADS
- L20 = 20 FEET OF PREWIRED LEADS
- L25 = 25 FEET OF PREWIRED LEADS
- L30 = 30 FEET OF PREWIRED LEADS

ACCESSORIES:

- SPDPLUGIN = REPLACEMENT SURGE PROTECTOR 120-277V
- SPDPLUGIN-48 = REPLACEMENT SURGE PROTECTOR 347-480V



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ORDER #:	
TYPE:	
DRAWN:	RAF
DATE:	5-11-15
DWG #:	LUM_GBLF2

Specifications

GENERAL DESCRIPTION

The Euro styled luminaire consists of a LED flat glass optical assembly shielded by a decorative formed reflector and a top mounted cast aluminum electrical assembly with a circumferential 1.50 inch reveal.

OPTICAL ASSEMBLY

The optical assembly consists of a thermal resistant flat glass panel mechanically held in a formed aluminum door frame. The door frame is attached to the spun cover with studs and lock nuts. Light from the LED module is distributed by precisely molded optical lens to maximize utilization, uniformity and luminaire spacing. Two LED boards are available for symmetrical or asymmetric distribution.

MOUNTING STYLE (LEVELING FITTER OPTIONS)

The Quick Lock Stem Mounting style is compatible with the following leveling fitters:

- Boston Harbor Decorative Arm Fitter (BHDF13)
- GlasWerks Decorative Arm Fitter (GWDF13)
- West Liberty Decorative Arm Fitter (WLDF13)

ELECTRICAL ASSEMBLY

The cast aluminum electrical housing has a smooth domed contour. A (3) station terminal block is provided that accepts #14 through #2 size wire and has a quick disconnect receptacle. The electrical housing is hinged with a tool-less latch to provide easy access to the gear assembly. The unitized electrical assembly, containing the electronic driver and other electrical components, plugs into the quick disconnect receptacle. The pendant mount version has a welded stem (Quick Lock Stem Mounting), which aides in installation speed. The arm mount version is provided with two U-bolts with washers and nuts and two leveling set screws that lock the housing to a 2 inch nominal (2-3/8" O.D.) horizontal arm and allow a +/- 5 degree adjustment from horizontal to the cover.

ELECTRICAL DRIVER

(Refer to the driver specification sheet for operating characteristics)

FINISH

The luminaire is finished with polyester powder paint to insure maximum durability.

LISTING

The luminaire is CSA listed as suitable for wet locations up to 40° C ambient temperature. IP55 rated electrical chamber, IP66 rated LED optic chamber.

WARRANTY

Limited warranty located at
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

NOTE

Actual performance may differ as a result of end-user environment and application.

Actual wattage may differ by +11% / -6% when operating between 120-480V +/- 10%.

Specification subject to change without notice.

GlasWerks® LED 2
Bern®

DESIGNER
OUTDOOR



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ORDER #:

TYPE:

DRAWN: RAF

DATE: 5-11-15

DWG #: LUM_GBLF2

Operating Characteristics

TOTAL LUMENS, WHITE LIGHT			
LED mA, CCT	Input Watts	L3	L5
053 3K	75	5537	5855
053 4K	75	6703	7089
053 5K	75	6770	7160
070 3K	99	6940	7339
070 4K	99	8402	8885
070 5K	99	8486	8974
105 3K	153	8938	9452
105 4K	153	10821	11443
105 5K	153	10929	11558

Operating Characteristics

TOTAL LUMENS, AMBER LIGHT			
LED mA, CCT	Input Watts	L3	L5
053 AM	56	1934	2045

GlasWerks® LED 2
Bern®

**DESIGNER
OUTDOOR**

HOLOPHANE®
An Acuity Brands Company
LEADER IN LIGHTING SOLUTIONS

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ORDER #:

TYPE:

DRAWN: RAF

DATE: 5-11-15

DWG #: LUM_GBLF2

TREE PROTECTION

PART 1 GENERAL:

1.1 SUMMARY:

- A. This Section includes the following:
 - 1. Protection of existing trees.
 - 2. Removal of trees and other vegetation.
 - 3. Clearing and grubbing.
 - 4. Removing above grade improvements
 - 5. Removing below grade improvements

1.2 UNIT PRICE – MEASUREMENT AND PAYMENT

- A. Measurement: No measurement will be made for tree protection, tree removal, removal of above ground or below ground improvements.
- B. Payment: Payment will be made at the lump sum bid for Tree Protection and shall include all costs for protection of the existing trees, trimming existing trees to remain, and for protection of trees during clearing, grubbing, tree removal, removal of existing above ground and below ground improvements, removal of debris and waste material from the site and all other costs of whatever nature in connection with the Work under this Section.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 PREPARATION

- A. Conduct site clearing operations to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct, walks or other occupied or used facilities without permission from authorities having jurisdiction.
- B. Provide protection necessary to prevent damage to existing improvements indicated to remain in place.
 - 1. Protect improvements on adjoining properties and on Owner's property;
 - 2. Restore damaged improvements to their original condition, as acceptable to property owners.

C. Tree Protection

1. Protect existing trees and other vegetation indicated to remain in place, against unnecessary cutting, breaking or skinning of roots, skinning or bruising of bark, smothering of trees by stockpiling construction materials or excavated materials within drip line, excess foot or vehicular traffic, or parking of vehicles within drip line or any other acts which may be harmful to the continued growth of the trees to be protected. Provide temporary guards to protect trees and vegetation to be left standing. A tree protection zone shall be defined as one foot lateral radius per inch diameter breast height (DBH).
2. Water trees and other vegetation to remain within limits of contract work as required to maintain their health during course of construction operations;
3. Provide protection for roots over 1-1/2 inch diameter that are cut during construction operations. Temporarily cover exposed roots with wet burlap to prevent roots from drying out; cover with earth as soon as possible or cut off cleanly below grade;
4. Repair or replace trees and vegetation indicated to remain, which are damaged by operations, in a manner acceptable to Engineer. Employ a licensed arborist to repair damages to trees and shrubs. All tree repair work shall be done in accordance with the most recent revision of the International Society of Arboriculture practices;
5. Replace trees which cannot be repaired and restored to full-growth status, as by arborist;
6. Install tree protection fencing where indicated on the plans using 2 x 4 lumber for posts and rails, spacing posts no more than 8 feet on center. Height to be a minimum of three feet above grade;
7. Savable Improvements: Carefully remove items indicated to be salvaged, and store on Owner's premises where indicated or directed.

3.2 SITE CLEARING

- A. General: Remove trees, shrubs, grass and other vegetation, improvements, or obstructions required to permit installation of new construction. Remove similar items elsewhere on premises as specifically indicated. "Removal" includes digging out and off-site disposing of stumps and roots.
1. Cut minor roots and branches of trees indicated to remain in a clean and careful manner, where such roots and branches obstruct installation of new construction.
- B. Clearing and Grubbing: Clear site of trees, shrubs and other vegetation, except for those indicated to be left standing.

1. Completely remove stumps, roots, and other debris protruding through ground surface;
 2. Use only hand methods for grubbing inside drip line of trees indicated to remain;
 3. Fill depressions caused by clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is indicated;
 - a. Place fill material in horizontal layers not exceeding 6 inches loose depth, and thoroughly compact to a density equal to adjacent original ground.
- C. Remove existing above-grade and below-grade improvements as indicated on the plans and as necessary to facilitate new construction.
1. Abandonment in place or removal of certain underground pipe or conduits interfering with construction is included under this section.
- D. Open burning on the site shall only be allowed if authorized in writing by Owner. Burning must comply with all state Air Pollution Regulations with regard to open burning as well as all local ordinances and regulations. Any permits required by state and local agencies for open burning shall be obtained by the Contractor.
- E. Remove all waste materials from Owner's property.

END OF SECTION

ATTACHMENT A – BID SHEET

CITY OF BEAUFORT

BID FORM - ALLISON ROAD (S-159) PEDESTRIAN CONNECTOR

ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	ESTIMATE PRICE
1031000	MOBILIZATION	1	LS		
1071000	TRAFFIC CONTROL	NEC.	LS		
2014000	SELECTED CLEAR & GRUB	NEC.	LS		
2031000	UNCLASSIFIED EXCAVATION	903	CY		
2033000	BORROW EXCAVATION	757	CY		
2024100	REMOVAL AND DISPOSAL OF EXISTING CURB AND GUTTER	389	LF		
2025000	REMOVAL AND DISPOSAL OF EXISTING ASPHALT PAVEMENT - 12 IN. DEEP	1150	SY		
2027000	REMOVAL AND DISPOSAL OF EXISTING CONCRETE	29	SY		
2028500	REMOVAL AND DISPOSAL OF EXISTING CULVERTS	7	EA		
2028510	REMOVAL AND DISPOSAL OF EXISTING GRATE INLET	1	EA		
2030011	RELOCATE MAILBOX	16	EA		
2034000	MUCK EXCAVATION (AS DIRECTED BY ENGINEER)	600	CY		
2081001	FINE GRADING	1464	SY		
2103000	FLOWABLE FILL (AS DIRECTED BY ENGINEER)	100	CY		
3050108	GRADED AGGREGATE BASE COURSE - 8 IN. UNIFORM	735	SY		
4011004	LIQUID ASPHALT BINDER PG64-22	37.9	TON		
4011005	PRIME COAT	200	GAL		
4012040	FULL DEP.ASPH.PAV.PATCH-4"UNIF	220	SY		
4013990	MILL EXISTING ASPHALT PAVEMENT - 2 IN. DEEP	3972	SY		
4020320	H-M ASPHALT LEVELING COURSE TYPE E	242	TON		
4020330	H-M ASPHALT INTERMEDIATE COURSE TYPE C	81	TON		
4030320	H-M ASPHALT SURFACE COURSE TYPE B	336	TON		
4071000	BITUMINOUS SURFACING (SINGLE TREATMENT) TYPE 1	81	SY		
6013025	POLY. PAINT 24 IN. SOLID STOP LINES	60	LF		
6040010	4 IN. WHITE SOLID LINE PAVEMENT EDGE FAST DRY PAINT	76	LF		
6040110	4 IN. YELLOW SOLID LINE PAVEMENT EDGE FAST DRY PAINT	2622	LF		
6041030	WHITE SINGLE ARROWS THERMO-125 MIL.	1	EA		
6041040	WHITE COMBO ARROWS THERMO-125 MIL.	1	EA		
6042015	8 IN. WHITE SOLID - CROSSWALK AND CHANNELIZATION - EPOXY PAINT	250	LF		
6051120	PERMANENT CONSTRUCTION SIGNS - GRND MNTD	25	SF		
6271025	24 IN. WHITE SOLID LINE THERMOPLASTIC 125 MIL.	84	LF		
6531205	U-SECTION POST FOR SIGN SUPPORT	120	LF		
6541011	RESET BRKWY.SGN.FOUND.(WOOD)	12	EA		
6770300	RESET 16 IN. ABOVE GRND. UTIL. MARK.	2	EA		
7143618	18 IN. SMOOTH WALL PIPE	460	LF		
7143624	24 IN. SMOOTH WALL PIPE	9	LF		
7143630	30 IN. SMOOTH WALL PIPE	904	LF		
7191165	CATCH BASIN - TYPE 16	11	EA		
7192220	DROP INLET - 24 IN. X 24 IN.	8	EA		
7197120	ADJ.UTILITY MANHOLE	3	EA		
7197141	ADJ.UTILITY VALVE BOX W/COVER	6	EA		
7203110	CONCRETE CURB AND GUTTER - 1 FT. GUTTER 6 IN. CURB 6 IN. VERTICAL FACE	2710	LF		
7204100	CONCRETE WALK - 4 IN. UNIFORM	169	SY		
7204101	CONCRETE PATH - 6 IN. UNIFORM	1050	SY		
7204900	DETECTABLE WARNING MATERIAL	156	SF		
7205000	CONCRETE DRIVEWAY - 6 IN. UNIFORM	156	SF		
7209000	PEDESTRIAN RAMP CONSTRUCTION	72	SY		
8041020	RIP-RAP CLASS "D"	15	TON		
8071000	RESET FENCE	183	LF		
8081100	ADJUST WATER SERVICE LINE	13	EA		
8100100	PERMANENT COVER	0.23	AC		
8100200	TEMPORARY COVER	0.23	AC		
8104005	FERTILIZER (NITROGEN)	61	LBS		
8104010	FERTILIZER (PHOSPHORIC ACID)	20	LBS		

CITY OF BEAUFORT

BID FORM - ALLISON ROAD (S-159) PEDESTRIAN CONNECTOR

ITEM	DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	ESTIMATE PRICE
8104015	FERTILIZER (POTASH)	102	LBS		
8105005	AGRICULTURAL GRANULAR LIME	814	LBS		
8109050	SELECTIVE WATERING	8210	GAL		
8109901	MOWING	0.3	AC		
8114010	TREE PROTECTION	1	LS		
8152007	SEDIMENT TUBES	10	LF		
8153000	SILT FENCE	2435	LF		
8153005	REPLACE - REPAIR SILT FENCE	245	LF		
8154050	REMOVAL OF SILT RETAINED BY SILT FENCE	610	LF		
	CONCRETE WASHOUT	1	EA		
	RELOCATE FIRE HYDRANT	2	EA		
	INSTALL LIGHT POLE FOUNDATION & COORDINATE POLE INSTALLATION WITH SCE&G	15	EA		
	LIGHTING ELECTRIC HANDHOLE	15	EA		
	LIGHTING 2" SCHEDULE 40 PVC CONDUIT	434	LF		
	LIGHTING 1" SCHEDULE 40 PVC CONDUIT	60	LF		
	PROJECT TOTAL COST				

ATTACHMENT B – CONSTRUCTION PLANS



INDEX OF SHEETS

SHEET NO.	DESCRIPTION	SHEET SUBTOTALS
1	TITLE SHEET	1
2	SUMMARY OF ESTIMATED QUANTITIES	1
2A	MOVING AND DEMOLITION ITEMS	1
3	TYPICAL SECTION	1
4	RIGHT OF WAY DATA SHEET	1
4A	RIGHT OF WAY ACQUISITION	1
5	GENERAL CONSTRUCTION NOTES	1
6	REFERENCE SHEET	1
7-9	DEMOLITION PLANS	3
10-12	PLAN AND PROFILE SHEETS	3
D1-D3	DRAINAGE PLANS	3
E1-E3	ELECTRICAL AND LIGHTING PLANS	3
EC1-EC4	EROSION CONTROL PLANS	4
L1-L3	LANDSCAPING PLANS	3
PM1-PM3	SIGNAGE AND PAVEMENT MARKING PLANS	3
X1-X9	CROSS SECTIONS	9
D1-D4	CONSTRUCTION DETAILS	4
TOTALS		43

CONSTRUCTION PLANS FOR

CITY OF BEAUFORT ALLISON ROAD PEDESTRIAN CONNECTOR

PROJECT ID: PO27276



LAYOUT

SCALE 1 INCH = 250' FEET

NET LENGTH OF ROADWAY	0.253 MILES
NET LENGTH OF BRIDGES	0.000 MILES
NET LENGTH OF PROJECT	0.253 MILES
LENGTH OF EXCEPTIONS	0.000 MILES
GROSS LENGTH OF PROJECT	0.253 MILES

EQUALITIES IN STATIONING = NONE

NOTE: EXCEPT AS MAY OTHERWISE BE SPECIFIED ON THE PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIALS AND WORKMANSHIP ON THIS PROJECT SHALL CONFORM TO THE SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2007 EDITION) AND THE STANDARD DRAWINGS FOR ROAD CONSTRUCTION IN EFFECT AT THE TIME OF LETTING.

Hydraulic Design Reference for these plans is the
2009
Edition of SCDOT's "Requirements for Hydraulic Design Studies"

Design Reference for these plans is the
2001
AASHTO "A Policy on Geometric Design of Highways and Streets"

NPDES PERMIT INFORMATION

NPDES Disturbed
Disturbed Area = 1.83 Acre(s)
Permitted Area = 1.83 Acre(s)

Approximate Location of Roadway is
Begin
Latitude N 32°24'52.32"
Longitude W 80°41'33.87"

End
Latitude N 32°24'52.33"
Longitude W 80°41'19.44"

Hydraulic and NPDES Design provided by:
WARD EDWARDS INC.

Designs may be obtained from the SCDOT Regional Production Group

ENVIRONMENTAL PERMIT INFORMATION		
USACE PERMIT	___YES	<input checked="" type="checkbox"/> NO
NEPA DOCUMENT	___YES	<input checked="" type="checkbox"/> NO
401 CERTIFICATION	___YES	<input checked="" type="checkbox"/> NO
OCRM CAP	___YES	<input checked="" type="checkbox"/> NO
NAVIGABLE WATERS___SC	___USCG	___USACE <input checked="" type="checkbox"/> N/A

SCDOT REVIEW	RIGHT-OF-WAY		CONSTRUCTION	
	INITIAL	DATE	INITIAL	DATE
PRECONSTRUCTION SUPPORT - ROAD				
PRECONSTRUCTION SUPPORT - STRUCTURES				
RPG - DESIGN MANAGER				
RPG - PROGRAM MANAGER				

THE INITIALS ABOVE DO NOT RELIEVE THE ENGINEER OF RECORD OF THE RESPONSIBILITY TO DESIGN THIS PROJECT IN ACCORDANCE WITH ALL APPLICABLE CRITERIA.

3 DAYS BEFORE DIGGING IN SOUTH CAROLINA
CALL 811
SOUTH CAROLINA 811 (SC811)
WWW.SC811.COM
ALL UTILITIES MAY NOT BE A MEMBER OF SC811

RAILROAD INVOLVEMENT?
NO

TRAFFIC DATA	
2018 ADT	1800
2038 ADT	1800
TRUCKS	0 %

C.O.B. ALLISON ROAD CONNECTOR
BJWSA PROJECT # 2015-034

For Right Of Way Acquisition:

Consultant Engineer of Record Date

Regional Production Engineer Date

CONSULTING ENGINEERING FIRM

Ward Edwards
ENGINEERING

P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
PH (843) 837-5250 / FAX (843) 837-2558
WWW.WARDEDWARDS.COM

ENGINEER OF RECORD

FOR CONSTRUCTION: _____ DATE

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MOVING ITEMS

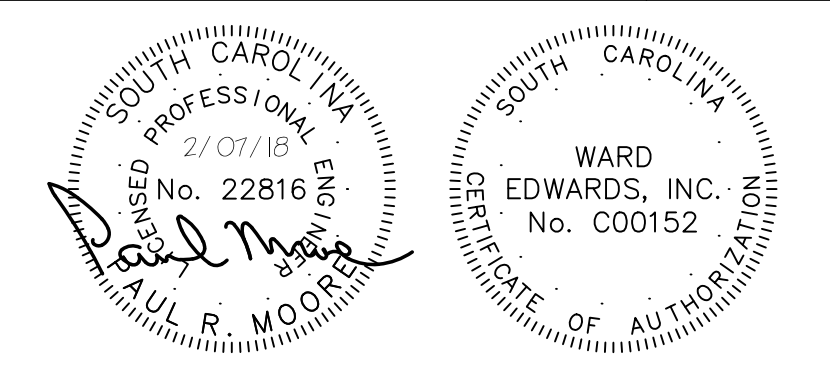
REMOVAL AND DISPOSAL ITEMS

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	NO.	SHEET NO.
3	S.C.	BEAUFORT	PO27276		2A

ITEM NO.	LOCATION		DESCRIPTION	WORK TO BE DONE	UNIT	OWNER	ITEM NO.	LOCATION		DESCRIPTION	WORK TO BE DONE	UNIT	OWNER
	FEET-RT.orLT.	STATION						FEET-RT.orLT.	STATION				
1	LT 61.730'	2+16.03	FENCE	MOVE AND RESET FENCE	15	BJWSA	1	RT 11.345'	2+12.34	CURB AND GUTTER	DEMOLISH CURB AND GUTTER	185 LF	CITY OF BEAUFORT
2	RT 14.939'	2+22.26	GAS LINE MARKER	RELOCATE GAS LINE MARKER	1	SCE&G	2	LT 11.874'	2+23.28	ASPHALT	DEMOLISH ASPHALT	94 SY	CITY OF BEAUFORT
3	LT 19.660'	2+38.94	ROAD SIGN	RELOCATE ROAD SIGN	1	CITY OF BEAUFORT	3	LT 14.240'	2+26.46	CURB AND GUTTER	DEMOLISH CURB AND GUTTER	179 LF	CITY OF BEAUFORT
4	LT 20.540'	2+46.10	ROAD SIGN	RELOCATE ROAD SIGN	1	CITY OF BEAUFORT	4	LT 20.062'	2+26.34	RAIL ROAD SIGN	REMOVE RAIL ROAD SIGN	1	CITY OF BEAUFORT
5	LT 20.000'	2+94.81	WATER METER BOX	ADJUST HEIGHT OF WATER METER BOX	1	BJWSA	5	RT 23.75'	2+12.34	SHRUBS	DEMOLISH SHRUBS IN R-O-W	1	CITY OF BEAUFORT
6	LT 19.851'	3+43.75	MAILBOX	RESET MAILBOX	1	JOSEPH ALLEN PATTERSON IV	6	LT 28.002'	2+66.38	SHRUBS	DEMOLISH SHRUBS IN R-O-W	1	CITY OF BEAUFORT
7	RT 7.943'	3+63.54	GAS VALVE BOX	ADJUST HEIGHT OF GAS VALVE BOX	1	SCE&G	7	LT 27.031'	2+98.50	CONCRETE WALK	DEMOLISH CONCRETE WALK	4 SY	JOSEPH ALLEN PATTERSON IV
8	LT 25.675'	3+72.14	WATER SPIGOT	RELOCATE WATER SPIGOT	1	JOSEPH ALLEN PATTERSON IV	8	RT 16.504'	3+40.71	SHRUBS	DEMOLISH SHRUBS IN R-O-W	1	CITY OF BEAUFORT
9	LT 21.975'	3+79.35	SANITARY SEWER MANHOLE	ADJUST FRAME ELEV OF SANITARY SEWER MANHOLE	1	BJWSA	9	LT 19.746'	3+41.81	SHRUBS	DEMOLISH SHRUBS IN R-O-W	1	CITY OF BEAUFORT
10	RT 39.175'	3+78.26	ROAD SIGN	RELOCATE ROAD SIGN	1	CITY OF BEAUFORT	10	LT 24.497'	3+50.40	WOOD FENCE	DEMOLISH WOOD FENCE	10 LF	JOSEPH ALLEN PATTERSON IV
11	LT 23.605'	3+94.25	ROAD SIGN	RESET ROAD SIGN	1	CITY OF BEAUFORT	11	LT 15.882'	3+64.35	ASPHALT	DEMOLISH ASPHALT	11 SY	CITY OF BEAUFORT
12	RT 13.839'	4+03.16	WATER VALVE BOX	ADJUST HEIGHT OF WATER VALVE BOX	1	BJWSA	12	RT 37.471'	4+04.11	ASPHALT	DEMOLISH ASPHALT	10 SY	SCDOT
13	RT 36.780'	4+12.74	ROAD SIGN	RELOCATE ROAD SIGN	1	CITY OF BEAUFORT	13	LT 14.386'	4+35.81	ASPHALT	DEMOLISH ASPHALT	108 SY	SCDOT
14	RT 16.151'	4+23.47	FIRE HYDRANT	RELOCATE FIRE HYDRANT	1	BJWSA	14	RT 11.288'	4+37.23	18" RCP	DEMOLISH 18" RCP	325 LF	SCDOT
15	LT 25.493'	4+67.09	WATER METER BOX	ADJUST HEIGHT OF WATER METER BOX	1	BJWSA	15	LT 23.301'	4+41.30	GRATE INLET	DEMOLISH EXISTING GRATE INLET	1	SCDOT
16	LT 25.493'	4+96.15	MAILBOX	RESET MAILBOX	1	MARRY ELIZABETH DOBYNS BAUER	16	RT 12.332'	4+41.97	15" RCP	DEMOLISH 15" RCP	38 LF	SCDOT
17	LT 24.505'	5+29.48	MAILBOX	RESET MAILBOX	1	TANGER R. CRASE	17	RT 15.001'	4+45.50	18" RCP	DEMOLISH 18" RCP	8 LF	SCDOT
18	LT 25.118'	5+32.07	MAILBOX	RESET MAILBOX	1	PATRICIA MATHEWS	18	LT 13.400'	5+11.78	ASPHALT	DEMOLISH ASPHALT	17 SY	SCDOT
19	LT 26.500'	5+44.73	WATER METER BOX	ADJUST HEIGHT OF WATER METER BOX	1	BJWSA	19	LT 23.861'	5+13.62	CONCRETE	DEMOLISH CONCRETE	25 SY	MARRY ELIZABETH DOBYNS BAUER
20	RT 21.122'	5+67.81	WATER METER BOX	ADJUST HEIGHT OF WATER METER BOX	1	BJWSA	20	RT 24.224'	5+59.68	SHRUBS	DEMOLISH SHRUBS	1	DAVID E. & MERRILY C. SUMERA
21	RT 22.140'	5+92.87	FENCE	RESET FENCE	80 LF	DAVID E. & MERRILY C. SUMERA	21	LT 15.949'	5+77.70	ASPHALT	DEMOLISH ASPHALT	49 SY	SCDOT
22	LT 27.401'	6+28.87	WATER METER BOX	ADJUST HEIGHT OF WATER METER BOX	1	BJWSA	22	RT 16.614'	5+78.47	18" RCP	DEMOLISH 18" RCP	21 LF	DAVID E. & MERRILY C. SUMERA
23	RT 19.046'	6+77.95	WATER METER BOX	ADJUST HEIGHT OF WATER METER BOX	1	BJWSA	23	RT 17.921'	5+82.50	ASPHALT	DEMOLISH ASPHALT	24 SY	DAVID E. & MERRILY C. SUMERA
24	LT 25.371'	6+89.27	MAILBOX	RESET MAILBOX	1	SEAN M. ALFORD	24	LT 19.451'	5+87.94	ASPHALT	DEMOLISH ASPHALT	32 SY	TANGER R. CRASE
25	LT 25.080'	6+90.84	MAILBOX	RESET MAILBOX	1	DAVID E. & MERRILY C. SUMERA	25	LT 31.207'	6+33.69	SHRUBS	DEMOLISH SHRUBS	1	SEAN M. ALFORD
26	LT 25.656'	6+92.46	MAILBOX	RESET MAILBOX	1	SHARON,BARRY,LOGAN&OLIVER SPENCER	26	RT 21.979'	6+48.32	SHRUBS	DEMOLISH SHRUBS	1	CATHERINE E. McLEDO
27	LT 25.206'	6+94.47	WATER METER BOX	ADJUST HEIGHT OF WATER METER BOX	1	BJWSA	27	RT 15.657'	6+50.52	18" RCP	DEMOLISH 18" RCP	21 LF	CATHERINE E. McLEDO
28	LT 24.972'	6+96.11	MAILBOX	RESET MAILBOX	1	CATHERINE E. McLEDO	28	RT 16.424'	6+58.94	ASPHALT	DEMOLISH ASPHALT	24 SY	CATHERINE E. McLEDO
29	LT 24.224'	6+99.68	MAILBOX	RESET MAILBOX	1	SWL PROPERTIES, LLC	29	LT 31.207'	6+33.69	SHRUBS	DEMOLISH SHRUBS	1	SEAN M. ALFORD
30	LT 21.735'	7+17.38	SANITARY SEWER MANHOLE	ADJUST FRAME ELEV OF SANITARY SEWER MANHOLE	1	BJWSA	30	LT 13.794'	6+84.55	ASPHALT	DEMOLISH ASPHALT	100 SY	SCDOT
31	RT 15.455'	7+78.89	WATER METER BOX	ADJUST HEIGHT OF WATER METER BOX	1	BJWSA	31	LT 30.087'	6+76.87	SHRUBS	DEMOLISH SHRUBS IN R-O-W	1	CITY OF BEAUFORT
32	LT 25.267'	8+09.62	WATER METER BOX	ADJUST HEIGHT OF WATER METER BOX	1	BJWSA	32	LT 23.541'	7+22.20	ASPHALT	DEMOLISH ASPHALT	26 SY	SHARON,BARRY,LOGAN&OLIVER SPENCER
33	RT 16.226'	9+09.08	WATER METER BOX	ADJUST HEIGHT OF WATER METER BOX	1	BJWSA	33	RT 12.317'	7+25.43	15" RCP	DEMOLISH 15" RCP	21 LF	SWL PROPERTIES, LLC
34	LT 26.283'	9+16.33	WATER METER BOX	ADJUST HEIGHT OF WATER METER BOX	1	BJWSA	34	RT 16.112'	7+31.54	ASPHALT	DEMOLISH ASPHALT	25 SY	SWL PROPERTIES, LLC
35	LT 28.048'	9+44.66	MAILBOX	RESET MAILBOX	1	PAUL J. & CAROL A. HOLEN-CASH	35	LT 28.748'	7+37.78	SHRUBS	DEMOLISH SHRUBS IN R-O-W	1	CITY OF BEAUFORT
36	LT 27.682'	9+46.19	MAILBOX	RESET MAILBOX	1	GERALD D. & CATHY L. BROWN	36	LT 14.355'	7+42.57	ASPHALT	DEMOLISH ASPHALT	49 SY	SCDOT
37	LT 26.946'	10+08.17	MAILBOX	RESET MAILBOX	1	TIMOTHY E. & KAREN L. KEANE	37	LT 24.678'	7+85.49	ASPHALT	DEMOLISH ASPHALT	27 SY	GANELLE R. & ROBERT C. HECK JR.
38	LT 26.485'	10+09.24	MAILBOX	RESET MAILBOX	1	ELSIE V. SMITH	38	LT 15.755'	7+99.68	ASPHALT	DEMOLISH ASPHALT	86 SY	SCDOT
39	LT 27.000'	10+08.50	WATER METER BOX	ADJUST HEIGHT OF WATER METER BOX	1	BJWSA	39	LT 21.468'	9+02.18	ASPHALT	DEMOLISH ASPHALT	21 SY	PAUL J. & CAROL A. HOLEN-CASH
40	LT 26.485'	10+09.24	MAILBOX	RESET MAILBOX	1	TIMOTHY E. & KAREN L. KEANE	40	RT 12.156'	9+26.92	18" RCP	DEMOLISH 18" RCP	21 LF	GERALD D. & CATHY L. BROWN
41	RT 17.201'	10+54.83	WATER METER BOX	ADJUST HEIGHT OF WATER METER BOX	1	BJWSA	41	RT 16.455'	9+32.73	ASPHALT	DEMOLISH ASPHALT	28 LF	GERALD D. & CATHY L. BROWN
42	LT 23.761'	10+58.13	SANITARY SEWER MANHOLE	ADJUST FRAME ELEV OF SANITARY SEWER MANHOLE	1	BJWSA	42	LT 13.857'	9+97.02	ASPHALT	DEMOLISH ASPHALT	277 SY	SCDOT
43	RT 10.556'	11+15.89	WATER VALVE BOX	ADJUST HEIGHT OF WATER VALVE BOX	1	BJWSA	43	RT 13.729'	10+08.97	ASPHALT	DEMOLISH ASPHALT	17 SY	GERALD D. & CATHY L. BROWN
44	RT 16.546'	11+16.04	FIRE HYDRANT	RELOCATE FIRE HYDRANT	1	BJWSA	44	RT 7.110'	10+39.76	ASPHALT	DEMOLISH ASPHALT	13 SY	ELSIE V. SMITH
45	RT 20.021'	11+23.27	ROAD SIGN	RELOCATE ROAD SIGN	1	SCDOT	45	LT 25.853'	10+31.49	SHRUBS	DEMOLISH SHRUBS IN R-O-W	1	CITY OF BEAUFORT
46	RT 9.910'	11+48.97	WATER VALVE BOX	ADJUST HEIGHT OF WATER VALVE BOX	1	BJWSA	46	LT 26.118'	10+45.21	WOOD POST	DEMOLISH WOOD POST	3	TIMOTHY E. & KAREN L. KEANE
47	RT 21.058'	11+57.65	ROAD SIGN	RELOCATE ROAD SIGN	1	SCDOT	47	RT 15.706'	10+52.07	SHRUBS	DEMOLISH SHRUBS IN R-O-W	1	CITY OF BEAUFORT
48	LT 26.678'	11+74.21	MAILBOX	RESET MAILBOX	1	ENID STEEDLY BATES	48	RT 27.517'	11+51.17	ASPHALT	DEMOLISH ASPHALT	40 SY	CITY OF BEAUFORT
49	LT 29.962'	11+80.27	FENCE	RESET FENCE	8 LF	ENID STEEDLY BATES	49	LT 21.352'	11+91.47	ASPHALT	DEMOLISH ASPHALT	19 SY	ENID STEEDLY BATES
50	LT 29.027'	12+17.86	WATER METER BOX	ADJUST HEIGHT OF WATER METER BOX	1	BJWSA	50	LT 15.089'	12+01.88	ASPHALT	DEMOLISH ASPHALT	77 SY	SCDOT
51	LT 29.529'	12+66.16	FENCE	RESET FENCE	95 LF	ENID STEEDLY BATES	51	RT 14.697'	12+43.30	ASPHALT	DEMOLISH ASPHALT	20 SY	SUE M. SAILORS
52	LT 22.357'	12+78.84	ROAD SIGN	RELOCATE ROAD SIGN	1	SCDOT	52	RT 13.746'	12+71.84	ASPHALT	DEMOLISH ASPHALT	19 SY	HAROLD F. & EMMA J. KUHN
53	LT 21.980'	13+04.57	SANITARY SEWER MANHOLE	ADJUST FRAME ELEV OF SANITARY SEWER MANHOLE	1	BJWSA	53	LT 40.737'	13+02.19	CURB AND GUTTER	DEMOLISH CURB AND GUTTER	10 LF	BEAUFORT MEMORIAL HOSPITAL
54	RT 13.156'	13+07.35	GAS LINE MARKER	RELOCATE GAS LINE MARKER	1	SCE&G	54	LT 20.260'	13+56.07	CURB AND GUTTER	DEMOLISH CURB AND GUTTER	125 LF	BEAUFORT MEMORIAL HOSPITAL
55	RT 13.870'	13+21.84	STORM STRUCTURE	RELOCATE STORM STRUCTURE	1	SCDOT	55	LT 17.400'	13+63.11	ASPHALT	DEMOLISH ASPHALT	23 SY	BEAUFORT MEMORIAL HOSPITAL
56	RT 11.202'	13+34.90	WATER VALVE BOX	ADJUST HEIGHT OF WATER VALVE BOX	1	BJWSA	56	RT 13.555'	13+68.33	ASPHALT	DEMOLISH ASPHALT	6 SY	BEAUFORT MEMORIAL HOSPITAL
57	RT 8.213'	13+41.36	WATER VALVE BOX	ADJUST HEIGHT OF WATER VALVE BOX	1	BJWSA	57	RT 28.094'	13+80.23	CURB AND GUTTER	DEMOLISH CURB AND GUTTER	3 LF	BEAUFORT MEMORIAL HOSPITAL
58							58	RT 28.581'	14+05.28	CURB AND GUTTER	DEMOLISH CURB AND GUTTER	3 LF	BEAUFORT MEMORIAL HOSPITAL
59							59	RT 18.338'	14+14.77	ASPHALT	DEMOLISH ASPHALT	4 SY	BEAUFORT MEMORIAL HOSPITAL
60							60						
61													
62													

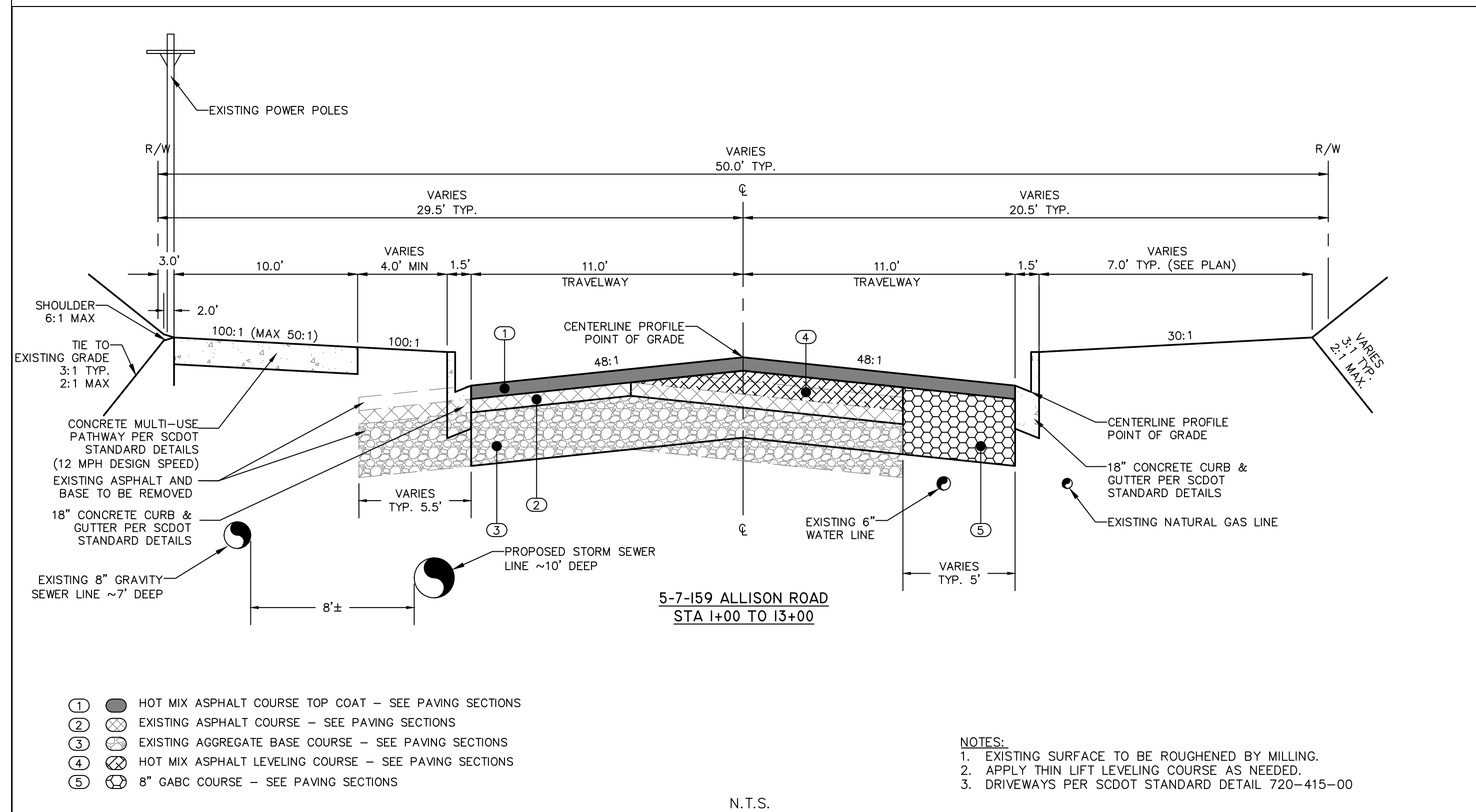
NEW FENCES

STA. TO STA.	LT.orRT.	DESCRIPTION	LINEAR FT.
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TYPICAL SECTION OF IMPROVEMENT SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION COLUMBIA, S.C.

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	NO.	SHEET NO.
3	S.C.	BEAUFORT	PO27276		3

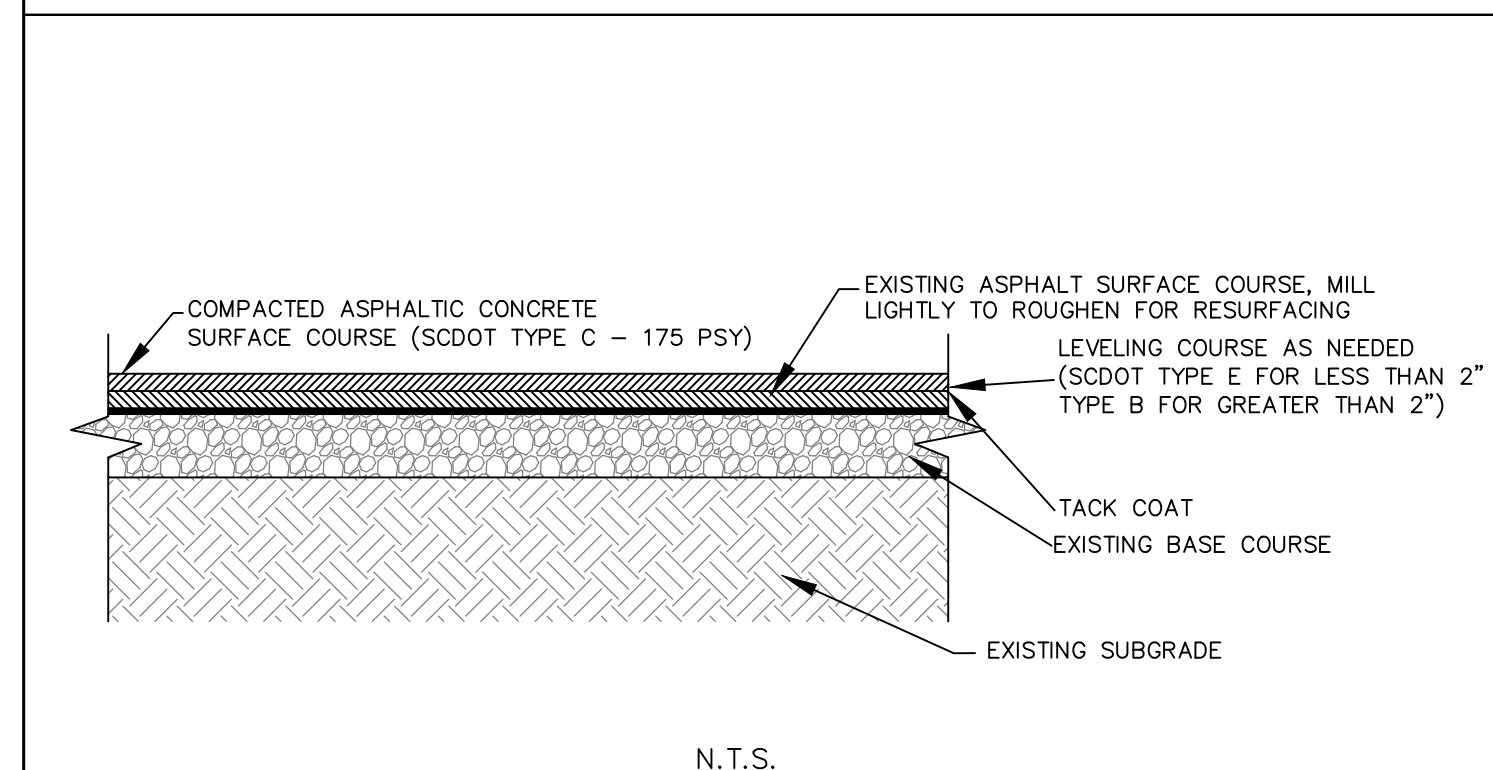


- ① ● HOT MIX ASPHALT COURSE TOP COAT - SEE PAVING SECTIONS
- ② ◐ EXISTING ASPHALT COURSE - SEE PAVING SECTIONS
- ③ ◑ EXISTING AGGREGATE BASE COURSE - SEE PAVING SECTIONS
- ④ ◒ HOT MIX ASPHALT LEVELING COURSE - SEE PAVING SECTIONS
- ⑤ ◓ 8" GABC COURSE - SEE PAVING SECTIONS

NOTES:
 1. EXISTING SURFACE TO BE ROUGHENED BY MILLING.
 2. APPLY THIN LIFT LEVELING COURSE AS NEEDED.
 3. DRIVEWAYS PER SCDOT STANDARD DETAIL 720-415-00

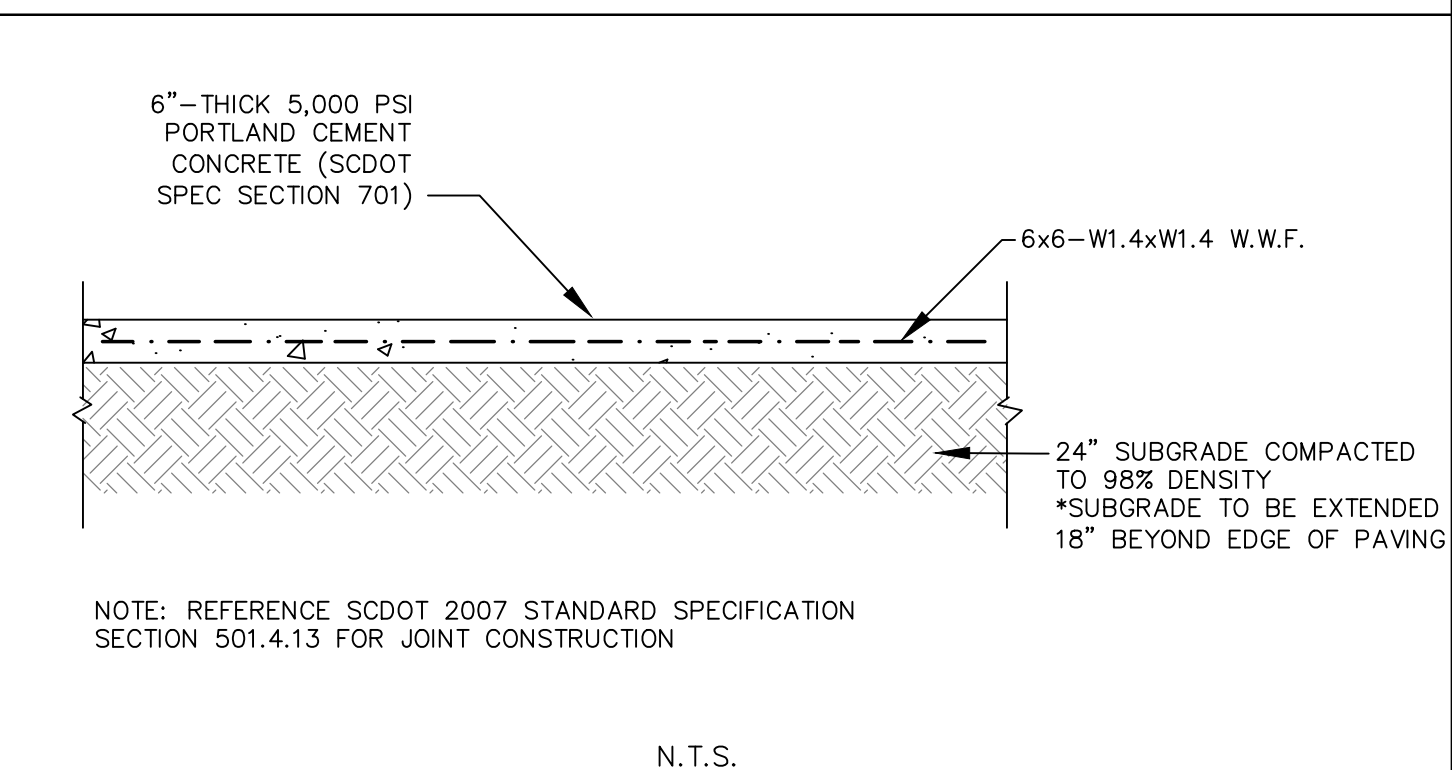
N.T.S.

5-7-159 - TYPICAL SECTION



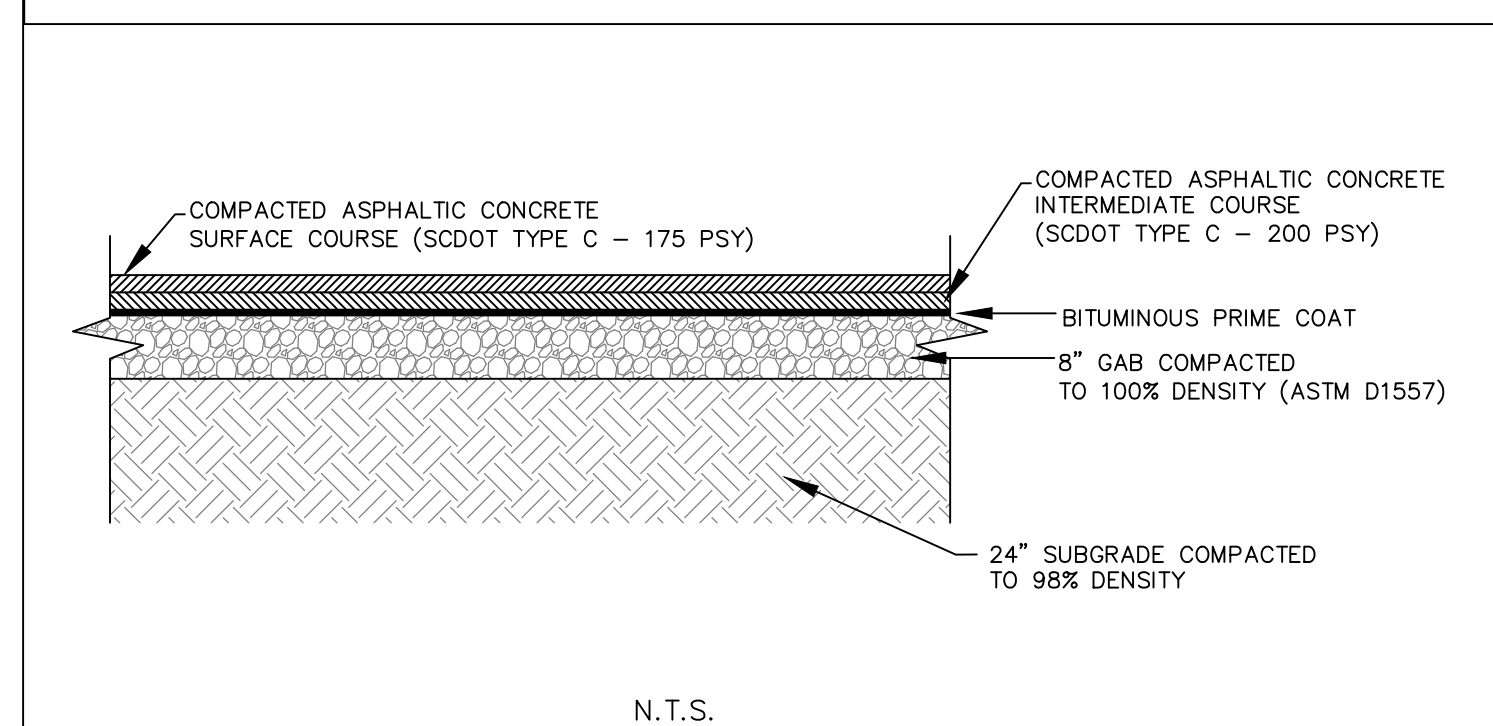
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ASPHALT RESURFACING



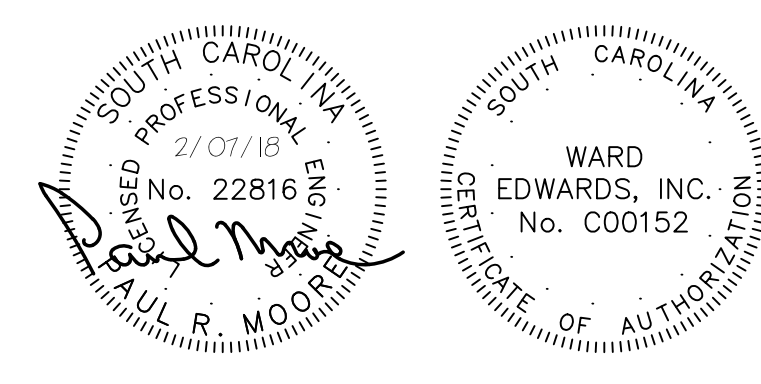
N.T.S.

MULTI-USE PATH SECTION



N.T.S.

NEW ASPHALT PAVING



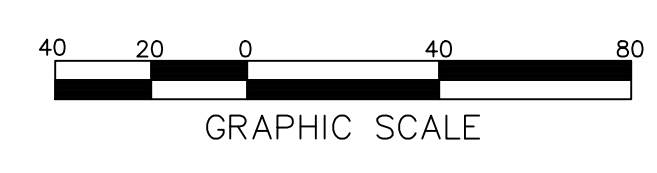
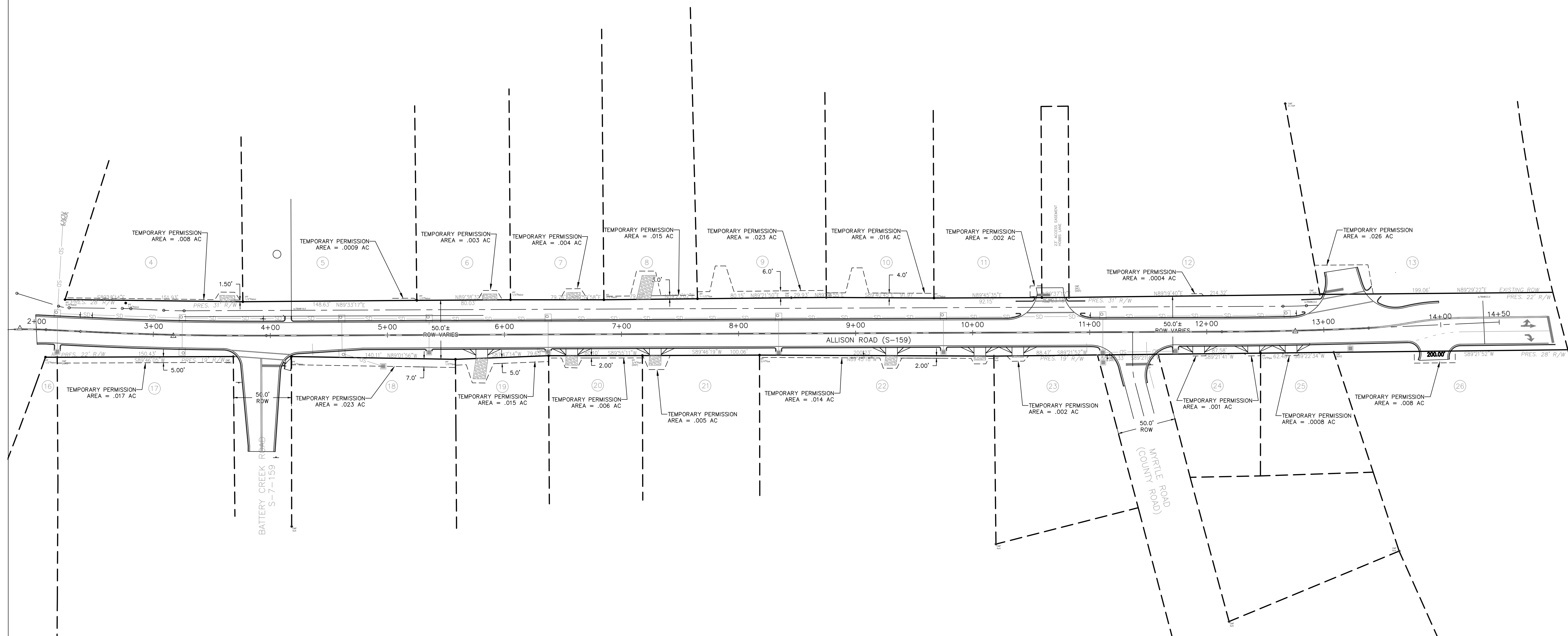
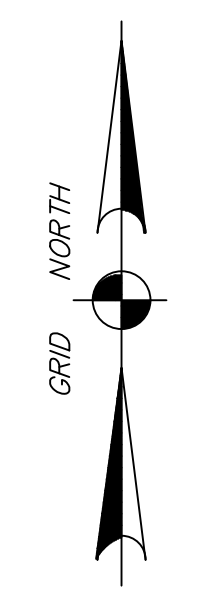
RTE.	DESIGN SPEED	
	FROM STA.	TO STA.
30	1+00	14+37
EXCEPTIONS TO DESIGN SPEED		

PAVEMENT DESIGN	

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
ROAD DESIGN COLUMBIA, S.C.

TYPICAL SECTION

SCALE 1"V= SCALE 1"H= RTE./RD.



4			
3			
2			
1			
REV. NO.	BY	DATE	DESCRIPTION OF REVISION
TOPO.		DATE	
DGN.		DATE	RPG
R/W		DATE	

SOUTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 COLUMBIA, S.C.
 CITY OF BEAUFORT
 ALLISON ROAD PEDESTRIAN CONNECTOR
 RIGHT OF WAY EXHIBIT
 SCALE 1" = 40' RTE.

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	NO.	SHEET NO.
3	S.C.	BEAUFORT	PO27276		5

EROSION & SEDIMENT CONTROL LEGEND

DESCRIPTION	SYMBOL
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EROSION PREVENTION

LAND GRADING:	
SURFACE ROUGHENING:	
TOPSOILING:	
TEMPORARY SEEDING:	
EASEMENT:	
ECB OR TRM:	
FGM:	
BFM:	
PERMANENT SEEDING:	
SODDING:	
RRAP:	
OUTLET PROTECTION:	
DUST CONTROL:	
POLYACRYLAMIDE (PAM):	

SEDIMENT CONTROL

SEDIMENT BASIN:	
TEMPORARY SEDIMENT TRAP:	
ROCK SEDIMENT DIKE:	
ROCK CHECK DAM:	
SEDIMENT TUBE:	
SILT FENCE:	
REINFORCED SILT FENCE:	
TYPE A - FABRIC INLET PROTECTION:	
TYPE A - SEDIMENT TUBE INLET PROTECTION:	
TYPE B - WIRE MESH AND STONE DROP INLET PROTECTION:	
TYPE C - BLOCK AND GRAVEL INLET PROTECTION:	
TYPE D - RIGID INLET FILTERS:	
TYPE E - SURFACE COURSE CURB INLET FILTER:	
TYPE F - INLET TUBE:	

RUNOFF CONVEYANCE MEASURES:

VEGETATED CHANNELS:	
RRAP-LINED CHANNELS:	
ECB OR TRM-LINED CHANNELS:	
PAVED CHANNELS:	
PIPE SLOPE DRAINS:	
TEMPORARY STREAM CROSSING:	
TEMPORARY DIVERSION DITCH OR SWALE:	
PERMANENT DIVERSION DITCH:	
DIVERSION DIKE OR BERM:	
LEVEL SPREADER:	
SUBSURFACE DRAIN:	

STANDARD ABBREVIATIONS

AC	ACRE	MJ	MECHANICAL JOINT
ADT	AVERAGE DAILY TRAFFIC	N	NORTH
ASPH	ASPHALT	NBR	NORTH BOUND ROADWAY
BEG	BEGIN	NC	NORMAL CROWN
BL	BASELINE	NGVD	NATIONAL GEODETIC VERTICAL DATUM
BM	BENCHMARK	NIC	NOT IN CONTRACT
BOB	BOTTOM OF BANK	OD	OUTSIDE DIAMETER
BOTT	BOTTLE	OH	OVERHEAD
BRG	BEARING	OHV	OVERHEAD POWER
BUR	BURIED TELEPHONE	PERF	PERFORATED
B/C	BACK OF CURB	PC	POINT OF CURVATURE
C	CURB AND GUTTER	PCF	POINT OF COMPOUND CURVATURE
C & G	RATE OF CHANGE IN SLOPE	PERF	PERFORATED
CATV	CABLE TELEVISION	PGF	PROFILE GRADE
CB	CATCH BASIN	PGE	PROFILE GRADE ELEVATION
CI	CURB INLET	REL	PROFILE GRADE
CL	CLEARANCE OR CENTERLINE	RI	POINT OF INTERSECTION
CONSTR	CONSTRUCTION	RR	POINT OF ROTATION
CON	CORRECTION	RRC	POINT OF REVERSE CURVATURE
CF	CUBIC FEET	PRCST	PRECAST
CI	CUBIC YARD	PT	POINT OF TANGENCY
DBA	DRAINAGE AREA	PVC	POLYVINYL CHLORIDE
DBI	DITCH BOTTOM INLET	PVI	POINT OF VERTICAL INTERSECTION
DBL	DOUBLE	Q	PEAK DISCHARGE OR FLOW VOLUME (CFS)
DHV	DESIGN HOURLY VOLUME	R	RATE OF CHANGE IN ELEVATION
DIA OR D	DIAMETER	R or RAD	RADIUS
DIP	DUCTILE IRON PIPE	REC	REINFORCED CONCRETE PIPE
DT	DITCH	REQD	REQUIRED
GRD	GRADE	R/W	RIGHT OF WAY
E	EAST OR EXTERNAL DISTANCE	S	SPEED OR SOUTH OR SLOPE
EGL	EXISTING GRADE LINE	SAHM	SAND ASPHALT HOT MIX
ELB OR ELV	ELEVATION	SAN	SANITARY
EMBK	EMBANKMENT	SF	SQUARE FOOT OR SALT FENCE
ENGR	ENGINEER	SQ	SQUARE YARD
EQUL	EQUAL	SR	SOUTH BOUND ROADWAY
ESMT	EASEMENT	SBR	STORM SEWER
EXIST	EXISTING	SED	SEDIMENT
F & I	FURNISH AND INSTALL	SHW	SEASONAL HIGH WATER
FES	FLARED END SECTION	SUBGR	SUBGRADE
FM	FIRE HYDRANT	SSMH	SANITARY SEWER MANHOLE
FN	FORCE MAIN	STA	STATION
FO	FOOT	STR	STREET
FUT	FUTURE	SURV	SURVEY
GI	GRATE INLET	SW	SIDEWALK
GRD	GRADE	TOP OF CURB	TOP OF CURB
H or HT	HEIGHT	TCE	TEMPORARY CONSTRUCTION EASEMENT
HDP	HIGH DENSITY POLYETHYLENE	TEL	TELEPHONE
HOWL	HEADWIND	TEMP	TEMPERATURE OR TEMPORARY
HORIZ	HORIZONTAL	TG	TOP OF GRADE
HWP	HIGHWAY	TB	TOP OF BANK
HWT	HIGHWAY	TP	TOP OF PAVEMENT
HWY	HIGHWAY	TS	TOP OF SIDEWALK
HYD	HYDRANT OR HYDRAULIC	TYP	TYPICAL
ID	INSIDE DIAMETER	UNDR	UNDERDRAIN
IE	INVERT ELEVATION	UG	UNDERGROUND
IN	UNDERGROUND	UL	UNDERGROUND ELECTRIC
INSTR	INSTALL	UT	UTILITIES
JB	JUNCTION BOX	UTIL	UTILITIES
LF	LINEAR FEET	VERT	VERTICAL
LGTH	LENGTH	W	WIDTH OR WEST
LOW	LIMIT OF WORK	WL	WATER LINE
LP	LOW POINT	WP	WATER MAIN
MES	MITRED END SECTION	WT	WATER TABLE OR WEIGHT
MHW	MANHOLE	WV	WATER VALVE
MMH	MEAN HIGH WATER	WWF	WELDED WIRE FABRIC
		YI	YARD INLET

CONSTRUCTION STAGING:
1. CONTRACTOR TO COORDINATE WITH CITY AND SCDOT ON CONSTRUCTION MATERIAL STORAGE, STAGING, AND PARKING.
2. CONTRACTORS AND INSPECTORS ARE NOT TO USE BEAUFORT MEMORIAL PARKING LOTS OR OTHER NEARBY BUSINESSES FOR PARKING, EQUIPMENT STORAGE, AND STAGING.



LEGEND

DESCRIPTION	EXISTING	PROPOSED
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LINE TYPES:

CENTERLINE		
CONTOUR LINE		
CURB & GUTTER (standard)		
CURB & GUTTER (roll curb)		
DITCH CENTERLINE		
DRAIN LINE		
EASEMENT		
FORCE MAIN		
PAVEMENT		
PROPERTY LINE		
SEWER LINE		
WATER LINE		

TYPICAL SYMBOLS:

TREE		
TREE TO BE REMOVED		
TREE PROTECTION		
SPOT ELEVATION		
TOP OF PAVING		
TOP OF CURB		
TOP OF WALK		
DIRECTION OF FLOW		

STRUCTURE SYMBOLS:

WEIR INLET		
CATCH BASIN		
CURB INLET		
CURB INLET (WITH GRATE)		
STORM DRAIN JUNCTION BOX		
STORM DRAIN MANHOLE		
STORM GRATE INLET		
SANITARY SEWER MANHOLE		
SANITARY SEWER CLEANOUT		
SANITARY SEWER WYE		

WATER SYSTEM SYMBOLS:

WATER METER		
WATER VALVE		
REDUCER		
POST INDICATOR VALVE		
FIRE HYDRANT		
BLOWOFF HYDRANT		
YARD HYDRANT		
FIRE DEPART. CONNECT. (FDC)		
CAP		
PLUG		

MATERIAL SYMBOLS:

PROPOSED DEMOLITION		
PROPOSED SIDEWALK/ CONCRETE		
EXISTING WETLANDS		
PROPOSED AGGREGATE/ STONES		
PROPOSED ASPHALT (STANDARD ASPHALT)		
PROPOSED ASPHALT (HEAVY DUTY)		
PERVIOUS PAVERS		

SEQUENCE OF CONSTRUCTION ACTIVITIES PROJECT PHASING

ESTIMATED START DATE: MAY 2017	ESTIMATED COMPLETION DATE: DEC 2017
ITEMS MUST OCCUR IN THE ORDER LISTED; ITEMS CANNOT OCCUR CONCURRENTLY UNLESS SPECIFICALLY NOTED.	
1. RECEIVE NPDES COVERAGE FROM DHEC.	2. PRE-CONSTRUCTION MEETING (ON-SITE)
3. NOTIFY DHEC REGIONAL OFFICE OR OCRM OFFICE 48 HOURS PRIOR TO BEGINNING LAND-DISTURBING ACTIVITIES.	4. CLEARING & GRUBBING ONLY AS NECESSARY FOR INSTALLATION OF PERIMETER CONTROLS.
5. INSTALLATION OF PERIMETER CONTROLS (E.G. SILT FENCE).	6. CLEARING & GRUBBING ONLY IN AREAS OF BASIN.
7. INSTALL SEDIMENT TUBES.	8. INSTALL TREE PROTECTION.
9. INSTALLATION OF BASIN AND INSTALLATION OF DIVERSIONS TO THOSE STRUCTURES (OUTLET STRUCTURES MUST BE COMPLETELY INSTALLED AS SHOWN ON THE DETAILS BEFORE PROCEEDING TO NEXT STEP; AREAS DRAINING TO THESE STRUCTURES CANNOT BE DISTURBED UNTIL THE STRUCTURES & DIVERSIONS TO THE STRUCTURES ARE COMPLETELY INSTALLED).	10. DEMOLITION & RELOCATION OF UTILITIES.
11. CLEARING & GRUBBING OF SITE OR DEMOLITION (SEDIMENT & EROSION CONTROL MEASURES FOR THESE AREAS MUST ALREADY BE INSTALLED).	12. ROUGH GRADING.
13. INSTALLATION OF STORM DRAIN SYSTEM AND PLACEMENT OF INLET PROTECTION AS EACH INLET IS INSTALLED.	14. FINE GRADING, PAVING, ETC.
15. PLACE TOPSOIL & ESTABLISH FINISH GRADES.	16. INSTALL PERMANENT SEEDING.
17. CLEAN-OUT OF DETENTION BASIN THAT WERE USED AS SEDIMENT CONTROL STRUCTURES AND RE-GRADING OF DETENTION POND BOTTOMS; IF NECESSARY, MODIFICATION OF SEDIMENT BASIN RISER TO CONVERT TO DETENTION BASIN OUTLET STRUCTURE.	18. FLUSH ANY SEDIMENT FROM STORM SEWER PIPES & INLETS.
19. REMOVAL OF TEMPORARY SEDIMENT & EROSION CONTROL MEASURES AFTER ENTIRE AREA DRAINING TO THE STRUCTURE IS FINALLY STABILIZED (THE DEPARTMENT RECOMMENDS THAT THE PROJECT OWNER / OPERATOR HAVE THE SWPPP PREPARED OR REGISTRATION EQUIVALENT APPROVE THE REMOVAL OF TEMPORARY STRUCTURES).	20. PERFORM AS-BUILT SURVEYS OF ALL DETENTION STRUCTURES AND SUBMIT TO DHEC OR MS4 FOR ACCEPTANCE.
21. SUBMIT NOTICE OF TERMINATION (NOT) TO DHEC AS APPROPRIATE.	

GENERAL NOTES:

- BOUNDARY INFORMATION TAKEN FROM ALLISON ROAD R/W SURVEY PREPARED FOR CITY OF BEAUFORT, RIBAUT ROAD TO COTTAGE FARM SUBDIVISION, DATED APRIL 11, 2013 BY BEAUFORT SURVEYING, INC.
- TOPOGRAPHIC DATA PROVIDED BY BEAUFORT SURVEYING, DATED APRIL 11, 2013.
- APPROXIMATE LOCATION OF CERTAIN EXISTING UNDERGROUND UTILITY LINES AND STRUCTURES ARE SHOWN ON THE PLANS FOR INFORMATION ONLY. ADDITIONAL UNDERGROUND LINES OR STRUCTURES MAY EXIST THAT ARE NOT SHOWN. CALL PALMETTO UTILITY PROTECTION SERVICE AT 1-888-721-7877 BETWEEN THE HOURS OF 7:00 AM AND 7:00 PM MONDAY THRU FRIDAY. AT LEAST THREE WORKING DAYS BEFORE COMMENCING CONSTRUCTION, REQUEST UNDERGROUND UTILITIES TO BE LOCATED AND MARKED WITH AND NEAR THE CONSTRUCTION SITE.
- COMPLY WITH SOUTH CAROLINA UNDERGROUND UTILITY DAMAGE PREVENTION ACT (S.C. CODE ANN. 58-35-10, CT-SEQ, SUPP. 1978). NOTIFICATION OF INTENT TO EXCAVATE MAY BE GIVEN BY CALLING THE TOLL FREE NUMBER: 1-800-922-0983.
- PROTECT BENCH MARKS AND PROPERTY MONUMENTS FROM DAMAGE DURING CONSTRUCTION OPERATIONS. REPLACE ANY BENCH MARKS OR MONUMENTS DAMAGED OR DESTROYED AS A RESULT OF CONTRACTOR'S OPERATIONS AT NO COST TO THE OWNER.
- OFF-STREET PARKING FOR THE CONTRACTOR'S EMPLOYEES AND AUTHORIZED VISITORS TO THE SITE MUST BE PROVIDED AND MAINTAINED THROUGHOUT CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR ADHERING TO WEIGHT LIMITS PRESCRIBED FOR ALL PUBLIC ROADS WHEN HAULING EQUIPMENT AND MATERIALS TO AND FROM THE PROJECT SITE. DAMAGES TO EXISTING PAVEMENT DUE TO THE CONTRACTOR'S CONSTRUCTION OPERATIONS OR IMPROPER TRANSPORTATION OF MATERIALS AND EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- AT LEAST ONE DRIVING LANE ON PUBLIC ROADS SHALL REMAIN OPEN TO TRAFFIC AT ALL TIMES. TRAFFIC LANES WILL ONLY BE CLOSED WITH THE EXPRESS WRITTEN CONSENT OF THE AGENCY HAVING JURISDICTION OVER THE ROADWAY. NOTIFY AGENCY HAVING JURISDICTION AT LEAST 5 DAYS BEFORE CLOSING ANY DRIVING LANES TO TRAFFIC. PROVIDE TRAFFIC CONTROL DEVICES, SIGNS AND FLAGMEN AS REQUIRED TO ENSURE PUBLIC SAFETY.
- CONTRACTOR SHALL COORDINATE DEMOLITION, CLEARING AND CONSTRUCTION OF IMPROVEMENTS TO MINIMIZE INTERFERENCE WITH VEHICULAR AND PEDESTRIAN TRAFFIC AND WITH OPERATIONS OF EXISTING FACILITIES.

WATER AND SEWER LINE CONSTRUCTION:

- ALL WATER AND SEWER LINE CONSTRUCTION SHALL CONFORM TO APPLICABLE STATE AND BEAUFORT JASPER WATER AND SEWER AUTHORITY REQUIREMENTS, STANDARDS AND SPECIFICATIONS.
- BUMSA WILL BE RESPONSIBLE FOR INSPECTION AND APPROVAL OF ALL WATER AND SEWER SYSTEM CONSTRUCTION AND FOR ACCEPTANCE FOR OPERATION AND MAINTENANCE.
- ALL UTILITIES SHOWN ARE APPROXIMATE LOCATIONS. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION OF ALL UTILITY OWNERS AND FOR FIELD VERIFICATION OF BOTH HORIZONTAL AND VERTICAL LOCATIONS PRIOR TO COMMENCING CONSTRUCTION. ANY DAMAGES TO EXISTING UTILITIES DUE TO THIS CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- NOTIFY THE PROJECT ENGINEER, IF CONFLICTS WITH EXISTING STRUCTURES REQUIRE THAT PROPOSED UTILITIES BE RELOCATED.
- THE CONTRACTOR MUST NOTIFY BUMSA FORTY-EIGHT (48) HOURS PRIOR TO ANY CONSTRUCTION, INSPECTION OR TESTING OF THE WATER DISTRIBUTION SYSTEM.
- PIPE, FITTINGS, VALVES AND APERTURES FOR WATER AND SEWER LINES SHALL ALL BE IN ACCORDANCE WITH THE REQUIREMENTS CONTAINED IN THE BEAUFORT-JASPER WATER AND SEWER AUTHORITY TECHNICAL SPECIFICATIONS.
- INSTALLATION OF WATER AND SEWER LINES AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE BEAUFORT-JASPER WATER AND SEWER AUTHORITY STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS.
- CONTRACTOR SHALL INSTALL MECHANICAL RESTRAINTS ON ALL BENDS, PLUGS AND TEES, 2" OR LARGER, ON WATERLINES AND SANITARY SEWER MAINS.
- ALL WATER MAINS SHALL BE STERILIZED AND PRESSURE TESTED IN ACCORDANCE WITH BUMSA SPECIFICATIONS.
- SEPARATION OF WATER MAINS AND SEWERS:
 - a. PARALLEL INSTALLATION: UNLESS OTHERWISE SPECIFICALLY SHOWN IN A SPECIAL DETAIL ON THE PLANS, WATER MAINS AT LEAST 10'-FT. HORIZONTALLY FROM ANY EXISTING OR PROPOSED SANITARY SEWER OR SANITARY SEWER FORCE MAIN, THE DISTANCE BEING MEASURED IN A HORIZONTAL PLANE BETWEEN THE OUTSIDE SURFACES OF THE PIPES.
 - b. CROSSINGS: UNLESS OTHERWISE SPECIFICALLY SHOWN IN A SPECIAL DETAIL ON THE PLANS, INSTALL WATER LINES CROSSING SANITARY SEWER FORCE MAINS TO PROVIDE A MINIMUM VERTICAL SEPARATION OF 18-INCHES BETWEEN THE OUTSIDE SURFACES OF THE PIPES. THIS SHALL BE THE CASE WHETHER THE WATER LINE IS ABOVE OR BELOW THE SANITARY SEWER LINE. WHENEVER POSSIBLE LOCATE THE WATER LINE ABOVE THE SEWER LINE. WHERE A NEW WATER LINE CROSSES A NEW SEWER LINE, PLACE A FULL LENGTH OF DUCTILE IRON PIPE FOR BOTH THE WATER AND THE SEWER LINE AT THE JOINTS WITH BOTH PIPES POSITIONED SO THAT THE JOINTS ON EACH ARE AS FAR AS POSSIBLE FROM THE POINT OF CROSSING. WHERE A NEW WATER LINE CROSSES AN EXISTING SEWER LINE, THE JOINTS ON THE WATER AND DUCTILE IRON PIPE WATER LINE SO THAT THE JOINTS ARE AS FAR FROM THE POINT OF CROSSING AS POSSIBLE.
- THE CONTRACTOR SHALL CUT AND PATCH EXISTING PAVEMENT AS REQUIRED FOR THE INSTALLATION OF UTILITY LINES.
- SANITARY MANHOLE RIM GRADES SHOWN ARE APPROXIMATE. ADJUST RIM ELEVATIONS TO BE FLUSH WITH FINISHED GRADE.
- THE CONTRACTOR UNDER THIS CONTRACT SHALL NOT MAKE ANY CONNECTIONS TO THE EXISTING WATER OR SANITARY SEWER SYSTEMS UNLESS EXPRESSLY AUTHORIZED TO DO SO BY THE BEAUFORT-JASPER WATER AND SEWER AUTHORITY. ALL WATER AND SEWER IMPROVEMENTS UNDER THIS CONTRACT MUST BE CONSTRUCTED COMPLETE, TESTED, INSPECTED AND APPROVED BY THE BEAUFORT-JASPER WATER AND SEWER AUTHORITY BEFORE ANY AUTHORIZATION TO CONNECT WILL BE GIVEN. COORDINATION OF TESTING, INSPECTION AND CONNECTIONS WITH THE BEAUFORT-JASPER WATER AND SEWER AUTHORITY IS THE RESPONSIBILITY OF THE CONTRACTOR UNDER THIS CONTRACT.
- ALL WATER MAINS SHALL BE INSTALLED WITH THIRTY-SIX INCHES (36") MINIMUM COVER (FROM FINISHED GRADE). MAXIMUM DEPTH SHALL BE FIVE FEET (5'). WHERE WATER MAINS MAY CONFLICT WITH OTHER UTILITIES, THE WATER MAINS SHALL BE CONSTRUCTED WITH DUCTILE IRON PIPE, MECHANICAL JOINT, 45-DEG. BENDS AND MECHANICAL RESTRAINTS.

SITE CLEARING AND DEMOLITION:

- NO CLEARING SHALL OCCUR WITHIN DESIGNATED BUFFER ZONES, TREE PROTECTION ZONES, OUTSIDE OF THE PROPERTY LINES OR BEYOND THE CLEARING LIMITS UNLESS OTHERWISE SPECIFICALLY SHOWN ON THE PLANS.
- ONLY THOSE TREES DESIGNATED ON THE DRAWINGS FOR REMOVAL ARE TO BE REMOVED AS PART OF THE SITE CLEARING OPERATIONS.
- THE CONTRACTOR SHALL INSTALL A CONTINUOUS LINE OF FLAGGING OR FENCING ALONG THE LIMITS OF CLEARING PRIOR TO COMMENCING ANY CLEARING, DEMOLITION OR CONSTRUCTION WORK ON THE PROJECT.
- EXERCISE CAUTION DURING CLEARING OPERATIONS TO AVOID FELLING TREES INTO DESIGNATED TREE PROTECTION ZONES.
- NO BURNING WILL BE ALLOWED WITHIN 50 FEET OF A TREE PROTECTION ZONE OR TREE DRIP LINE.
- SELECTIVE CLEARING AREAS SHALL BE CLEARED OF ALL BRUSH AND UNDERSTORY GROWTH.

TREE PROTECTION-BEAUFORT

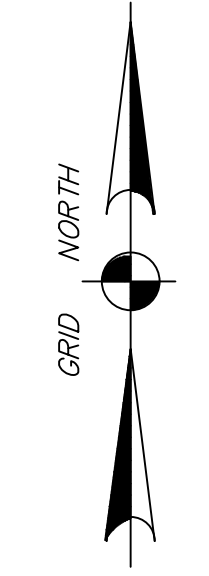
- ALL TREES HAVING A TRUNK DIAMETER OF 8-INCHES (dbh) OR LARGER, AND SPECIMEN TREES MUST BE PRESERVED UNLESS SPECIFICALLY APPROVED FOR REMOVAL IN ACCORDANCE WITH THE CITY OF BEAUFORT ZONING AND DEVELOPMENT STANDARDS ORDINANCE AND INDICATED ON THE PLANS TO BE REMOVED.
- PRIOR TO COMMENCING ANY CLEARING OR CONSTRUCTION OPERATIONS ON THE SITE, THE CONTRACTOR SHALL ERECT TREE PROTECTION BARRIERS AROUND EACH TREE OR GROUP OF TREES DESIGNATED FOR PRESERVATION IN ACCORDANCE WITH THE DETAILS ON THE PLANS AND THE REQUIREMENTS CONTAINED IN ARTICLE 7.3, SECTION 7.3, PAR. D.2 OF THE CITY OF BEAUFORT, SOUTH CAROLINA UNIFIED DEVELOPMENT ORDINANCE.
- TREE PROTECTION ZONES SHALL BE ESTABLISHED IN ACCORDANCE WITH THE PROVISIONS CONTAINED IN ARTICLE 7.3, SECTION 7.3, PAR. D.3 OF THE CITY OF BEAUFORT, SOUTH CAROLINA UNIFIED DEVELOPMENT ORDINANCE FOR EACH EXISTING TREE OR GROUPING OF TREES DESIGNATED FOR PRESERVATION. THE MINIMUM TREE PROTECTION ZONE MAY BE ADJUSTED AT THE DISCRETION OF THE CITY'S ADMINISTRATOR OF THE ORDINANCE. A RADIUS OF THE GREATER OF 5-FT. OR ONE-HALF FOOT PER INCH DBH (DIAMETER AT BREAST HEIGHT), THE SIZE OR CONFIGURATION OF THE TREE PROTECTION ZONE MAY BE ADJUSTED AT THE DISCRETION OF THE CITY'S ADMINISTRATOR OF THE ORDINANCE. A PLACEMENT OR STORAGE OF ANY SOIL, DEBRIS, OILS, FUEL, PAINTS, BUILDING MATERIALS OR ANY OTHER MATERIALS.
 - B. BURNING
 - C. VEHICLE PARKING
 - D. PAVING
 - E. TRENCHING FOR UTILITIES
- WHERE UTILITY LINES MUST PASS THRU THE TREE PROTECTION ZONE, THEY SHALL BE INSTALLED BY HORIZONTAL BORING BENEATH THE ROOTS OF THE TREE.
- WHERE IT IS NECESSARY FOR MACHINERY AND EQUIPMENT TO PASS WITHIN THE TREE PROTECTION ZONE, APPROVAL MUST BE OBTAINED FROM THE ZONING AND DEVELOPMENT ADMINISTRATOR. SPECIAL MEASURES WILL BE REQUIRED TO PROTECT THE ROOTS FROM EXCESSIVE COMPACTION.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL TREE REMOVAL PERMITS AND FOR COORDINATING ALL INSPECTIONS REQUIRED BY BEAUFORT COUNTY IN CONNECTION WITH TREE PRESERVATION AND REMOVAL ACTIVITIES, DURING CONSTRUCTION.

SITE GRADING AND DRAINAGE:

- ALL UTILITIES SHOWN ARE APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING 72-HOUR NOTICE TO ALL RESPECTIVE UTILITY COMPANIES FOR FIELD VERIFICATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION. ANY DAMAGES TO EXISTING UTILITIES DUE TO THIS CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- TEMPORARY CONTROL OF STORM WATER DRAINAGE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SEQUENCING AND CONSTRUCTION TECHNIQUES SHALL PREVENT OBSTRUCTION OF STORM SEWER OR TRAFFIC AREA OR RISING OF WATER LEVELS WHICH WOULD ENTER ADJACENT BUILDINGS OR STRUCTURES.
- FULL WIDTH OF STREET AND ROAD RIGHTS-OF-WAY MUST BE CLEARED AND GRADED AS SHOWN IN THE DETAILS ON THE DRAWINGS.
- SUBGRADE PREPARATION: TOP SOIL SHALL BE REMOVED FROM PAVED AREAS TO A MINIMUM DEPTH OF 4". ALL EXCAVATION SHALL BE TO SUBGRADE LIMITS.
- ALL UTILITY PIPE LINES, CONDUITS AND CABLES UNDER PAVED AREAS MUST BE IN PLACE PRIOR TO COMPLETION OF THE ROADWAY SUBGRADE COMPACTION.
- FINISH GRADING SHALL INCLUDE THE PLACEMENT OF TOPSOIL OVER ALL UNPAVED AREAS NOT OCCUPIED BY BUILDINGS OR STRUCTURES AND FINE GRADING AROUND BUILDINGS, ADJACENT TO WALKS, CURBS, GUTTERS AND STRUCTURES TO ASSURE POSITIVE DRAINAGE.

SDPHEC/OCRM SEDIMENT AND EROSION CONTROL STANDARD NOTES (REVISED DEC-2012):

- IF NECESSARY, SLOPES, WHICH EXCEED EIGHT (8) VERTICAL FEET SHOULD BE STABILIZED WITH SYNTHETIC OR VEGETATIVE MATS, IN ADDITION TO HYDROSEEDING, IT MAY BE NECESSARY TO INSTALL TEMPORARY SLOPE DRAINS DURING CONSTRUCTION. TEMPORARY BERMS MAY BE NEEDED UNTIL THE SLOPE IS BROUGHT TO GRADE.
- STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN FOURTEEN (14) DAYS AFTER WORK HAS CEASED, EXCEPT AS STATED BELOW.
 - WHERE STABILIZATION BY THE 14TH DAY IS PRECLUDED BY SNOW COVER OR FROZEN GROUND CONDITIONS STABILIZATION MEASURES MUST BE INITIATED AS SOON AS PRACTICABLE.
 - WHERE CONSTRUCTION ACTIVITY ON A PORTION OF THE SITE IS TEMPORARILY CEASED, AND EARTH-DISTURBING ACTIVITIES WILL BE RESUMED WITHIN 14 DAYS, TEMPORARY STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE.
- ALL SEDIMENT AND EROSION CONTROL FEATURES SHALL BE INSPECTED ONCE EVERY CALENDAR WEEK. IF PERIODIC INSPECTION OR OTHER INFORMATION INDICATES THAT A BMP HAS BEEN INAPPROPRIATELY, OR INCORRECTLY INSTALLED, THE PERMITTEE MUST ADDRESS THE NECESSARY REPLACEMENT OR MODIFICATION REQUIRED TO CORRECT THE BMP WITHIN 48 HOURS OF IDENTIFICATION.
- PROVIDE SILT FENCE AND/OR OTHER CONTROL DEVICES, AS MAY BE REQUIRED, TO CONTROL SOIL EROSION DURING UTILITY CONSTRUCTION. ALL DISTURBED AREAS SHALL BE CLEARED, GRADED, AND STABILIZED WITH GRASSING IMMEDIATELY AFTER THE UTILITY INSTALLATION, FILL COVER, AND TEMPORARY SEEDING AT THE END OF EACH DAY ARE RECOMMENDED. IF WATER IS ENCOUNTERED WHILE TRENCHING, THE WATER SHOULD BE FILTERED TO REMOVE SEDIMENT BEFORE BEING PUMPED BACK INTO ANY WATERS OF THE STATE.
- ALL EROSION CONTROL DEVICES SHALL BE PERMANENTLY MAINTAINED DURING ALL PHASES OF CONSTRUCTION UNTIL THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES AND ALL DISTURBED AREAS HAVE BEEN STABILIZED. ADDITIONAL CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION IN ORDER TO CONTROL EROSION AND/OR PREVENT SEDIMENTATION. ALL TEMPORARY CONTROL DEVICES SHALL BE REMOVED ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED.
- THE CONTRACTOR MUST TAKE NECESSARY ACTION TO MINIMIZE THE TRACKING OF MUD ONTO PAVED ROADWAY(S) FROM CONSTRUCTION AREAS AND THE GENERATION OF DUST. THE CONTRACTOR SHALL DAILY REMOVE MUD/SOIL FROM PAVEMENT, AS MAY BE REQUIRED.



Alignment "C": Alignment - Allison Road

Tangent Data				Tangent Data			
Description	PT Station	Northing	Easting	Description	PT Station	Northing	Easting
Start:	1+00.000	211613.752	2094727.671	Start:	3+96.567	211614.415	2095023.913
End:	1+63.638	211618.75	2094791.113	End:	12+12.883	211617.74	2095840.222

Tangent Data				Tangent Data			
Parameter	Value	Parameter	Value	Parameter	Value	Parameter	Value
Length:	63.638	Course:	N 85° 29' 46.4262" E	Length:	816.316	Course:	N 89° 45' 59.9654" E

Curve Point Data				Curve Point Data			
Description	Station	Northing	Easting	Description	Station	Northing	Easting
PC:	1+63.638	211618.75	2094791.113	PC:	12+12.883	211617.74	2095840.222
RP:	2+08.253	211619.413	2094835.692	RP:	13+38.412	211620.877	2095965.703
PT:	2+08.253	211619.413	2094835.692	PT:	13+38.412	211620.877	2095965.703

Circular Curve Data				Circular Curve Data			
Parameter	Value	Parameter	Value	Parameter	Value	Parameter	Value
Delta:	07° 18' 12.6879"	Type:	RIGHT	Delta:	02° 23' 50.7524"	Type:	LEFT
Radius:	350	DOC:	16° 22' 12.8023"	Radius:	3000	DOC:	01° 54' 35.4936"
Length:	44.615	Tangent:	22.338	Length:	125.529	Tangent:	62.774
Mid-Ord:	0.711	External:	0.712	Mid-Ord:	0.657	External:	0.657
Chord:	44.584	Course:	N 89° 08' 52.7701" E	Chord:	125.52	Course:	N 88° 34' 04.5893" E

Tangent Data				Tangent Data			
Description	PT Station	Northing	Easting	Description	PT Station	Northing	Easting
Start:	2+08.253	211619.413	2094835.692	Start:	13+38.412	211620.877	2095965.703
End:	2+37.755	211617.972	2094865.159	End:	14+50.001	211625.999	2096077.174

Tangent Data				Tangent Data			
Parameter	Value	Parameter	Value	Parameter	Value	Parameter	Value
Length:	29.502	Course:	S 87° 12' 00.8859" E	Length:	111.589	Course:	N 87° 22' 09.2131" E

Curve Point Data				Curve Point Data			
Description	Station	Northing	Easting	Description	Station	Northing	Easting
PC:	2+37.755	211617.972	2094865.159	PC:	14+50.001	211625.999	2096077.174
RP:	3+96.567	211614.415	2095023.913	RP:	14+50.001	211625.999	2096077.174
PT:	3+96.567	211614.415	2095023.913	PT:	14+50.001	211625.999	2096077.174

Circular Curve Data				Circular Curve Data			
Parameter	Value	Parameter	Value	Parameter	Value	Parameter	Value
Delta:	03° 01' 59.1486"	Type:	LEFT	Delta:	02° 23' 50.7524"	Type:	LEFT
Radius:	3000	DOC:	01° 54' 35.4936"	Radius:	478.5	DOC:	11° 58' 26.5429"
Length:	158.813	Tangent:	79.425	Length:	20.022	Tangent:	10.012
Mid-Ord:	1.051	External:	1.051	Mid-Ord:	0.105	External:	0.105
Chord:	158.794	Course:	S 88° 43' 00.4602" E	Chord:	20.02	Course:	N 88° 34' 04.5893" E

Alignment "A": Proposed Multi-use Path

Tangent Data				Tangent Data			
Description	PT Station	Northing	Easting	Description	PT Station	Northing	Easting
Start:	0+00.000	211650.515	2094810.828	Start:	1+27.279	211636.019	2094936.284
End:	0+37.246	211639.577	2094846.432	End:	1+44.669	211635.63	2094953.667

Tangent Data				Tangent Data			
Parameter	Value	Parameter	Value	Parameter	Value	Parameter	Value
Length:	37.246	Course:	S 72° 55' 18.7318" E	Length:	938.786	Course:	N 89° 45' 59.9654" E

Curve Point Data				Curve Point Data			
Description	Station	Northing	Easting	Description	Station	Northing	Easting
PC:	0+37.246	211639.577	2094846.432	PC:	10+83.455	211639.453	2095892.445
RP:	0+46.395	211638.168	2094855.829	RP:	11+03.477	211639.953	2095912.46
PT:	0+46.395	211638.168	2094855.829	PT:	11+03.477	211639.953	2095912.46

Circular Curve Data				Circular Curve Data			
Parameter	Value	Parameter	Value	Parameter	Value	Parameter	Value
Delta:	16° 22' 55.3256"	Type:	LEFT	Delta:	02° 23' 50.7524"	Type:	LEFT
Radius:	32	DOC:	179° 02' 57.5250"	Radius:	478.5	DOC:	11° 58' 26.5429"
Length:	9.149	Tangent:	4.606	Length:	20.022	Tangent:	10.012
Mid-Ord:	0.326	External:	0.33	Mid-Ord:	0.105	External:	0.105
Chord:	9.118	Course:	S 81° 06' 46.3946" E	Chord:	20.02	Course:	N 88° 34' 04.5893" E

Tangent Data				Tangent Data			
Description	PT Station	Northing	Easting	Description	PT Station	Northing	Easting
Start:	0+46.395	211638.168	2094855.441	Start:	11+03.477	211639.953	2095912.46
End:	0+91.818	211637.616	2094900.86	End:	11+13.421	211640.41	2095922.394

Tangent Data				Tangent Data			
Parameter	Value	Parameter	Value	Parameter	Value	Parameter	Value
Length:	45.422	Course:	S 89° 18' 14.0574" E	Length:	9.945	Course:	N 87° 22' 09.2131" E

Curve Point Data				Curve Point Data			
Description	Station	Northing	Easting	Description	Station	Northing	Easting
PC:	0+91.818	211637.616	2094900.86	PC:	11+13.421	211640.41	2095922.394
RP:	0+99.161	211637.392	2094908.199	RP:	11+13.421	211640.41	2095922.394
PT:	0+99.161	211637.392	2094908.199	PT:	11+13.421	211640.41	2095922.394

Circular Curve Data				Circular Curve Data			
Parameter	Value	Parameter	Value	Parameter	Value	Parameter	Value
Delta:	02° 06' 13.1715"	Type:	RIGHT	Delta:	02° 27' 04.8015"	Type:	LEFT
Radius:	200	DOC:	28° 38' 52.4040"	Radius:	1000	DOC:	05° 43' 46.4808"
Length:	7.343	Tangent:	3.672	Length:	42.784	Tangent:	21.395
Mid-Ord:	0.034	External:	0.034	Mid-Ord:	0.229	External:	0.229
Chord:	7.343	Course:	S 88° 15' 07.4717" E	Chord:	42.781	Course:	N 88° 35' 41.6138" E

Tangent Data				Tangent Data			
Description	PT Station	Northing	Easting	Description	PT Station	Northing	Easting
Start:	0+99.161	211637.392	2094908.199	Start:	14+57.312	211625.199	2096059.764
End:	1+27.279	211636.019	2094936.284	End:	15+26.595	211628.379	2096128.974

Tangent Data				Tangent Data			
Parameter	Value	Parameter	Value	Parameter	Value	Parameter	Value
Length:	28.118	Course:	S 87° 12' 00.8859" E	Length:	69.283	Course:	N 87° 22' 09.2131" E

Alignment "B": Alignment - EXIST ROAD

Tangent Data				Curve Point Data			
Description	PT Station	Northing	Easting	Description	Station	Northing	Easting
Start:	1+00.000	211611.789	2094702.748	PC:	14+14.528	211624.15	2096016.997
End:	1+42.136	211615.098	2094744.754	RP:	14+57.312	211625.199	2096013.865

Tangent Data				Circular Curve Data			
Parameter	Value	Parameter	Value	Parameter	Value	Parameter	Value
Length:	42.136	Course:	N 85° 29' 46.4262" E	Delta:	02° 27' 04.8015"	Type:	LEFT

Curve Point Data				Tangent Data			
Description	Station	Northing	Easting	Description	PT Station	Northing	Easting
PC:	1+42.136	211615.098	2094744.754	Start:	14+57.312	211625.199	2096059.764
RP:	2+76.479	211620.586	2094878.953	End:	15+26.595	211628.379	2096128.974
PT:	2+76.479	211620.586	2094878.953	End:	15+26.595	211628.379	2096128.974

Circular Curve Data				Tangent Data			
Parameter	Value	Parameter	Value	Description	PT Station	Northing	Easting
Delta:	04° 19' 27.5883"	Type:	RIGHT	Start:	14+57.312	211625.199	2096059.764
Radius:	1780	DOC:	03° 13' 07.9106"	End:	15+26.595	211628.379	2096128.974
Length:	134.343	Tangent:	67.204	End:	15+26.595	211628.379	2096128.974
Mid-Ord:	1.267	External:	1.268	End:	15+26.595	211628.379	2096128.974
Chord:	134.311	Course:	N 87° 39' 30.2204" E	End:	15+26.595	211628.379	2096128.974

Tangent Data				Tangent Data			
Description	PT Station	Northing	Easting	Description	PT Station	Northing	Easting
Start:	2+76.479	211620.586	2094878.953	Start:	14+57.312	211625.199	2096059.764
End:	14+14.528	211624.15	2096016.997	End:	15+26.595	211628.379	2096128.974

Tangent Data				Tangent Data			
Parameter	Value	Parameter	Value	Parameter	Value	Parameter	Value
Length:	1138.049	Course:	N 89° 49' 14.0145" E	Length:	69.283	Course:	N 87° 22' 09.2131" E



Professional Engineer Seal: WARD EDWARDS, INC. No. CO0152. License No. 22816. Date: 2/01/18. State: SOUTH CAROLINA.

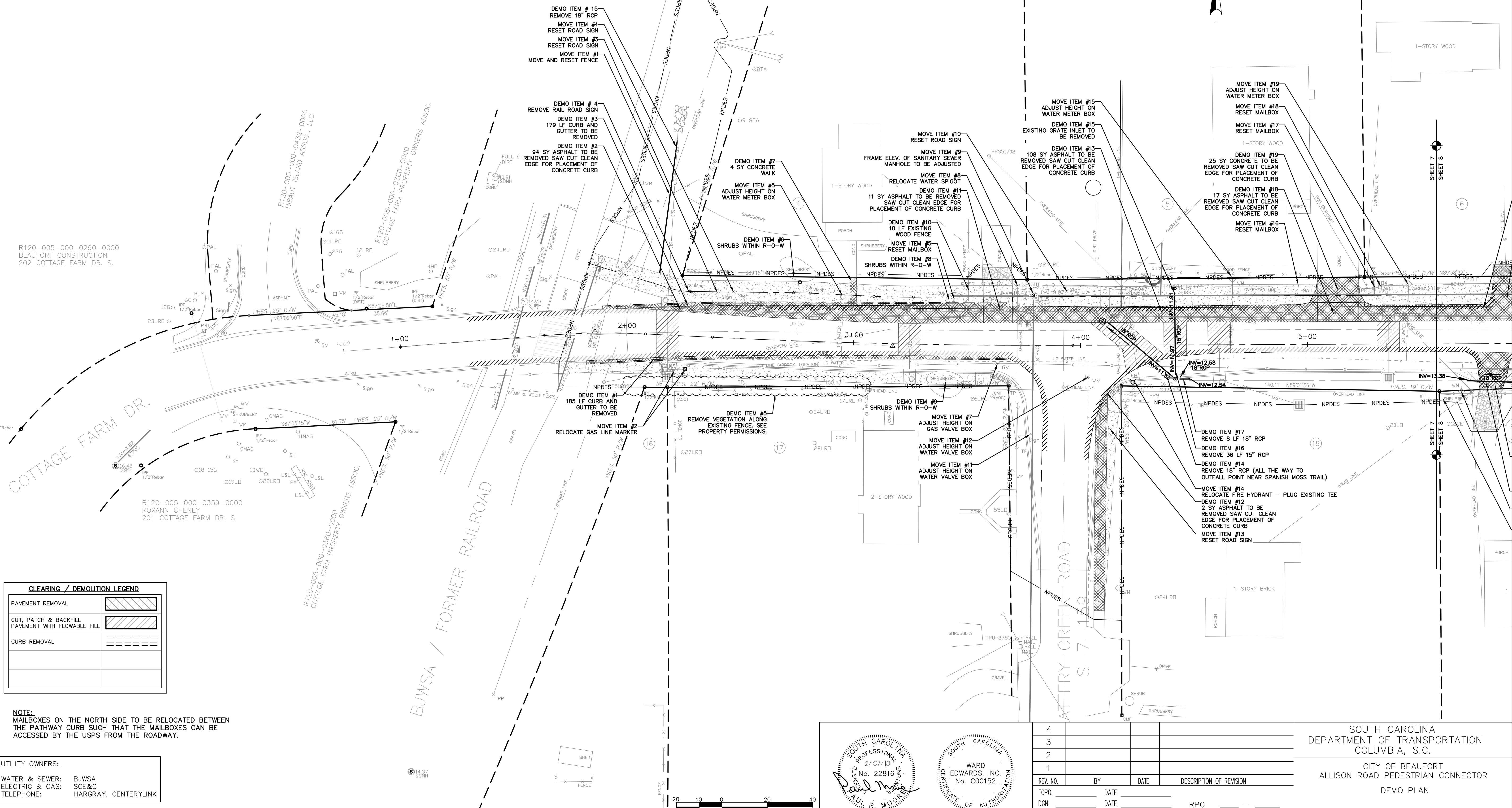
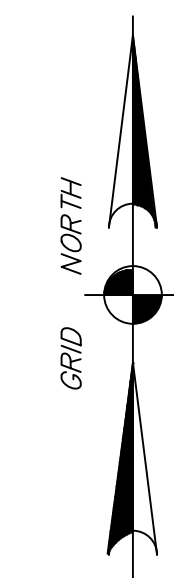
REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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TOPO.	DATE	
DGN.	DATE	
R/W	DATE	

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION COLUMBIA, S.C.

CITY OF BEAUFORT ALLISON ROAD PEDESTRIAN CONNECTOR REFERENCE SHEET

SCALE 1" = 40' RTE.



R120-005-000-0290-0000
BEAUFORT CONSTRUCTION
202 COTTAGE FARM DR. S.

R120-005-000-0432-0000
RIBAULT ISLAND ASSOC., LLC

R120-005-000-0360-0000
COTTAGE FARM PROPERTY OWNERS ASSOC.

R120-005-000-0359-0000
ROXANN CHENEY
201 COTTAGE FARM DR. S.

R120-005-000-0360-0000
COTTAGE FARM PROPERTY OWNERS ASSOC.

CLEARING / DEMOLITION LEGEND

PAVEMENT REMOVAL	
CUT, PATCH & BACKFILL PAVEMENT WITH FLOWABLE FILL	
CURB REMOVAL	

NOTE:
MAILBOXES ON THE NORTH SIDE TO BE RELOCATED BETWEEN THE PATHWAY CURB SUCH THAT THE MAILBOXES CAN BE ACCESSED BY THE USPS FROM THE ROADWAY.

UTILITY OWNERS:
WATER & SEWER: BJWSA
ELECTRIC & GAS: SCE&G
TELEPHONE: HARGRAY, CENTERYLINK

NOTE: ALIGNMENT CONTROL CAN BE FOUND ON REFERENCE SHEET



PROFESSIONAL SEAL
SOUTH CAROLINA
REGISTERED PROFESSIONAL ENGINEER
No. 22816
AUL R. MOORE

PROFESSIONAL SEAL
SOUTH CAROLINA
REGISTERED PROFESSIONAL ENGINEER
No. C00152
WARD EDWARDS, INC.

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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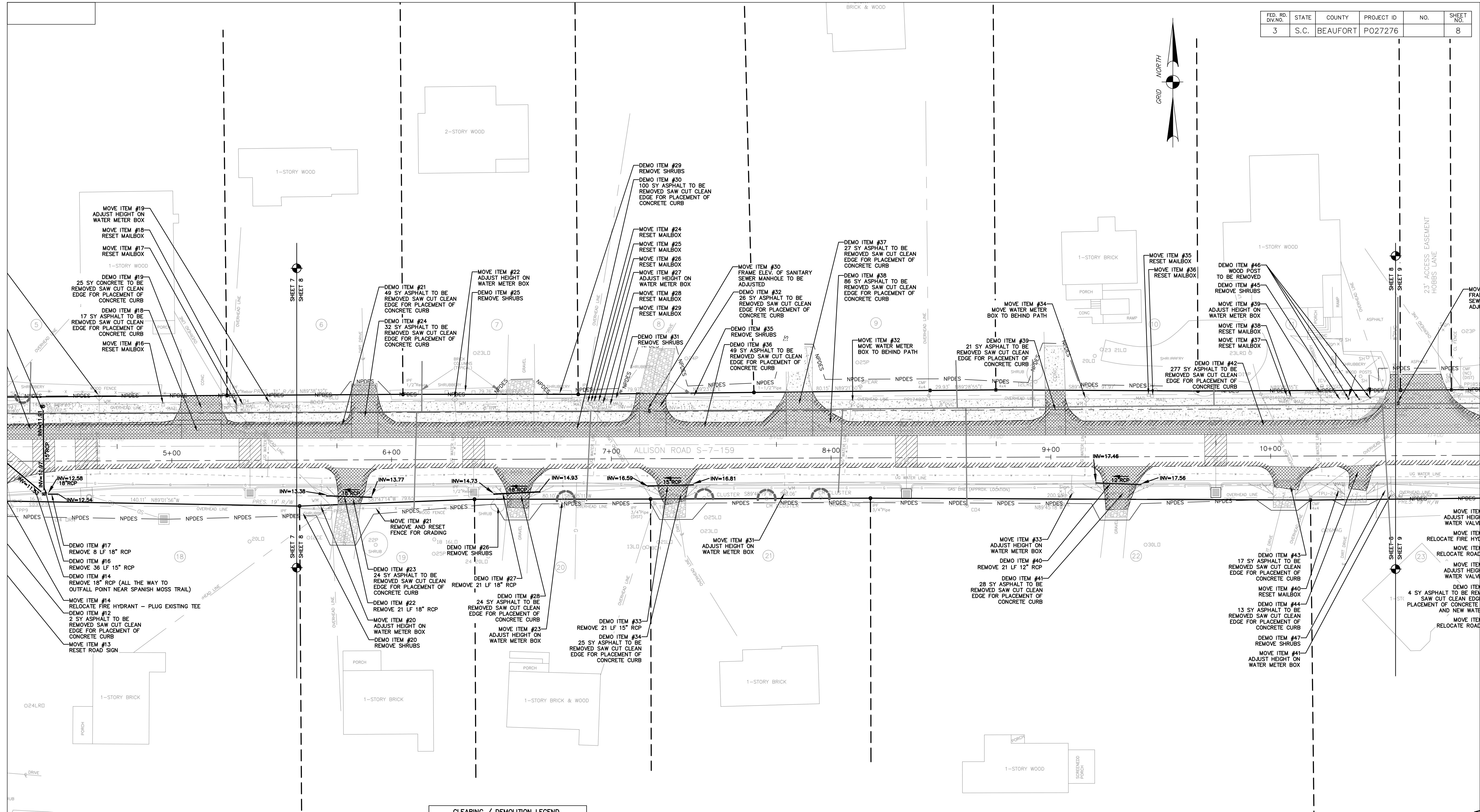
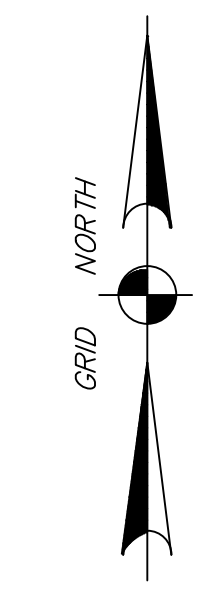
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DGN. _____ DATE _____
R/W _____ DATE _____

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

CITY OF BEAUFORT
ALLISON ROAD PEDESTRIAN CONNECTOR
DEMO PLAN

SCALE 1"= 20' RTE.

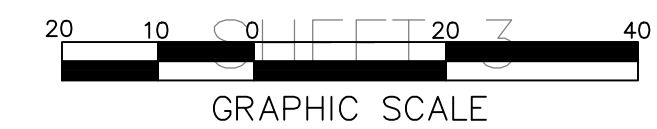
FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	NO.	SHEET NO.
3	S.C.	BEAUFORT	PO27276		8



UTILITY OWNERS:
 WATER & SEWER: BJWSA
 ELECTRIC & GAS: SCE&G
 TELEPHONE: HARGRAY, CENERYLINK

NOTE:
 MAILBOXES ON THE NORTH SIDE TO BE RELOCATED BETWEEN THE PATHWAY CURB SUCH THAT THE MAILBOXES CAN BE ACCESSED BY THE USPS FROM THE ROADWAY.

PAVEMENT REMOVAL	
CUT, PATCH & BACKFILL PAVEMENT WITH FLOWABLE FILL	
CURB REMOVAL	



AUL R. MOORE
No. 22816
2/07/18

WARD EDWARDS, INC.
No. C00152

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1			
REV. NO.	BY	DATE	DESCRIPTION OF REVISION

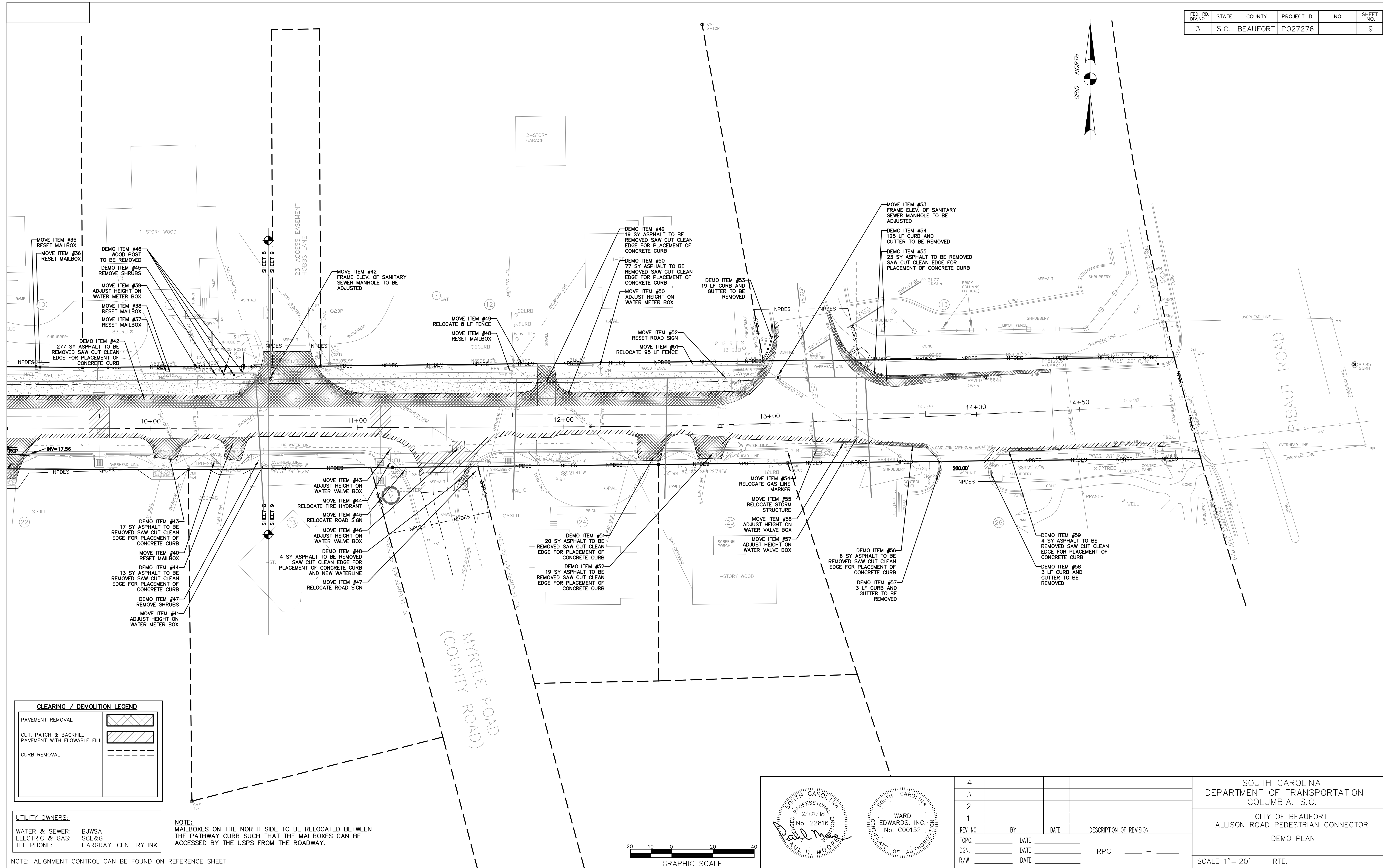
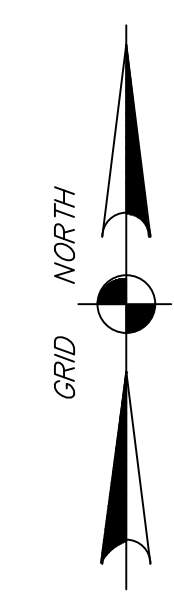
SOUTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 COLUMBIA, S.C.

CITY OF BEAUFORT
 ALLISON ROAD PEDESTRIAN CONNECTOR
 DEMO PLAN

SCALE 1"=20' RTE.

NOTE: ALIGNMENT CONTROL CAN BE FOUND ON REFERENCE SHEET

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	NO.	SHEET NO.
3	S.C.	BEAUFORT	PO27276		9



CLEARING / DEMOLITION LEGEND

PAVEMENT REMOVAL	
CUT, PATCH & BACKFILL PAVEMENT WITH FLOWABLE FILL	
CURB REMOVAL	

UTILITY OWNERS:
 WATER & SEWER: BJWSA
 ELECTRIC & GAS: SCE&G
 TELEPHONE: HARGRAY, CENTERYLINK

NOTE:
 MAILBOXES ON THE NORTH SIDE TO BE RELOCATED BETWEEN THE PATHWAY CURB SUCH THAT THE MAILBOXES CAN BE ACCESSED BY THE USPS FROM THE ROADWAY.

NOTE: ALIGNMENT CONTROL CAN BE FOUND ON REFERENCE SHEET



PROFESSIONAL SEAL
 SOUTH CAROLINA
 2/07/18
 No. 22816
 AUL R. MOORE

PROFESSIONAL SEAL
 SOUTH CAROLINA
 WARD EDWARDS, INC.
 No. C00152

4			
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REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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DGN.		DATE	RPG
R/W		DATE	

SOUTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 COLUMBIA, S.C.

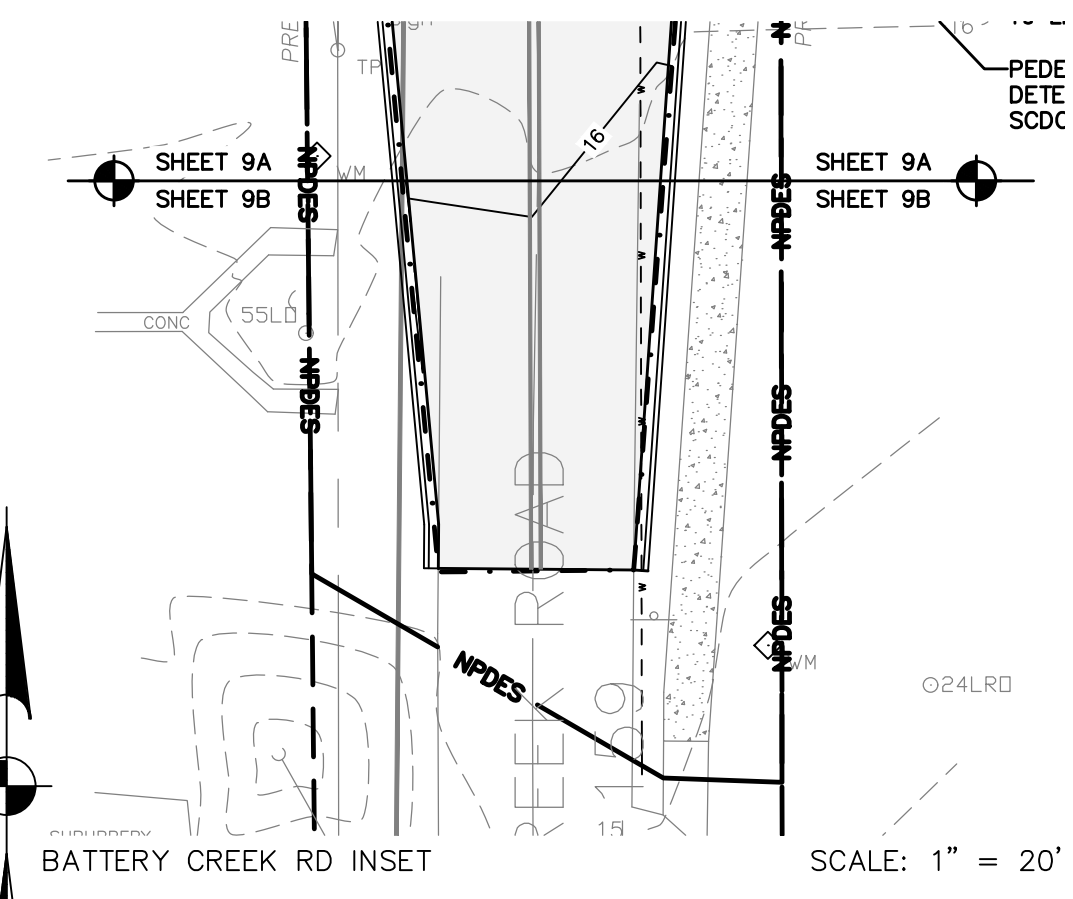
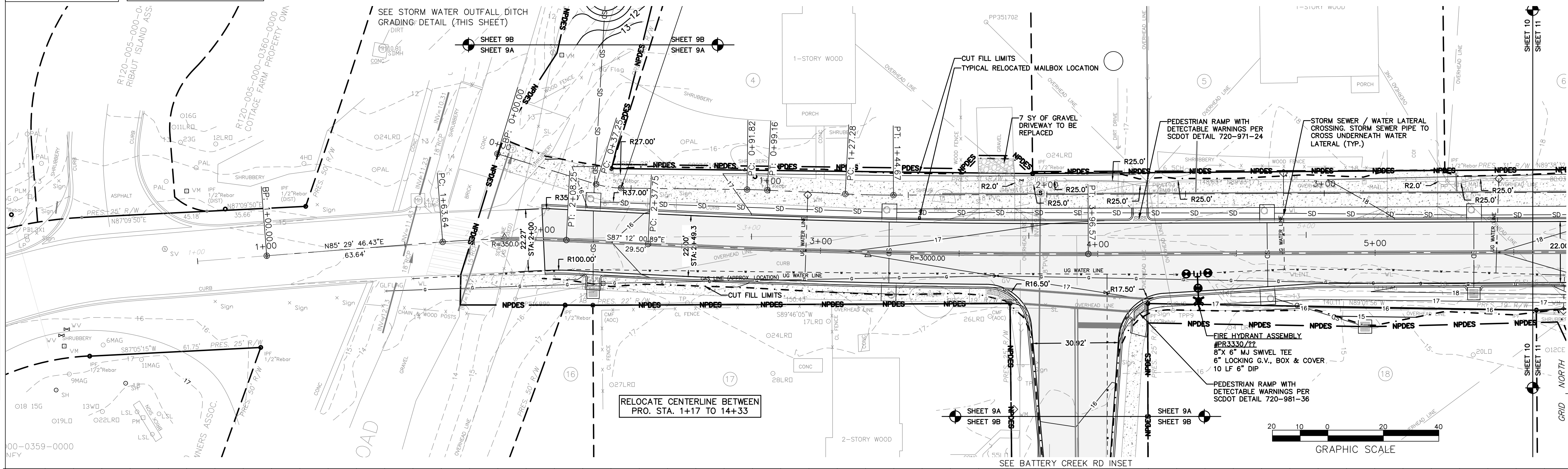
CITY OF BEAUFORT
 ALLISON ROAD PEDESTRIAN CONNECTOR
 DEMO PLAN

SCALE 1"= 20' RTE.

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	NO.	SHEET NO.
3	S.C.	BEAUFORT	PO27276		10

ALIGNMENT CONTROL CAN BE FOUND ON REFERENCE SHEET

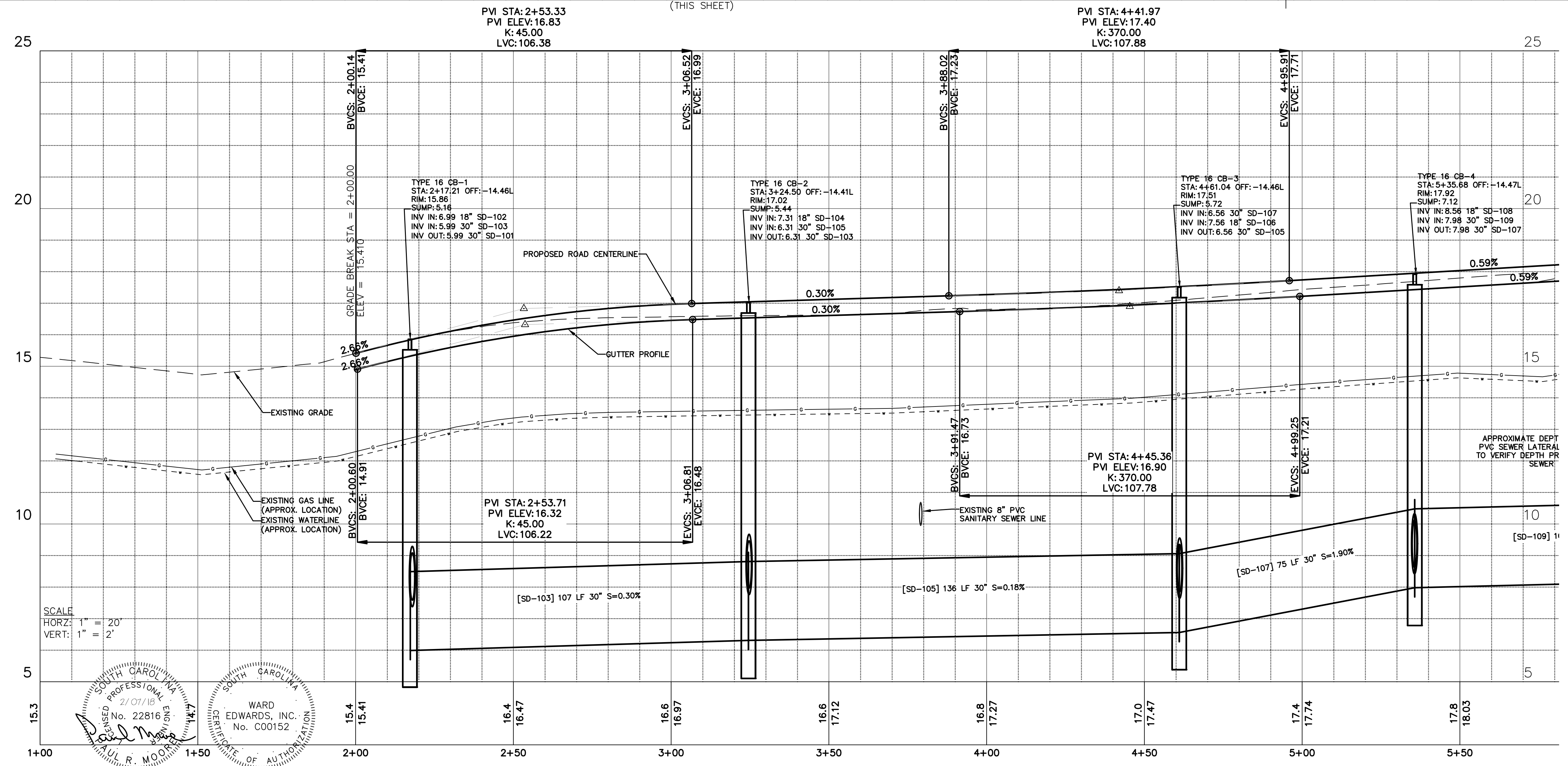
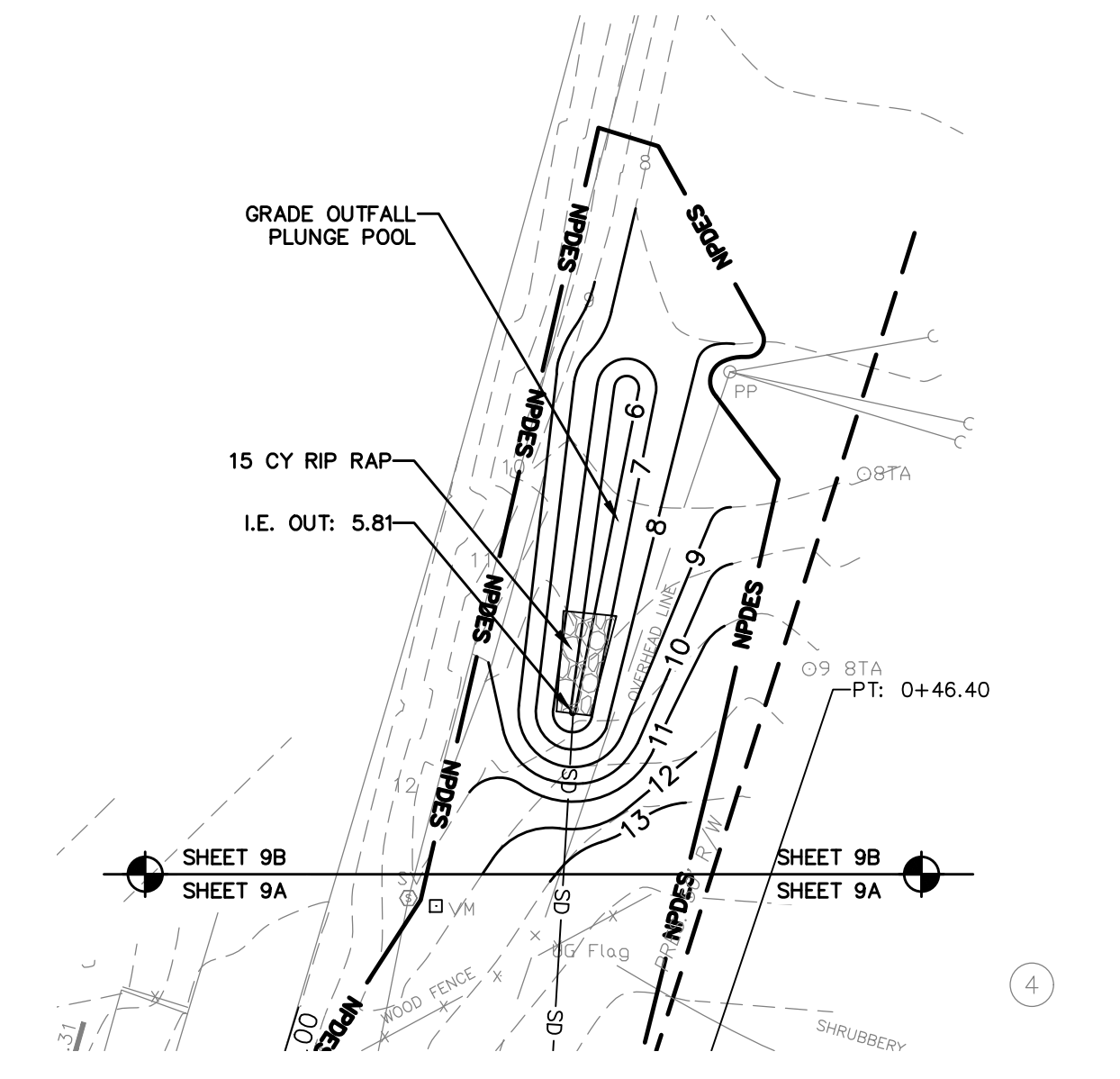
BY	DATE	PLAN	REVISED	DATE
		NOTED		
		ALIGNED		
		CHECKED		
		BY		



NOTE: ALIGNMENT CONTROL CAN BE FOUND ON REFERENCE SHEET

NOTE: ALL EXISTING UTILITY LINE DEPTHS ARE ONLY ESTIMATES BASED ON BEST AVAILABLE INFORMATION. CONTRACTOR TO VERIFY UTILITY DEPTHS AT ALL CROSSINGS AND NOTIFY CITY OF ALL VARIATIONS.

BY	DATE	PROFILE	REVISED	DATE
		NOTED		
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		CHECKED		
		BY		

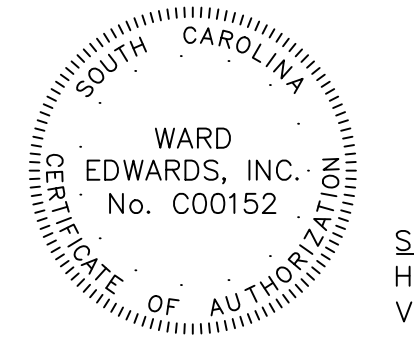
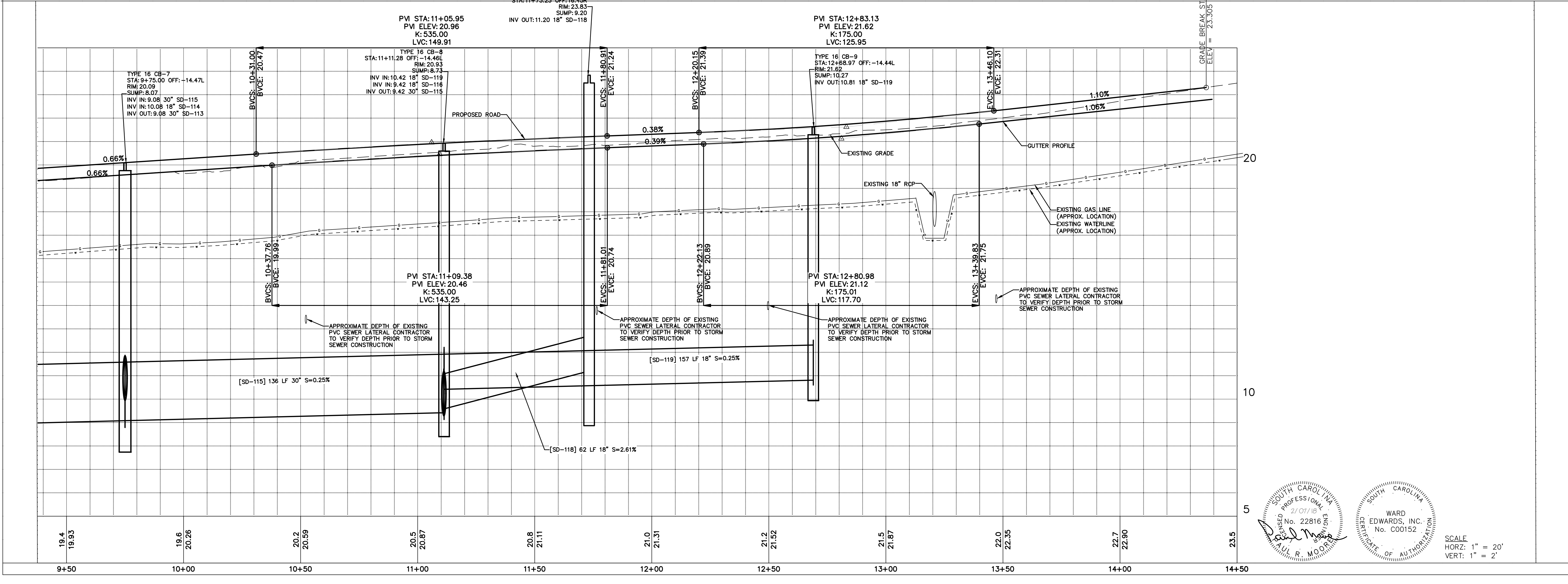
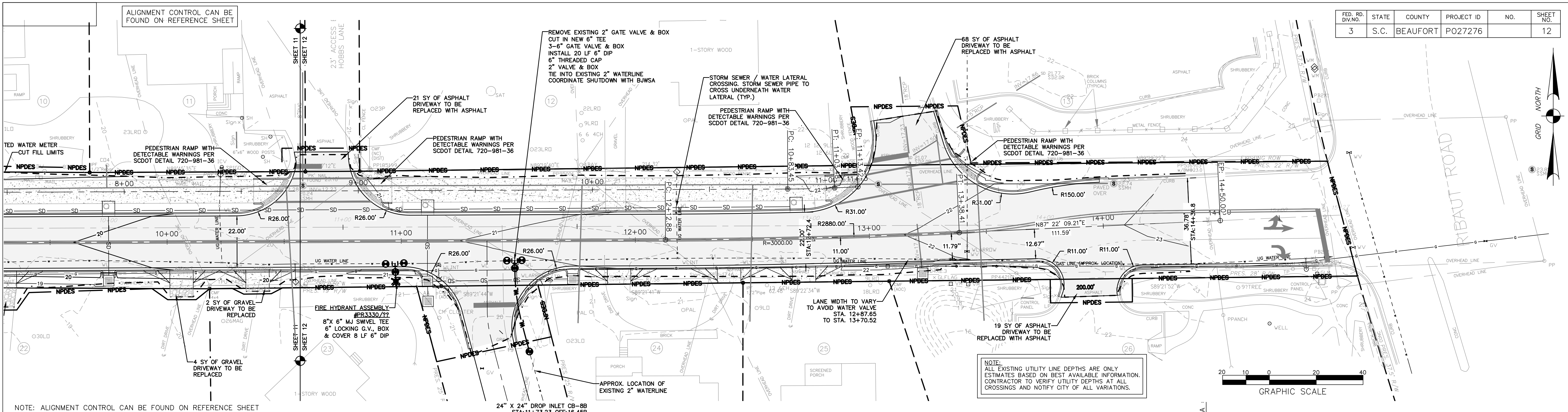


WARD EDWARDS, INC. No. C00152
 SOUTH CAROLINA PROFESSIONAL ENGINEER
 No. 22816
 2/01/16
 PAUL R. MOOR

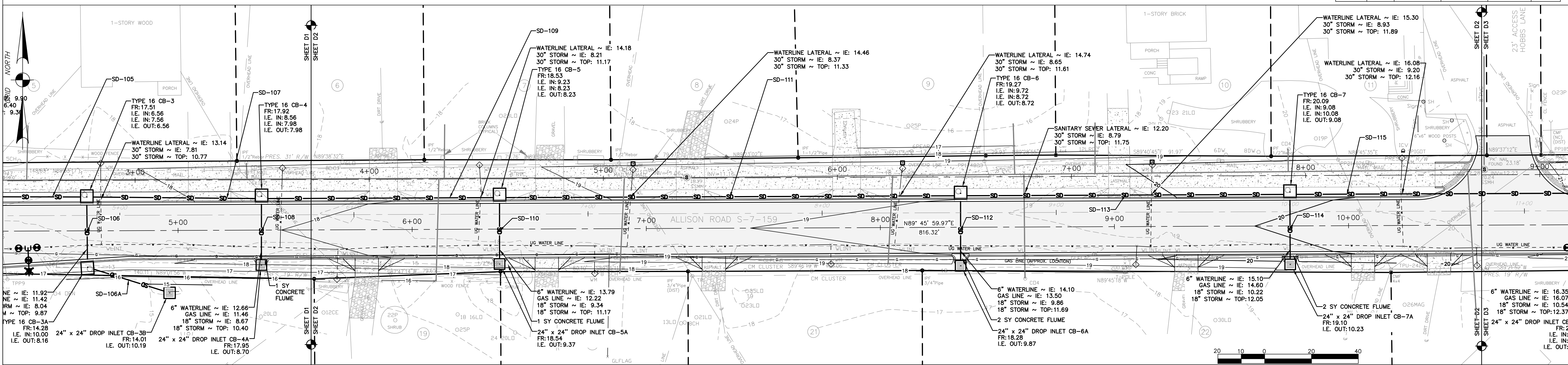
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3	S.C.	BEAUFORT	PO27276		12

PLAN	DATE	BY

PROFILE	DATE	BY



SCALE
HORIZ: 1" = 20'
VERT: 1" = 2'



NOTE: ALIGNMENT CONTROL CAN BE FOUND ON REFERENCE SHEET

GRAPHIC SCALE

Smooth Wall Pipe

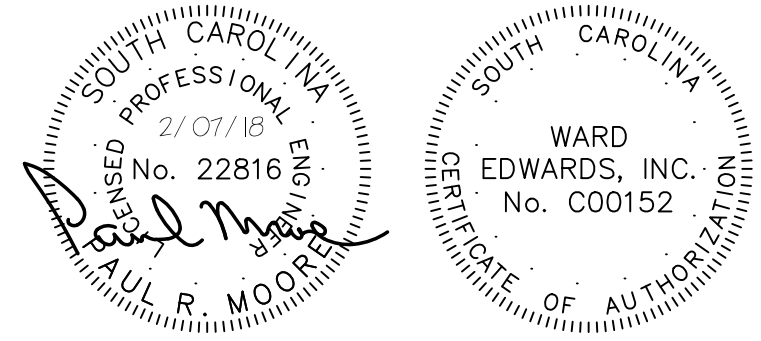
Corrugated Wall Pipe

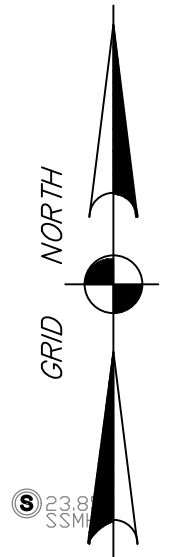
System	Link ID	Geometry		Upstream		Downstream		Fill Height		Min Field SPT "N" below invert	Joint Pressure (psi)	Smooth Wall Options									
		Diameter (in)	No. of Barrels	Node	Node Description	Node Station	Link Invert (ft)	Node	Node Description			Node Station	Link Invert (ft)	Min	Max	HDPE	Built	RCP	Built	SRAP	Built
														(ft)	(ft)	Type	✓	Highest Class	✓	Thickest Gage	✓
1	SD-109	30	1	CB-5	C.B. TYPE 16	6+37.37	8.23	CB-4	C.B. TYPE 16	5+35.68	7.98	6.9	7.2	10	S		IV		16ga		
1	SD-110	18	1	CB-5A	24"X24" DROP INLET	6+37.28	9.37	CB-5	C.B. TYPE 16	6+37.37	9.23	4.3	7.4	10	S		IV		16ga		
1	SD-111	30	1	CB-6	C.B. TYPE 16	8+34.30	8.72	CB-5	C.B. TYPE 16	6+37.37	8.23	7.1	7.4	10	S		IV		16ga		
1	SD-112	18	1	CB-6A	24"X24" DROP INLET	8+34.23	9.87	CB-6	C.B. TYPE 16	8+34.30	9.72	5.5	7.5	10	S		IV		16ga		
1	SD-113	30	1	CB-7	C.B. TYPE 16	9+75.00	9.08	CB-6	C.B. TYPE 16	8+34.30	8.72	7.3	7.8	10	S		IV		16ga		
1	SD-114	18	1	CB-7A	24"X24" DROP INLET	9+75.00	10.23	CB-7	C.B. TYPE 16	9+75.00	10.08	6.7	7.9	10	S		IV		16ga		
1	SD-115	30	1	CB-8	C.B. TYPE 16	11+11.28	9.42	CB-7	C.B. TYPE 16	9+75.00	9.08	7.8	8.4	10	S		IV		16ga		

System	Link ID	Geometry		Upstream		Downstream		Fill Height		Min Field SPT "N" below invert	Joint Pressure (psi)	Corrugated Wall Options							
		Diameter (in)	No. of Barrels	Node	Node Description	Node Station	Link Invert (ft)	Node	Node Description			Node Station	Link Invert (ft)	Min	Max	CAAP	Built		
														(ft)	(ft)	Thickest Gage	✓		
1	SD-109	30	1	CB-5	C.B. TYPE 16	6+37.37	8.23	CB-4	C.B. TYPE 16	5+35.68	7.98	6.9	7.2	10	16ga				
1	SD-110	18	1	CB-5A	24"X24" DROP INLET	6+37.28	9.37	CB-5	C.B. TYPE 16	6+37.37	9.23	4.3	7.4	10	16ga				
1	SD-111	30	1	CB-6	C.B. TYPE 16	8+34.30	8.72	CB-5	C.B. TYPE 16	6+37.37	8.23	8.3	9.2	10	16ga				
1	SD-112	18	1	CB-6A	24"X24" DROP INLET	8+34.23	9.87	CB-6	C.B. TYPE 16	8+34.30	9.72	5.5	7.5	10	16ga				
1	SD-113	30	1	CB-7	C.B. TYPE 16	9+75.00	9.08	CB-6	C.B. TYPE 16	8+34.30	8.72	9.3	9.6	10	16ga				
1	SD-114	18	1	CB-7A	24"X24" DROP INLET	9+75.00	10.23	CB-7	C.B. TYPE 16	9+75.00	10.08	9.3	9.6	10	16ga				
1	SD-115	30	1	CB-8	C.B. TYPE 16	11+11.28	9.42	CB-7	C.B. TYPE 16	9+75.00	9.08	9.3	9.6	10	16ga				

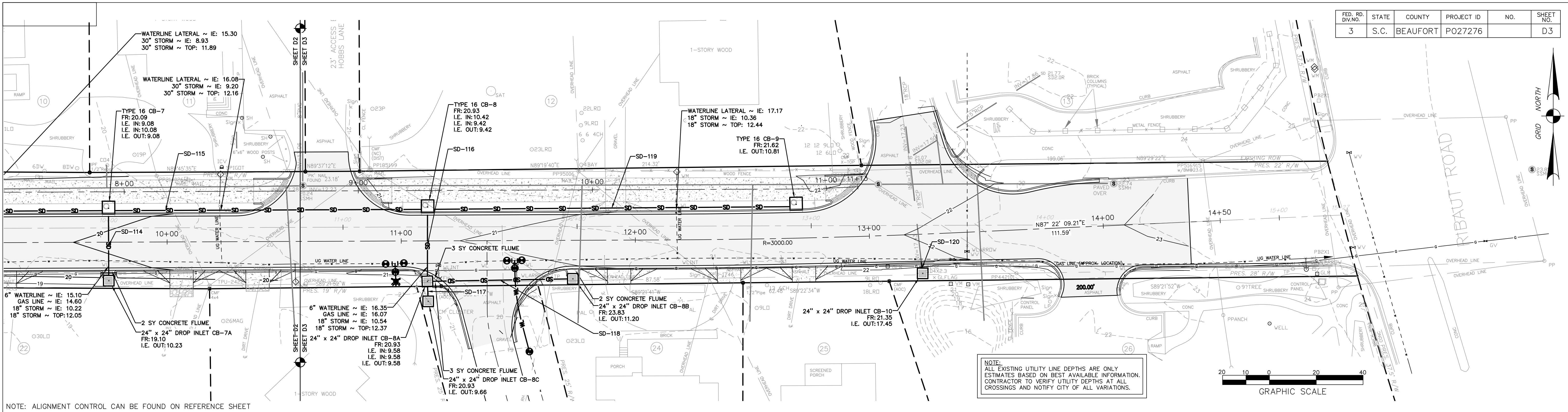
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PROFILE SURVEYED, PLOTTED, CHECKED, BY: DATE: 6/40 9:30, 6/40 9:30





DATE	BY	REVISION



NOTE:
ALL EXISTING UTILITY LINE DEPTHS ARE ONLY ESTIMATES BASED ON BEST AVAILABLE INFORMATION. CONTRACTOR TO VERIFY UTILITY DEPTHS AT ALL CROSSINGS AND NOTIFY CITY OF ALL VARIATIONS.



NOTE: ALIGNMENT CONTROL CAN BE FOUND ON REFERENCE SHEET

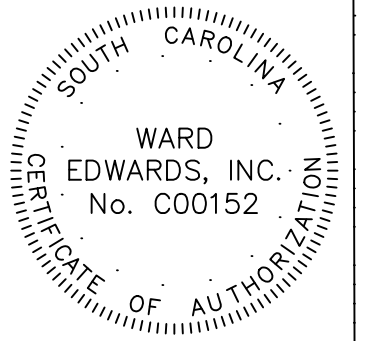
DATE	BY	REVISION

Smooth Wall Pipe

System	Link ID	Geometry			Upstream		Downstream		Fill Height		Min Field SPT "N" below invert	Joint Pressure (psi)	Smooth Wall Options										
		Diameter (in)	No. of Barrels	Pipe Length (ft)	Slope (%)	Node	Node Description	Node Station	Link Invert (ft)	Node			Node Description	Node Station	Link Invert (ft)	Min	Max	HDPE		RCP		SRAP	
																		Type	Built	Highest Class	Built	Thickest Gage	Built
1	SD-116	18	1	31.00	0.52	CB-8A	24"X24" DROP INLET	11+11.11	9.58	CB-8	C.B. TYPE 16	11+11.28	9.42	7.3	10	S	✓	IV	✓	16ga	✓		
1	SD-117	24	1	9.00	0.94	CB-8C	24"X24" DROP INLET	11+11.39	9.66	CB-8A	24"X24" DROP INLET	11+11.11	9.58	8.7	8.9	10	S		IV		16ga		
1	SD-118	18	1	62.00	2.61	CB-8B	24"X24" DROP INLET	11+73.23	11.2	CB-8A	24"X24" DROP INLET	11+11.11	9.58	8.0	9.0	10	S		IV		16ga		
1	SD-119	18	1	157.00	0.25	CB-9	C.B. TYPE 16	12+68.97	10.81	CB-8	C.B. TYPE 16	11+11.28	10.42	8.5	8.9	10	S		IV		16ga		
1	SD-120	18	1	5.00	0.44	CB-10	24"X24" DROP INLET	13+22.09	17.45	N/A	EXISTING PIPE	13+21.71	17.43	3.1	2.8	10	S		IV		16ga		

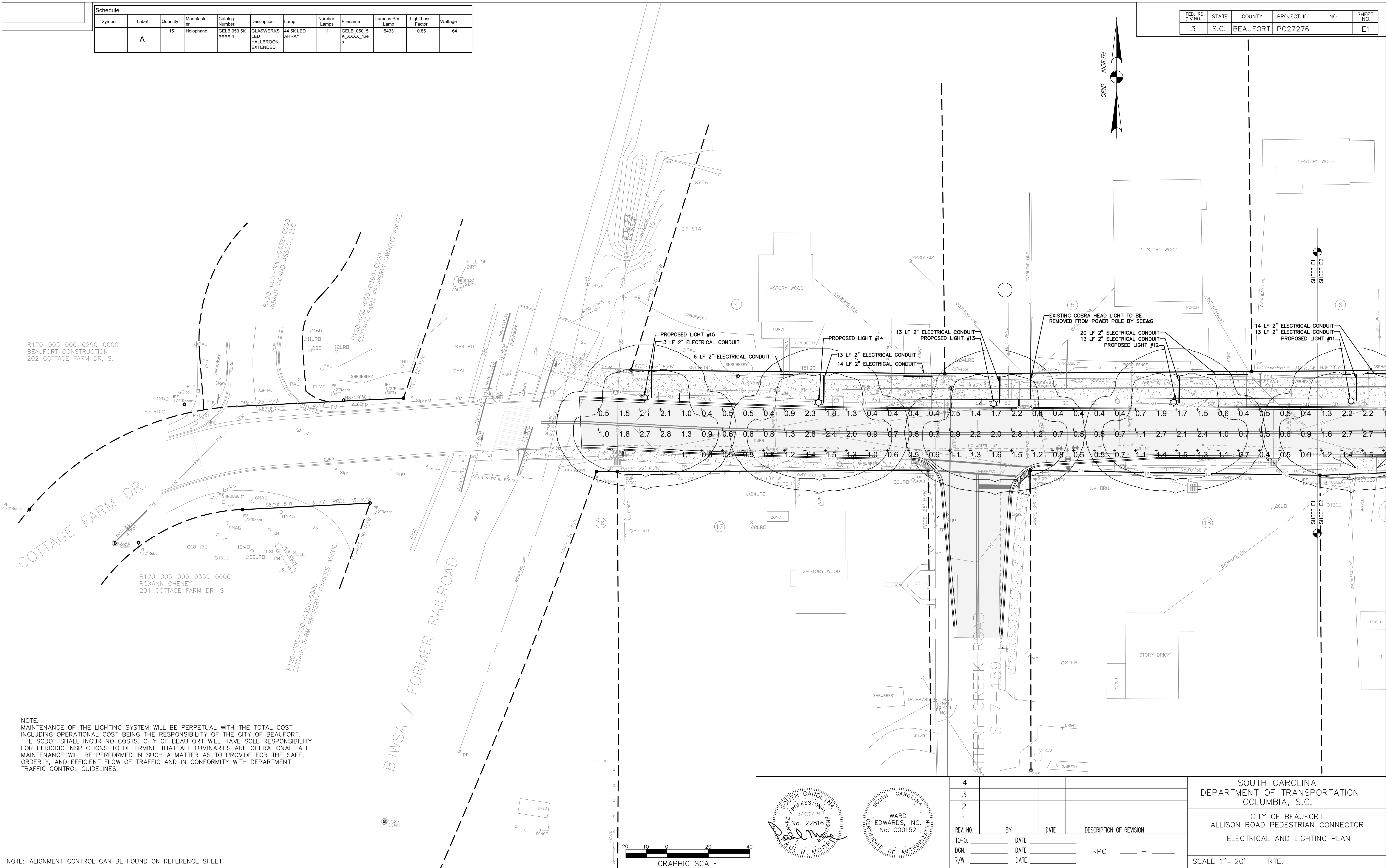
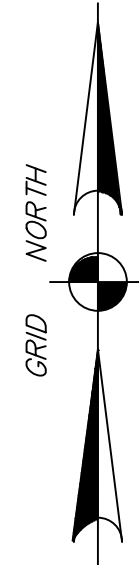
Corrugated Wall Pipe

System	Link ID	Geometry			Upstream		Downstream		Fill Height		Min Field SPT "N" below invert	Joint Pressure (psi)	Corrugated Wall Options							
		Diameter (in)	No. of Barrels	Pipe Length (in)	Slope (%)	Node	Node Description	Node Station	Link Invert (ft)	Node			Node Description	Node Station	Link Invert (ft)	Min	Max	CAAP		Thickest Gage
																		Type	Built	
1	SD-116	18	1	31.00	0.52	CB-8A	24"X24" DROP INLET	11+11.11	9.58	CB-8	C.B. TYPE 16	11+11.28	9.42	7.3	10.0	10	16ga	16ga	✓	
1	SD-117	24	1	9.00	0.94	CB-8C	24"X24" DROP INLET	11+11.39	9.66	CB-8A	24"X24" DROP INLET	11+11.11	9.58	8.7	8.9	10	16ga	16ga		
1	SD-118	18	1	62.00	2.61	CB-8B	24"X24" DROP INLET	11+73.23	11.20	CB-8A	24"X24" DROP INLET	11+11.11	9.58	8.0	9.0	10	16ga	16ga		
1	SD-119	18	1	157.00	0.25	CB-9	C.B. TYPE 16	12+68.97	10.81	CB-8	C.B. TYPE 16	11+11.28	10.42	8.5	8.9	10	16ga	16ga		
1	SD-120	18	1	5.00	0.44	CB-10	24"X24" DROP INLET	13+22.09	17.45	N/A	EXISTING PIPE	13+21.71	17.43	3.1	2.8	10	16ga	16ga		



Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
	A	15	Holophane	GELB 050 5K XXXX 4	GLASWERKS LED HALLBROOK EXTENDED	44 5K LED ARRAY	1	GELB_050_5K_XXXX_4ies	5433	0.85	64

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	NO.	SHEET NO.
3	S.C.	BEAUFORT	PO27276		E1



R120-005-000-0290-0000
BEAUFORT CONSTRUCTION
202 COTTAGE FARM DR. S.

R120-005-000-0359-0000
ROXANN CHENEY
201 COTTAGE FARM DR. S.

NOTE:
MAINTENANCE OF THE LIGHTING SYSTEM WILL BE PERPETUAL WITH THE TOTAL COST INCLUDING OPERATIONAL COST BEING THE RESPONSIBILITY OF THE CITY OF BEAUFORT. THE SCDOT SHALL INCUR NO COSTS. CITY OF BEAUFORT WILL HAVE SOLE RESPONSIBILITY FOR PERIODIC INSPECTIONS TO DETERMINE THAT ALL LUMINARIES ARE OPERATIONAL. ALL MAINTENANCE WILL BE PERFORMED IN SUCH A MANNER AS TO PROVIDE FOR THE SAFE, ORDERLY, AND EFFICIENT FLOW OF TRAFFIC AND IN CONFORMITY WITH DEPARTMENT TRAFFIC CONTROL GUIDELINES.

NOTE: ALIGNMENT CONTROL CAN BE FOUND ON REFERENCE SHEET



REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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TOPO. _____ DATE _____
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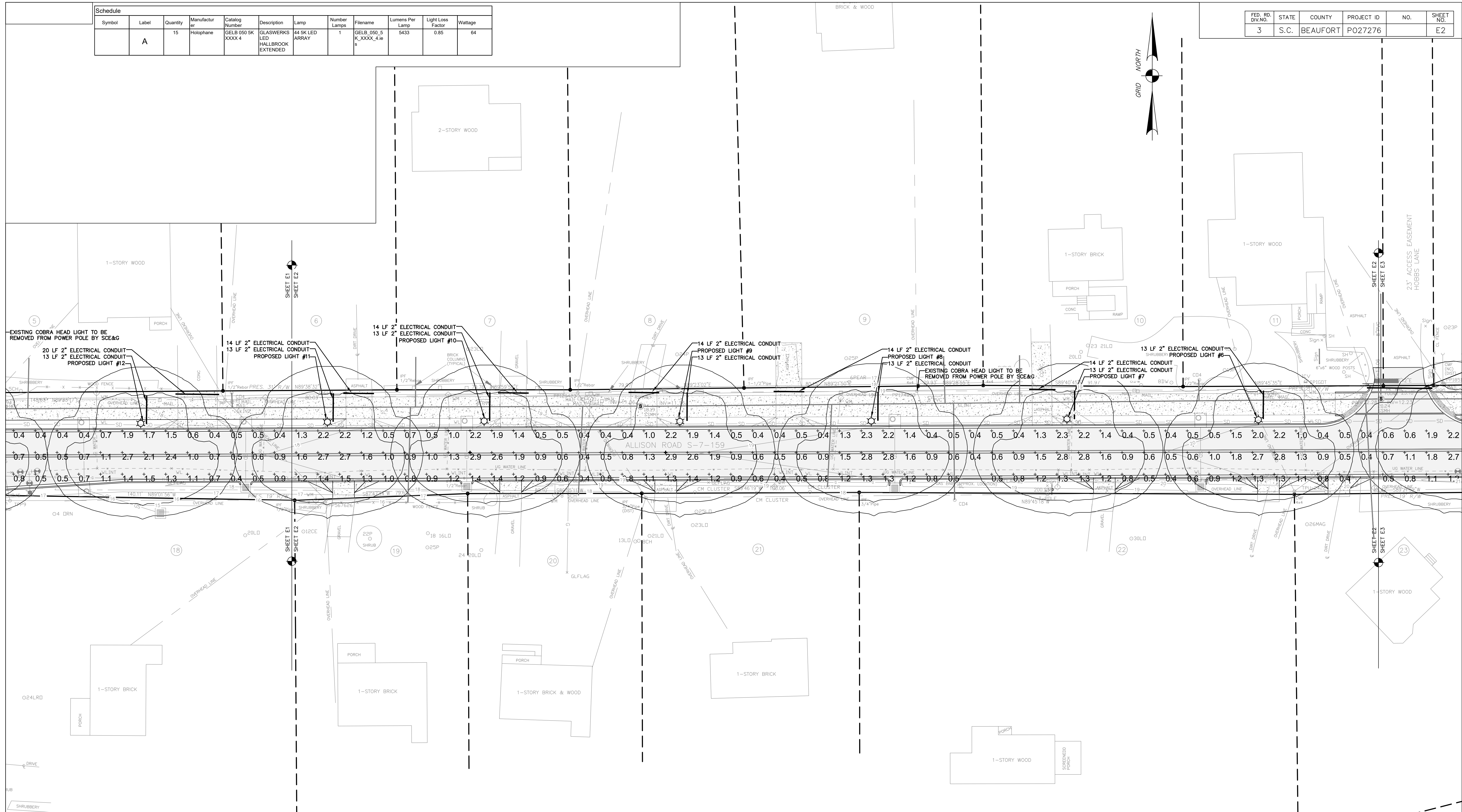
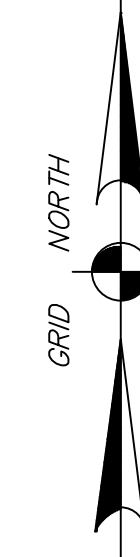
SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

CITY OF BEAUFORT
ALLISON ROAD PEDESTRIAN CONNECTOR
ELECTRICAL AND LIGHTING PLAN

SCALE 1"= 20'
RTE.

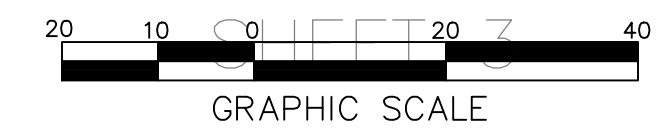
Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
	A	15	Holophane	GELB 050 5K XXXX 4	GLASWERKS LED HALLBROOK EXTENDED	44 5K LED ARRAY	1	GELB_050_5K_XXXX_4ies	5433	0.85	64

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	NO.	SHEET NO.
3	S.C.	BEAUFORT	PO27276		E2



NOTE:
 MAINTENANCE OF THE LIGHTING SYSTEM WILL BE PERPETUAL WITH THE TOTAL COST INCLUDING OPERATIONAL COST BEING THE RESPONSIBILITY OF THE CITY OF BEAUFORT. THE SCDOT SHALL INCUR NO COSTS. CITY OF BEAUFORT WILL HAVE SOLE RESPONSIBILITY FOR PERIODIC INSPECTIONS TO DETERMINE THAT ALL LUMINARIES ARE OPERATIONAL. ALL MAINTENANCE WILL BE PERFORMED IN SUCH A MANNER AS TO PROVIDE FOR THE SAFE, ORDERLY, AND EFFICIENT FLOW OF TRAFFIC AND IN CONFORMITY WITH DEPARTMENT TRAFFIC CONTROL GUIDELINES.

NOTE: ALIGNMENT CONTROL CAN BE FOUND ON REFERENCE SHEET



REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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TOPO. _____ DATE _____
 DGN. _____ DATE _____
 R/W _____ DATE _____

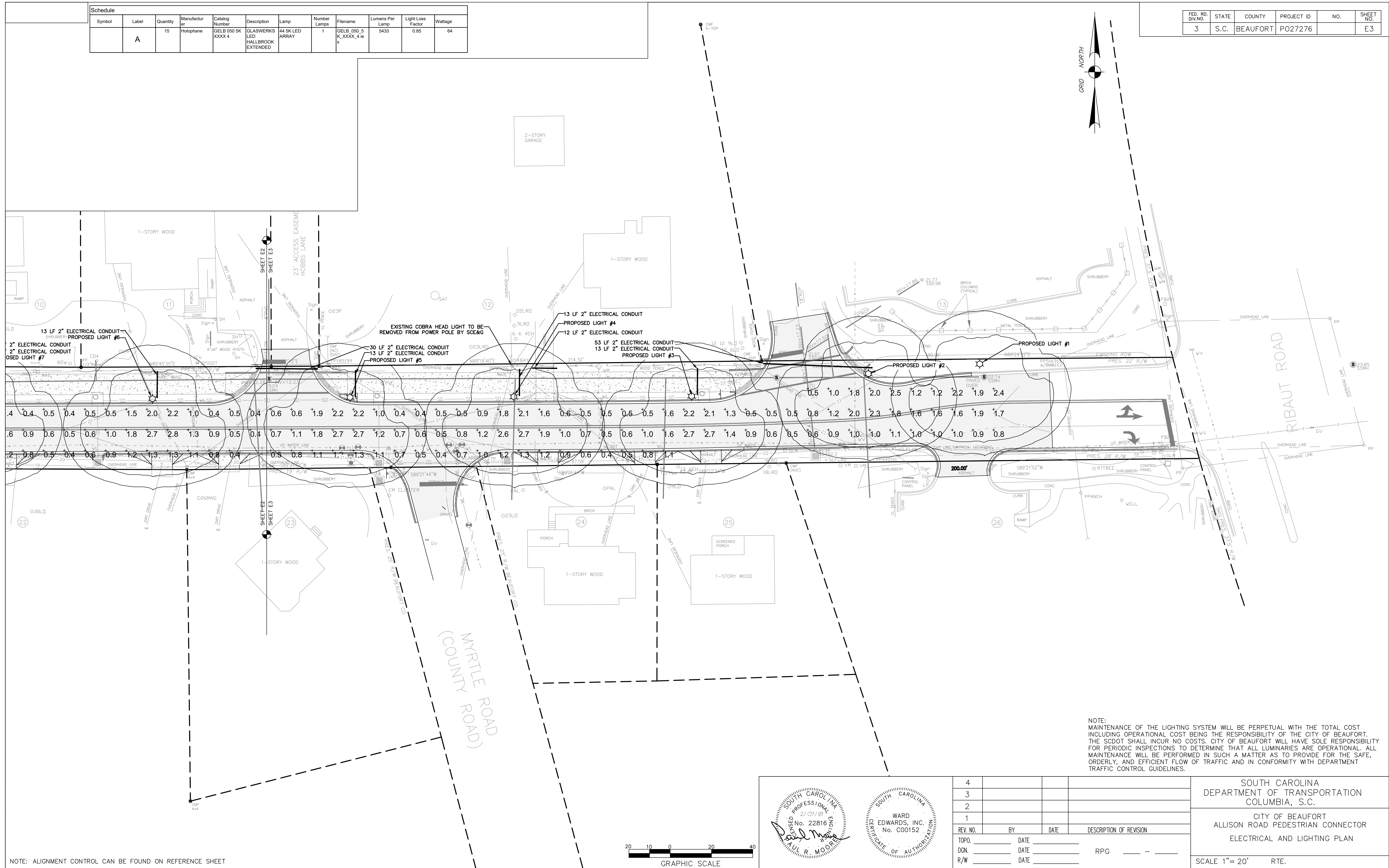
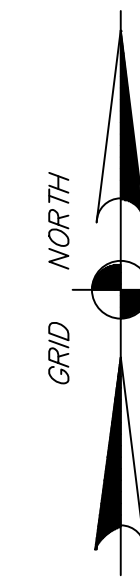
SOUTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 COLUMBIA, S.C.

CITY OF BEAUFORT
 ALLISON ROAD PEDESTRIAN CONNECTOR
 ELECTRICAL AND LIGHTING PLAN

SCALE 1"=20' RTE.

Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
	A	15	Holophane	GELB 050 5K XXXX 4	GLASWERKS LED HALLBROOK EXTENDED	44 5K LED ARRAY	1	GELB_050_5 K_XXXX_4ies	5433	0.85	64

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	NO.	SHEET NO.
3	S.C.	BEAUFORT	PO27276		E3



EXISTING COBRA HEAD LIGHT TO BE REMOVED FROM POWER POLE BY SCE&G

13 LF 2" ELECTRICAL CONDUIT PROPOSED LIGHT #4

12 LF 2" ELECTRICAL CONDUIT

53 LF 2" ELECTRICAL CONDUIT PROPOSED LIGHT #3

13 LF 2" ELECTRICAL CONDUIT PROPOSED LIGHT #5

30 LF 2" ELECTRICAL CONDUIT

13 LF 2" ELECTRICAL CONDUIT

NOTE: MAINTENANCE OF THE LIGHTING SYSTEM WILL BE PERPETUAL WITH THE TOTAL COST INCLUDING OPERATIONAL COST BEING THE RESPONSIBILITY OF THE CITY OF BEAUFORT. THE SCDDT SHALL INCUR NO COSTS. CITY OF BEAUFORT WILL HAVE SOLE RESPONSIBILITY FOR PERIODIC INSPECTIONS TO DETERMINE THAT ALL LUMINARIES ARE OPERATIONAL. ALL MAINTENANCE WILL BE PERFORMED IN SUCH A MANNER AS TO PROVIDE FOR THE SAFE, ORDERLY, AND EFFICIENT FLOW OF TRAFFIC AND IN CONFORMITY WITH DEPARTMENT TRAFFIC CONTROL GUIDELINES.

NOTE: ALIGNMENT CONTROL CAN BE FOUND ON REFERENCE SHEET



PAUL R. MOORE
No. 22816

WARD EDWARDS, INC.
No. C00152

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1			

TOPO. _____ DATE _____
 DGN. _____ DATE _____
 R/W _____ DATE _____

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

CITY OF BEAUFORT
ALLISON ROAD PEDESTRIAN CONNECTOR
ELECTRICAL AND LIGHTING PLAN

SCALE 1"=20' RTE.

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	NO.	SHEET NO.
3	S.C.	BEAUFORT	PO27276		L1

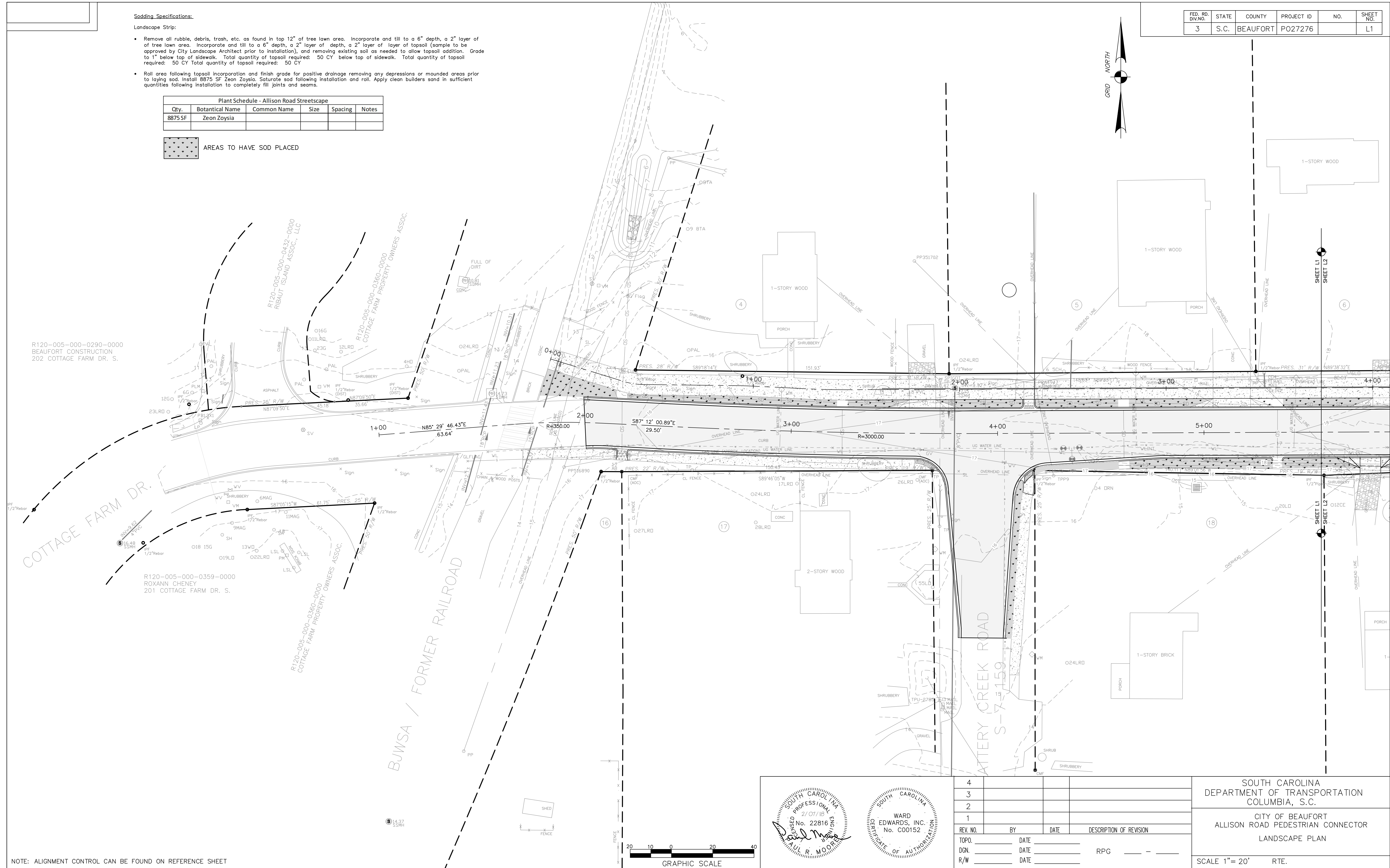
Sodding Specifications:

Landscape Strip:

- Remove all rubble, debris, trash, etc. as found in top 12" of tree lawn area. Incorporate and till to a 6" depth, a 2" layer of tree lawn area. Incorporate and till to a 6" depth, a 2" layer of depth, a 2" layer of layer of topsoil (sample to be approved by City Landscape Architect prior to installation), and removing existing soil as needed to allow topsoil addition. Grade to 1" below top of sidewalk. Total quantity of topsoil required: 50 CY below top of sidewalk. Total quantity of topsoil required: 50 CY
- Roll area following topsoil incorporation and finish grade for positive drainage removing any depressions or rounded areas prior to laying sod. Install 8875 SF Zeon Zoysia. Saturate sod following installation and roll. Apply clean builders sand in sufficient quantities following installation to completely fill joints and seams.

Plant Schedule - Allison Road Streetscape					
Qty.	Botanical Name	Common Name	Size	Spacing	Notes
8875 SF	Zeon Zoysia				

 AREAS TO HAVE SOD PLACED



R120-005-000-0290-0000
BEAUFORT CONSTRUCTION
202 COTTAGE FARM DR. S.

R120-005-000-0359-0000
ROXANN CHENEY
201 COTTAGE FARM DR. S.

R120-005-000-0360-0000
COTTAGE FARM PROPERTY OWNERS ASSOC.

COTTAGE FARM DR.

BJWSA / FORMER RAILROAD

ATTERY CREEK ROAD
S-7-159

NOTE: ALIGNMENT CONTROL CAN BE FOUND ON REFERENCE SHEET



AUL R. MOORHEAD
No. 22816
2/01/18

WARD EDWARDS, INC.
No. C00152

4				
3				
2				
1				
REV. NO.	BY	DATE	DESCRIPTION OF REVISION	
TOPO.		DATE		
DGN.		DATE		
R/W		DATE		

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

CITY OF BEAUFORT
ALLISON ROAD PEDESTRIAN CONNECTOR
LANDSCAPE PLAN

SCALE 1"= 20' RTE.

Sodding Specifications:

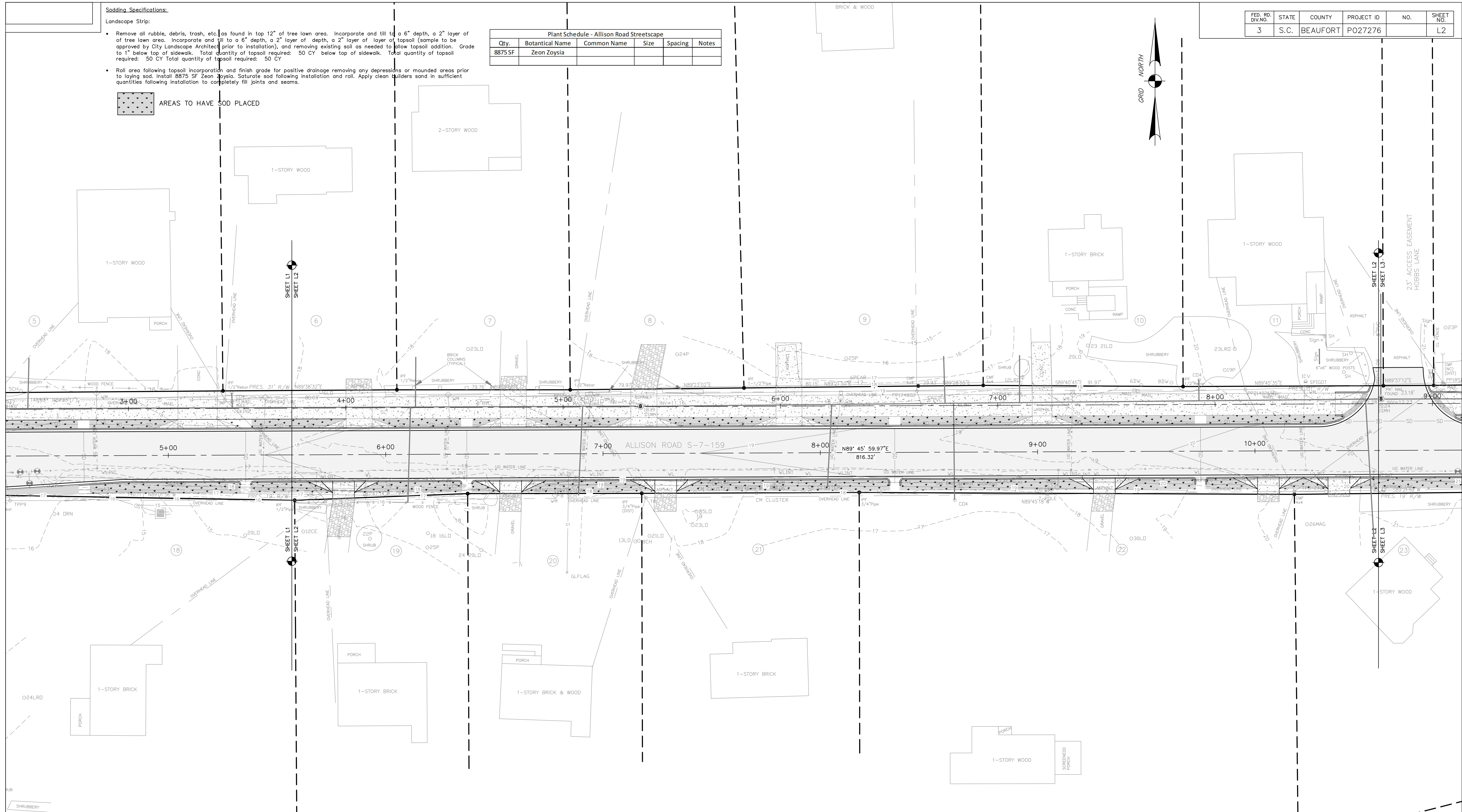
Landscape Strip:

- Remove all rubble, debris, trash, etc. as found in top 12" of tree lawn area. Incorporate and till to a 6" depth, a 2" layer of of tree lawn area. Incorporate and till to a 6" depth, a 2" layer of layer of topsoil (sample to be approved by City Landscape Architect prior to installation), and removing existing soil as needed to allow topsoil addition. Grade to 1" below top of sidewalk. Total quantity of topsoil required: 50 CY below top of sidewalk. Total quantity of topsoil required: 50 CY
- Roll area following topsoil incorporation and finish grade for positive drainage removing any depressions or mounded areas prior to laying sod. Install 8875 SF Zeon Zoysia. Saturate sod following installation and roll. Apply clean builders sand in sufficient quantities following installation to completely fill joints and seams.



Plant Schedule - Allison Road Streetscape					
Qty.	Botanical Name	Common Name	Size	Spacing	Notes
8875 SF	Zeon Zoysia				

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	NO.	SHEET NO.
3	S.C.	BEAUFORT	PO27276		L2



NOTE: ALIGNMENT CONTROL CAN BE FOUND ON REFERENCE SHEET



AUL R. MOORE
No. 22816
2/01/18

WARD EDWARDS, INC.
No. C00152

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
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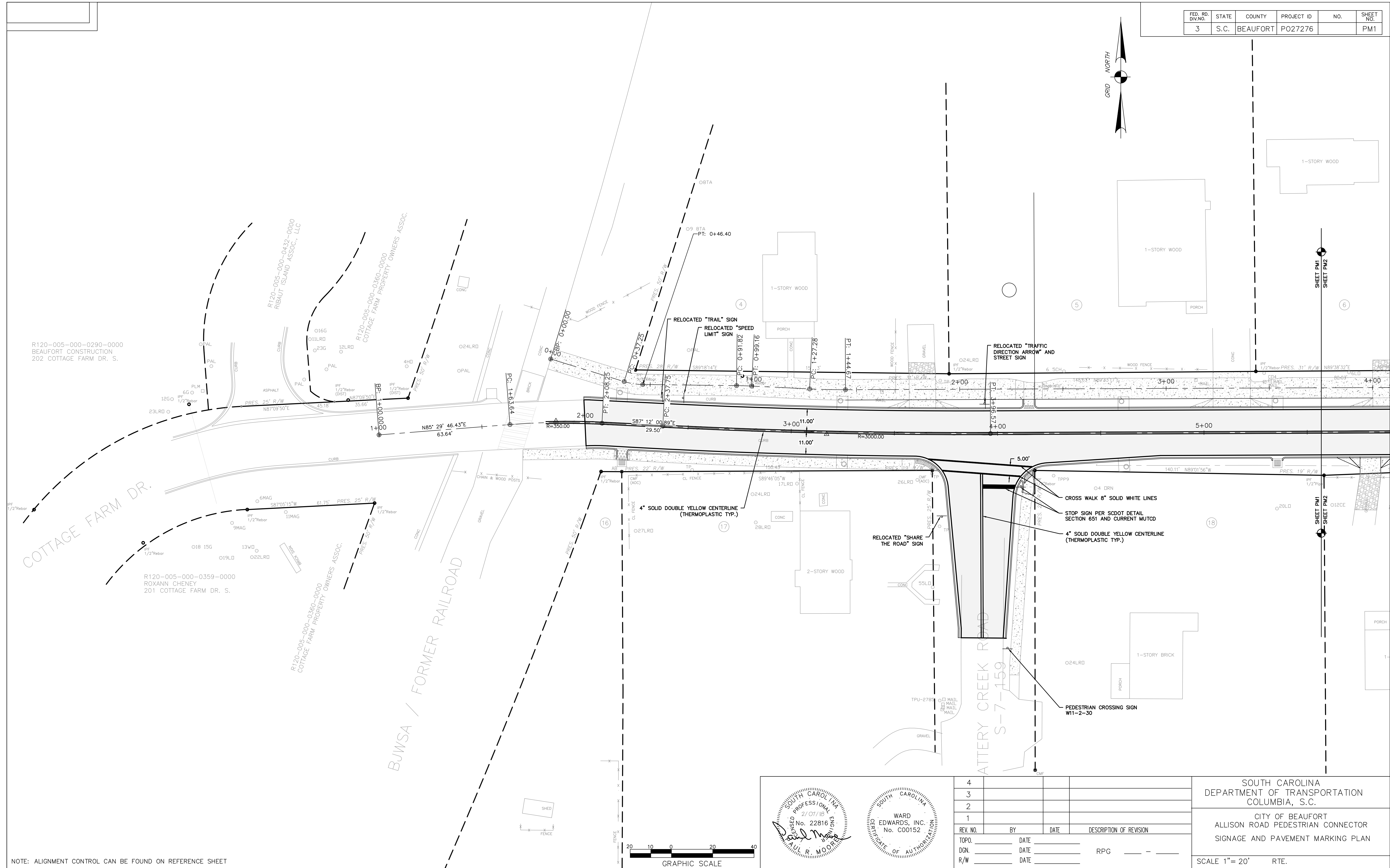
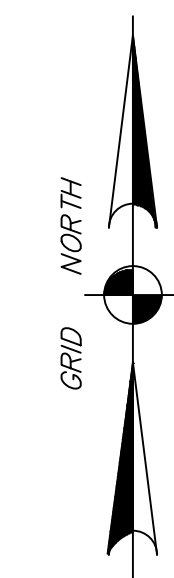
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SOUTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 COLUMBIA, S.C.

CITY OF BEAUFORT
 ALLISON ROAD PEDESTRIAN CONNECTOR
 LANDSCAPE PLAN

SCALE 1" = 20' RTE.

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	NO.	SHEET NO.
3	S.C.	BEAUFORT	PO27276		PM1



NOTE: ALIGNMENT CONTROL CAN BE FOUND ON REFERENCE SHEET



WARD EDWARDS, INC.
No. 000152

AUL R. MOORE

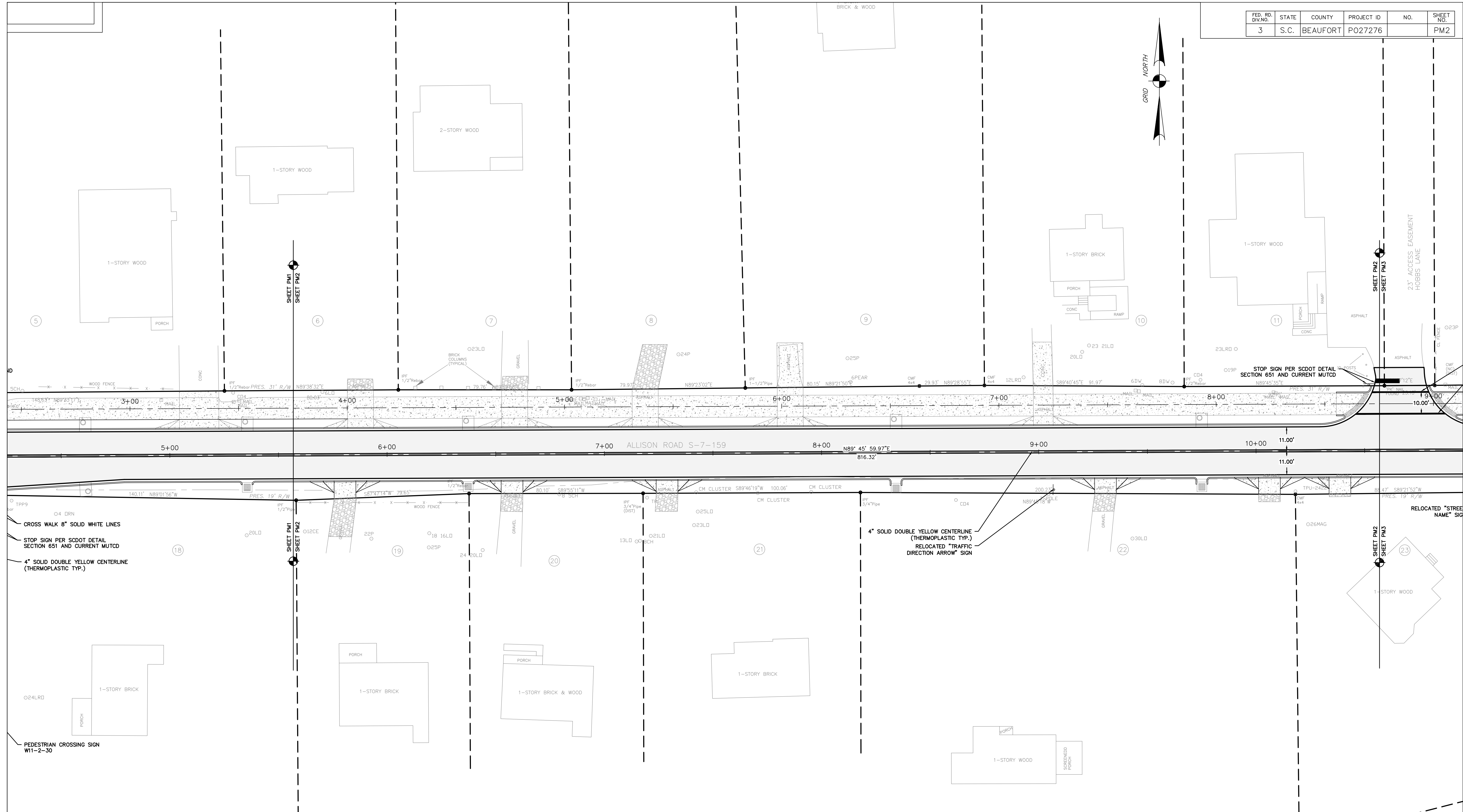
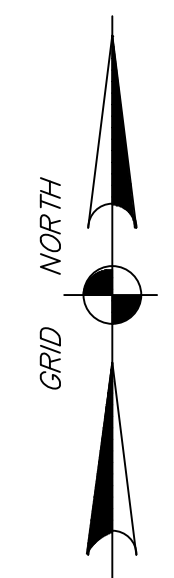
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SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

CITY OF BEAUFORT
ALLISON ROAD PEDESTRIAN CONNECTOR
SIGNAGE AND PAVEMENT MARKING PLAN

SCALE 1" = 20' RTE.

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	NO.	SHEET NO.
3	S.C.	BEAUFORT	PO27276		PM2

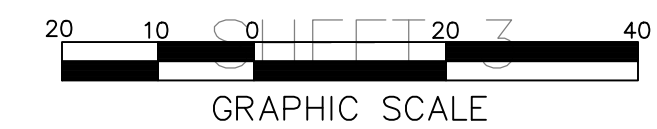


- CROSS WALK 8" SOLID WHITE LINES
- STOP SIGN PER SCDOT DETAIL SECTION 651 AND CURRENT MUTCD
- 4" SOLID DOUBLE YELLOW CENTERLINE (THERMOPLASTIC TYP.)
- PEDESTRIAN CROSSING SIGN W11-2-30

4" SOLID DOUBLE YELLOW CENTERLINE (THERMOPLASTIC TYP.)
RELOCATED "TRAFFIC DIRECTION ARROW" SIGN

RELOCATED "STREET NAME" SIGN

NOTE: ALIGNMENT CONTROL CAN BE FOUND ON REFERENCE SHEET



AUL R. MOORE
No. 22816

WARD EDWARDS, INC.
No. C00152

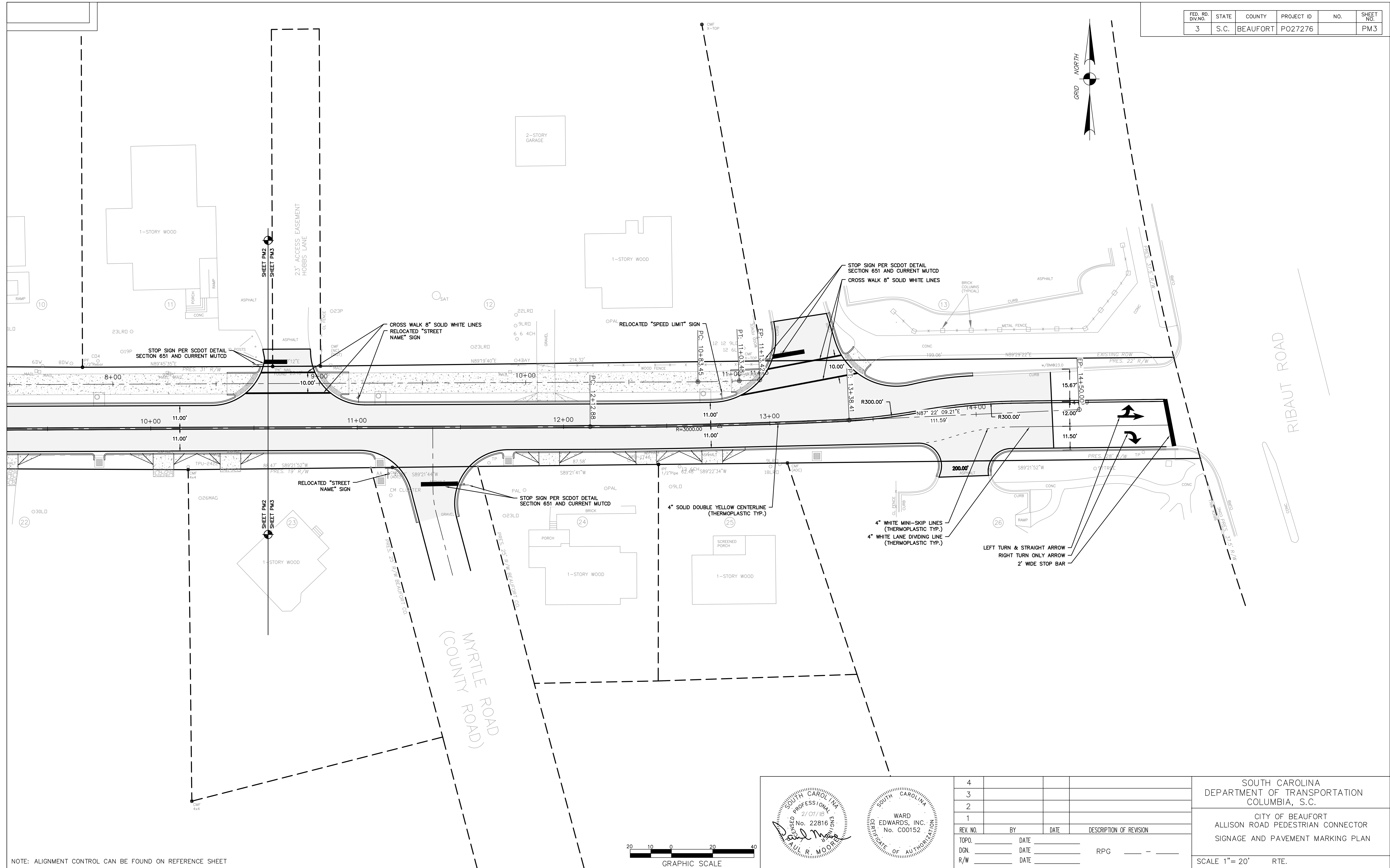
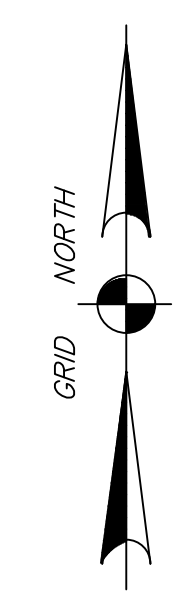
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DGN.		DATE	
R/W		DATE	

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

CITY OF BEAUFORT
ALLISON ROAD PEDESTRIAN CONNECTOR
SIGNAGE AND PAVEMENT MARKING PLAN

SCALE 1"= 20' RTE.

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	NO.	SHEET NO.
3	S.C.	BEAUFORT	PO27276		PM3



NOTE: ALIGNMENT CONTROL CAN BE FOUND ON REFERENCE SHEET



WARD EDWARDS, INC.
No. 22816
2/01/18

AUL R. MOORE
No. 000152

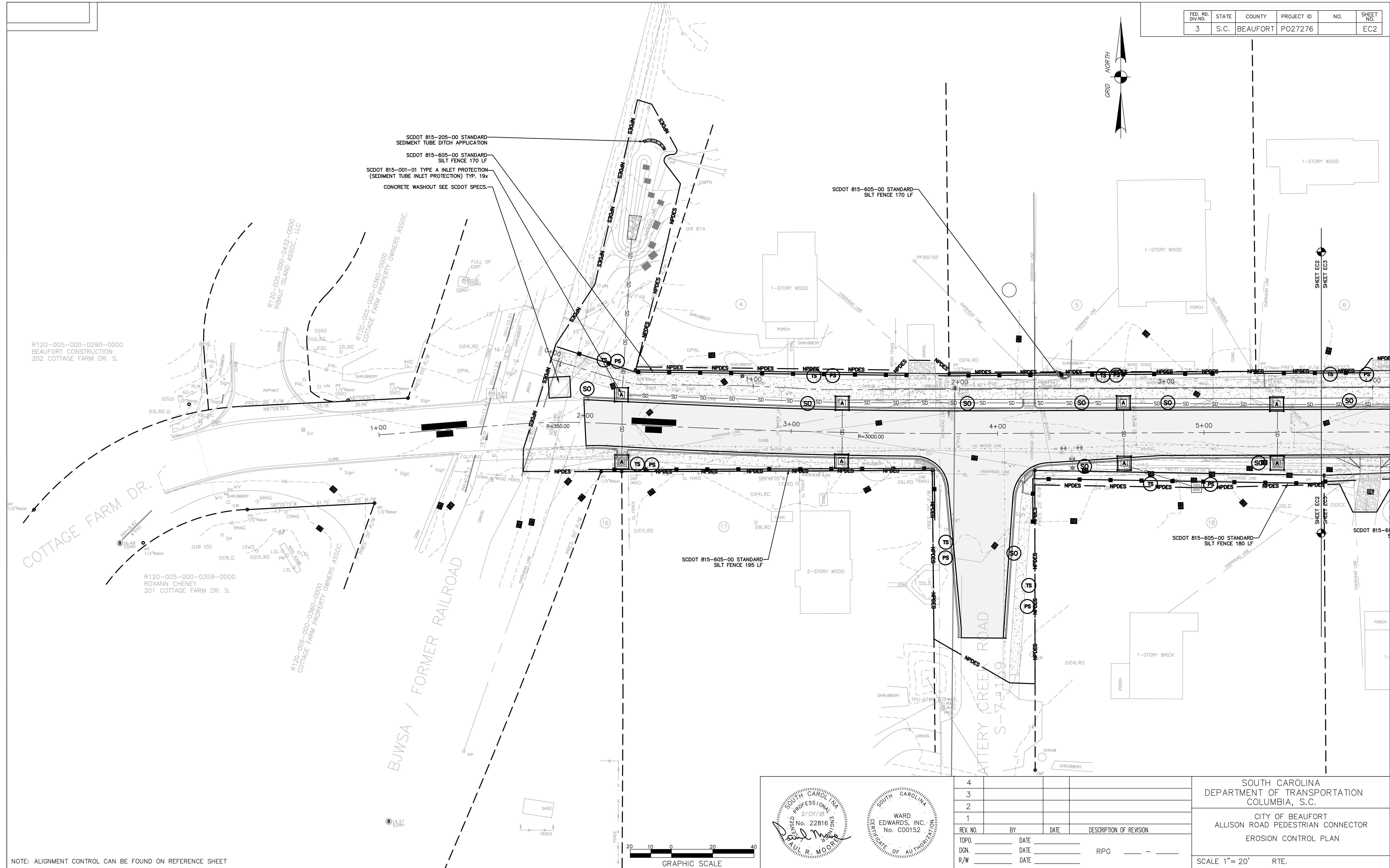
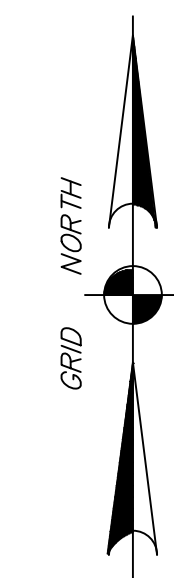
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R/W		DATE		

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

CITY OF BEAUFORT
ALLISON ROAD PEDESTRIAN CONNECTOR
SIGNAGE AND PAVEMENT MARKING PLAN

SCALE 1"= 20' RTE.

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	NO.	SHEET NO.
3	S.C.	BEAUFORT	PO27276		EC2



R120-005-000-0290-0000
BEAUFORT CONSTRUCTION
202 COTTAGE FARM DR. S.

R120-005-000-0432-0000
RIBAULT ISLAND ASSOC., LLC

R120-005-000-0360-0000
COTTAGE FARM PROPERTY OWNERS ASSOC.

R120-005-000-0359-0000
ROXANN CHENEY
201 COTTAGE FARM DR. S.

R120-005-000-0360-0000
COTTAGE FARM PROPERTY OWNERS ASSOC.

COTTAGE FARM DR.

BJWSA / FORMER RAILROAD

ATTERY CREEK ROAD
S-7-1199

NOTE: ALIGNMENT CONTROL CAN BE FOUND ON REFERENCE SHEET



AUL R. MOORE
No. 22816
2/01/18

WARD EDWARDS, INC.
No. C00152

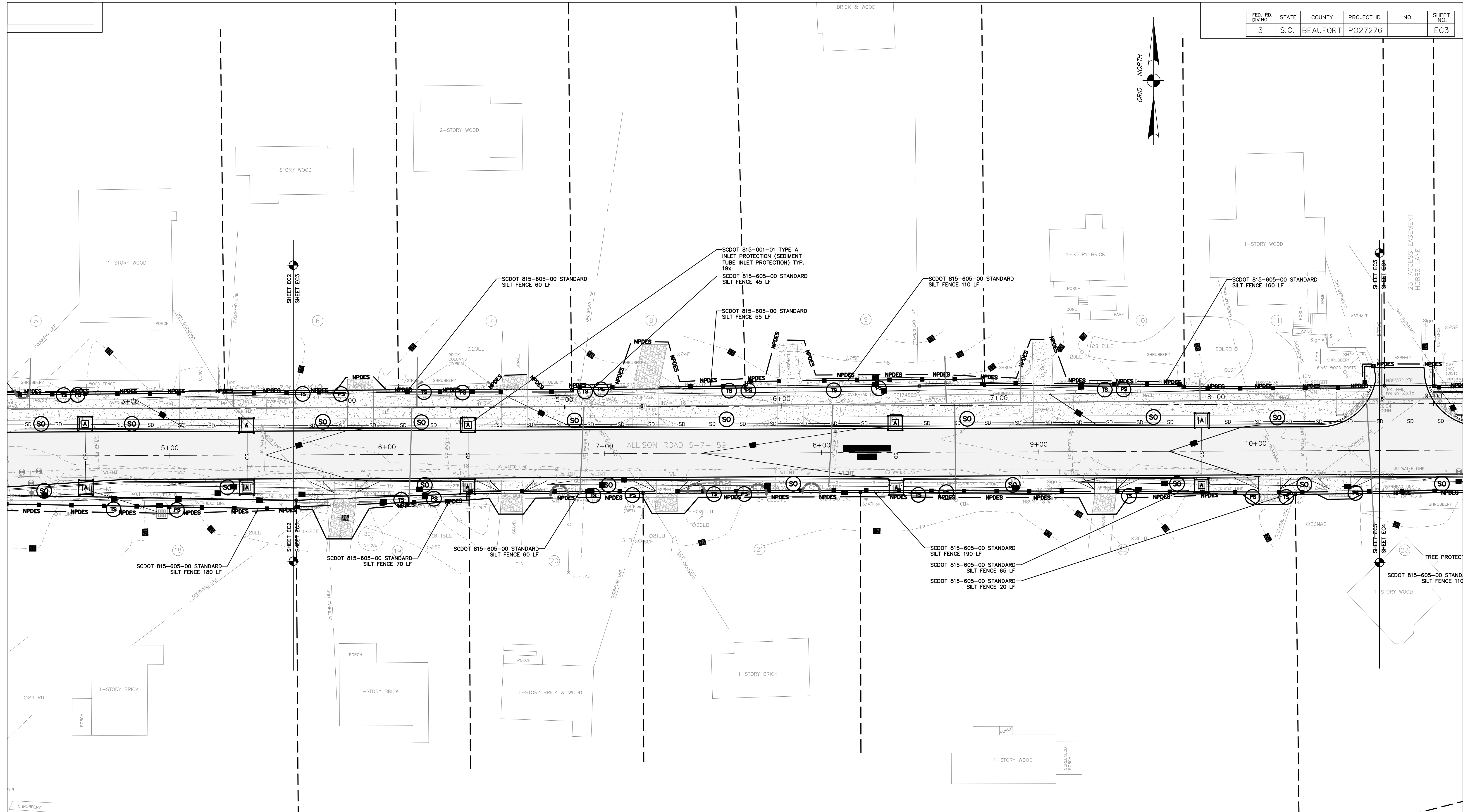
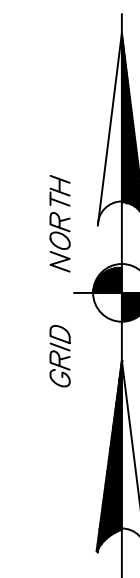
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SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

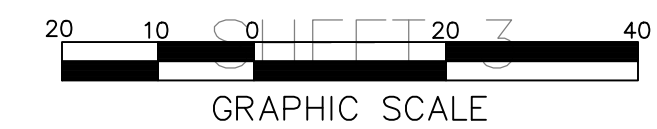
CITY OF BEAUFORT
ALLISON ROAD PEDESTRIAN CONNECTOR
EROSION CONTROL PLAN

SCALE 1" = 20' RTE.

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	NO.	SHEET NO.
3	S.C.	BEAUFORT	PO27276		EC3



NOTE: ALIGNMENT CONTROL CAN BE FOUND ON REFERENCE SHEET



AUL R. MOORE
No. 22816

WARD EDWARDS, INC.
No. C00152

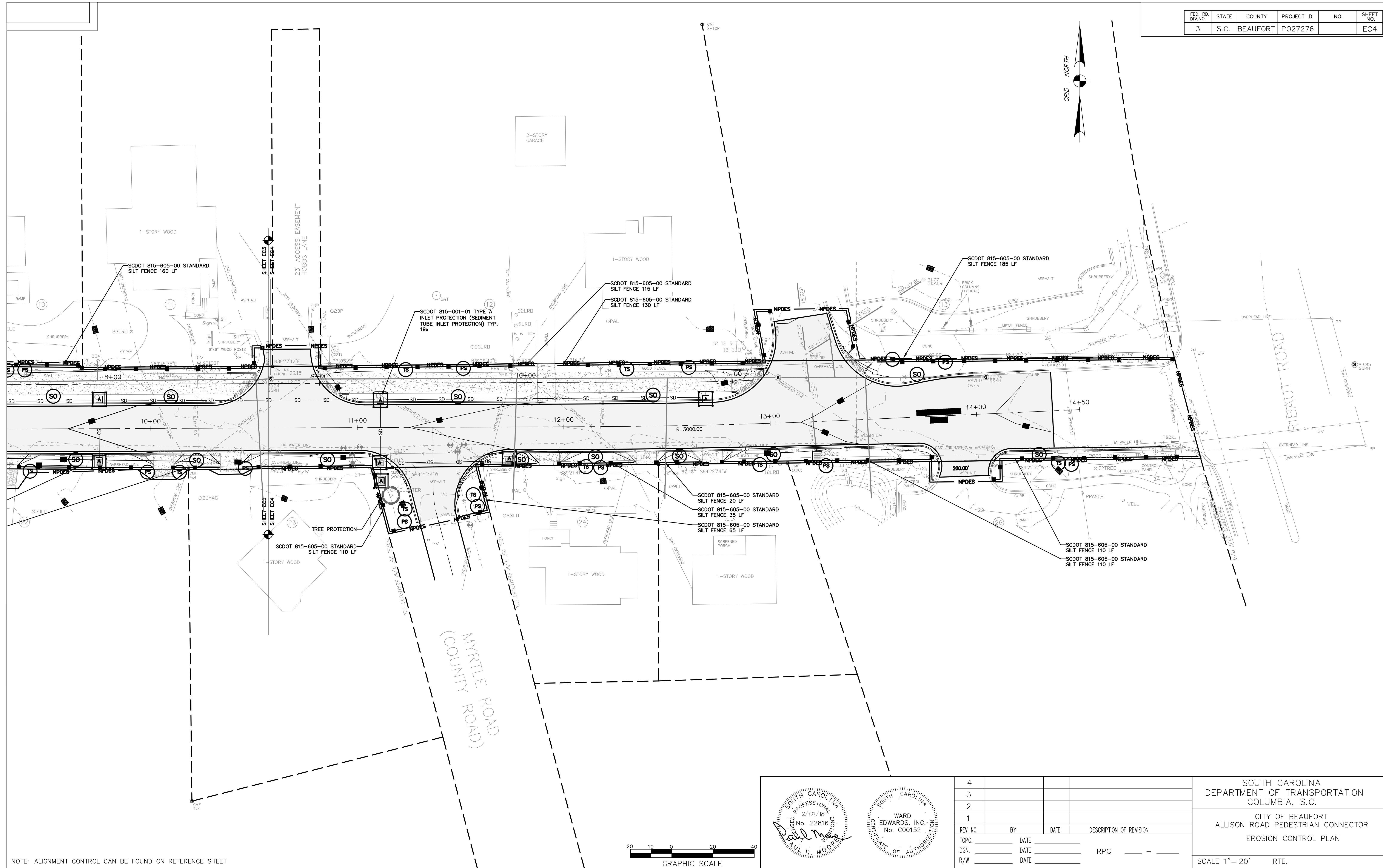
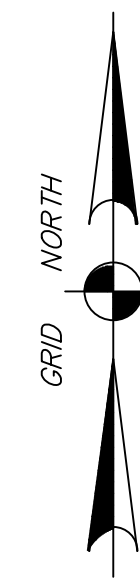
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SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

CITY OF BEAUFORT
ALLISON ROAD PEDESTRIAN CONNECTOR
EROSION CONTROL PLAN

SCALE 1" = 20' RTE.

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	NO.	SHEET NO.
3	S.C.	BEAUFORT	PO27276		EC4



NOTE: ALIGNMENT CONTROL CAN BE FOUND ON REFERENCE SHEET



AUL R. MOORE
No. 22816

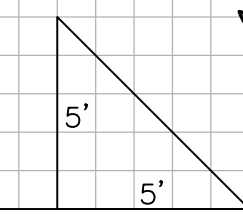
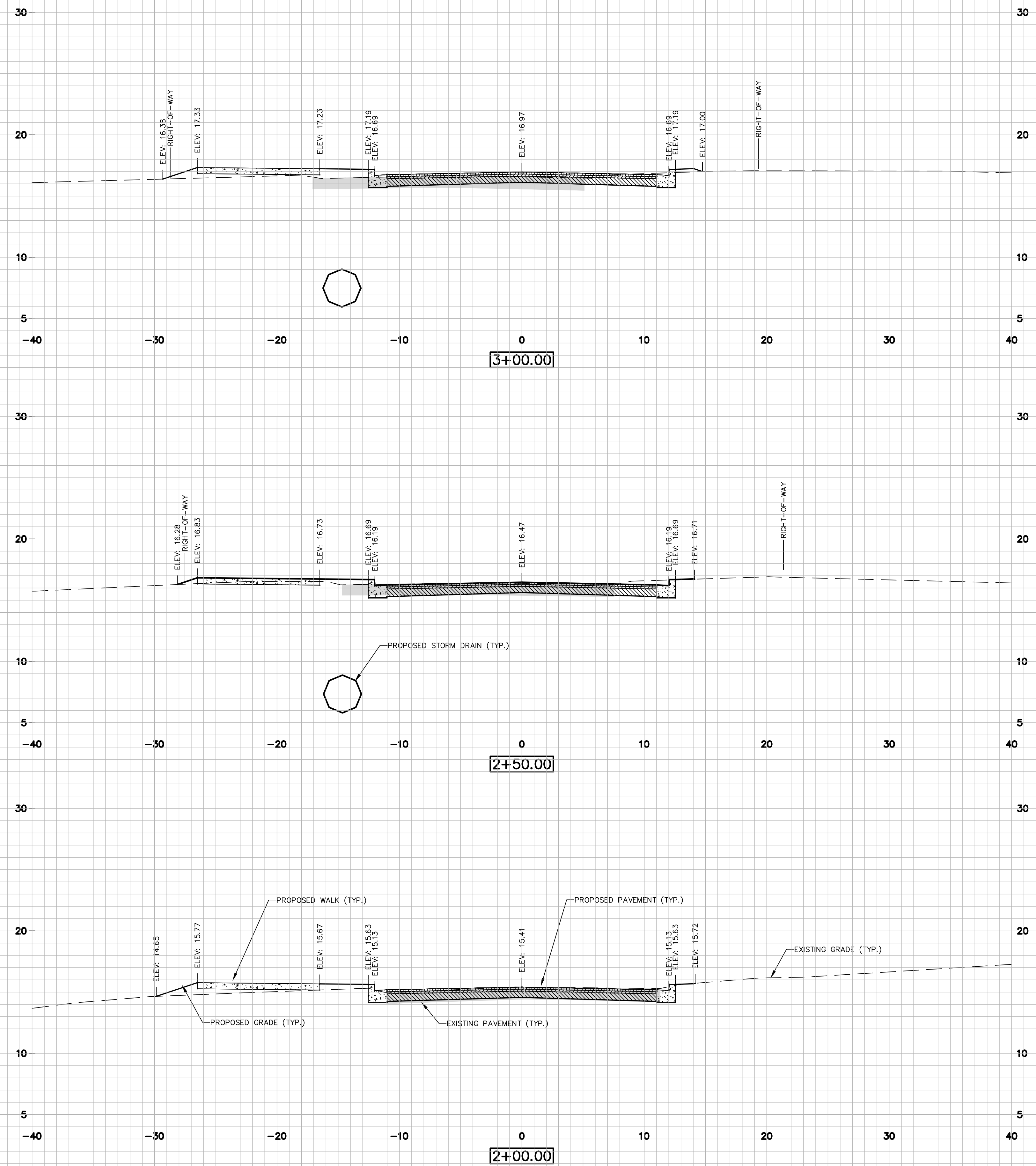
WARD EDWARDS, INC.
No. C00152

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REV. NO.	BY	DATE	DESCRIPTION OF REVISION

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

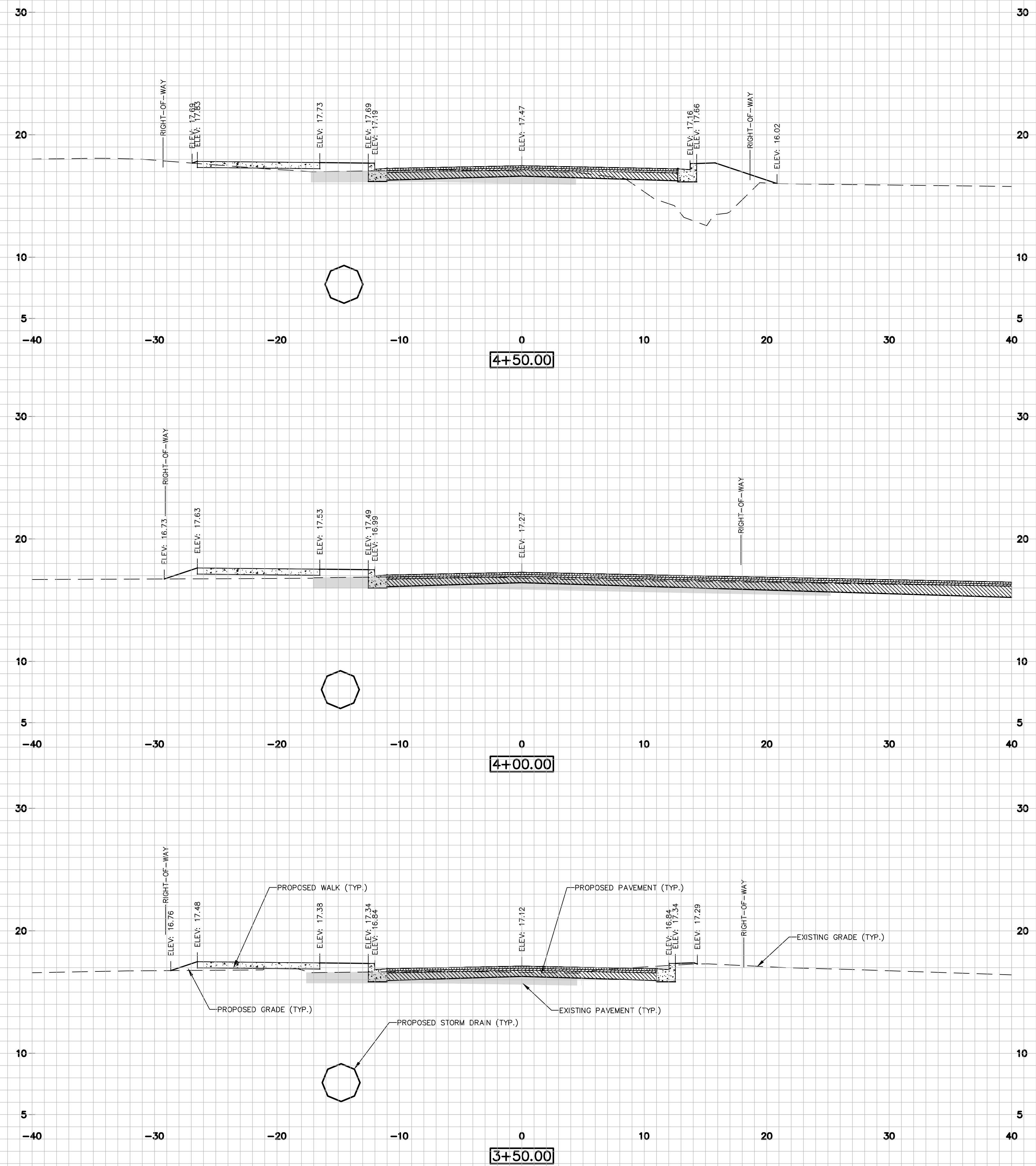
CITY OF BEAUFORT
ALLISON ROAD PEDESTRIAN CONNECTOR
EROSION CONTROL PLAN

SCALE 1"= 20' RTE.



Professional Engineer
 No. 22816
 A. R. MOORE

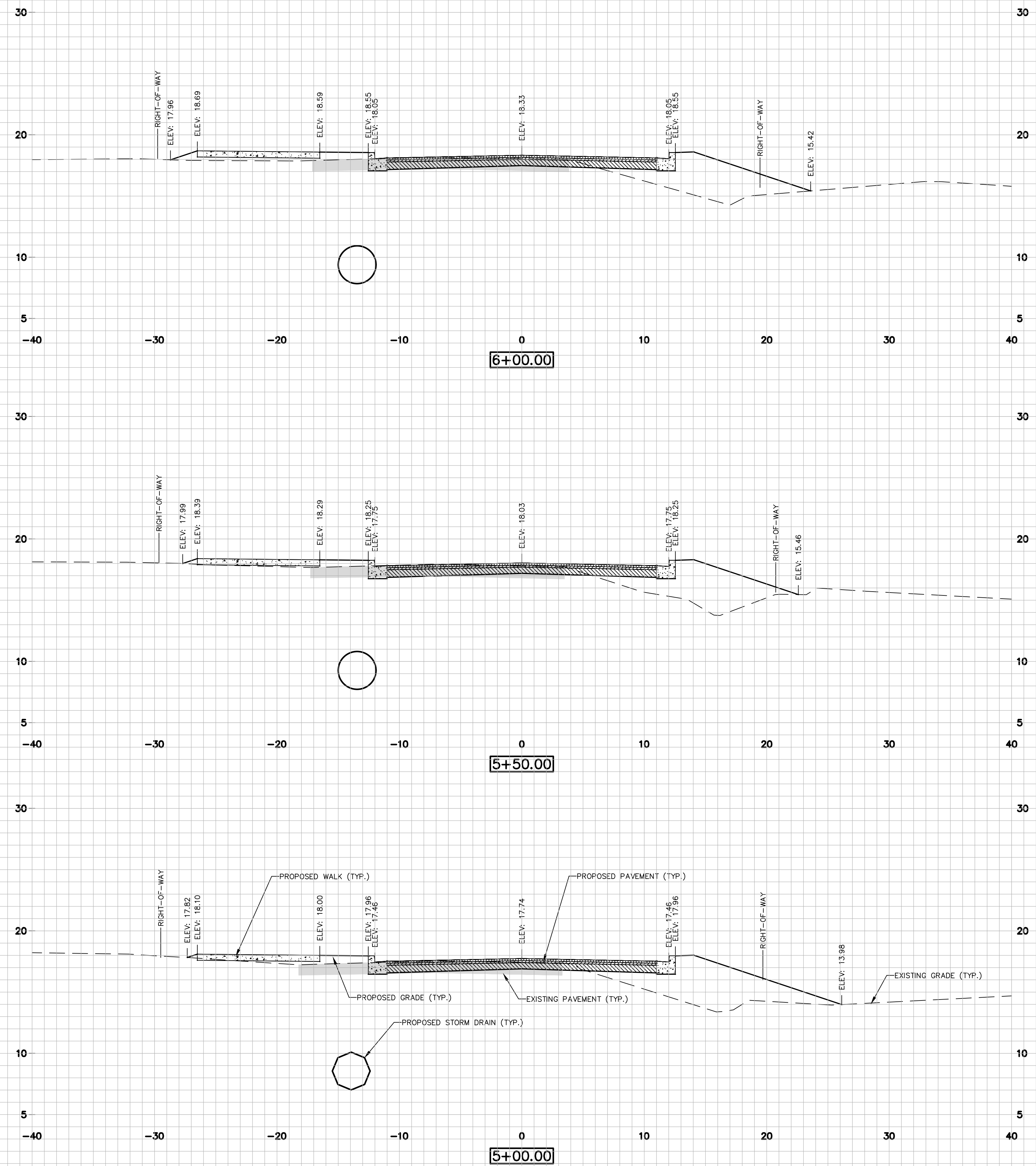
Professional Engineer
 No. C00152
 WARD EDWARDS, INC.
 CERTIFICATE OF AUTHORIZATION



5' / 5'

Professional Engineer Seal:
 SOUTH CAROLINA PROFESSIONAL ENGINEER
 No. 22816
 A. R. MOORE

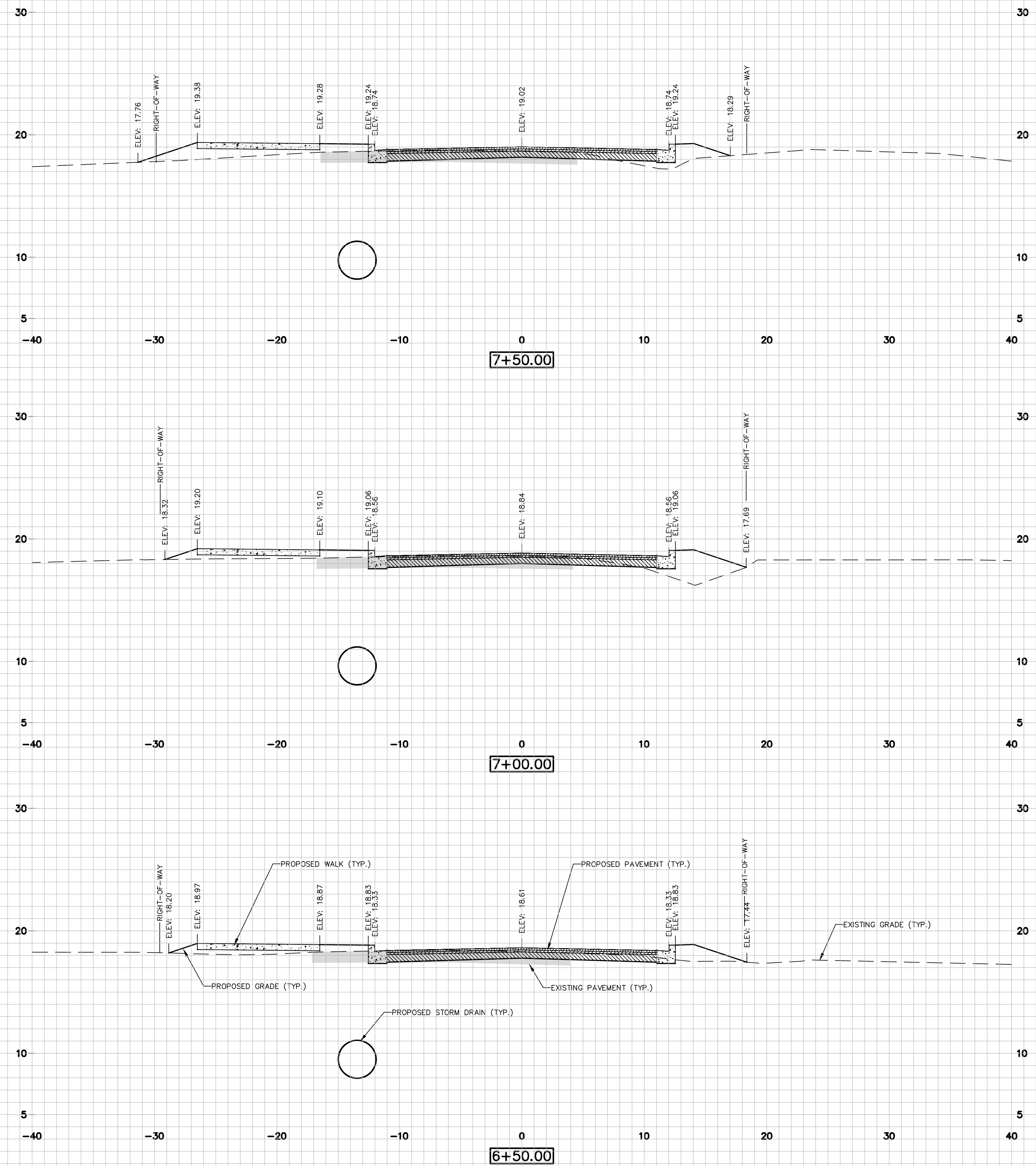
Professional Engineer Seal:
 SOUTH CAROLINA PROFESSIONAL ENGINEER
 No. C00152
 WARD EDWARDS, INC.
 CERTIFICATE OF AUTHORIZATION



5' 5'

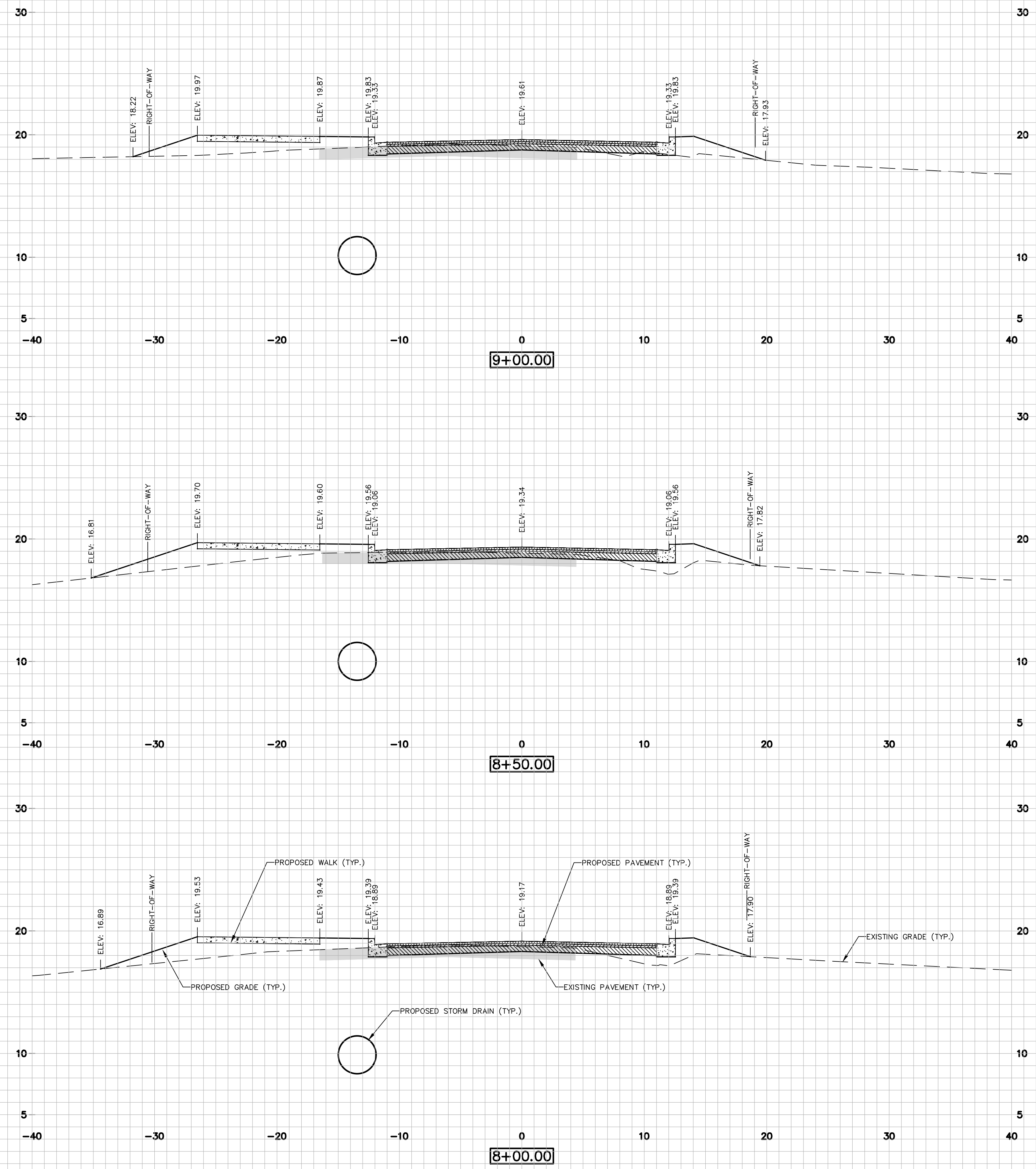
Professional Engineer Seal: SOUTH CAROLINA PROFESSIONAL ENGINEER, No. 22816, A. R. MOORE.

Professional Engineer Seal: SOUTH CAROLINA PROFESSIONAL ENGINEER, No. C00152, WARD EDWARDS, INC.



5' 5'

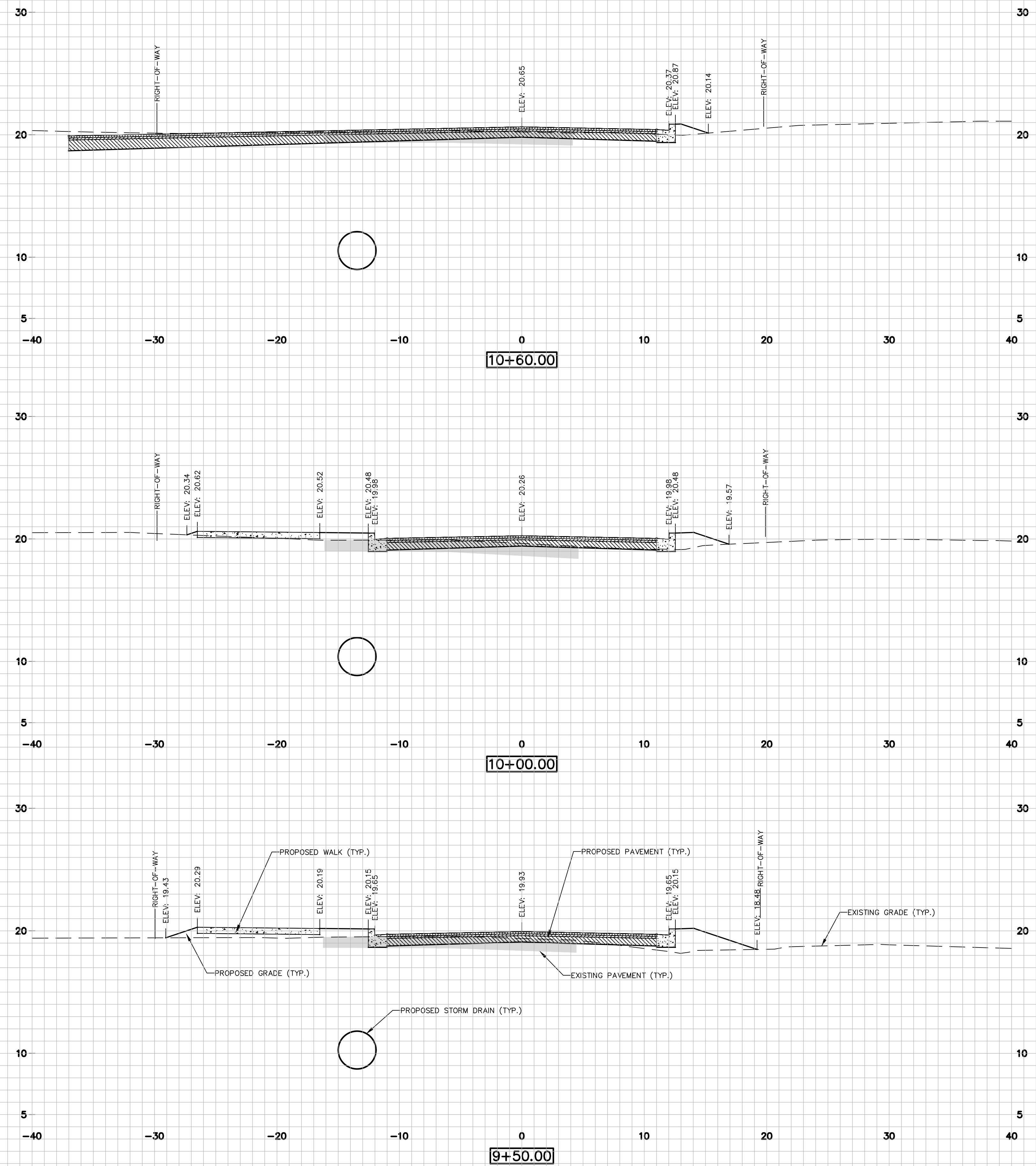
WARD EDWARDS, INC.
 No. C00152
 SOUTH CAROLINA
 PROFESSIONAL ENGINEER
 No. 22816
 State of South Carolina
 License No. C00152



5' 5'

SOUTH CAROLINA PROFESSIONAL ENGINEER
 No. 22816
 WARD EDWARDS, INC.
 No. C00152
 CERTIFICATE OF AUTHORITY

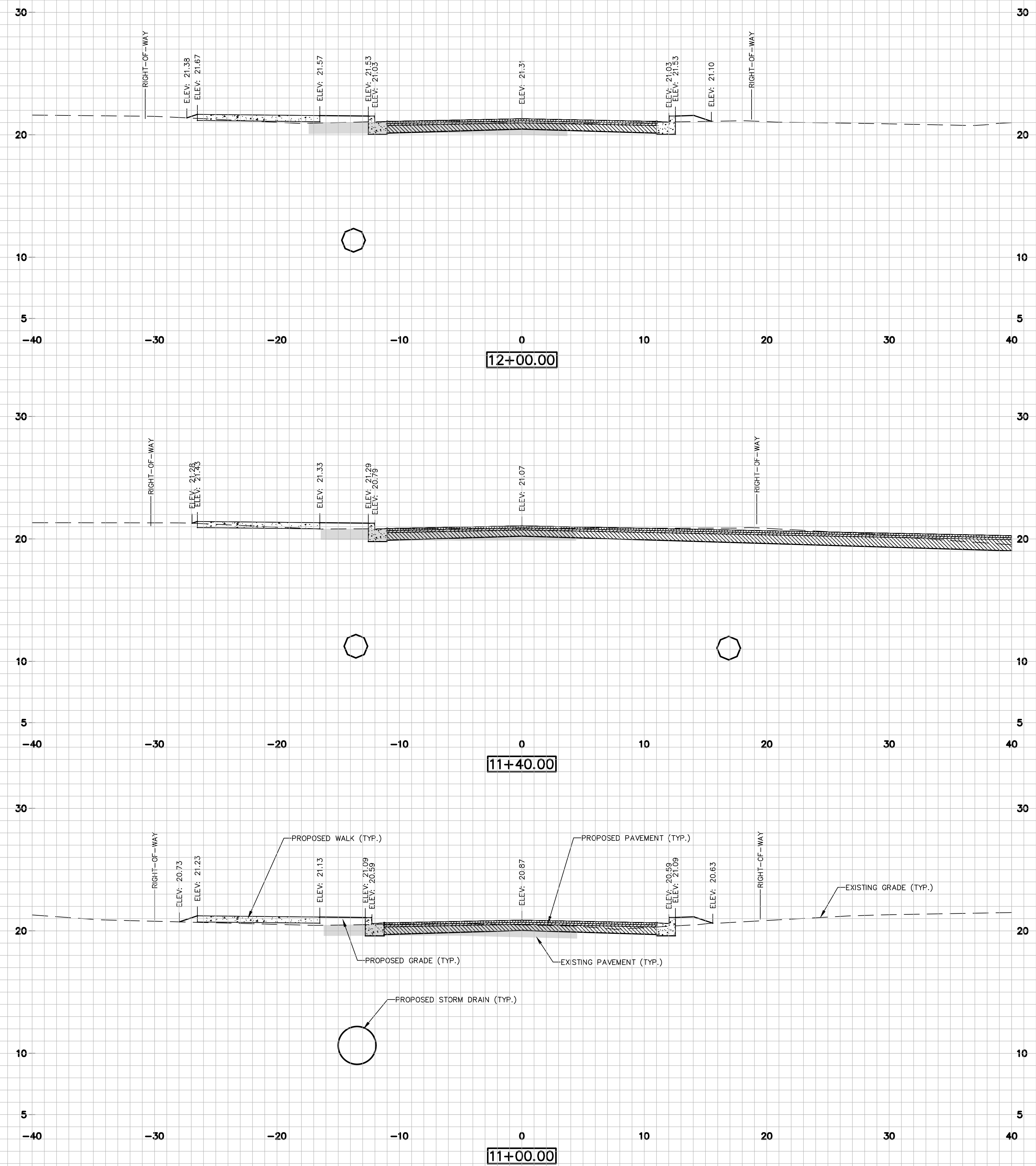
2/01/18
 A. R. MOORE



5' 5'

SOUTH CAROLINA PROFESSIONAL ENGINEER
 No. 22816
Paul R. Moore
 PAUL R. MOORE

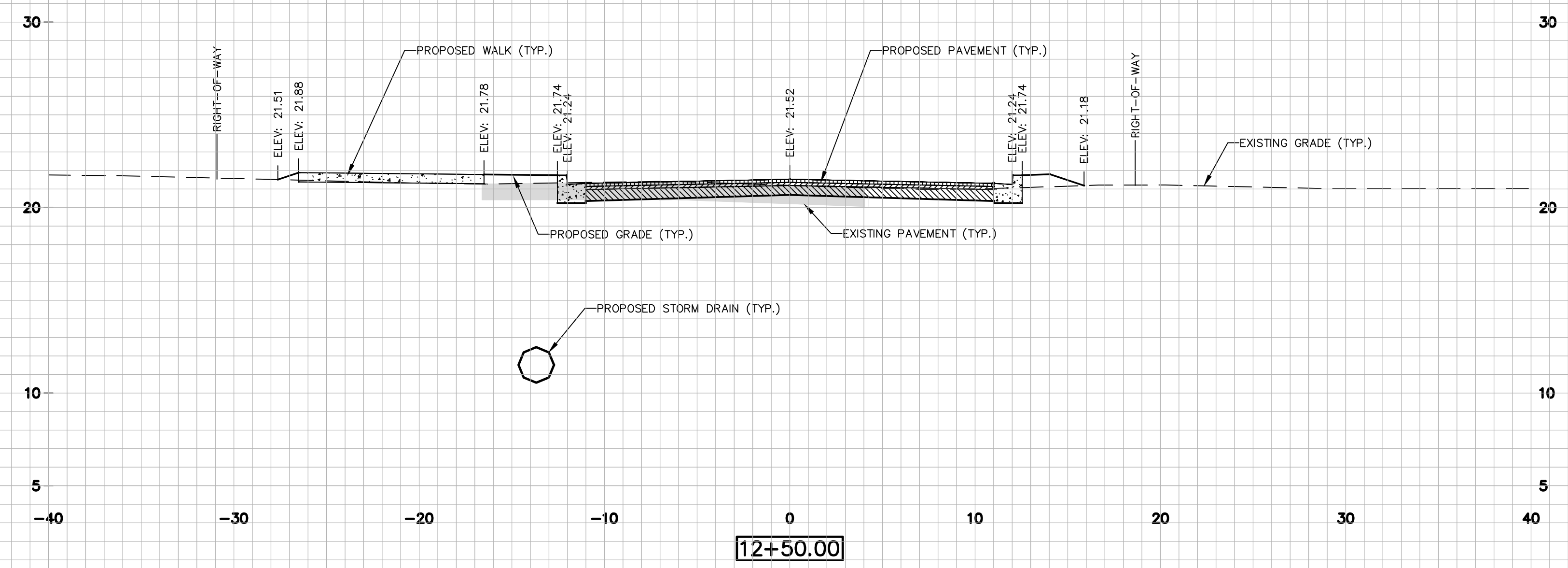
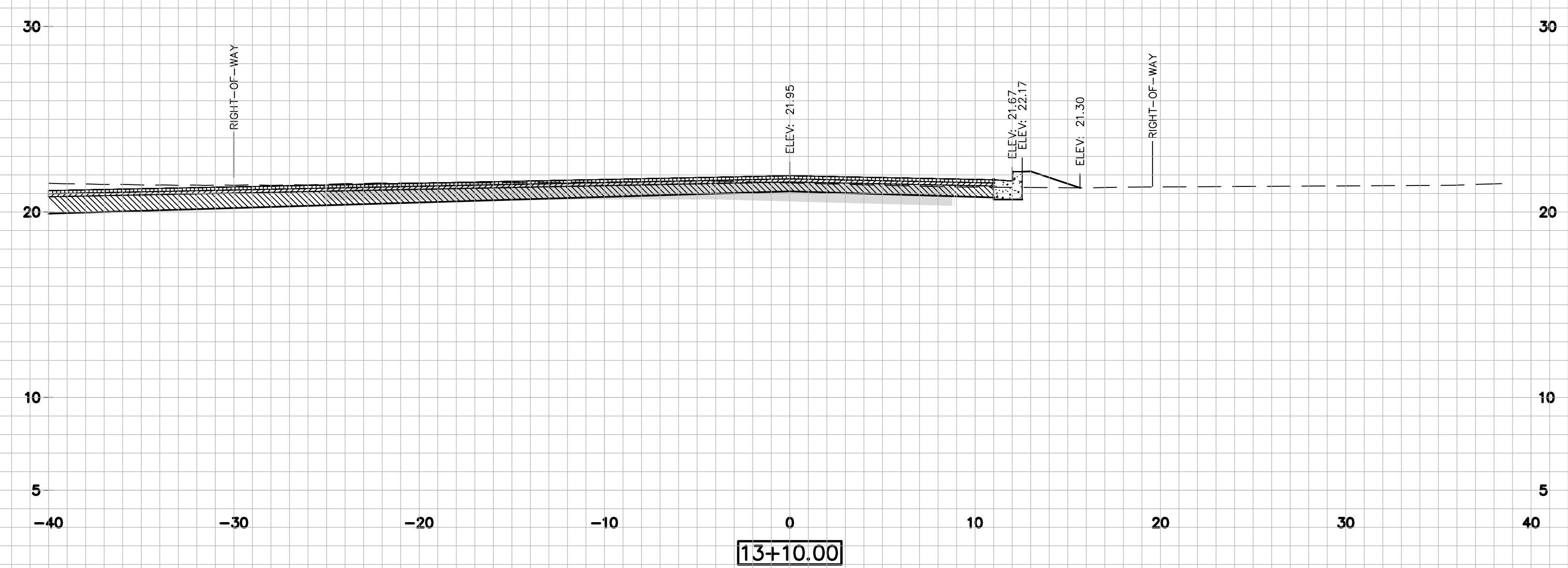
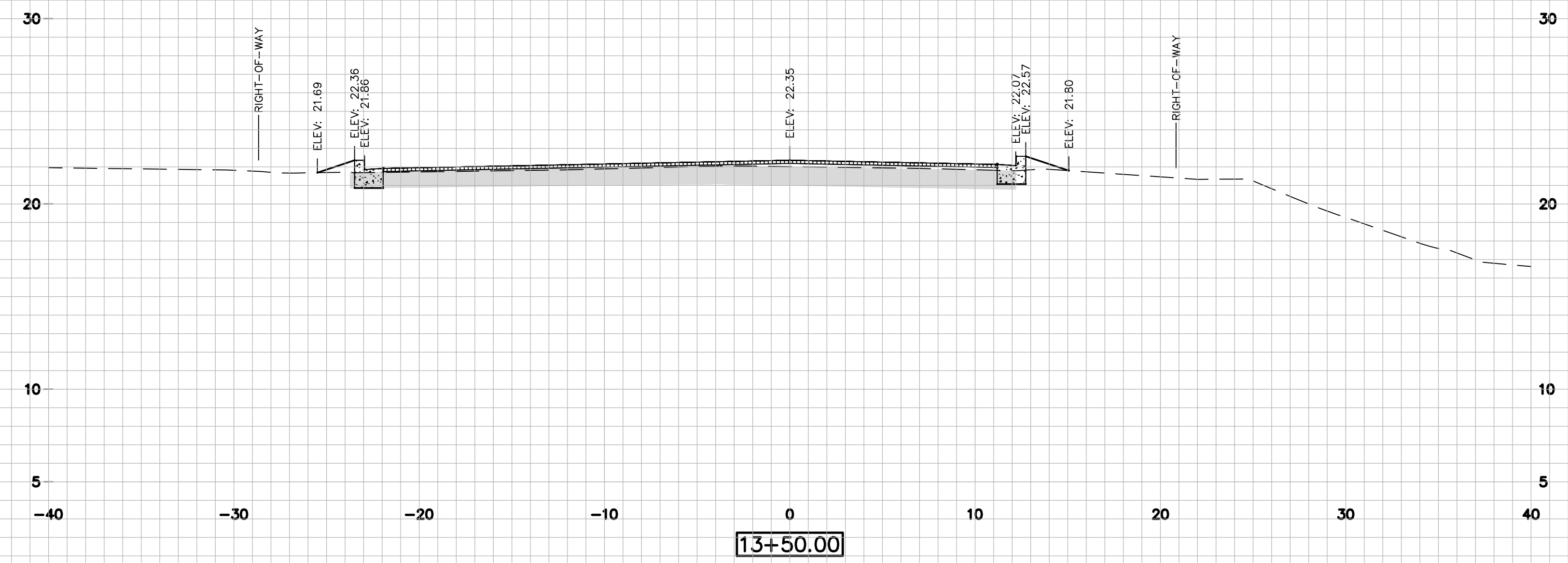
SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
 WARD EDWARDS, INC.
 No. C00152



5' 5'

SOUTH CAROLINA PROFESSIONAL ENGINEER
 No. 22816
Paul R. Moore
 PAUL R. MOORE

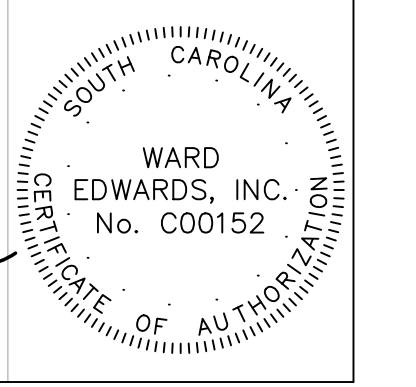
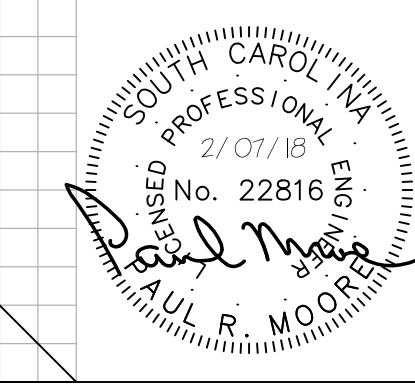
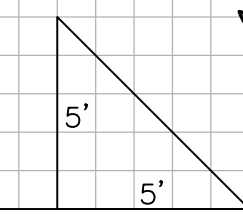
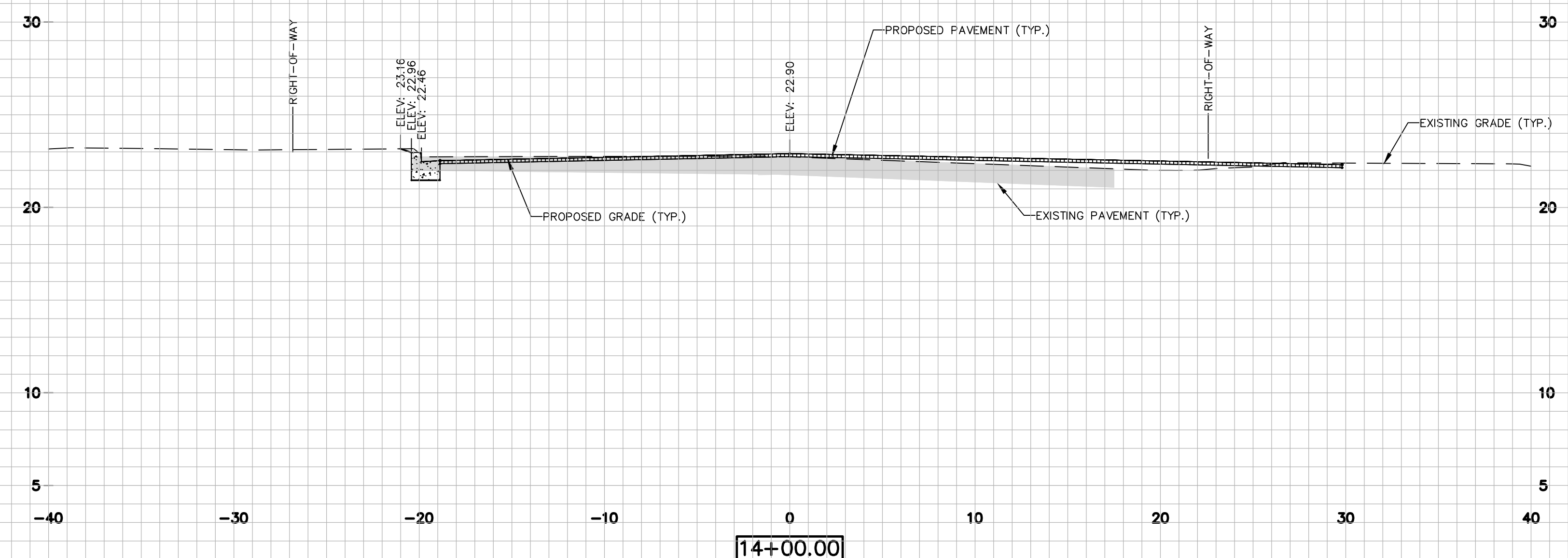
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 WARD EDWARDS, INC.
 No. C00152

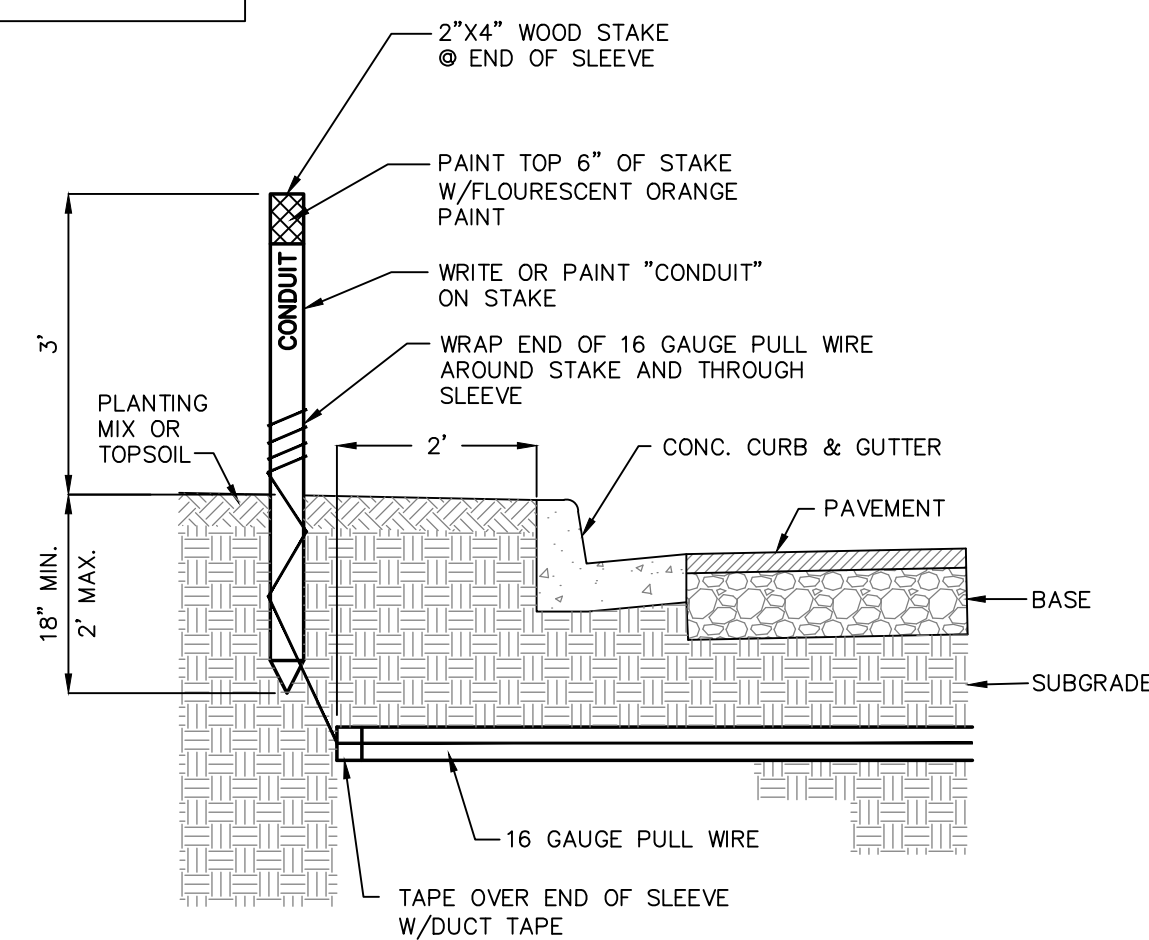


5' 5'

Professional Engineer Seal: AUI R. MOORE, No. 22816, State of South Carolina

Professional Engineer Seal: WARD EDWARDS, INC., No. C00152, State of South Carolina

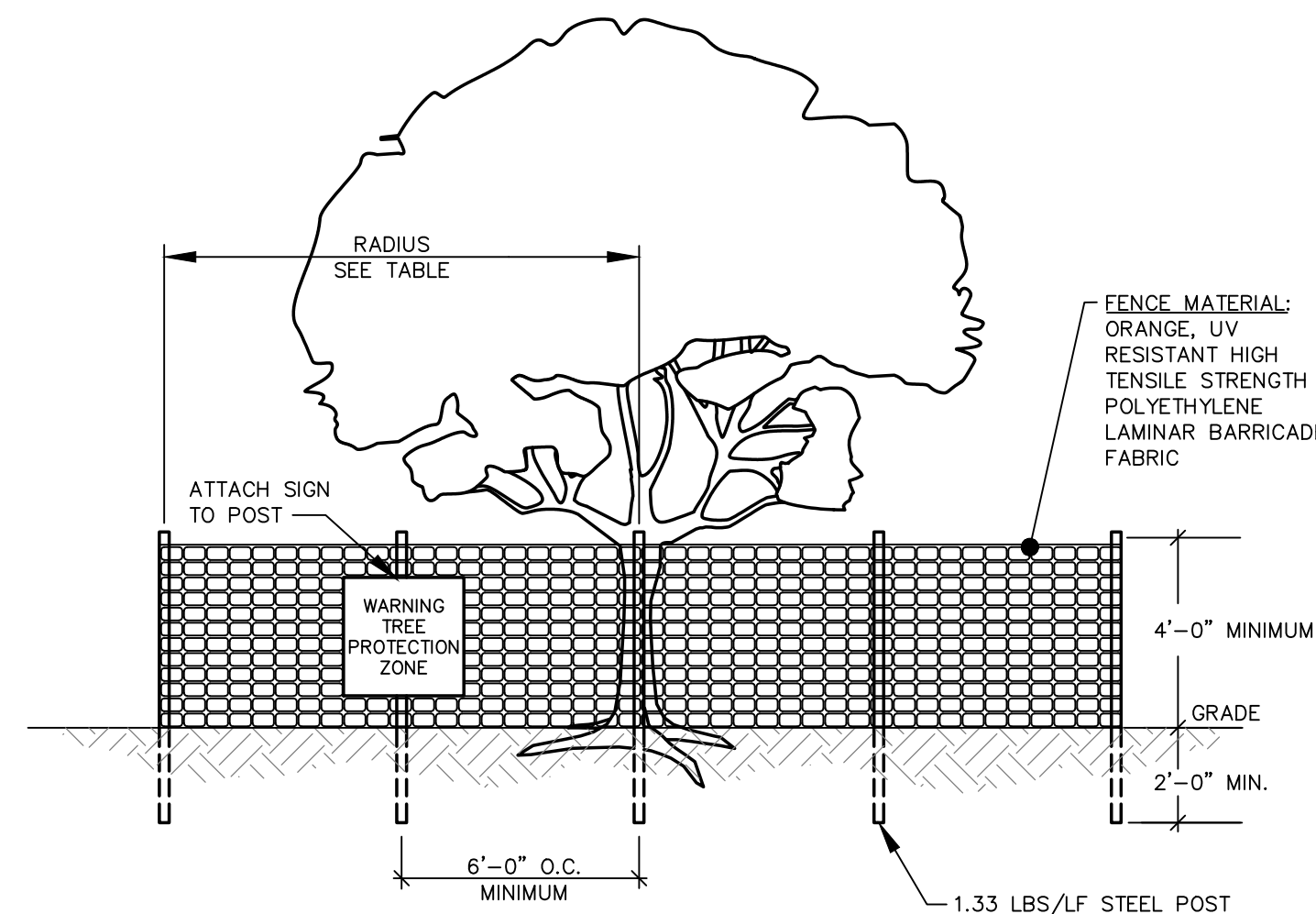




CONDUIT NOTES:

1. ALL CONDUIT ENDS SHALL BE CAPPED AND MARKED AS ILLUSTRATED.
2. ELECTRICAL CONDUIT: 42" BURY DEPTH, SCH 40 ELECTRICAL GRADE (N.E.C.) PVC
3. TELCO CONDUIT: 36" BURY DEPTH, SCH 40 ELECTRICAL GRADE (N.E.C.) PVC
4. IRRIGATION CONDUIT: 24" BURY DEPTH, SCH 40 PVC
5. MINIMUM 12" VERTICAL CLEARANCE WHEN CROSSING WATER, SEWER, AND DRAINAGE.
6. MINIMUM 18" HORIZONTAL CLEARANCE WHEN PARALLELING WATER, SEWER, AND DRAINAGE.
7. MINIMUM 12" HORIZONTAL SEPARATION BETWEEN CONDUIT.
8. CONDUIT MUST EXTEND BEYOND PAVEMENT, CURB, AND SIDEWALKS.
9. THE CONTRACTOR MUST INSTALL ALL CONDUITS, AS SHOWN ON THE PLANS OR AS REQUIRED BY DRY UTILITY COMPANIES. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE STRICT COMPLIANCE WITH ALL APPLICABLE CODES AND REGULATIONS WITH REGARDS TO THE INSTALLATION OF UTILITIES AND CONDUIT.
10. REFER TO PLANS FOR CONDUIT SIZE AND LOCATION. PLAN VIEW LOCATIONS OF CONDUIT ARE APPROXIMATE.
11. NO 90° OR 45° COUPLINGS TO BE USED ON CONDUIT.
12. CONDUIT MUST BE STRAIGHT TO ALLOW PIPE AND/OR WIRING BY UTILITY COMPANY AND IRRIGATION INSTALLER.
13. CONDUIT NOT INSTALLED AT PROPER DEPTH WILL BE REINSTALLED TO CONFORM TO DETAIL.
14. CONTRACTOR TO VERIFY CONDUIT INTEGRITY PRIOR TO FINAL PAVING.

CONDUIT DETAIL



NOTES:

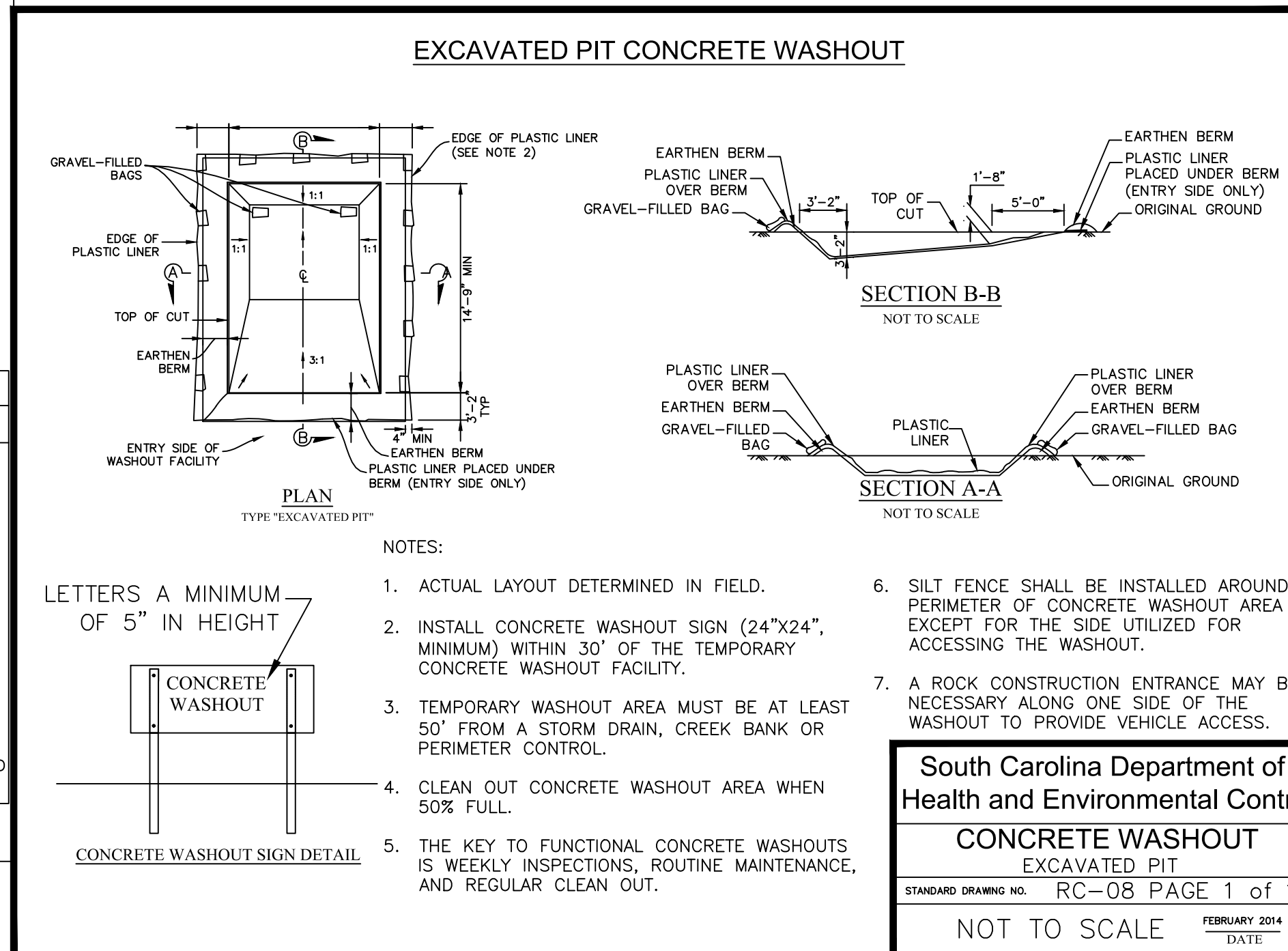
1. ALL TREES DESIGNATED TO BE SAVED SHALL BE PROTECTED BY FENCING.
2. INSTALL TREE PROTECTION FENCE TO RADIUS INDICATED IN TABLE UNLESS OTHERWISE INDICATED ON PLANS.
3. WARNING SIGNS TO BE MADE OF DURABLE WATERPROOF MATERIAL.
4. ALL WARNING SIGN LETTERS TO BE AT LEAST 3 INCHES HIGH, CLEARLY LEGIBLE AND SPACED A MINIMUM OF ONE EVERY 40 FT. FOR PROTECTION AREAS LESS THAN 40 FT IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER SIDE.
5. THE SIZE OF EACH WARNING SIGN MUST BE A MINIMUM OF 2' x 2' AND BE VISIBLE FROM BOTH SIDES OF THE FENCE.
6. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC.
7. THERE SHALL BE NO STORAGE OF MATERIAL WITHIN THE BOUNDARIES OF THE TREE PROTECTION FENCING.
8. TREE PROTECTION FENCING SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. FENCING MUST REMAIN UPRIGHT AND SLACK FREE.

TABLE - RADIUS OF TREE PROTECTION ZONE (TPZ)	
JURISDICTION	RADIUS OF CIRCULAR TPZ
BEAUFORT COUNTY DSO 106-1846(b)(2) OR	1 FOOT PER INCH OF TRUNK DBH OR 5 FEET, WHICHEVER IS GREATER
TOWN OF BLUFFTON UDO 5.3.3, C(1)	1.5 FEET PER INCH OF TRUNK DBH
TOWN OF HILTON HEAD LMO 16-6-404	FENCING AT DRIP LINE FOR "SPECIMEN TREES", SEE PLANS FOR ALL OTHERS
CITY OF BEAUFORT UDO 7.3, D(3)	0.5 FOOT PER INCH OF TRUNK DBH OR 5 FEET, WHICHEVER IS GREATER
JASPER COUNTY ZONING ORD. ART. 13	FENCING AT DRIP LINE FOR "SIGNIFICANT" AND "LANDMARK" TREES
CITY OF HARDEEVILLE MZDSO 4.8, F	FENCING AT DRIP LINE FOR "PROTECTED TREES", SEE PLANS FOR ALL OTHERS

DBH = TRUNK DIAMETER AT BREAST HEIGHT

TREE PROTECTION FENCE

DETAIL #02915-008



South Carolina Department of Health and Environmental Control

CONCRETE WASHOUT

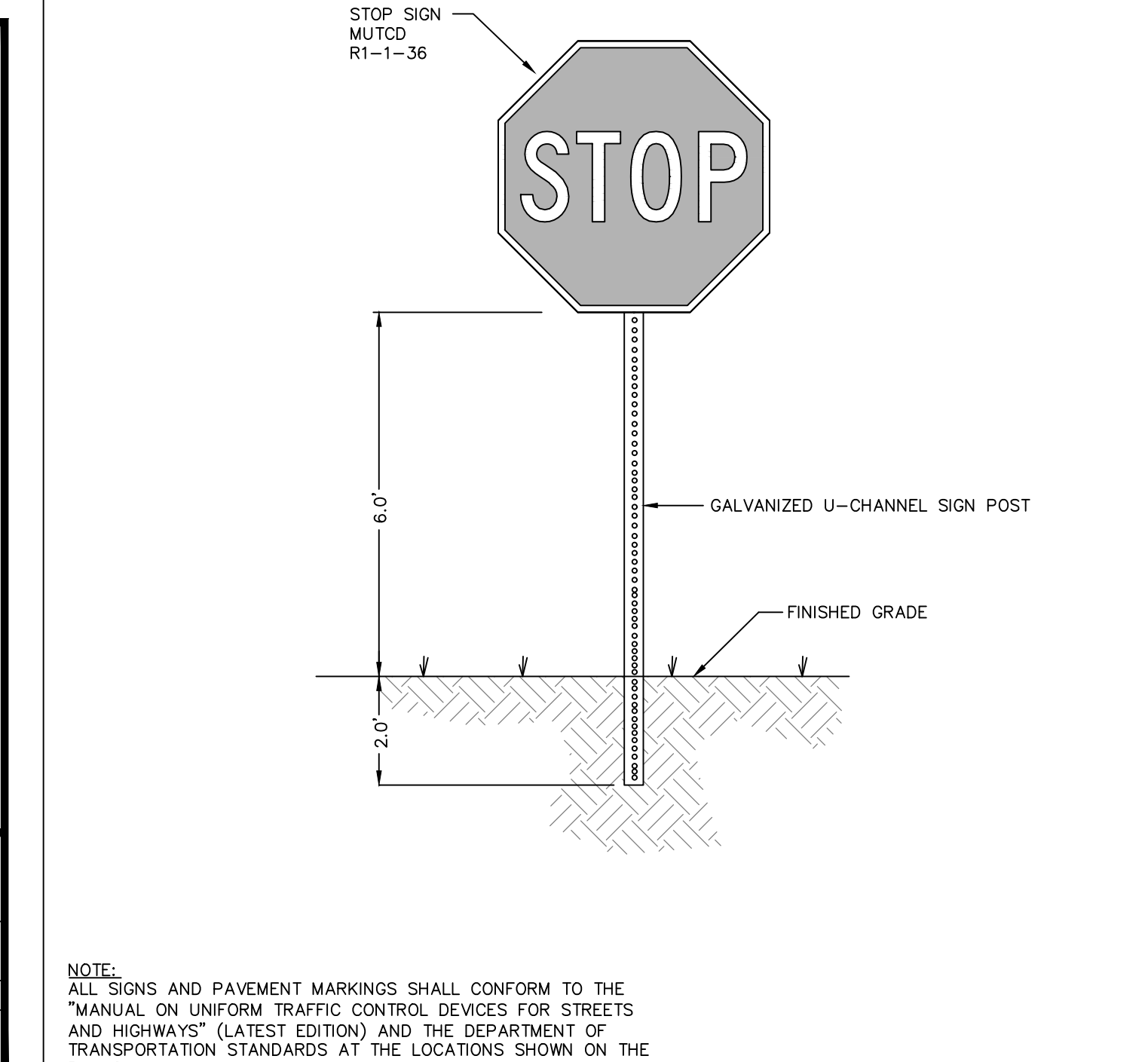
EXCAVATED PIT

STANDARD DRAWING NO. RC-08 PAGE 1 of 1

NOT TO SCALE

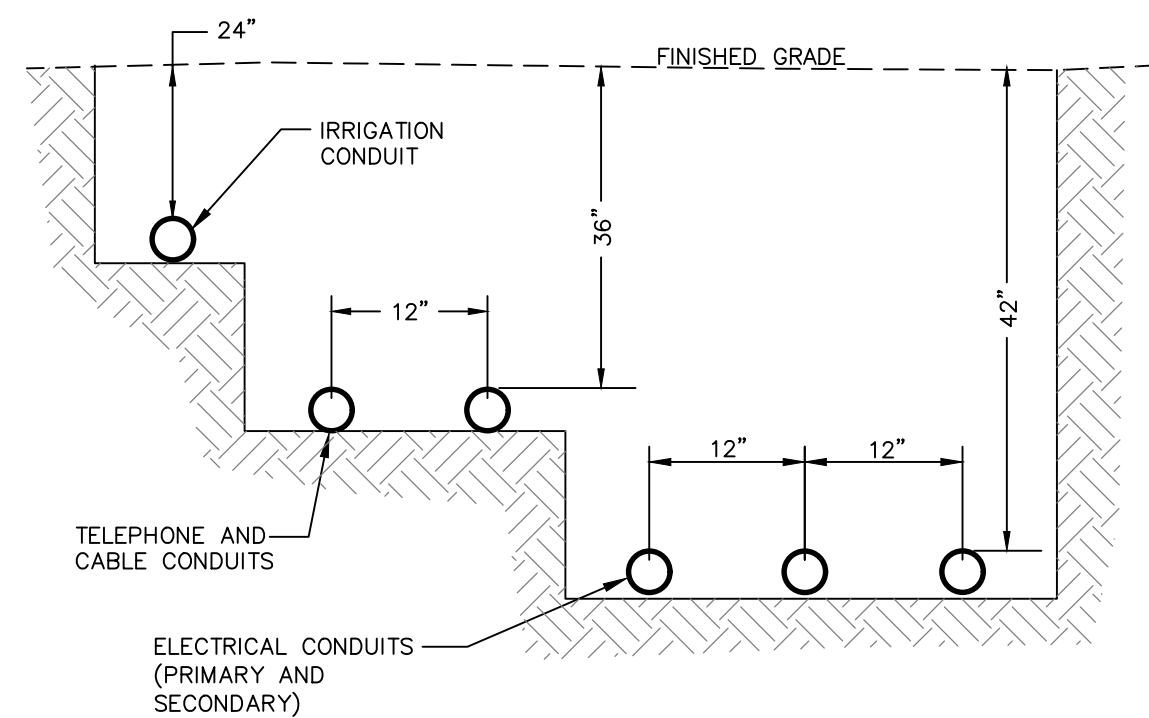
FEBRUARY 2014

DATE

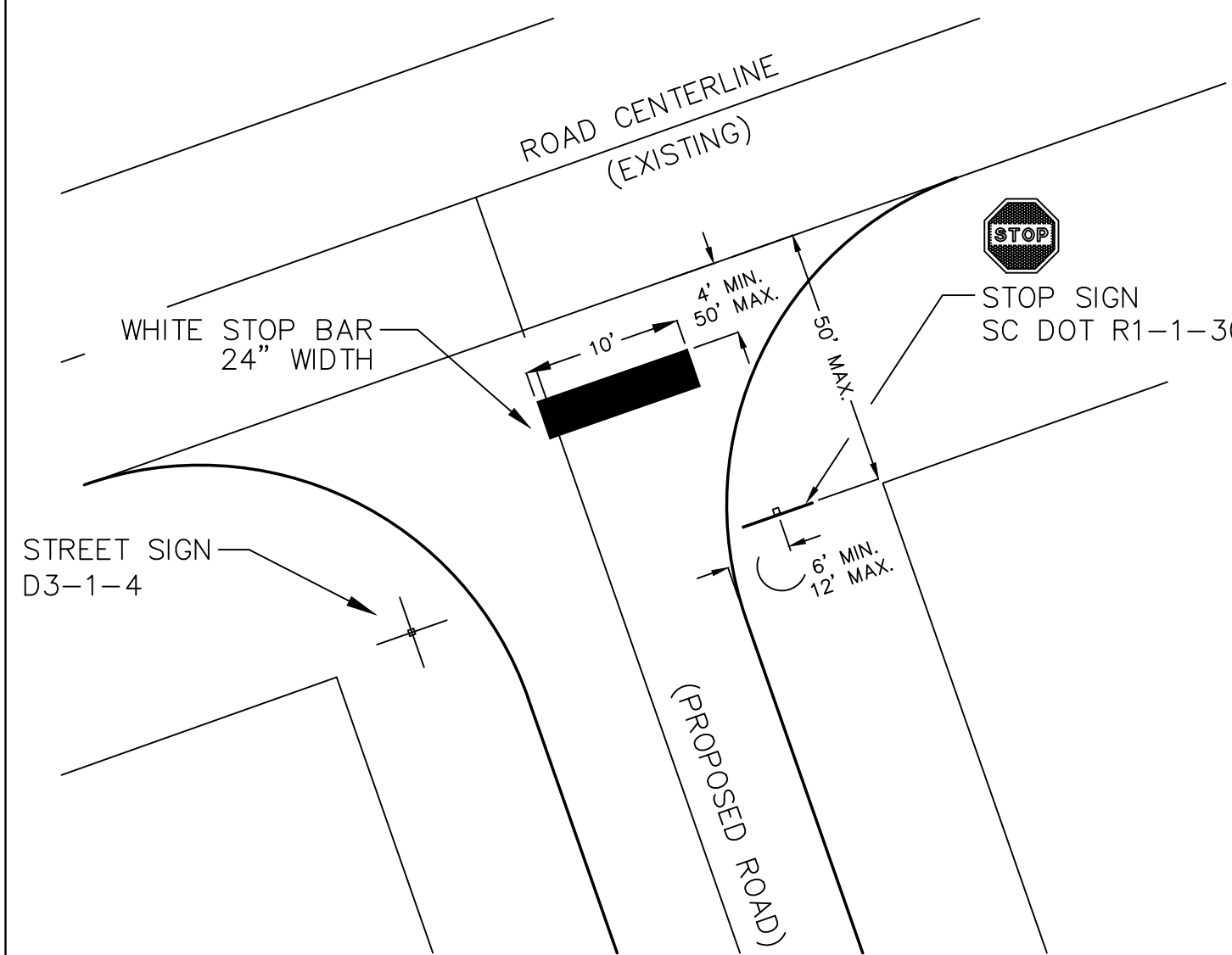


STOP SIGN

DETAIL #02890-002



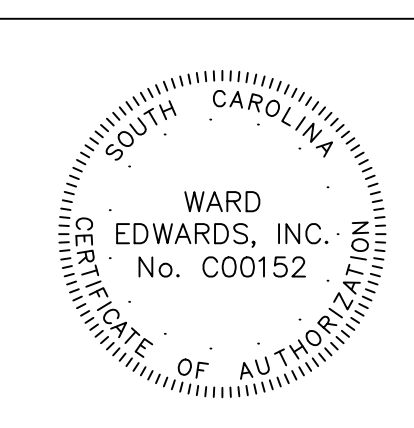
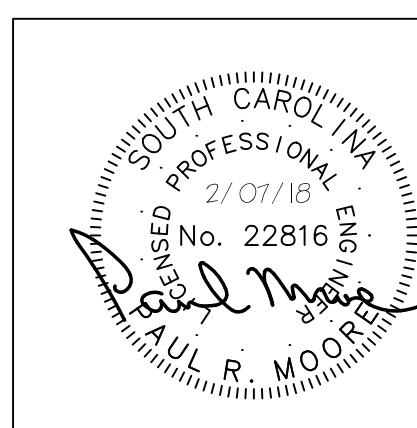
UTILITY CONDUIT TRENCH DETAIL



TYPICAL STOP SIGN & STOP BAR STRIPING AT INTERSECTION

DETAIL #02740-018

SOUTH CAROLINA DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION STANDARD DRAWINGS FOR ROAD CONSTRUCTION	
650-110-01	INSTALLATION GUIDE (SIGN)
654-105-01	BREAK-AWAY SIGN SUPPORTS
719-009-01	CATCH BASIN TYPE 9
719-016-01	CATCH BASIN TYPE 16
720-901-01.02	PEDESTRIAN RAMPS GENERAL NOTES & DEFINITIONS
720-910-01.02	DETECTABLE WARNING MATERIAL WET INSET MECHANICAL ANCHORS & THREADED INSERTS
720-929-01.02	PEDESTRIAN RAMP STANDARD VARIANTS
720-971-24	PEDESTRIAN RAMP 3'-0" TO 6'-0" GRASS STRIP (COMBINED RAMP)



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REV. NO.	BY	DATE	DESCRIPTION OF REVISION

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

Ward Edwards ENGINEERING

P.O. BOX 881, BLUFFTON, SOUTH CAROLINA 29910
PH: 803.785.1100 FAX: 803.785.1104
WWW.WARDEDWARDS.COM

CONSTRUCTION DETAILS

SCALE 1" = RTE.

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	NO.	SHEET NO.
3	S.C.	BEAUFORT	PO27276		D2

PERMANENT SEEDING – COASTAL

SPECIES	LBS/AC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
SANDY, DROUGHTY SITES													
BROWNTOP MILLET BAHAGRASS	10 LBS/AC 40 LBS/AC												
BROWNTOP MILLET BAHAGRASS SERICEA LESPEDEZA	10 LBS/AC 30 LBS/AC 40 LBS/AC												
BROWNTOP MILLET ATLANTIC COASTAL PANICGRASS	10 LBS/AC 15 LBS/AC PLS												
BROWNTOP MILLET SWITCHGRASS (ALAMO)	10 LBS/AC 8 LBS/AC PLS												
LITTLE BLUESTEM SERICEA LESPEDEZA	4 LBS/AC 20 LBS/AC												
BROWNTOP MILLET WEEPING LOVEGRASS	10 LBS/AC 8 LBS/AC												
WELL DRAINED, CLAYEY/LOAMEY SITES													
BROWNTOP MILLET BAHAGRASS	10 LBS/AC 40 LBS/AC												
RYE, GRAIN BAHAGRASS CLOVER, CRIMSON (ANNUAL)	10 LBS/AC 40 LBS/AC 5 LBS/AC												
BROWNTOP MILLET BAHAGRASS SERICEA LESPEDEZA	10 LBS/AC 30 LBS/AC 40 LBS/AC												
BROWNTOP MILLET BERMUDA, COMMON SERICEA LESPEDEZA	10 LBS/AC 10 LBS/AC 40 LBS/AC												
BROWNTOP MILLET BERMUDA, COMMON KOBE LESPEDEZA (ANNUAL)	10 LBS/AC 12 LBS/AC 10 LBS/AC												
BROWNTOP MILLET BAHAGRASS BERMUDA, COMMON SERICEA LESPEDEZA	10 LBS/AC 20 LBS/AC 6 LBS/AC 40 LBS/AC												
BROWNTOP MILLET SWITCHGRASS LITTLE BLUESTEM INDIANGRASS	10 LBS/AC 8 LBS/AC PLS 3 LBS/AC PLS 3 LBS/AC PLS												

ADHESIVE	WATER DILUTION	NOZZLE TYPE	APPLICATION (GAL./ACRE)
ANIONIC ASPHALT EMULSION	7:1*	COARSE SPRAY	1,200
LATEX EMULSION	12.5:1*	FINE SPRAY	235
RESIN-IN-WATER EMULSION	4:1*	FINE SPRAY	300

*USE MANUFACTURER'S RECOMMENDATIONS WHEN AVAILABLE.

- MAINTENANCE:**
- PROHIBIT TRAFFIC ON SURFACE AFTER SPRAYING.
 - SUPPLEMENT SURFACE COVERING AS NEEDED.
- INSTALLATION:**
- APPLY ACCORDING TO APPROVED PLAN.
 - MULCH DISTURBED AREAS AND TACKIFY WITH RESINS SUCH AS ASPHALT, CURASOL OR TERRATAK ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
 - STABILIZE DISTURBED AREAS WITH TEMPORARY OR PERMANENT VEGETATION.
 - IRRIGATE DISTURBED AREAS UNTIL SURFACE IS WET.
 - COVER SURFACES WITH CRUSHED STONE OR GRAVEL.
 - APPLY CALCIUM CHLORIDE AT A RATE TO KEEP SURFACES MOIST.
 - APPLY SPRAY-ON ADHESIVES TO MINERAL SOILS (NOT MUCK SOILS) AS DESCRIBED IN TABLE 1.

(DC) DUST CONTROL ON DISTURBED AREAS

(PS) PERMANENT SEEDING - COASTAL

DETAIL 02370-010

TEMPORARY SEEDING – COASTAL

SPECIES	LBS/AC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
SANDY, DROUGHTY SITES													
BROWNTOP MILLET	40 LBS/AC												
RYE, GRAIN	56 LBS/AC												
RYEGRASS	50 LBS/AC												
WELL DRAINED, CLAYEY/LOAMEY SITES													
BROWNTOP MILLET OR JAPANESE MILLET	40 LBS/AC												
RYE, GRAIN OR OATS	56 LBS/AC 75 LBS/AC												
RYEGRASS	50 LBS/AC												

(TS) TEMPORARY SEEDING - COASTAL

DETAIL 02370-011

PAUL R. MOORE
No. 22816
2/01/18

WARD EDWARDS, INC.
No. CO0152

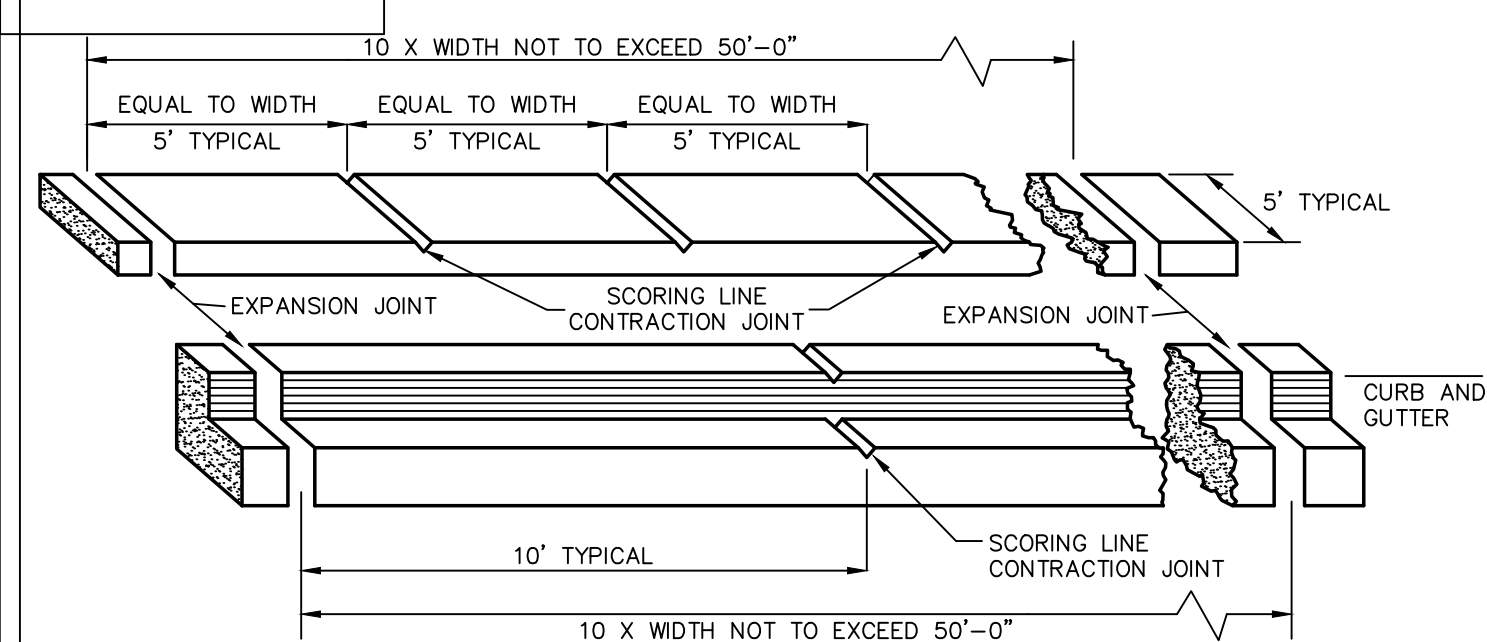
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REV. NO.	BY	DATE	DESCRIPTION OF REVISION
TOPO.		DATE	
DGN.		DATE	RPG
R/W		DATE	

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

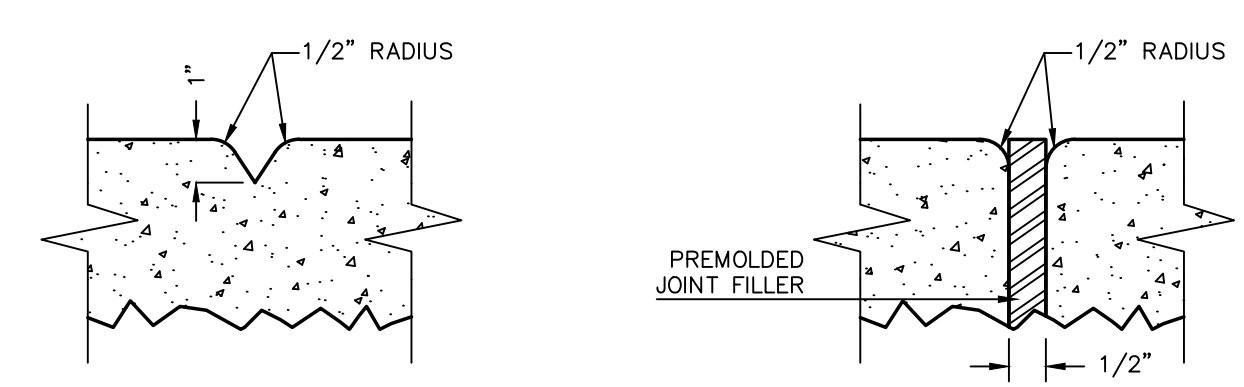
Ward Edwards
ENGINEERING

CONSTRUCTION DETAILS

SCALE 1"= RTE.



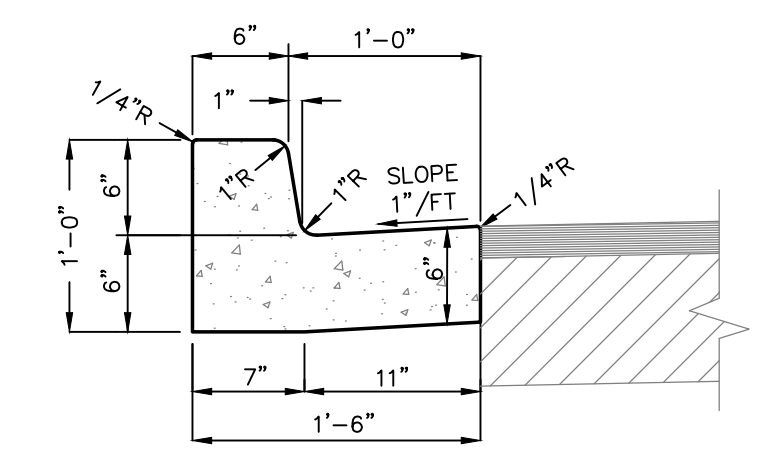
ISOMETRIC



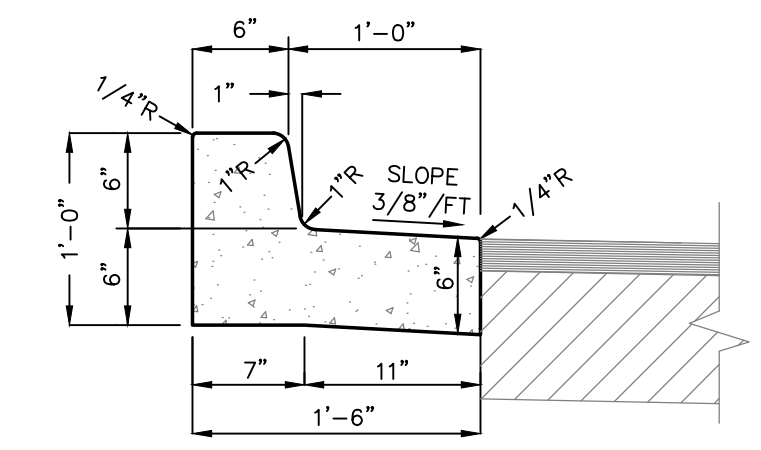
CONTRACTION JOINT SCORING LINE
EXPANSION JOINT

- NOTES:
- EXPANSION JOINTS, 1/2 INCH THICK, SHALL BE PLACED IN THE SIDEWALK AND CURBING AT THE POINT OF CURVATURE (PC) AND POINT OF TANGENCY (PT) OF ALL CURVES, AT THE OUTER EDGES OF DRIVEWAYS, AND AT UNIFORM INTERVALS AS SHOWN. EXPANSION JOINTS SHALL MEET SCDOT SPECIFICATION SECTION 702.2.2.1.
 - TRANSVERSE SCORING LINES (CONTRACTION JOINTS) IN THE SIDEWALK SHALL BE PLACED BETWEEN EXPANSION JOINTS AT UNIFORM INTERVALS EQUAL TO THE WIDTH OF THE WALK AS SHOWN.
 - LONGITUDINAL SCORING LINES WILL BE REQUIRED IN WALKS WIDER THAN 5 FEET OR AS DIRECTED BY THE ENGINEER.
 - TRANSVERSE CONTRACTION JOINTS IN THE CURBING SHALL BE PLACED BETWEEN EXPANSION JOINTS AT UNIFORM 10' INTERVALS.
 - TRANSVERSE AND LONGITUDINAL SCORING LINES SHALL BE A DEPTH OF 1" AND NOT LESS THAN 1/4 INCH OR MORE THAN 1/2 INCH IN WIDTH. THE CORNERS OF THE SCORING LINES SHALL HAVE A 1/2 INCH MINIMUM RADIUS.
 - JOINTS IN THE CURB AND GUTTER SHALL ALIGN WITH CORRESPONDING JOINTS IN THE SIDEWALK.

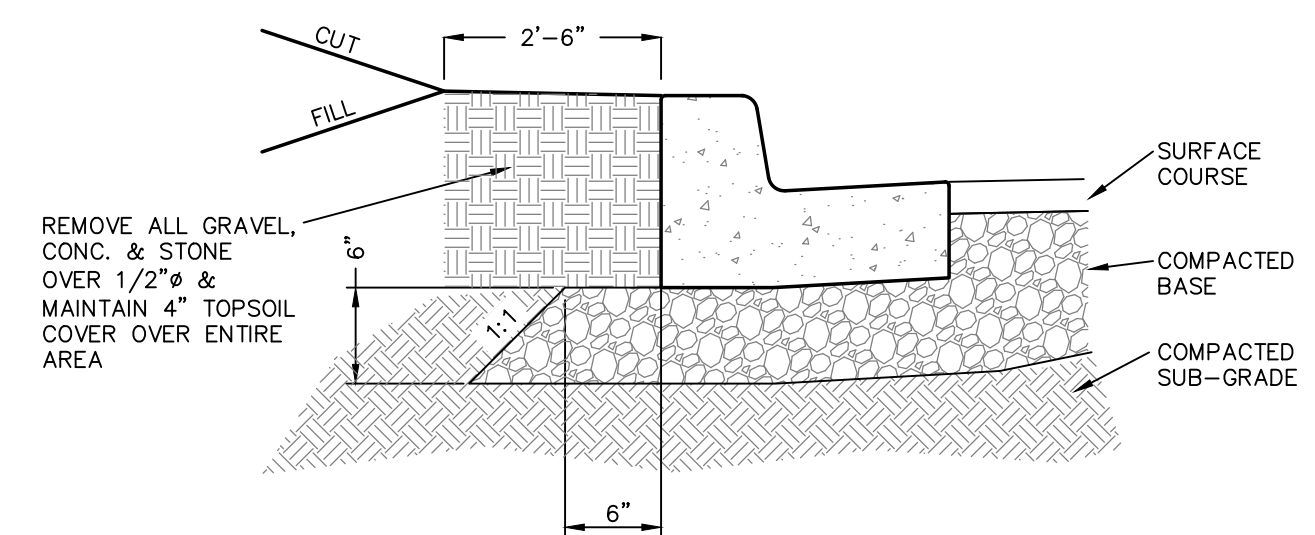
EXPANSION JOINTS AND SCORING LINES
DETAIL 03300-007A



NORMAL GUTTER

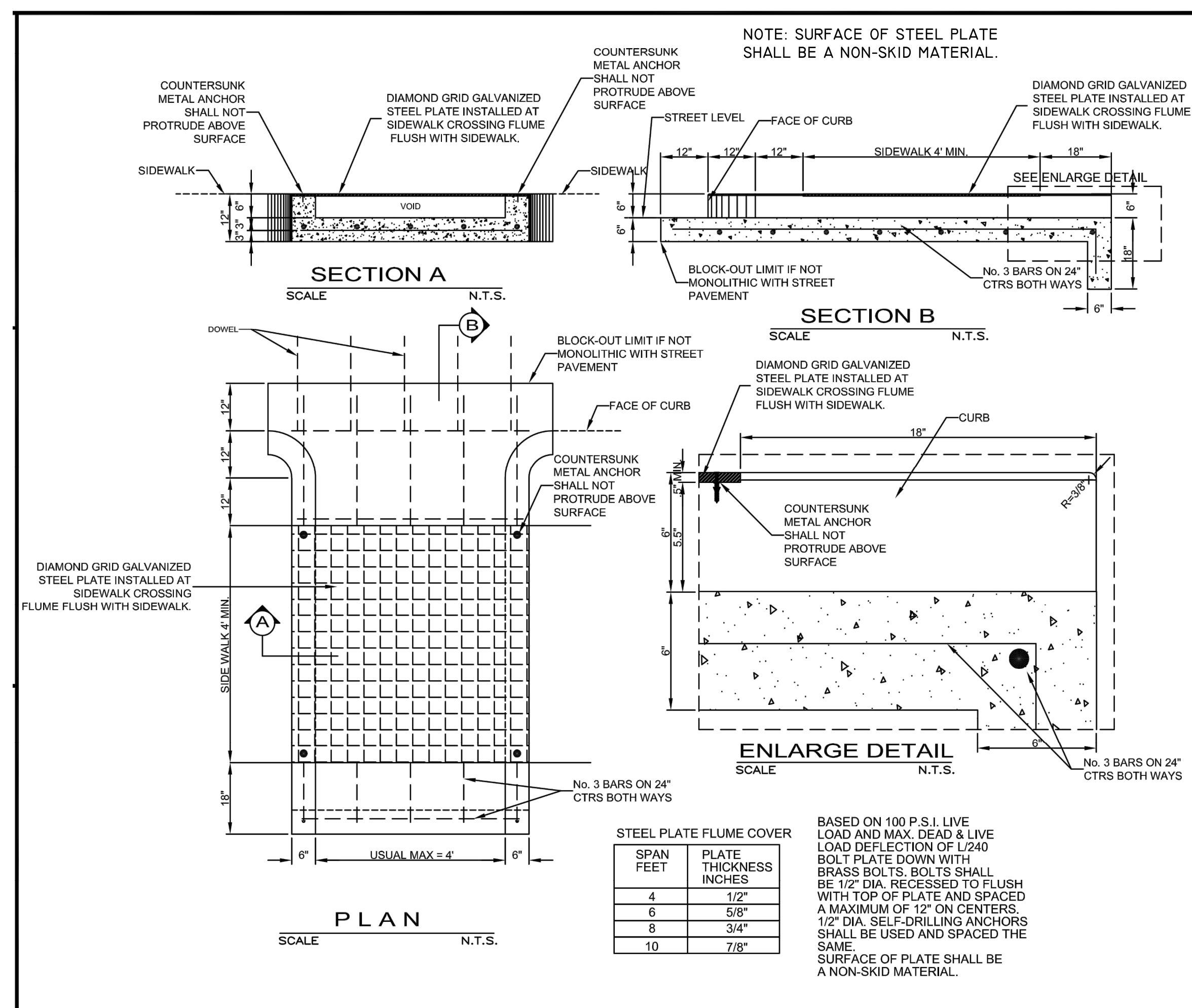


PITCHED GUTTER

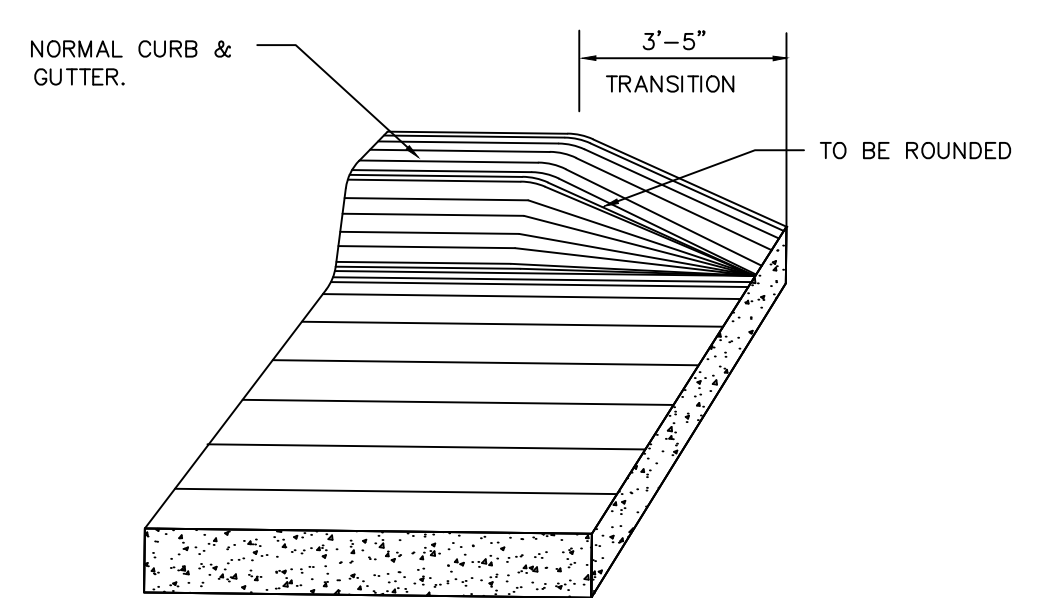


18" CURB AND GUTTER

DETAIL 03300-004A

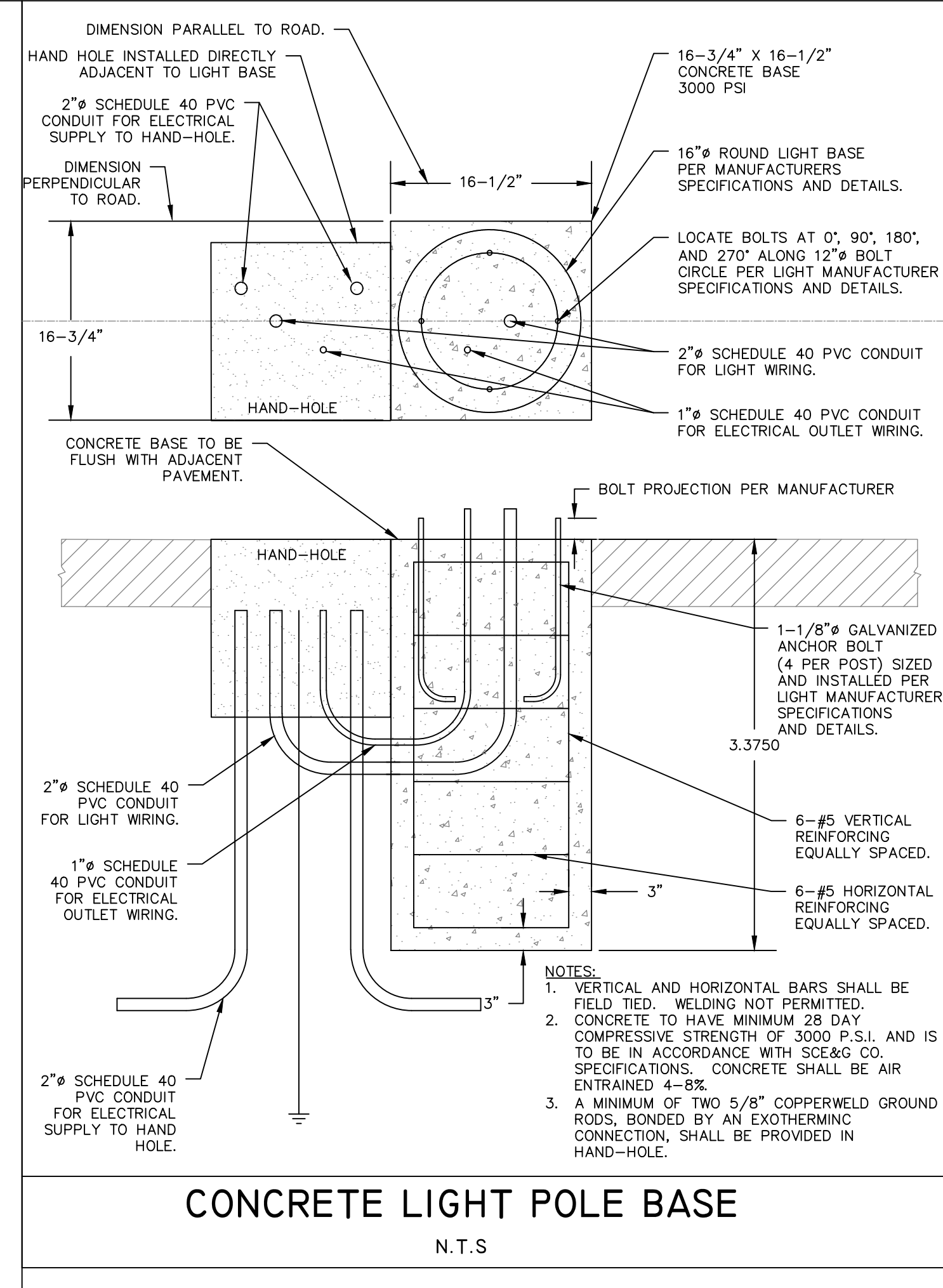


SIDEWALK FLUME CROSSING NOT TO SCALE



CURB AND GUTTER TRANSITION DETAIL

DETAIL 03300-020



CONCRETE LIGHT POLE BASE

N.T.S.

Professional Engineer Seal for Ward Edwards, Inc. No. 22816, dated 2/01/18. Also includes a Certificate of Authorization for Paul R. Moore.

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REV. NO.	BY	DATE	DESCRIPTION OF REVISION
TOPO.		DATE	
DGN.		DATE	RPG
R/W		DATE	

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION COLUMBIA, S.C.

Ward Edwards ENGINEERING

CONSTRUCTION DETAILS

SCALE 1" = RTE.