

**CONTRACT DOCUMENT PROJECT MANUAL**

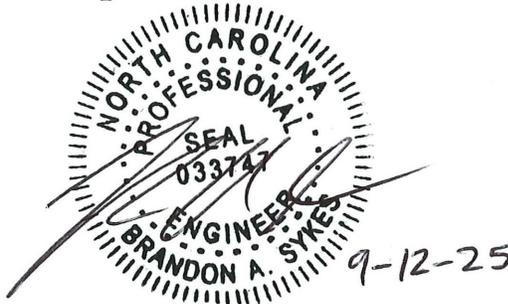
**FOR**

**PS#11 & OUTFALL IMPROVEMENTS – MARKET STREET  
SEWER REPLACEMENT**

**TOWN OF SMITHFIELD, NORTH CAROLINA**

**NCDEQ DWI Project No. SRP-W 134-0012.2**

September 2025



**FINAL SPECIFICATIONS - NOT RELEASED FOR CONSTRUCTION**

**PREPARED BY**

**SEE, PLLC**

Sykes Environmental Engineering, PLLC

9504 BARKER ROAD  
NEW HILL, NORTH CAROLINA 27562  
License No. P-2436

## TABLE OF CONTENTS

<u>Document</u>	<u>Title</u>	<u>Pages</u>
00101	Table of Contents.....	1-2
<b>Bidding Requirements</b>		
C-111	Advertisement for Bids .....	1-2
C-200	Instruction to Bidders .....	1-10
C-410a	Bidder's Checklist .....	1-1
C-410	Bid Form .....	1-6
C-430	Bid Bond .....	1-2
00432	Page for Attaching Power of Attorney (Bid Bond).....	1-1
00451	Contractor Questionnaire .....	1-2
00480	Non-Collusive Affidavit.....	1-1
00482	Debarment Certification Form .....	1-2
00490	Addendum .....	1-1
	NC DWI MBE/WBE (DBE) Compliance Statement.....	1-7
<b>Contract Requirements</b>		
C-510	Notice of Award .....	1-1
C-520	Agreement .....	1-7
C-520a	Amendment to Boiler Plate Contract .....	1-2
C-550	Notice to Proceed .....	1-1
C-610	Performance Bond .....	1-3
C-615	Payment Bond .....	1-3
C-616	Page for Attaching Power of Attorney .....	1-1
C-618	Page for Attaching Certificate of Insurance .....	1-1
00695c	Change Order Form.....	1-1
00695d	Certificate of Substantial Completion .....	1-2
00695e	Certificate of Final Payment .....	1-1
00695f	Contractor Affidavit Final Payment / Waiver of Liens.....	1-1
00695g	Contractor Sales Tax Report / Certification Form.....	1-1
C-700	General Conditions .....	1-65
C-800	Supplementary Conditions .....	1-21

## Technical Specifications

### Division 1 - General Requirements

<u>Section</u>	<u>Title</u>	<u>Pages</u>
00010	Special Provisions.....	1-4
01015	Project Requirements .....	1-7
01270	Unit Prices .....	1-12
01300	Submittals.....	1-5
01400	Quality Control .....	1-2
01500	Temporary Facilities.....	1-6

### Division 2 - Site Construction

00300	Wastewater Flow Control .....	1-2
00400	Manhole Rehabilitation .....	1-7
00500	Television Inspection of Gravity Sewer .....	1-2
02200	Earthworks.....	1-11
02270	Erosion and Sediment Control .....	1-3
02930	Seeding and Mulching .....	1-6
02950	Site Work .....	1-5
7.00	Sanitary Sewer.. .....	1-12

### Permits

NCDOT Encroachment Pre-Approval.....	1-39
--------------------------------------	------

END OF DOCUMENT

ADVERTISEMENT FOR BIDS

**TOWN OF SMITHFIELD, NORTH CAROLINA  
PS#11 & OUTFALL IMPROVEMENTS – MARKET STREET SEWER REPLACEMENT**

Legal Notice

Pursuant to NC General Statutes 143-129, sealed bids will be received by the Town of Smithfield for the furnishing of all materials and construction of the PS#11 & Outfall Improvements – Market Street Sewer Replacement Project.

Sealed Bids for the construction of the **PS#11 & Outfall Improvements – Market Street Sewer Replacement Project** will be received by the Town of Smithfield, at the **Public Utilities Department - 230 Hospital Road, Smithfield, NC 27577**, until **2:00 PM** local time on **November ??, 2025** at which time the Bids received will be publicly opened and read aloud. The Project consists of **replace-in-place existing 10-inch sewer with 18-inch C900 PVC; approximately 2,210 LF. Pipe replacement includes installation / replacement of 12 manholes. Installation of approximately 60 LF of 30-inch steel casing pipe underneath Market Street by bore-and-jack. All associated work including excavation, demolition, pavement cut and patch, bypass pumping, traffic control, cleanup, and restoration.**

Sealed bids should be submitted to the **Town of Smithfield – Public Utilities Department - 230 Hospital Road, Smithfield, NC 27577**, Attn: **Ted Credle** and marked **“Bid Enclosed - PS#11 & Outfall Improvements – Market Street Sewer Replacement Project – November ??, 2025 – 2:00 PM”** All bids must be accompanied by a 5% bid bond and shall be subject to the conditions provided in the Instructions to Bidders.

A pre-bid conference will be held at **2:00 PM** local time on **October ??, 2025** at the **Public Utilities Department - 230 Hospital Road, Smithfield, NC 27577** Attendance at the pre-bid conference is highly encouraged but is not mandatory.

The Issuing Office for the Bidding Documents is:

**Sykes Environmental Engineering, PLLC**  
**9504 Barker Rd**  
**New Hill, NC 27562**  
**919-891-5109**  
**Brandon A. Sykes, PE**  
**brandon@sykesenviro.com**

Prospective Bidders may obtain copies of the Bidding Documents from the Issuing Office as described below.

Bidding Documents also may be examined online at **Dodge Data & Analytics** [www.construction.com](http://www.construction.com) and **CarolinAs AGC iSqFt** [www.isqft.com](http://www.isqft.com).

Bidding Documents may be obtained from the Issuing Office either via in-person pick-up or via mail, upon Issuing Office’s receipt of payment for the Bidding Documents. **Electronic copies may be obtained upon request free of charge.** The non-refundable cost of printed Bidding Documents is **\$100** per set, payable to **“Sykes Environmental Engineering”**, including ground shipping. Upon Issuing Office’s receipt of payment, printed Bidding Documents will be sent via the prospective Bidder’s delivery method of choice; the shipping charge will depend on the shipping method chosen. The date that the Bidding Documents are transmitted by the Issuing Office will be considered the prospective Bidder’s date of receipt of the Bidding Documents. Partial sets of Bidding Documents will not be available from the

Issuing Office. Neither Owner nor Engineer will be responsible for full or partial sets of Bidding Documents, including Addenda if any, obtained from sources other than the Issuing Office.

Owner: **Town of Smithfield**

By: **Ted Credle, PE**

Title: **Public Utilities Director**

Date: **September 2, 2025**

+ + END OF ADVERTISEMENT FOR BIDS + +

# INSTRUCTIONS TO BIDDERS

## TABLE OF CONTENTS

	<b>Page</b>
ARTICLE 1 – Defined Terms.....	1
ARTICLE 2 – Copies of Bidding Documents .....	1
ARTICLE 3 – Qualifications of Bidders .....	1
ARTICLE 4 – Site and Other Areas; Existing Site Conditions; Examination of Site; Owner’s Safety Program; Other Work at the Site .....	2
ARTICLE 5 – Bidder’s Representations .....	3
ARTICLE 6 – Pre-Bid Conference .....	4
ARTICLE 7 – Interpretations and Addenda.....	5
ARTICLE 8 – Bid Security .....	5
ARTICLE 9 – Contract Times .....	5
ARTICLE 10 – Liquidated Damages.....	5
ARTICLE 11 – Substitute and “Or-Equal” Items.....	6
ARTICLE 12 – Subcontractors, Suppliers, and Others .....	6
ARTICLE 13 – Preparation of Bid .....	6
ARTICLE 14 – Basis of Bid .....	7
ARTICLE 15 – Submittal of Bid.....	8
ARTICLE 16 – Modification and Withdrawal of Bid.....	8
ARTICLE 17 – Opening of Bids .....	8
ARTICLE 18 – Bids to Remain Subject to Acceptance .....	8
ARTICLE 19 – Evaluation of Bids and Award of Contract .....	9
ARTICLE 20 – Signing of Agreement.....	10
ARTICLE 21 – Sales and Use Taxes .....	10

## **ARTICLE 1 – DEFINED TERMS**

1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:

A. *Issuing Office* – The office from which the Bidding Documents are to be issued.

## **ARTICLE 2 – COPIES OF BIDDING DOCUMENTS**

2.01 Complete sets of the Bidding Documents may be obtained from the Issuing Office in the number and format stated in the advertisement or invitation to bid.

2.02 Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.03 Owner and Engineer, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license for any other use.

## **ARTICLE 3 – QUALIFICATIONS OF BIDDERS**

3.01 To demonstrate Bidder's qualifications to perform the Work, after submitting its Bid and within 5 days of Owner's request, Bidder shall submit written evidence which shall include, but not be limited to, the following:

A. Official name of Bidder and length of time the organization has been in business under present name.

B. Address, phone and fax numbers of main place of business. Address and phone numbers of company office that will manage the Project if different than above.

C. Officers of the company. Name and resume of designated project manager and field superintendent. Number of regular employees of the organization.

D. Name and home office address of the Surety proposed and the name and address of the responsible local claim agent.

E. Listing of completed projects of similar size and type. Provide name and phone number of project owner representative.

F. Statement that bidder is capable of completing the project within the stated time.

3.02 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.

3.03 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.

3.04 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

## **ARTICLE 4 – SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE**

### **4.01 *Site and Other Areas***

- A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. Any additional lands required for temporary construction facilities, construction equipment, or storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by Contractor.

### **4.02 *Existing Site Conditions***

- A. Subsurface and Physical Conditions; Hazardous Environmental Conditions
  - 1. The Supplementary Conditions identify:
    - a. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site.
    - b. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).
    - c. reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.
    - d. Technical Data contained in such reports and drawings.
  - 2. Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.
  - 3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.
- B. Underground Facilities: Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or adjacent to the Site are set forth in the Contract Documents and are based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.
- C. Adequacy of Data: Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 5.03, 5.04, and 5.05 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work, appear in Paragraph 5.06 of the General Conditions.

#### 4.03 *Site Visit and Testing by Bidders*

- A. Bidder shall conduct the required Site visit during normal working hours, and shall not disturb any ongoing operations at the Site.
- B. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.
- C. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site.
- D. Bidder shall comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.
- E. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

#### 4.04 *Owner's Safety Program*

- A. Site visits and work at the Site may be governed by an Owner safety program. As the General Conditions indicate, if an Owner safety program exists, it will be noted in the Supplementary Conditions.

#### 4.05 *Other Work at the Site*

- A. Reference is made to Article 8 of the Supplementary Conditions for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

### **ARTICLE 5 – BIDDER'S REPRESENTATIONS**

#### 5.01 It is the responsibility of each Bidder before submitting a Bid to:

- A. examine and carefully study the Bidding Documents, and any data and reference items identified in the Bidding Documents and any Addenda;
- B. visit the Site, conduct a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfy itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. become familiar with and satisfy itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work;
- D. carefully study all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary

Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings;

- E. consider the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs;
- F. agree, based on the information and observations referred to in the preceding paragraph, that at the time of submitting its Bid no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;
- G. become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
- H. Obtain and carefully study (or assume responsibility for not doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto;
- I. Correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;
- J. promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder;
- K. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work; and
- L. agree that the submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

## **ARTICLE 6 – PRE-BID CONFERENCE**

- 6.01 A pre-Bid conference will be held at the time and location stated in the invitation or advertisement to bid. Representatives of Owner and Engineer will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference. Engineer will transmit to all prospective Bidders of record such Addenda as Engineer considers necessary in

response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

#### **ARTICLE 7 – INTERPRETATIONS AND ADDENDA**

- 7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to Engineer in writing. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all parties recorded as having received the Bidding Documents. Questions received less than seven days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 7.02 Addenda may be issued to clarify, correct, supplement, or change the Bidding Documents.

#### **ARTICLE 8 – BID SECURITY**

- 8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of five percent (5%) of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form of a certified check, bank money order, or a Bid bond (on the form included in the Bidding Documents) issued by a surety meeting the requirements of Paragraphs 6.01 and 6.02 of the General Conditions.
- 8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract Documents, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 10 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults.
- 8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of the Contract or the end of the Bid holding period, whereupon Bid security furnished by such Bidders will be released.
- 8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within seven days after the Bid opening.

#### **ARTICLE 9 – CONTRACT TIMES**

- 9.01 The number of days within which, or the dates by which the Work is to be substantially completed, and completed and ready for final payment, are set forth in the Agreement.

#### **ARTICLE 10 – LIQUIDATED DAMAGES**

- 10.01 Provisions for liquidated damages, if any, for failure to timely attain a Milestone, Substantial Completion, or completion of the Work in readiness for final payment, are set forth in the Agreement.

## **ARTICLE 11 – SUBSTITUTE AND “OR-EQUAL” ITEMS**

- 11.01 All prices that Bidder sets forth in its Bid shall be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of “or-equal” or substitution requests are made at Bidder’s sole risk.

## **ARTICLE 12 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS**

- 12.01 A Bidder shall be prepared to retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of the Work if required by the Bidding Documents (most commonly in the Specifications) to do so. If a prospective Bidder objects to retaining any such Subcontractor, Supplier, or other individual or entity, and the concern is not relieved by an Addendum, then the prospective Bidder should refrain from submitting a Bid.
- 12.02 Subsequent to the submittal of the Bid, Owner may not require the Successful Bidder or Contractor to retain any Subcontractor, Supplier, or other individual or entity against which Contractor has reasonable objection.
- 12.03 The apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner a list of the Subcontractors or Suppliers proposed for any portions of the Work.

If requested by Owner, such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, or other individual or entity. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder shall submit a substitute, Bidder’s Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.

- 12.04 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, or other individuals or entities. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.06 of the General Conditions.

## **ARTICLE 13 – PREPARATION OF BID**

- 13.01 The Bid Form is included with the Bidding Documents.
- A. Bids must be made on the required Bid Form. All blanks on the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.
- B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words “No Bid” or “Not Applicable.”

- 13.02 A Bid by a corporation shall be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation shall be shown.
- 13.03 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The partnership's address for receiving notices shall be shown.
- 13.04 A Bid by a limited liability company shall be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the firm's address for receiving notices shall be shown.
- 13.05 A Bid by an individual shall show the Bidder's name and address for receiving notices.
- 13.06 A Bid by a joint venture shall be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The joint venture's address for receiving notices shall be shown.
- 13.07 All names shall be printed in ink below the signatures.
- 13.08 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
- 13.09 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.
- 13.10 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located, or Bidder shall covenant in writing to obtain such authority and qualification prior to award of the Contract and attach such covenant to the Bid. Bidder's state contractor license number, if any, shall also be shown on the Bid Form.

#### **ARTICLE 14 – BASIS OF BID**

##### **14.01 *Unit Price***

- A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the unit price section of the Bid Form.
- B. The "Bid Price" (sometimes referred to as the extended price) for each unit price Bid item will be the product of the "Estimated Quantity" (which Owner or its representative has set forth in the Bid Form) for the item and the corresponding "Bid Unit Price" offered by the Bidder. The total of all unit price Bid items will be the sum of these "Bid Prices"; such total will be used by Owner for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions.
- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

##### **14.02 *Allowances***

- A. For cash allowances the Bid price shall include such amounts as the Bidder deems proper for Contractor's overhead, costs, profit, and other expenses on account of cash allowances, if any, named in the Contract Documents, in accordance with Paragraph 13.02.B of the General Conditions.

## **ARTICLE 15 – SUBMITTAL OF BID**

- 15.01 Bid form is to be completed and submitted with all the attachments outlined in Article 7 of the Bid Form. The complete list of required bid documents can also be found in the attached Bidder's Checklist. The checklist shall be the first page of all bids submitted.
- 15.02 A Bid shall be received no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid and shall be enclosed in a plainly marked package with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation "***Bid Enclosed - PS#11 & Outfall Improvements – Market Street Sewer Replacement Project – November ??, 2025***" A mailed Bid shall be addressed to:
- Town of Smithfield  
Attention: Ted Credle, PE  
230 Hospital Road  
Smithfield, NC 27577
- 15.03 Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.
- 15.04 When using the mail or other delivery system, the Bidder is fully responsible for the mail or other delivery system delivering the Bid at the place and prior to the time indicated in the Advertisement for Bid.

## **ARTICLE 16 – MODIFICATION AND WITHDRAWAL OF BID**

- 16.01 A Bid may be withdrawn prior to opening by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.
- 16.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in the paragraph above and submit a new Bid prior to the date and time for the opening of Bids.
- 16.03 After the bid opening, a Bid may only be withdrawn in accordance with N.C.G.S. 143-129.1.

## **ARTICLE 17 – OPENING OF BIDS**

- 17.01 Bids will be opened at the time and place indicated in the advertisement or invitation to bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

## **ARTICLE 18 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE**

- 18.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

## ARTICLE 19 – EVALUATION OF BIDS AND AWARD OF CONTRACT

- 19.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible. If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, then the Owner will reject the Bid as nonresponsive; provided that Owner also reserves the right to waive all minor informalities not involving price, time, or changes in the Work.
- 19.02 If Owner awards the contract for the Work, such award shall be to the responsible Bidder submitting the lowest responsive Bid.
- 19.03 Evaluation of Bids
- A. In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.
  - B. For the determination of the apparent low Bidder when unit price bids are submitted, Bids will be compared on the basis of the total of the products of the estimated quantity of each item and unit price Bid for that item, together with any lump sum items.
  - C. More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of Bids in which that Bidder has an interest.
  - D. In determining the lowest responsible Bidder, Owner shall take into consideration the past performance of Bidder on construction contracts with particular concern given to completion times, quality of work, cooperation with other contractors, and cooperation with owner.
  - E. Owner reserves the right to reject Bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy Owner that such Bidder is properly qualified to carry out the obligations of the Agreement and to complete the Work described therein.
  - F. Should the Owner adjudge that the apparent low Bidder is not the lowest responsible Bidder by virtue of the above information, said apparent low Bidder will be so notified and his Bid security shall be returned.
- 19.04 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.
- 19.05 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.
- 19.06 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the Agreement (executed by Successful Bidder) to Owner, it shall be accompanied by required bonds and insurance documentation.
- 19.07 In determining the responsive Bidder, Owner shall take into consideration bidder's compliance with the requirements of G.S. 143-128.2(c). Failure of the low bidder to furnish affidavit(s) and

documentation as required by the Bid Form for compliance with G.S. 143-128.2(c) may constitute a basis for disqualification of the Bid.

- 19.08 If the Contract is to be awarded, Owner will award the Contract to the responsible Bidder who's Bid, conforming with all the material terms and conditions of the Instruction to Bidders, is lowest, price and other factors considered. If detailed in the bid form, factors such as discounts, transportation costs, and life cycle costs may be used to determine which bidder, if any, is to be offered the award.

#### **ARTICLE 20 – SIGNING OF AGREEMENT**

- 20.01 When Owner issues a Notice of Award to the Successful Bidder, it shall be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within 10 days thereafter, Successful Bidder shall execute and deliver the required number of counterparts of the Agreement (and any bonds and insurance documentation required to be delivered by the Contract Documents) to Owner. Within ten days thereafter, Owner shall deliver one fully executed counterpart of the Agreement to Successful Bidder, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

#### **ARTICLE 21 – SALES AND USE TAXES**

- 21.01 Owner is not exempt from state sales and use taxes on materials and equipment to be incorporated in the Work. Said taxes shall be included in the Bid.

**BIDDER'S CHECKLIST**

**This checklist shall be included as the first page of the submitted bidding documents. As outlined in article 7 of the Bid Form the following items shall be included with the submitted bidding documents:**

	A.	Properly Executed Bid Form (Including the acknowledgement of all Addenda)
	B.	Required Bid security in the form of a Bid Bond (EJCDC No. C-430) or Certified Check (circle type of security provided); Bid Bond shall include an executed Power of Attorney.
	C.	00451 - Contractor Questionnaire Form
	D.	00480 – Non-collusive Affidavit
	E.	00482 – Debarment Certification
	F.	Evidence of authority to do business in the state of the Project (i.e., copy of contractor's license)
	G.	MBE/WBE (DBE) Compliance Supplement

**BID FORM**

Project: PS#11 & Outfall Replacement – Market Street Sewer Replacement

Bid From: \_\_\_\_\_

**TABLE OF CONTENTS**

	<b>Page</b>
Article 1 – Bid Recipient .....	1
Article 2 – Bidder’s Acknowledgements .....	1
Article 3 – Bidder’s Representations.....	1
Article 4 – Bidder’s Certification .....	2
Article 5 – Basis of Bid.....	3
Article 6 – Attachments to this Bid .....	4
Article 7 – Defined Terms.....	5
Article 8 – Bid Submittal.....	5

**ARTICLE 1 – BID RECIPIENT**

1.01 This Bid is submitted to:

**Mr. Ted Credle, PE  
Town of Smithfield  
230 Hospital Road  
Smithfield, NC 27577**

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

**ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS**

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

**ARTICLE 3 – BIDDER’S REPRESENTATIONS**

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

<u>Addendum No.</u>	<u>Addendum, Date</u>
_____	_____
_____	_____
_____	_____
_____	_____

B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and

observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.

- F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder 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 Bidding Documents.
- H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Engineer is acceptable to Bidder.
- I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.
- J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.
- K. Bidder will submit written evidence of its authority to do business in the state where the Project is located not later than the date of its execution of the Agreement.

#### **ARTICLE 4 – BIDDER'S CERTIFICATION**

4.01 Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
  - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;
  - 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
  - 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

**ARTICLE 5 – BASIS OF BID**

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
<b>Sewer Main Replacement</b>					
1	Mobilization (5% maximum)	LS	1		
2	NCDOT Performance Bond (\$20,000)	LS	1		
3	18-Inch C900 DR 18 Gravity Sewer (Dig & Repl. 10") (10'-16' deep)	LF	2,210		
4	Valving / Piping Installation at Wet Well for Temporary Bypass of Wet Well	LS	1		
5	Core and Connect new 18" Sewer to Existing Wet Well	LS	1		
6	Install new 5' Dia. Manhole in new location (10'-16' Deep)	EA	3		
7	Replace Existing Manhole with new 5' Dia. MH (10'-16' Deep)	EA	9		
8	Abandon Existing Manhole in place	EA	2		
9	Bypass Pumping	LS	1		
10	30" Steel Casing Installation By Jack & Bore	LF	58		
11	Extend / Reconnect Sewer Lateral to New Sewer Main	EA	1		
12	Install 100 mil DFT Epoxy Coating - 5' Dia. Manhole	VF	152		
<b>Site Work</b>					
13	Asphalt Cut & Patch NCDOT (7" B25.OB or B25.OC and 2" min. S9.5B or S9.5C)	SY	150		
14	Mil Existing Pavement 2-inch deep 25-feet on each side of trench (NCDOT) (MIL 2", 2" S9.5B Overlay)	SY	560		
15	Asphalt Cut & Patch Town Streets (Parking Lots) (7" B25.OB or B25.OC and 2" min. S9.5B or S9.5C)	SY	1,410		
16	Concrete Sidewalk Replacement	SY	165		
17	Concrete Curb & Gutter Replacement	LF	570		
18	Replace / Install ADA Sidewalk Ramp	EA	3		

19	Undercut Pipe Trench and Replace with No. 67 Stone for Pipe Foundation	CY	1,000		
20	Select Backfill	CY	3,000		
21	Rock Excavation Mechanical method	CY	100		
22	Restore Drainage Ditch with Rip Rap	CY	20		
23	Wattle	EA	11		
24	Inlet Protection	EA	2		
25	Silt Fence	LF	1,000		
26	Tree Protection Fencing	LF	1,000		
27	Traffic Control	LS	1		
28	Clearing & Grubbing	LS	1		
29	Cleanup and Seeding (Min. 5% of Bid Items #3-8)	LS	1		
30	Allowance for Parking Lot Restoration	N/A	N/A	\$20,000.00	\$20,000.00
31	Allowance for Landscaping	N/A	N/A	\$15,000.00	\$15,000.00
32	Allowance for Miscellaneous Utility Adjustments	N/A	N/A	\$20,000.00	\$20,000.00

Bidder acknowledges that (1) each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item, and (2) estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

---

**Total of Lump Sum and Unit Price Bids = Total Bid Price**     \$ \_\_\_\_\_

---

Time of Completion

5.02 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

5.03 Bidder accepts the provisions of the Agreement as to liquidated damages.

**ARTICLE 6 – ATTACHMENTS TO THIS BID**

6.01 The following documents are submitted with and made a condition of this Bid. Failure to provide the documentation with the bid may be grounds for rejection of the bid.:

- A. Required Bid security in the form of a Bid Bond (EJCDC No. C-430) or Certified Check (circle type of security provided).
- B. Submit the Bidder's Checklist as provided in the bidding documents with the bid submittal. The Checklist shall be completed and included as the first page of the submittal.
- C. 00451 - Contractor Questionnaire Form
- D. 00480 – Non-collusive Affidavit

- E. 00482 – Debarment Certification
- F. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such license within the time for acceptance of Bids;
- G. Contractor’s License No.: \_\_\_\_\_ [or] Evidence of Bidder’s ability to obtain a State Contractor’s License and a covenant by Bidder to obtain said license within the time for acceptance of Bids;

6.02 After the bid opening the Owner will consider all bids and alternates and determine the lowest responsible, responsive bidder. Upon notification of being the apparent low Bidder, the Bidder shall then file within 72 hours of the notification of being the apparent lowest bidder, the following:

NONE

6.03 Bidder understands that if this Bid is accepted by the Owner, Bidder shall not substitute for the subcontractors named in the Bid Documents except as allowed in the Supplementary Conditions.

**ARTICLE 7 – DEFINED TERMS**

7.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

**ARTICLE 8 – BID SUBMITTAL**

Contractor’s License

- A. Number: \_\_\_\_\_
- B. Classification: \_\_\_\_\_
- C. Limitation: \_\_\_\_\_

Employer’s Tax ID No.: \_\_\_\_\_

BIDDER: *[Indicate correct name of bidding entity]*

---

Telephone Number: \_\_\_\_\_

Fax Number: \_\_\_\_\_

Contact Name and e-mail address: \_\_\_\_\_

\_\_\_\_\_

This Bid Submitted by:

An Individual

Name: \_\_\_\_\_  
(Type or print)

By: \_\_\_\_\_  
(Individual's Signature)

Doing Business As: \_\_\_\_\_  
(Type or print)

A Partnership

Partnership Name: \_\_\_\_\_

The Organization and Internal Affairs of the Partnership are governed by the laws of the State of: \_\_\_\_\_

By: \_\_\_\_\_  
(Signature of general partner, attach evidence of authority to sign)

Name: \_\_\_\_\_  
(Type or print)

Title: \_\_\_\_\_  
(Type or print)

Attest: \_\_\_\_\_  
(Signature of Corporate Secretary)

A Corporation

Corporation Name: \_\_\_\_\_

State of Incorporation: \_\_\_\_\_

Type (General Business, Profession, Service, Limited Liability):  
\_\_\_\_\_

By: \_\_\_\_\_  
(Signature, attach evidence of authority to sign)

Name: \_\_\_\_\_  
(Type or print)

Title: \_\_\_\_\_  
(Type or print)

Attest: \_\_\_\_\_ Corporate Seal  
(Signature of Corporate Secretary)

Date of Qualification to do business in North Carolina is \_\_\_\_\_.

Limited Liability Company – LLC

Name of LLC: \_\_\_\_\_

Name of State under whose Laws the Limited Liability Company was formed: \_\_\_\_\_

By: \_\_\_\_\_

(Signature of Manager)

Name: \_\_\_\_\_  
(Type or print)

Title: \_\_\_\_\_  
(Type or print)

## BID BOND

Any singular reference to Bidder, Surety, Owner or other party shall be considered plural where applicable.

---

BIDDER (*Name and Address*):

SURETY (*Name, and Address of Principal Place of Business*):

OWNER (*Name and Address*):

Town of Smithfield  
350 East Market Street  
Smithfield, NC 27577

BID

Bid Due Date:

Description (*Project Name— Include Location*):

BOND

Bond Number:

Date:

Penal sum \_\_\_\_\_

\$

(Words)

(Figures)

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

**BIDDER**

**SURETY**

(Seal)

(Seal)

\_\_\_\_\_  
Bidder'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

*Note: Addresses are to be used for giving any required notice.*

*Provide execution by any additional parties, such as joint venturers, if necessary.*

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
  - 3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
  - 3.2 All Bids are rejected by Owner, or
  - 3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after the Bid due date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

PAGE FOR ATTACHING  
POWER OF ATTORNEY  
(Bid Bond)

*GENERAL CONTRACTOR QUESTIONNAIRE*

The undersigned warrants the truth and accuracy of all statements and answers herein contained.

- 1. How many years has your organization or firm been in business as a (circle one) General Contractor, Subcontractor?

\_\_\_\_\_

- 2. Describe and give the date and owner of the last project that your organization or firm has completed similar in type, size, and nature as the one proposed.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- 3. Provide the names of three (3) the entities, together with individual contacts, for which you have performed construction work (include current telephone numbers).

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- 4. Has representatives from your organization or firm conducted a visit to the site of the proposed work? If so, describe any anticipated problems and any recommended solutions.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- 5. Will you Subcontract any part of this Work? If so, describe the parts that will be subcontracted.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- 6. Please list the names and addresses of the subcontractors to be used for the parts of the Work as described in Question No. 6 above.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

---

---

---

---

NAME OF FIRM

---

SIGNATURE OF AUTHORIZED OFFICIAL

---

TITLE

NON-COLLUSIVE AFFIDAVIT

State of \_\_\_\_\_

County of \_\_\_\_\_

\_\_\_\_\_ being first duly sworn, deposes and says that:

- (1) He is the \_\_\_\_\_, of  
(Owner, Partner, Officer, Representative or Agent)  
\_\_\_\_\_ the Bidder that has submitted the attached Bid;
- (2) He is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;
- (3) Such Bid is genuine and is not a collusive or sham Bid;
- (4) Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affidavit, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Bidder, firm, or person to submit a collusive or sham Bid in connection with the Work for which the attached Bid has been submitted; or to refrain from bidding in connection with such Work; or have in any manner, directly or indirectly, sought by agreement or collusion, or communication, or conference with any Bidder, firm, or person to fix the price or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit, or cost elements of the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against (Recipient), or any person interested in the proposed Work;
- (5) The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Bidder or any other of its agents, representatives, owners, employees or parties in interest, including this affidavit.

BY: \_\_\_\_\_  
SIGNATURE OF AUTHORIZED OFFICIAL

\_\_\_\_\_  
(TITLE)

Sworn and subscribed before me this  
\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

\_\_\_\_\_  
NOTARY PUBLIC

My Commission Expires: \_\_\_\_\_

DEBARMENT CERTIFICATION

CONTRACT NO. \_\_\_\_\_

CONTRACT TITLE \_\_\_\_\_

The undersigned hereby certifies that the firm of \_\_\_\_\_ has not been suspended by the State of North Carolina or any agency or department thereof for conviction or indictment or any of the offenses enumerated in G.S 133-27 nor will award subcontracts of any tier to firms that have been suspended for conviction or indictment of any of the offences enumerated in G. S. 133-27.

\_\_\_\_\_  
NAME OF FIRM

ATTEST \_\_\_\_\_ (SEAL)

\_\_\_\_\_  
SIGNATURE OF AUTHORIZED OFFICIAL

\_\_\_\_\_  
TITLE

Sworn and subscribed before me this

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_

\_\_\_\_\_  
NOTARY PUBLIC

My Commission Expires : \_\_\_\_\_

CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS

CONTRACT TITLE: \_\_\_\_\_

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
(b) 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 or embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
(c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
(d) 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.
(e) Have not been suspended by the State of North Carolina or any agency or department thereof for conviction or indictment or any of the offenses enumerated in G.S 133-27 nor will award subcontracts of any tier to firms that have been suspended for conviction or indictment of any of the offences enumerated in G. S. 13327.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Sec. 1001, a false statement may result in a fine of up to \$10,000 or imprisonment for up to 5 years, or both.

\_\_\_\_\_  
Typed Name & Title of Authorized Representative

\_\_\_\_\_  
Signature of Authorized Representative

**PS#11 & OUTFALL IMPROVEMENTS – MARKET STREET SEWER REPLACEMENT  
TOWN OF SMITHFIELD , NORTH CAROLINA**

**SUBJECT: ADDENDUM NO. Number**

**DATE**

To the Plans and Specifications for:

\_\_\_\_\_  
\_Town of Smithfield

**To: PROSPECTIVE BIDDERS AND OTHER CONCERNED PARTIES**

This ADDENDUM forms a part of the Contract Documents and modifies the original Bidding Documents as noted below. Bidders shall acknowledge receipt of the ADDENDUM in the space provided on the Bid Form. Failure to do so may subject the Bidder to Disqualification.

- A. Previous Addenda Requirements
  - 1. Addendum Number, Date
    - a. Change
  
- B. Bidding Requirements
  - 1. Document Number, Title
    - a. Change
  
- C. Contracting Requirements
  - 1. Document Number, Title
    - a. Change
  
- D. Technical Specification Requirements
  - 1. Section Number, Title
    - a. Change
  
- E. Drawing Requirements
  - 1. Drawing No. Number, Title
    - a. Change

Bids will be received until \_\_\_\_\_ pm, Date of Bid, 20\_\_

FOR THE OWNER  
Company Name

BY \_\_\_\_\_  
Engineer's Name, P.E.

END OF DOCUMENT

# NC Division of Water Infrastructure MBE/WBE (DBE) Compliance Supplement Instructions

*(This package combines the various aspects of State of NC HUB program requirements and Federal DBE requirements into a single compliance supplement in order to eliminate redundancy and ambiguity)*

Item	What to do with it
Good Faith Efforts Form	Provided by all bidders to be responsive Only low bidder's form is submitted to the State
Table A (Summary of firms on job)	Provided by all bidders to be responsive Only low bidder's form is submitted to the State
Table B (per item being subbed)	Provided by low bidder if SRF project or SRP/SEL* that obtains less than 10% M/WBE utilization (see page 2)
Provide documentation of anything you did that is mentioned later in this supplement	- Proof of trade paper advertisement - Printouts of DBE sources used - Solicitation emails and/or letters
<b>Additional Forms for SRF Projects (these forms are currently not applicable)</b>	
<del>6100-3 (per M/WBE firm)</del>	<del>Provided by low bidder if SRF project</del>
<del>6100-2</del>	<del>Distributed to M/WBE firms if SRF project</del>
<del>Subs submit concerns on 6100-2 forms to:</del>	<del><b>Michael Pigram</b> <b>Region 4, Atlanta Federal Center</b> <b>61 Forsyth Street</b> <b>Atlanta, GA 30303-8960</b></del>

## NOTES on this Compliance Supplement

### Verifiable Goals

- |   |           |
|---|-----------|
| <b>EPA MBE/WBE participation goals:</b> | MBE 10.9% |
|   | WBE 10.4% |

These are goals that the State reports against and are not quotas. *The good faith efforts must be adhered to and all forms provided regardless of what percentage utilization is achieved.*

- |  |                |
|--|----------------|
| <b>State of NC MBE/WBE participation goal:</b> | 10% (combined) |
|--|----------------|

Table B is not required for SRP and SEL projects if you achieve 10% utilization.

### DBE (MBE or WBE) Certification

In order for a firm to count towards the goals, a firm must be properly certified. Table A and Table B both provide spaces to note who certified the firm. The North Carolina Department of Administration and North Carolina Department of Transportation are the most common certifications we see listed. Division of Water Infrastructure staff verify all certifications listed.

**For SRF projects, please note the EPA’s six Good Faith Efforts found in 40 CFR 33**

Filling out the Good Faith Efforts Form and providing Table B (if subcontracting is achieved) constitutes compliance with EPA’s six good faith efforts.

(1) Ensure MBE/WBEs are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities. For Indian Tribal, State and local Government recipients, this will include placing MBE/WBEs on solicitation lists and soliciting them whenever they are potential sources.

(2) Make information of forthcoming opportunities available to MBE/WBEs and arrange time for contracts and establish delivery schedules, where requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.

(3) Consider in the contracting process whether firms competing for large contracts could subcontract with MBE/WBEs. For Indian Tribal, State and local Government recipients, this will include dividing total requirements when economically feasible into smaller tasks or quantities in order to increase opportunities for participation by MBE/WBEs in the competitive process.

(4) Encourage contracting with a consortium of MBE/WBEs when a contract is too large for one of these firms to handle individually.

(5) Use the services and assistance of the SBA and the MBDA.

(6) If the prime contractor awards subcontracts, require the prime contractor to take the steps in subparagraphs (1)-(5) of this section.

**Pertinent State of North Carolina Administrative Code Regarding M/WBE Compliance. The provisions in this Compliance Supplement constitute compliance with the Rules below.**

Owner Requirements	01 NCAC 30I .0306
Contractor Requirements	01 NCAC 30I .0308

**Resources**

---

***Some sources for identifying MBE/WBE (DBE) firms***

- <https://www.ips.state.nc.us/vendor/SearchVendor.aspx> (NCDOA)
- <https://www.ebs.nc.gov/VendorDirectory/default.html> (NCDOT)
- [http://dsbs.sba.gov/dsbs/search/dsp\\_dsbs.cfm](http://dsbs.sba.gov/dsbs/search/dsp_dsbs.cfm) (US SBA)

***Some sources for finding minority trade papers for potential solicitation advertisements and Federal advertising options***

- <http://web.sba.gov/subnet/> (US SBA Subnet advertising website)
- <https://www.mbda.gov/> (US Dept. of Commerce)
- <https://ncadmin.nc.gov/businesses/hub> (NC HUB Office)

## Good Faith Efforts Form

---

*Attempts to provide subcontracting opportunities for MBE/WBE firms.*

Per 01 NCAC 30I .0101, 50 points must be claimed below by the bidder.

*(This is identical to State of NC Affidavit A)*

- 1 – (10 pts)** Contacted minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor, or available on State or local government maintained lists, at least 10 days before the bid date and notified them of the nature and scope of the work to be performed.
- 2 --(10 pts)** Made the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bids are due.
- 3 – (15 pts)** Broken down or combined elements of work into economically feasible units to facilitate minority participation.
- 4 – (10 pts)** Worked with minority trade, community, or contractor organizations identified by the Office of Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.
- 5 – (10 pts)** Attended prebid meetings scheduled by the public owner.
- 6 – (20 pts)** Provided assistance in getting required bonding or insurance or provided alternatives to bonding or insurance for subcontractors.
- 7 – (15 pts)** Negotiated in good faith with interested minority businesses and did not reject them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.
- 8 – (25 pts)** Provided assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisted minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.
- 9 – (20 pts)** Negotiated joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.
- 10 - (20 pts)** Provided quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.

*Results of Good Faith Efforts Undertaken (you must check one box below)*

- No subcontractors are being used for this contracted work. Fill out Table A listing only the Prime Contractor. (This statement takes the place of State of NC Affidavit B)
- Subcontractors are being used. Fill out Table A and B for each trade. **Each Table B lists 3.**
- Subcontractors are being used. If any Table B has fewer than 3 solicitations you must also advertise in an M/WBE trade paper and indicate what source of M/WBE firms you used (*must list at least one*). Some possible papers and sources of M/WBE firms are listed in the Instructions of this Supplement.

Name of the Trade Paper: \_\_\_\_\_

Submit proof of advertisement with package

M/WBE Sources:      Source: \_\_\_\_\_      Source: \_\_\_\_\_

Submit printouts from M/WBE source(s)

**Certification Statement and Affidavit of Contractor.**

The below affidavit constitutes compliance with 01NCAC 30I .0308(7)(a) and (b) and takes the place of State of North Carolina Affidavits C and D.

I have read the information in this compliance supplement and all information provided to the State in this package is accurate and true to the extent of my knowledge including the calculated percentages and the good faith efforts presented herein.

\_\_\_\_\_  
Prime Contractor Company Name (Print)

\_\_\_\_\_  
Prime Contractor Representative (Sign & Date)



State of \_\_\_\_\_, County of \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_

Notary Public \_\_\_\_\_

My Commission Expires \_\_\_\_\_

**Certification of Project Owner/Funding Applicant**

\_\_\_\_\_  
Funding Applicant (City, Town etc)

\_\_\_\_\_  
Applicant Authorized Representative (Sign & Date)

\_\_\_\_\_  
Division of Water Infrastructure Project Number

### Table A: Prime Contractor and list of selected subcontractors

List Prime and ALL of the selected subcontractors (both DBE's and non-DBE's) being used on the project. Each Trade listed on this sheet should have a completed Table B: Subcontract Solicitation List showing the DBE firms contacted and given opportunities to bid.

Company Name (list prime first then subs)	Company Address and Phone	Trade (Above) and Price (Below)	MBE or WBE and certifying agency <u>if applicable</u>	(State use only) Listed in EPLS as Debarred?
		\$		
		\$		
		\$		
		\$		

Calculate M/WBE utilization as a percent (00.00%) of the prime contract. Limited to 100% even if the Prime is a DBE.

<b>MBE and WBE subs total</b>	\$	_____ %
<b>Prime Contract Price</b>	\$	

Note: Table A substitutes for both the State of NC "Identification of Minority Participation" form and EPA Form 6100-4.

## Table B: Subcontract Solicitation List

Table B is required if:

- 1) Project is Federally funded (SRF) OR;
- 2) Project is a State Reserve Project or State Emergency Loan (SRP or SEL) and Utilization % on Table A is less than 10%
- 3)

**Trade: \_\_\_\_\_ (enter the trade being solicited, paving, hauling etc.)**

**List the firm being used on the project first. If three MBE or WBE firms are not listed, additional information must be provided showing advertisements and/or sources used to identify MBE/WBE subs.**

**Use as many of these sheets as are necessary to cover every trade being subbed out.**

Company Name	Company Address and Phone	MBE or WBE and certifying agency if applicable.	How was this firm contacted (email, letter, phone) and what was the result of the solicitation?*

\*Must submit copies of emails or letters. If phone calls were made this sheet can serve as documentation of calls.

## MBE/WBE (DBE) – Change or Add a Subcontractor Form

According to EPA guidance on 40 CFR 33.302

*If a DBE subcontractor fails to complete work under the subcontract for any reason, the recipient must require the prime contractor to employ the six good faith efforts described in §33.301 if soliciting a replacement subcontractor.*

Please provide the information below **if the subcontracted work in question was included in previously submitted good faith efforts documentation:**

Prime Contractor:

Subcontracted work:

Previous Subcontractor:

Reason this firm did not complete the work:

New subcontractor and DBE status:  MBE  WBE  N/A

If this is a new trade being subcontracted, or was not documented in the original Project Bid Information submittal to the State then good faith efforts to solicit a DBE firm must be documented. As the original DBE instructions indicate, please provide a Table B from those original instructions, showing all the DBE firms contacted to perform this work. If three (3) firms are not listed on Table B, then additionally you must submit proof of an advertisement in a minority trade paper and evidence that there were not three reasonably available firms in the work area. The EPA provides in 33.301(a) that good faith efforts are to be carried out "...to the fullest extent practicable...". If solicitations were not carried out due to being impracticable, please attach this explanation to this form.

**Please follow the steps below for new subcontracted work:**

Indicate the new trade being subcontracted:

Indicate the firm being used and DBE status:  MBE  WBE  N/A

Attach Table B

(For State Use) Is this sub debarred?  Yes  No

\_\_\_\_\_  
Project Owner/Applicant:

\_\_\_\_\_  
Project Number:

\_\_\_\_\_  
Signature of Prime Contractor's Representative

## NOTICE OF AWARD

Date of Issuance:

Owner: Town of Smithfield

Owner's Contract No.:

Engineer: Sykes Environmental Engineering, PLLC

Engineer's Project No.:

Project: Market Street Sewer Replacement

Contract Name: Market Street Sewer Replacement

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:

The Contract Price of the awarded Contract is: \$ \_\_\_\_\_.

[3] 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 [3] 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: Town of Smithfield  
Authorized Signature

By: \_\_\_\_\_

Title: \_\_\_\_\_

Copy: Engineer

### Acceptance of Notice

Receipt of the above Notice of Award is hereby acknowledged by \_\_\_\_\_

this the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

By: \_\_\_\_\_ Title: \_\_\_\_\_

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

THIS AGREEMENT is by and between Town of Smithfield (“Owner”) and  
\_\_\_\_\_ (“Contractor”).

Owner and Contractor hereby 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:

Replace-in-place existing 10-inch sewer with 18-inch C900 PVC; approximately 2,210 LF. Pipe replacement includes installation / replacement of 12 manholes. Installation of approximately 60 LF of 30-inch steel casing pipe underneath Market Street by bore-and-jack. All associated work including excavation, demolition, pavement cut and patch, bypass pumping, traffic control, cleanup, and restoration.

**ARTICLE 2 – THE PROJECT**

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows:

PS#11 & Outfall Improvements – Market Street Sewer Replacement

**ARTICLE 3 – ENGINEER**

3.01 The Owner has retained Sykes Environmental Engineering, PLLC (“Engineer”) to act as Owner’s representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

**ARTICLE 4 – CONTRACT TIMES**

4.01 *Time of the Essence*

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

4.02 *Contract Times: Days*

A. The Work will be substantially completed within **120 days** after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within **150 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 as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed

and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. 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):

1. Substantial Completion: Contractor shall pay Owner **\$750** for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner **\$750** for each day that expires after such time until the Work is completed and ready for final payment.
3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.
4. Milestones: Contractor shall pay Owner **\$750** for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for achievement of Milestone 1, until Milestone 1 is achieved.

#### **ARTICLE 5 – CONTRACT PRICE**

- 5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents the amounts that follow, subject to adjustment under the Contract:
- A. All specific cash allowances are included in the above price in accordance with Paragraph 13.02 of the General Conditions.
  - B. Total of Unit Price Work \$ \_\_\_\_\_
  - C. All Work, at the prices stated in Contractor's Bid, is 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 15 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 Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.
  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 Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract

- a. 95 percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and
  - b. 95 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
- B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 100 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less 200 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

#### 6.03 *Final Payment*

- A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 15.06.

### **ARTICLE 7 – INTEREST**

7.01 Not used.

### **ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS**

- 8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:
- A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
  - B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, 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 Laws and Regulations that may affect cost, progress, and performance of the Work.
  - D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
  - E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance

of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor's safety precautions and programs.

- F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no 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.
- G. 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.
- H. 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.
- I. 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 7, inclusive).
  - 2. Performance bond (pages 1 to 3, inclusive).
  - 3. Payment bond (pages 1 to 3, inclusive).
  - 4. Power of Attorney (pages 1 to 1, inclusive).
  - 5. Certificate of Insurance (pages 1 to 1, inclusive).
  - 6. General Conditions (pages 1 to 65, inclusive).
  - 7. Supplementary Conditions (pages 1 to 21, inclusive).
  - 8. Specifications as listed in the table of contents of the Project Manual.
  - 9. Drawings (not attached but incorporated by reference) consisting of 9 sheets with each sheet bearing the following general title: PS#11 & Outfall Improvements – Market Street Sewer Replacement [or] the Drawings listed on the attached sheet index.
  - 10. Addenda (numbers     to    , inclusive).
  - 11. Exhibits to this Agreement (enumerated as follows):
    - a. Contractor's Bid (pages 1 to 6, inclusive), including E-Verify Affidavit.
    - b. Notice of Award (pages 1 to 1, inclusive).
    - c. Documentation submitted by Contractor prior to Notice of Award.
    - d. Affidavits.
  - 12. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
    - a. Notice to Proceed.

- b. Work Change Directives.
  - c. Change Orders.
- 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 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. Unless expressly agreed to elsewhere in the Contract, 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, money that may become due and money that is 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 successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

### **10.04 Severability**

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

### **10.05 Contractor's Certifications**

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:
  - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
  - 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

10.06 E-Verify

- A. Contractor hereby acknowledges that "E-Verify" is the federal E-Verify program operated by the US Department of Homeland Security and other federal agencies which is used to verify the work authorization of newly hired employees pursuant to federal law and in accordance with Article 2, Chapter 64 of the North Carolina General Statutes. Contractor further acknowledges that all employers, as defined by Article 2, Chapter 64 of the North Carolina General Statutes, must use E-Verify and after hiring an employee to work in the United States, shall verify the work authorization of the employee through E-Verify in accordance with NCGS §64-26(a). Contractor hereby pledges, attests and warrants through execution of this Agreement that Contractor complies with the requirements of Article 2 of Chapter 64 of the North Carolina General Statutes and further pledges, attests and warrants that any subcontractors currently employed by or subsequently hired by Contractor shall comply with any and all E-Verify requirements. Failure to comply with the above requirements shall be considered a breach of this Agreement.

10.07 Iran Divestment Act Certification

- A. N.C.G.S. 147-86.60 prohibits the State of North Carolina, a North Carolina local government, or any other political subdivision of the State of North Carolina from contracting with any entity that is listed on the Final Divestment List created by the North Carolina State Treasurer pursuant to N.C.G.S. 147-86.58. N.C.G.S. 147-86.59 further requires that contractors with the State, a North Carolina local government, or any other political subdivision of the State of North Carolina must not utilize any subcontractor found on the State Treasurer's Final Divestment List. As of the date of execution of this Agreement Contractor hereby certifies that it is not listed on the Final Divestment List created by the North Carolina State Treasurer and that Contractor will not utilize any subcontractors found on the Final Divestment List.

10.08 Anti-Human Trafficking

- A. The Contractor warrants and agrees that no labor supplied by the Contractor or the Contractor's subcontractors in the performance of this Agreement shall be obtained by means of deception, coercion, intimidation or force, or otherwise in violation of North Carolina law, specifically Article 10A, Subchapter 3 of Chapter 14 of the North Carolina General Statutes, Human Trafficking.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on \_\_\_\_\_ (which is the Effective Date of the Contract).

OWNER:

CONTRACTOR:

Town of Smithfield \_\_\_\_\_

\_\_\_\_\_

By: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

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

Attest: \_\_\_\_\_

Attest: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Address for giving notices:

Address for giving notices:

350 East Market Street \_\_\_\_\_

\_\_\_\_\_

Smithfield, NC 27577 \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

License No.: \_\_\_\_\_  
*(where applicable)*

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

*This instrument has been preaudited in the manner required by the Local Government Budget and Fiscal Control Act.*

\_\_\_\_\_  
Finance Director

**AMENDMENT TO BOILER PLATE CONTRACT**

(131 East Market Street, Smithfield)

THIS AMENDMENT TO CONTRACT ("Amendment") is made as of \_\_\_\_\_, 2024, by and among \_\_\_\_\_ ("Contractor"), and the Town of Smithfield ("Town").

**RECITALS:**

- A. Contractor desires to enter into a Contract with Town according to a form supplied, a boiler plate contract, by Contractor and used in its normal business, which agreement is hereinafter referenced as the Contract and dated approximately simultaneously with this Amendment.
- B. It is efficient for Town to enter small contracts such as this on forms supplied by Contractor so as to avoid the time and expense of more formally drafted contracts but Town desires to preserve for itself certain basic contractual provisions in all contracts.
- C. The Parties hereto have therefore agreed to the following Amendment to Contract.

**AGREEMENT:**

NOW, THEREFORE, in consideration of the mutual promises contained herein, the parties amend the Contract signed approximately simultaneously herewith and attached hereto by inserting the following provisions which shall be additional provisions of the Contract and shall control over any other provisions of the Contract that might appear contradictory hereto or appear to create ambiguities when read with the provisions agreed to herein.

1. Miscellaneous:

- a. Clause Control. Due to the volume of vender and independent contractor agreements submitted to the Town of Smithfield that would be too time consuming to redraft, this miscellaneous paragraph (subparagraphs a-n) is being inserted in Town Contracts and the provisions of this miscellaneous paragraph will control over all other provisions of the contract.
- b. Merger and Modification. This instrument constitutes the entire agreement between the parties and supersedes any and all prior agreements, arrangements and understandings, whether oral or written, between the parties. All negotiations, correspondence and memorandums passed between the parties hereto are merged herein and this agreement cancels and supersedes all prior agreements between the parties with reference thereto. No modification of this instrument shall be binding unless in writing, attached hereto, and signed by the party against whom or which it is sought to be enforced.
- c. Waiver. No waiver of any right or remedy shall be effective unless in writing and nevertheless shall not operate as a waiver of any other right or remedy or of the same right or remedy on a future occasion.
- d. Caption and Words. The captions and headings contained herein are solely for convenience and reference and do not constitute a part of this instrument. All words and phrases in this instrument shall be construed to include the singular and plural number, and the masculine, feminine or neuter gender, as the context requires.
- e. Binding Effect. This instrument shall be binding upon and shall insure to the benefit of the parties and their heirs, successors and permitted assigns.
- f. North Carolina Law. This instrument shall be construed in accordance with the laws of North Carolina without giving effect to its conflict of laws principles.

- g. Forum Selection. In any action arising from or to enforce this agreement, the parties agree (a) to the jurisdiction and venue exclusively of the state courts in Johnston County, North Carolina.
- h. Limitation of Liability. No party will be liable to another party, or to the extent this agreement may limit the same to any third party, for any special, indirect, incidental, exemplary, consequential or punitive damages arising out of or relating to this agreement, whether the claims alleges tortious conduct (including negligence) or any other legal theory.
- i. Two Originals. This instrument may be executed in two (2) or more counterparts as the parties may desire, and each counterpart shall constitute an original.
- j. Follow Through. Each party will execute and deliver all additional documents and do all such other acts as may be reasonably necessary to carry out the provisions and intent of this instrument.
- k. Authority. Any corporate party or business entities and its designated partners, venturers, or officers have full and complete authority to sell, assign and convey the contracts and assume the obligations referred to herein; said corporations or entities are in good standing under North Carolina law.
- l. Severability. If any one or more of the terms, provisions, covenants or restrictions of this agreement shall be determined by a Court of competent jurisdiction to be invalid, void or unenforceable, the remainder of the terms, provisions, covenants and restrictions of this Contract shall remain in full force and effect and shall in no way be affected, impaired or invalidated. If, moreover, any one or more of the provisions contained in this Contract shall for any reason be determined by a Court of competent jurisdiction to be excessively broad as to duration, geographical scope, activity or subject, it shall be construed, by limiting or reducing it, so as to be enforceable to the extent compatible with the then applicable law.
- m. Contract Termination. The Town may terminate this contract without cause on 5 days' notice.
- n. Pre-Audit Certification. This instrument has been preaudited in the manner required by the Local Government Budget and Fiscal Control Act to assure compliance with NCGS 159-28.

\_\_\_\_\_  
Greg Siler, Town Budget Officer

**IN WITNESS WHEREOF**, the parties hereto have executed this First Amendment to Agreement as of the day and year first above written.

**Town:**

By: \_\_\_\_\_  
**Michael. L. Scott, Town manager**

**CONTRACTOR:** \_\_\_\_\_

By: \_\_\_\_\_

Business Name: \_\_\_\_\_

**NOTICE TO PROCEED**

Owner: Town of Smithfield

Owner's Contract No.:

Contractor:

Contractor's Project No.:

Engineer: Sykes Environmental Engineering, PLLC

Engineer's Project No.:

Project: Market Street Sewer Replacement

Contract Name: Market Street Sewer Replacement

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:

Owner: Town of Smithfield  
Authorized Signature

By: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date Issued: \_\_\_\_\_

Copy: Engineer

**Acceptance of Notice**

Receipt of the Notice of Proceed is hereby acknowledged by \_\_\_\_\_

this the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

By: \_\_\_\_\_

Title: \_\_\_\_\_

## PERFORMANCE BOND

CONTRACTOR *(name and address)*:

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

OWNER *(name and address)*: Town of Smithfield  
350 East Market Street  
Smithfield, NC 27577

### 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

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

\_\_\_\_\_ *(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 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)*: Town of Smithfield  
350 East Market Street  
Smithfield, NC 27577

## 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

\_\_\_\_\_ *(seal)*

Contractor's Name and Corporate Seal

\_\_\_\_\_ *(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

EJCDC® C-615, Payment Bond

Copyright © 2013 National Society of Professional Engineers, American Council of Engineering Companies,  
and American Society of Civil Engineers. All rights reserved. 1 of 3

**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;
  - 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.
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.
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:

PAGE FOR ATTACHING

POWER OF ATTORNEY

PAGE FOR ATTACHING  
CERTIFICATE OF INSURANCE

TOWN OF SMITHFIELD  
CHANGE ORDER

No. \_\_\_\_\_

PROJECT \_\_\_\_\_

Date of Issuance \_\_\_\_\_ Effective Date \_\_\_\_\_

OWNER \_\_\_\_\_ Town of Smithfield

OWNER'S Contract No. \_\_\_\_\_ Project No. \_\_\_\_\_

CONTRACTOR \_\_\_\_\_ ENGINEER \_\_\_\_\_

You are directed to make the following changes in the Contract Documents, as indicated in the attached Cost Proposal:

Description: (Enter description here)

Reason for Change: (Enter details here)

Attachments: (Include Attachments, as needed)

<b>CHANGE IN CONTRACT PRICE:</b> <i>Original Contract Price:</i> \$ _____.	<b>CHANGE IN CONTRACT TIMES:</b> <i>Original Contract Times</i> Substantial Completion: _____. Ready for final payment: _____.
<i>Net changes from previous Change Orders No. 1 to 2</i> \$ _____.	<i>Net change from previous Change Orders No.1 to 2</i> _____ Days.
<i>Contract Price prior to this Change Order</i> \$ _____.	<i>Contract Times prior to this Change Order</i> Substantial Completion: _____. Ready for final payment: _____.
<i>Net Increase/Decrease of this Change Order</i> \$ _____.	<i>Net Increase/Decrease of this Change Order</i> Substantial Completion: <u>0</u> Days . Ready for final payment: <u>0</u> Days .
<i>Contract Price with all Approved Change Orders</i> \$ _____.	<i>Contract Times with all approved Change Orders</i> Substantial Completion: _____. Ready for final payment: _____.

It is understood and agreed that the change in Contract Price stated above is the Contractor's full, final, and sole consideration for this Change Order, and that the Contract Price will not be changed further as a result of the circumstances giving rise to this Change Order. Signature below indicates agreement to waive any past, present or future claims for direct, indirect, impact, delay, inefficiency, acceleration, and increased staff, general conditions, and home office costs in any way associated with or arising from this Change Order.

RECOMMENDED:

APPROVED:

ACCEPTED:

By: \_\_\_\_\_  
Engineer (Authorized Signature)

By: \_\_\_\_\_  
Owner (Authorized Signature)

By: \_\_\_\_\_  
Contractor (Authorized Signature)

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act.

By: \_\_\_\_\_  
( Finance Director) Date

# CERTIFICATE OF SUBSTANTIAL COMPLETION

---

PROJECT \_\_\_\_\_

DATE OF ISSUANCE \_\_\_\_\_

---

OWNER Town of Smithfield

OWNER'S CONTRACT NO. \_\_\_\_\_

CONTRACTOR \_\_\_\_\_ ENGINEER \_\_\_\_\_

---

This Certificate of Substantial Completion applies to all Work under the Contract Documents or to the following specified parts thereof:

TO Town of Smithfield  
*Owner*

And TO \_\_\_\_\_  
*Contractor*

---

The Work to which this Certificate applies has been inspected by authorized representatives of OWNER, CONTRACTOR, and ENGINEER, and that Work is hereby declared to be substantially complete in accordance with the Contract Documents on

\_\_\_\_\_  
*Date of Substantial Completion*

A tentative list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item in it does not alter the responsibility of CONTRACTOR to complete all the Work in accordance with the Contract Documents. The items in the tentative list shall be completed or corrected by CONTRACTOR within 30 days of the above date of Substantial Completion.

From the date of Substantial Completion, the responsibilities between OWNER and CONTRACTOR for security, operation, safety, maintenance, heat, utilities, insurance and warranties and guarantees shall be as follows:

RESPONSIBILITIES:

OWNER \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

CONTRACTOR

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The following documents are attached to and made a part of this Certificate:

Contract  
Deficiency List dated

*(For items to be attached, see definition of Substantial Completion as supplemented and other specifically noted conditions precedent to achieving Substantial Completion as required by Contract Documents.)*

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 Documents.

Executed by ENGINEER on \_\_\_\_\_  
*Engineer*

By: \_\_\_\_\_  
*Authorized Signature*

CONTRACTOR accepts this Certificate of Substantial Completion on \_\_\_\_\_  
*Date*

\_\_\_\_\_  
*Contractor*

By: \_\_\_\_\_

OWNER accepts this Certificate of Substantial Completion on \_\_\_\_\_  
*Date*

Town of Smithfield  
*Owner*

By: \_\_\_\_\_

CERTIFICATE OF FINAL PAYMENT

DATE: \_\_\_\_\_

To: Contractor \_\_\_\_\_  
 Address \_\_\_\_\_  
 Owner \_\_\_\_\_  
 Address \_\_\_\_\_  
 Project \_\_\_\_\_ Project No. \_\_\_\_\_  
 Date of Contract \_\_\_\_\_ Original Contract Price \_\_\_\_\_

The work performed under this Contract has been inspected by authorized representatives of the Owner, Contractor, Engineer, and Regulatory Agencies and is hereby declared to be completed as of the date shown below:

Date of Completion \_\_\_\_\_

Attached is the Contractor's Waiver of Liens Affidavit and Consent of Surety.

The Contractor and his Sureties shall guarantee all work against defects as specified in the Contract for one year.

End of Guarantee Period \_\_\_\_\_

The final Payment due to the Contractor by the Owner for the completed project is \$ \_\_\_\_\_ payable within 30 days after filing of this Final Certificate of Payment. The Final Total Contract Price is \$ \_\_\_\_\_

REMARKS:

Recommended by Engineer \_\_\_\_\_

Accepted by Contractor \_\_\_\_\_

Approved by Owner \_\_\_\_\_

**CONTRACTOR'S  
AFFIDAVIT OF  
RELEASE OF LIENS**  
*EJCDC C-700*

OWNER  
ENGINEER  
CONTRACTOR  
SURETY  
OTHER

TO (Owner)

PROJECT NO:  
CONTRACT FOR:

PROJECT:

CONTRACT DATE:

State of:

County of:

The undersigned, pursuant to Article 14 of the General Conditions of the Contract for Construction EJCDC C-700 Standard Conditions of the Construction Contract, hereby certifies that to the best of his knowledge, information and belief, except as listed below, the Releases or Waivers of Lien attached hereto include the Contractor, all Subcontractors, all suppliers of materials and equipment, and all performers of Work, labor or services who have or may have liens against any property of the Owner arising in any manner out of the performance of the Contract referenced above.

EXCEPTIONS: (If none, write "None". If required by the Owner, the Contractor shall furnish bond satisfactory to the Owner for each exception.)

SUPPORTING DOCUMENTS ATTACHED HERETO:

CONTRACTOR:

1. Contractor's Release or Waiver of Liens, conditional upon receipt of final payment.
2. Separate Releases or Waivers of Liens from Subcontractors and material and equipment suppliers, to the extent required by the Owner, accompanied by a list thereof.
3. Consent of Surety to Final Payment.

Subscribed and sworn to before me this  
day of

Notary Public:

My Commission Expires:

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

## STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared By



Endorsed By



Copyright© 2018

National Society of Professional Engineers  
1420 King Street, Alexandria, VA 22314-2794  
(703) 684-2882  
[www.nspe.org](http://www.nspe.org)

American Council of Engineering Companies  
1015 15th Street N.W., Washington, DC 20005  
(202) 347-7474  
[www.acec.org](http://www.acec.org)

American Society of Civil Engineers  
1801 Alexander Bell Drive, Reston, VA 20191-4400  
(800) 548-2723  
[www.asce.org](http://www.asce.org)

The copyright for this EJCDC document is owned jointly by the three sponsoring organizations listed above. The National Society of Professional Engineers is the Copyright Administrator for the EJCDC documents; please direct all inquiries regarding EJCDC copyrights to NSPE.

NOTE: EJCDC publications may be purchased at [www.ejcdc.org](http://www.ejcdc.org), or from any of the sponsoring organizations above.

# **GUIDELINES FOR USE OF EJCDC® C-700, STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT**

## **1.0 PURPOSE AND INTENDED USE OF THE DOCUMENT**

EJCDC® C-700, Standard General Conditions of the Construction Contract (2018), is the foundation document for the EJCDC Construction Series. The General Conditions define the basic rights, responsibilities, risk allocations, and contractual relationship of the Owner and Contractor, and establish how the Contract is to be administered.

## **2.0 OTHER DOCUMENTS**

EJCDC documents are intended to be used as a system and changes in one EJCDC document may require a corresponding change in other documents. Other EJCDC documents may also serve as a reference to provide insight or guidance for the preparation of this document.

These General Conditions have been prepared for use with either EJCDC® C-520, Agreement Between Owner and Contractor for Construction Contract (Stipulated Price), or EJCDC® C-525, Agreement Between Owner and Contractor for Construction Contract (Cost-Plus-Fee) (2018 Editions). The provisions of the General Conditions and the Agreement are interrelated, and a change in one may necessitate a change in the other.

To prepare supplementary conditions that are coordinated with the General Conditions, use EJCDC® C-800, Supplementary Conditions of the Construction Contract (2018).

The full EJCDC Construction series of documents is discussed in the EJCDC® C-001, Commentary on the 2018 EJCDC Construction Documents (2018).

## **3.0 ORGANIZATION OF INFORMATION**

All parties involved in a construction project benefit significantly from a standardized approach in the location of subject matter throughout the documents. Experience confirms the danger of addressing the same subject matter in more than one location; doing so frequently leads to confusion and unanticipated legal consequences. Careful attention should be given to the guidance provided in EJCDC® N-122/AIA® A521, Uniform Location of Subject Matter (2012 Edition) when preparing documents. EJCDC® N-122/AIA® A521 is available at no charge from the EJCDC website, [www.ejcdc.org](http://www.ejcdc.org), and from the websites of EJCDC's sponsoring organizations.

If CSI MasterFormat™ is used for organizing the Project Manual, consult CSI MasterFormat™ for the appropriate document number (e.g., under 00 11 00, Advertisements and Invitations), and accordingly number the document and its pages.

## **4.0 EDITING THIS DOCUMENT**

Remove these Guidelines for Use. Some users may also prefer to remove the two cover pages.

Although it is permissible to revise the Standard EJCDC Text of C-700 (the content beginning at page 1 and continuing to the end), it is common practice to leave the Standard EJCDC Text of C-700 intact and unaltered, with modifications and supplementation of C-700's provisions set forth in EJCDC® C-800, Supplementary Conditions of the Construction Contract (2018). If the Standard Text itself is revised, the

user must comply with the terms of the License Agreement, Paragraph 4.0, Document-Specific Provisions, concerning the tracking or highlighting of revisions. The following is a summary of the relevant License Agreement provisions:

1. The term “Standard EJCDC Text” for C-700 refers to all text prepared by EJCDC in the main body of the document. Document covers, logos, footers, instructions, or copyright notices are not Standard EJCDC Text for this purpose.
2. During the drafting or negotiating process for C-700, it is important that the two contracting parties are both aware of any changes that have been made to the Standard EJCDC Text. Thus, if a draft or version of C-700 purports to be or appears to be an EJCDC document, the user must plainly show all changes to the Standard EJCDC Text, using “Track Changes” (redline/strikeout), highlighting, or other means of clearly indicating additions and deletions.
3. If C-700 has been revised or altered and is subsequently presented to third parties (such as potential bidders, grant agencies, lenders, or sureties) as an EJCDC document, then the changes to the Standard EJCDC Text must be shown, or the third parties must receive access to a version that shows the changes.
4. Once the document is ready to be finalized (and if applicable executed by the contracting parties), it is no longer necessary to continue to show changes to the Standard EJCDC Text. The user may produce a final version of the document in a format in which all changes are accepted, and the document at that point does not need to include any “Track Changes,” redline/strikeout, highlighting, or other indication of additions and deletions to the Standard EJCDC Text.

## **5.0 LICENSE AGREEMENT**

This document is subject to the terms and conditions of the **License Agreement, 2018 EJCDC® Construction Series Documents**. A copy of the License Agreement was furnished at the time of purchase of this document, and is available for review at [www.ejcdc.org](http://www.ejcdc.org) and the websites of EJCDC’s sponsoring organizations.

# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

## TABLE OF CONTENTS

	Page
Article 1—Definitions and Terminology.....	1
1.01 Defined Terms.....	1
1.02 Terminology .....	6
Article 2—Preliminary Matters.....	7
2.01 Delivery of Performance and Payment Bonds; Evidence of Insurance.....	7
2.02 Copies of Documents .....	7
2.03 Before Starting Construction .....	7
2.04 Preconstruction Conference; Designation of Authorized Representatives.....	8
2.05 Acceptance of Schedules .....	8
2.06 Electronic Transmittals .....	8
Article 3—Contract Documents: Intent, Requirements, Reuse.....	9
3.01 Intent.....	9
3.02 Reference Standards.....	9
3.03 Reporting and Resolving Discrepancies .....	10
3.04 Requirements of the Contract Documents.....	10
3.05 Reuse of Documents.....	11
Article 4—Commencement and Progress of the Work .....	11
4.01 Commencement of Contract Times; Notice to Proceed.....	11
4.02 Starting the Work.....	11
4.03 Reference Points .....	11
4.04 Progress Schedule.....	12
4.05 Delays in Contractor’s Progress .....	12
Article 5—Site; Subsurface and Physical Conditions; Hazardous Environmental Conditions .....	13
5.01 Availability of Lands .....	13
5.02 Use of Site and Other Areas.....	14
5.03 Subsurface and Physical Conditions.....	15
5.04 Differing Subsurface or Physical Conditions .....	16

5.05	Underground Facilities .....	17
5.06	Hazardous Environmental Conditions at Site .....	19
Article 6—Bonds and Insurance.....		21
6.01	Performance, Payment, and Other Bonds.....	21
6.02	Insurance—General Provisions.....	22
6.03	Contractor’s Insurance.....	24
6.04	Builder’s Risk and Other Property Insurance.....	25
6.05	Property Losses; Subrogation .....	25
6.06	Receipt and Application of Property Insurance Proceeds .....	27
Article 7—Contractor’s Responsibilities .....		27
7.01	Contractor’s Means and Methods of Construction .....	27
7.02	Supervision and Superintendence .....	27
7.03	Labor; Working Hours .....	27
7.04	Services, Materials, and Equipment .....	28
7.05	“Or Equals”.....	28
7.06	Substitutes .....	29
7.07	Concerning Subcontractors and Suppliers.....	31
7.08	Patent Fees and Royalties.....	32
7.09	Permits .....	33
7.10	Taxes .....	33
7.11	Laws and Regulations.....	33
7.12	Record Documents.....	33
7.13	Safety and Protection .....	34
7.14	Hazard Communication Programs .....	35
7.15	Emergencies.....	35
7.16	Submittals .....	35
7.17	Contractor’s General Warranty and Guarantee .....	38
7.18	Indemnification .....	39
7.19	Delegation of Professional Design Services .....	39
Article 8—Other Work at the Site.....		40
8.01	Other Work .....	40
8.02	Coordination .....	41
8.03	Legal Relationships.....	41

Article 9—Owner’s Responsibilities .....	42
9.01 Communications to Contractor .....	42
9.02 Replacement of Engineer .....	42
9.03 Furnish Data .....	42
9.04 Pay When Due.....	42
9.05 Lands and Easements; Reports, Tests, and Drawings.....	43
9.06 Insurance.....	43
9.07 Change Orders .....	43
9.08 Inspections, Tests, and Approvals.....	43
9.09 Limitations on Owner’s Responsibilities .....	43
9.10 Undisclosed Hazardous Environmental Condition.....	43
9.11 Evidence of Financial Arrangements.....	43
9.12 Safety Programs .....	43
Article 10—Engineer’s Status During Construction .....	44
10.01 Owner’s Representative.....	44
10.02 Visits to Site.....	44
10.03 Resident Project Representative.....	44
10.04 Engineer’s Authority .....	44
10.05 Determinations for Unit Price Work .....	45
10.06 Decisions on Requirements of Contract Documents and Acceptability of Work .....	45
10.07 Limitations on Engineer’s Authority and Responsibilities .....	45
10.08 Compliance with Safety Program.....	45
Article 11—Changes to the Contract .....	46
11.01 Amending and Supplementing the Contract .....	46
11.02 Change Orders .....	46
11.03 Work Change Directives.....	46
11.04 Field Orders.....	47
11.05 Owner-Authorized Changes in the Work .....	47
11.06 Unauthorized Changes in the Work.....	47
11.07 Change of Contract Price .....	47
11.08 Change of Contract Times.....	49
11.09 Change Proposals.....	49
11.10 Notification to Surety.....	50

Article 12—Claims.....	50
12.01    Claims.....	50
Article 13—Cost of the Work; Allowances; Unit Price Work .....	51
13.01    Cost of the Work .....	51
13.02    Allowances .....	55
13.03    Unit Price Work.....	55
Article 14—Tests and Inspections; Correction, Removal, or Acceptance of Defective Work .....	56
14.01    Access to Work.....	56
14.02    Tests, Inspections, and Approvals.....	56
14.03    Defective Work .....	57
14.04    Acceptance of Defective Work.....	58
14.05    Uncovering Work .....	58
14.06    Owner May Stop the Work .....	58
14.07    Owner May Correct Defective Work.....	59
Article 15—Payments to Contractor; Set-Offs; Completion; Correction Period .....	59
15.01    Progress Payments.....	59
15.02    Contractor’s Warranty of Title .....	62
15.03    Substantial Completion.....	62
15.04    Partial Use or Occupancy .....	63
15.05    Final Inspection .....	64
15.06    Final Payment.....	64
15.07    Waiver of Claims .....	65
15.08    Correction Period .....	66
Article 16—Suspension of Work and Termination .....	67
16.01    Owner May Suspend Work .....	67
16.02    Owner May Terminate for Cause.....	67
16.03    Owner May Terminate for Convenience.....	68
16.04    Contractor May Stop Work or Terminate .....	68
Article 17—Final Resolution of Disputes .....	69
17.01    Methods and Procedures.....	69
Article 18—Miscellaneous .....	69
18.01    Giving Notice .....	69
18.02    Computation of Times.....	69

18.03 Cumulative Remedies ..... 70  
18.04 Limitation of Damages ..... 70  
18.05 No Waiver ..... 70  
18.06 Survival of Obligations ..... 70  
18.07 Controlling Law ..... 70  
18.08 Assignment of Contract..... 70  
18.09 Successors and Assigns ..... 70  
18.10 Headings..... 70

# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

## ARTICLE 1—DEFINITIONS AND TERMINOLOGY

### 1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. 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, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
  3. *Application for Payment*—The document prepared by Contractor, in a form acceptable to Engineer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
  4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
  5. *Bidder*—An individual or entity that submits a Bid to Owner.
  6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
  7. *Bidding Requirements*—The Advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
  8. *Change Order*—A document 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, or other revision to the Contract, issued on or after the Effective Date of the Contract.
  9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
  10. *Claim*
    - a. A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment of Contract Price or Contract Times; contesting an initial decision by Engineer concerning the

- requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract.
- b. A demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal, or seeking resolution of a contractual issue that Engineer has declined to address.
  - c. A demand or assertion by Owner or Contractor, duly submitted in compliance with the procedural requirements set forth herein, made pursuant to Paragraph 12.01.A.4, concerning disputes arising after Engineer has issued a recommendation of final payment.
  - d. A demand for money or services by a third party is not a Claim.
11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
  12. *Contract*—The entire and integrated written contract between Owner and Contractor concerning the Work.
  13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
  14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.
  15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
  16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
  17. *Cost of the Work*—See Paragraph 13.01 for definition.
  18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
  19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
  20. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.
  21. *Electronic Means*—Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or communication of Electronic Documents; (b) the documentation of transmissions, including sending and receipt; (c) printing of the transmitted Electronic Document by the

recipient; (d) the storage and archiving of the Electronic Document by sender and recipient; and (e) the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

22. *Engineer*—The individual or entity named as such in the Agreement.
23. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
24. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto.
  - a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.
  - b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.
  - c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.
25. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
26. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
27. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date, or by a time prior to Substantial Completion of all the Work.
28. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.
29. *Notice to Proceed*—A written notice 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.
30. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
31. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising Contractor's plan to accomplish the Work within the Contract Times.
32. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.

33. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative (RPR) includes any assistants or field staff of Resident Project Representative.
34. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
35. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals.
36. *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.
37. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
38. *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, and such other lands or areas furnished by Owner which are designated for the use of Contractor.
39. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
40. *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.
41. *Submittal*—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers’ instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.
42. *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 of such Work.

43. *Successful Bidder*—The Bidder to which the Owner makes an award of contract.
44. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
45. *Supplier*—A manufacturer, fabricator, supplier, distributor, 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 a Subcontractor.
46. *Technical Data*
- a. Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (1) existing subsurface conditions at or adjacent to the Site, or existing physical conditions at or adjacent to the Site including existing surface or subsurface structures (except Underground Facilities) or (2) Hazardous Environmental Conditions at the Site.
  - b. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then Technical Data is defined, with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06, as the data contained in boring logs, recorded measurements of subsurface water levels, assessments of the condition of subsurface facilities, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical, environmental, or other Site or facilities conditions report prepared for the Project and made available to Contractor.
  - c. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data, and instead Underground Facilities are shown or indicated on the Drawings.
47. *Underground Facilities*—All active or not-in-service underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. An abandoned facility or system is not an Underground Facility.
48. *Unit Price Work*—Work to be paid for on the basis of unit prices.
49. *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; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
50. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

## 1.02 Terminology

- A. The words and terms discussed in Paragraphs 1.02.B, C, D, and E are not defined terms that require initial capital letters, but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:* 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 information in the Contract Documents and with the design concept of the 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 Article 10 or any other provision of the Contract Documents.
- C. *Day:* The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:* The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
1. does not conform to the Contract Documents;
  2. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
  3. 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 15.03 or Paragraph 15.04).
- E. *Furnish, Install, Perform, Provide*
1. The word “furnish,” when used in connection with services, materials, or equipment, means 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, means 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, means to furnish and install said services, materials, or equipment complete and ready for intended use.
  4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

- F. *Contract Price or Contract Times*: References to a change in “Contract Price or Contract Times” or “Contract Times or Contract Price” or similar, indicate that such change applies to (1) Contract Price, (2) Contract Times, or (3) both Contract Price and Contract Times, as warranted, even if the term “or both” is not expressed.
- G. Unless stated otherwise in the Contract Documents, words or phrases that 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 Performance and Payment Bonds; Evidence of Insurance***

- A. *Performance and Payment Bonds*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner the performance bond and payment bond (if the Contract requires Contractor to furnish such bonds).
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each additional insured (as identified in the Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Contractor in accordance with Article 6, except to the extent the Supplementary Conditions expressly establish other dates for delivery of specific insurance policies.
- C. *Evidence of Owner’s Insurance*: After receipt of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each additional insured (as identified in the Contract), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

### **2.02 *Copies of Documents***

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

### **2.03 *Before Starting Construction***

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise required by the Contract Documents), 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;
  - 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.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- 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 2.03.A, procedures for handling Shop Drawings, Samples, and other Submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *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 the schedules submitted in accordance with Paragraph 2.03.A. No progress payment will 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 the component parts of the Work.
  - 4. If a schedule is not acceptable, Contractor will have an additional 10 days to revise and resubmit the schedule.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may send, and shall accept, Electronic Documents transmitted by Electronic Means.
- B. If the Contract does not establish protocols for Electronic Means, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

## ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

### 3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one Contract Document 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.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.
- F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Owner and Contractor, which agree that the Contract Documents will 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.
- G. Nothing in the Contract Documents creates:
  - 1. any contractual relationship between Owner or Engineer and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or
  - 2. any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity, except as may otherwise be required by Laws and Regulations.

### 3.02 *Reference Standards*

- A. *Standards Specifications, Codes, Laws and Regulations*
  - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, means the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract 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, reference standard, or code, and no instruction of a Supplier, will be effective to change the duties or responsibilities of Owner, Contractor, or Engineer from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner or Engineer 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 part of the Contract Documents prepared by or for Engineer.

### 3.03 *Reporting and Resolving Discrepancies*

#### A. *Reporting Discrepancies*

1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.
2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then 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 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.
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 had actual knowledge thereof.

#### B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
  - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); 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 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer in writing all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work.

- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly notify Owner and Contractor in writing that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

### 3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers 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 its consultants, including electronic media versions, or reuse any 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 adaptation by Engineer; or
  - 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein precludes Contractor from retaining copies of the Contract Documents for record purposes.

## **ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK**

### 4.01 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the 30th day after the Effective Date of the Contract 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 Contract. In no event will the Contract Times commence to run later than the 60th day after the day of Bid opening or the 30th day after the Effective Date of the Contract, whichever date is earlier.

### 4.02 *Starting the Work*

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

### 4.03 *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.

#### 4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 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 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
  - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times must be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work will be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

#### 4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, 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 Contract Price or Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Such an adjustment will be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
  - 1. Severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
  - 2. Abnormal weather conditions;
  - 3. Acts or failures to act of third-party utility owners or other third-party entities (other than those third-party utility owners or other third-party entities performing other work at or adjacent to the Site as arranged by or under contract with Owner, as contemplated in Article 8); and
  - 4. Acts of war or terrorism.

- D. Contractor's entitlement to an adjustment of Contract Times or Contract Price is limited as follows:
1. Contractor's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.
  2. Contractor shall not be entitled to an adjustment in Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor. Such a concurrent delay by Contractor shall not preclude an adjustment of Contract Times to which Contractor is otherwise entitled.
  3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 11.
- E. Each Contractor request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:
1. The circumstances that form the basis for the requested adjustment;
  2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;
  3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;
  4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and
  5. The impact on Contract Price, in accordance with the provisions of Paragraph 11.07.
- Contractor shall also furnish such additional supporting documentation as Owner or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work.
- F. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5, together with the provisions of Paragraphs 4.05.D and 4.05.E.
- G. Paragraph 8.03 addresses delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

## **ARTICLE 5—SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS**

### **5.01 *Availability of Lands***

- A. Owner shall furnish the Site. Owner shall notify Contractor in writing 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.

- 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 permanent improvements are to be made 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.

## 5.02 *Use of Site and Other Areas*

### A. *Limitation on Use of Site and Other Areas*

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas, or to improvements, structures, utilities, or similar facilities located at such adjacent lands or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
  2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.13, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or in a court of competent jurisdiction; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against any such claim, and against all 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 directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.
- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris will 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 and adjacent areas 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 of 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 structures or land to stresses or pressures that will endanger them.

### 5.03 *Subsurface and Physical Conditions*

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

1. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data;
2. Those drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data; and
3. Technical Data contained in such reports and drawings.

- B. *Underground Facilities:* Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05, and not in the drawings referred to in Paragraph 5.03.A. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

- C. *Reliance by Contractor on Technical Data:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b.

- D. *Limitations of Other Data and Documents:* Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, 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;
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings;
3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner's archival documents concerning the Site; or
4. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

#### 5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site:
1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate;
  2. is of such a nature as to require a change in the Drawings or Specifications;
  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 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine whether it is necessary for Owner to obtain additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- E. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, 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 fall within any one or more of the categories described in Paragraph 5.04.A;
  - 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 Paragraph 13.03; and,
  - c. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
- a. Contractor knew of the existence of such condition at the time Contractor made a 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 otherwise;
  - b. The existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
  - c. Contractor failed to give the written notice required by Paragraph 5.04.A.
3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.
- F. *Underground Facilities; Hazardous Environmental Conditions*: Paragraph 5.05 governs rights and responsibilities regarding the presence or location of Underground Facilities. Paragraph 5.06 governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs 5.03 and 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

#### 5.05 *Underground Facilities*

- A. *Contractor's Responsibilities*: Unless it is otherwise expressly provided in the Supplementary Conditions, the cost of all of the following are included in the Contract Price, and Contractor shall have full responsibility for:
1. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
  2. complying with applicable state and local utility damage prevention Laws and Regulations;

3. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;
  4. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
  5. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated on the Drawings, or was not shown or indicated on the Drawings with reasonable accuracy, then 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 7.15), notify Owner and Engineer in writing regarding such Underground Facility.
- C. *Engineer's Review:* Engineer will:
1. promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy;
  2. identify and communicate with the owner of the Underground Facility; prepare recommendations to Owner (and if necessary issue any preliminary instructions to Contractor) regarding the Contractor's resumption of Work in connection with the Underground Facility in question;
  3. obtain any pertinent cost or schedule information from Contractor; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and
  4. advise Owner in writing of Engineer's findings, conclusions, and recommendations.

During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the Underground Facility may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the Underground Facility in question and conditions affected by its presence have been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- F. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown

or indicated on the Drawings, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

- a. 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 Paragraph 13.03;
  - b. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and
  - c. Contractor gave the notice required in Paragraph 5.05.B.
2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
  3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.
  4. The information and data shown or indicated on the Drawings with respect to existing Underground Facilities at the Site is based on information and data (a) furnished by the owners of such Underground Facilities, or by others, (b) obtained from available records, or (c) gathered in an investigation conducted in accordance with the current edition of ASCE 38, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, by the American Society of Civil Engineers. If such information or data is incorrect or incomplete, Contractor's remedies are limited to those set forth in this Paragraph 5.05.F.

#### 5.06 *Hazardous Environmental Conditions at Site*

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

1. those reports known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site;
2. drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
3. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, 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;
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 removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) 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. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.
- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. 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, as a result of such Work stoppage, such special conditions under which Work is agreed to be resumed by Contractor, or any costs or expenses incurred in response to the Hazardous Environmental Condition, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off. Entitlement to any such adjustment is subject to the provisions of Paragraphs 4.05.D, 4.05.E, 11.07, and 11.08.
- H. 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, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.

- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, 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, arbitration, or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I obligates Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, 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 failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J obligates Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

## **ARTICLE 6—BONDS AND INSURANCE**

### **6.01 *Performance, Payment, and Other Bonds***

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of Contractor's obligations under the Contract. These bonds must remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Contract.
- B. Contractor shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Contract.
- C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Owner prior to execution of the Contract, except as provided otherwise by Laws or

Regulations, and must be issued and signed by a surety named in “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual’s authority to bind the surety. The evidence of authority must show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

- D. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.
- E. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer in writing and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which must comply with the bond and surety requirements above.
- F. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner’s termination rights under Article 16.
- G. Upon request to Owner from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Owner shall provide a copy of the payment bond to such person or entity.
- H. Upon request to Contractor from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Contractor shall provide a copy of the payment bond to such person or entity.

#### 6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized in the state or jurisdiction in which the Project is located to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Alternative forms of insurance coverage, including but not limited to self-insurance and “Occupational Accident and Excess Employer’s Indemnity Policies,” are not sufficient to meet the insurance requirements of this Contract, unless expressly allowed in the Supplementary Conditions.
- D. Contractor shall deliver to Owner, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Contractor has obtained and is maintaining the policies and coverages required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, full disclosure of all relevant exclusions, and evidence of insurance required to be purchased and maintained by

Subcontractors or Suppliers. In any documentation furnished under this provision, Contractor, Subcontractors, and Suppliers may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those applicable to this Contract.

- E. Owner shall deliver to Contractor, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Owner has obtained and is maintaining the policies and coverages required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, and full disclosure of all relevant exclusions. In any documentation furnished under this provision, Owner may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those relevant to this Contract.
- F. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, will not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- G. In addition to the liability insurance required to be provided by Contractor, the Owner, at Owner's option, may purchase and maintain Owner's own liability insurance. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.
- H. Contractor shall require:
  - 1. Subcontractors to purchase and maintain worker's compensation, commercial general liability, and other insurance that is appropriate for their participation in the Project, and to name as additional insureds Owner and Engineer (and any other individuals or entities identified in the Supplementary Conditions as additional insureds on Contractor's liability policies) on each Subcontractor's commercial general liability insurance policy; and
  - 2. Suppliers to purchase and maintain insurance that is appropriate for their participation in the Project.
- I. If either party does not purchase or maintain the insurance required of such party by the Contract, 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.
- J. If Contractor has failed to obtain and maintain required insurance, Contractor's entitlement to enter or remain at the Site will end immediately, and Owner may impose an appropriate set-off against payment for any associated costs (including but not limited to the cost of purchasing necessary insurance coverage), and exercise Owner's termination rights under Article 16.
- K. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect (but is in no way obligated) to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price will be adjusted accordingly.

- L. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests. Contractor is responsible for determining whether such coverage and limits are adequate to protect its interests, and for obtaining and maintaining any additional insurance that Contractor deems necessary.
- M. The insurance and insurance limits required herein will not be deemed as a limitation on Contractor's liability, or that of its Subcontractors or Suppliers, under the indemnities granted to Owner and other individuals and entities in the Contract or otherwise.
- N. All the policies of insurance required to be purchased and maintained under this Contract will contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured and Engineer.

#### 6.03 Contractor's Insurance

- A. *Required Insurance:* Contractor shall purchase and maintain Worker's Compensation, Commercial General Liability, and other insurance pursuant to the specific requirements of the Supplementary Conditions.
- B. *General Provisions:* The policies of insurance required by this Paragraph 6.03 as supplemented must:
  - 1. include at least the specific coverages required;
  - 2. be written for not less than the limits provided, or those required by Laws or Regulations, whichever is greater;
  - 3. remain in effect at least until the Work is complete (as set forth in Paragraph 15.06.D), and longer if expressly required elsewhere in this Contract, and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract;
  - 4. apply with respect to the performance of the Work, whether such performance is 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; and
  - 5. include all necessary endorsements to support the stated requirements.
- C. *Additional Insureds:* The Contractor's commercial general liability, automobile liability, employer's liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies, if required by this Contract, must:
  - 1. include and list as additional insureds Owner and Engineer, and any individuals or entities identified as additional insureds in the Supplementary Conditions;
  - 2. include coverage for the respective officers, directors, members, partners, employees, and consultants of all such additional insureds;
  - 3. afford primary coverage to these additional insureds for all claims covered thereby (including as applicable those arising from both ongoing and completed operations);

4. not seek contribution from insurance maintained by the additional insured; and
5. as to commercial general liability insurance, apply to additional insureds with respect to liability caused in whole or in part by Contractor's acts or omissions, or the acts and omissions of those working on Contractor's behalf, in the performance of Contractor's operations.

#### 6.04 *Builder's Risk and Other Property Insurance*

- A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the Work's full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder's risk insurance are set forth in the Supplementary Conditions.
- B. *Property Insurance for Facilities of Owner Where Work Will Occur*: Owner is responsible for obtaining and maintaining property insurance covering each existing structure, building, or facility in which any part of the Work will occur, or to which any part of the Work will attach or be adjoined. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, providing coverage consistent with that required for the builder's risk insurance, and will be maintained until the Work is complete, as set forth in Paragraph 15.06.D.
- C. *Property Insurance for Substantially Complete Facilities*: Promptly after Substantial Completion, and before actual occupancy or use of the substantially completed Work, Owner will obtain property insurance for such substantially completed Work, and maintain such property insurance at least until the Work is complete, as set forth in Paragraph 15.06.D. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, and provide coverage consistent with that required for the builder's risk insurance. The builder's risk insurance may terminate upon written confirmation of Owner's procurement of such property insurance.
- D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide advance notice of such occupancy or use to the builder's risk insurer, and obtain an endorsement consenting to the continuation of coverage prior to commencing such partial occupancy or use.
- E. *Insurance of Other Property; Additional Insurance*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, then the entity or individual owning such property item will be responsible for insuring it. If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.04, it may do so at Contractor's expense.

#### 6.05 *Property Losses; Subrogation*

- A. The builder's risk insurance policy purchased and maintained in accordance with Paragraph 6.04 (or an installation floater policy if authorized by the Supplementary Conditions), will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against

Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors.

1. Owner and Contractor waive all rights against each other and the respective officers, directors, members, 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, risks, 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 Engineer, its consultants, all individuals or entities identified in the Supplementary Conditions as builder's risk or installation floater insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused.
  2. None of the above waivers extends to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Any property insurance policy maintained by Owner covering any loss, damage, or consequential loss to Owner's existing structures, buildings, or facilities in which any part of the Work will occur, or to which any part of the Work will attach or adjoin; to adjacent structures, buildings, or facilities of Owner; or to part or all of the completed or substantially completed Work, during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06, will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them, and that the insured is allowed to waive the insurer's rights of subrogation in a written contract executed prior to the loss, damage, or consequential loss.
1. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, 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 fire or any of the perils, risks, or causes of loss covered by such policies.
- C. The waivers in this Paragraph 6.05 include the waiver of rights 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 insured peril, risk, or cause of loss.
- D. Contractor shall be responsible for assuring that each Subcontract contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, 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 fire or other peril, risk, or cause of loss covered by builder's risk insurance, installation floater, and any other property insurance applicable to the Work.

6.06 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of property insurance required by Paragraph 6.04 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.
- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.04 shall maintain such proceeds in a segregated account, and distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, Contractor shall repair or replace the damaged Work, using allocated insurance proceeds.

**ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES**

7.01 *Contractor's Means and Methods of Construction*

- A. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. If the Contract Documents note, or Contractor determines, that professional engineering or other design services are needed to carry out Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety, then Contractor shall cause such services to be provided by a properly licensed design professional, at Contractor's expense. Such services are not Owner-delegated professional design services under this Contract, and neither Owner nor Engineer has any responsibility with respect to (1) Contractor's determination of the need for such services, (2) the qualifications or licensing of the design professionals retained or employed by Contractor, (3) the performance of such services, or (4) any errors, omissions, or defects in such services.

7.02 *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.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who will not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.03 *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 maintain good discipline and order at the Site.

- B. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of Contractor's employees; of Suppliers and Subcontractors, and their employees; and of any other individuals or entities performing or furnishing any of the Work, just as Contractor is responsible for Contractor's own acts and omissions.
- C. 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 will be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

#### 7.04 *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, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work must be new and of good quality, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications will 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 must 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.

#### 7.05 *"Or Equals"*

- A. *Contractor's Request; Governing Criteria:* Whenever an item of equipment or material is specified or described in the Contract Documents by using the names of one or more proprietary items or specific Suppliers, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item 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 is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material, or items from other proposed Suppliers, under the circumstances described below.
  - 1. If Engineer in its sole discretion determines that an item of equipment or material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer will deem it an "or equal" item. For the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:
    - a. in the exercise of reasonable judgment Engineer determines that the proposed item:
      - 1) is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

- 2) 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) has a proven record of performance and availability of responsive service; and
  - 4) is not objectionable to Owner.
- b. Contractor certifies that, if the proposed item is approved and incorporated into the Work:
- 1) there will be no increase in cost to the Owner or increase in Contract Times; and
  - 2) the item will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense*: Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal," which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer's Determination*: Neither approval nor denial of an "or-equal" request will result in any change in Contract Price. The Engineer's denial of an "or-equal" request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.
- E. *Treatment as a Substitution Request*: If Engineer determines that an item of equipment or material proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the item a proposed substitute pursuant to Paragraph 7.06.

#### 7.06 Substitutes

- A. *Contractor's Request; Governing Criteria*: Unless the specification or description of an item of equipment or material required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material under the circumstances described below. To the extent possible such requests must be made before commencement of related construction at the Site.
1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of equipment or material from anyone other than Contractor.
  2. The requirements for review by Engineer will be as set forth in Paragraph 7.06.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.

3. Contractor shall make written application to Engineer for review of a proposed substitute item of equipment or material that Contractor seeks to furnish or use. The application:
  - a. will certify that the proposed substitute item will:
    - 1) perform adequately the functions and achieve the results called for by the general design;
    - 2) be similar in substance to the item specified; and
    - 3) be suited to the same use as the item specified.
  - b. will state:
    - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times;
    - 2) whether 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
    - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
  - c. will identify:
    - 1) all variations of the proposed substitute item from the item specified; and
    - 2) available engineering, sales, maintenance, repair, and replacement services.
  - d. will contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee*: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable 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.

- E. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
- F. *Effect of Engineer's Determination*: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request will be final and binding, and may not be reversed through an appeal under any provision of the Contract. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.06.D, by timely submittal of a Change Proposal.

7.07 *Concerning Subcontractors and Suppliers*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor's retention of a Subcontractor or Supplier for the performance of parts of the Work will not relieve Contractor's obligation to Owner to perform and complete the Work in accordance with the Contract Documents.
- B. Contractor shall retain specific Subcontractors and Suppliers for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor or Supplier to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within 5 days.
- E. Owner may require the replacement of any Subcontractor or Supplier. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors or Suppliers for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor or Supplier so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor or Supplier.
- F. If Owner requires the replacement of any Subcontractor or Supplier retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor or Supplier, whether initially or as a replacement, will constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.

- H. On a monthly basis, Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors and Suppliers.
- J. The divisions and sections of the Specifications and the identifications of any Drawings do not control Contractor in dividing the Work among Subcontractors or Suppliers, or in delineating the Work to be performed by any specific trade.
- K. All Work performed for Contractor by a Subcontractor or Supplier must be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract for the benefit of Owner and Engineer.
- L. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor for Work performed for Contractor by the Subcontractor or Supplier.
- M. Contractor shall restrict all Subcontractors and Suppliers from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed in this Contract.

7.08 *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 an 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 will be disclosed in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors, 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 specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, 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.

#### 7.09 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits, licenses, and certificates of occupancy. 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 the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

#### 7.10 *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.

#### 7.11 *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. Neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, 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 such Work or other action. It is not Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this does not relieve Contractor of its obligations under Paragraph 3.03.
- C. Owner or Contractor may give written notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such written notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

#### 7.12 *Record Documents*

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

### 7.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations.
- B. Contractor shall designate a qualified and experienced safety representative whose duties and responsibilities are the prevention of Work-related accidents and the maintenance and supervision of safety precautions and programs.
- C. 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, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- D. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.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 at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer 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).
- E. 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.
- F. Contractor shall notify Owner; the owners of adjacent property; the owners of Underground Facilities and other utilities (if the identity of such owners is known to Contractor); and other contractors and utility owners performing work at or adjacent to the Site, in writing, when Contractor knows that prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
- G. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. Any Owner's safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.
- H. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.

- I. Contractor's duties and responsibilities for safety and protection will continue until all the Work is completed, Engineer has issued a written notice to Owner and Contractor in accordance with Paragraph 15.06.C that the Work is acceptable, and Contractor has left the Site (except as otherwise expressly provided in connection with Substantial Completion).
- J. Contractor's duties and responsibilities for safety and protection will resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of safety data sheets (formerly known as 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.

7.15 *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 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 by an emergency, or are required as a result of Contractor's response to an emergency. If Engineer determines that a change in the Contract Documents is required because of an emergency or Contractor's response, a Work Change Directive or Change Order will be issued.

7.16 *Submittals*

A. *Shop Drawing and Sample Requirements*

- 1. Before submitting a Shop Drawing or Sample, Contractor shall:
  - a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
  - b. determine and verify:
    - 1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal;
    - 2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
    - 3) all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto;
  - c. confirm that the Submittal is complete with respect to all related data included in the Submittal.
- 2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that Submittal, and that Contractor approves the Submittal.

3. With each Shop Drawing or Sample, Contractor shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Contract Documents. This notice must be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.
- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.
1. *Shop Drawings*
    - a. Contractor shall submit the number of copies required in the Specifications.
    - b. Data shown on the Shop Drawings must 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 7.16.C.
  2. *Samples*
    - a. Contractor shall submit the number of Samples required in the Specifications.
    - b. Contractor shall 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 7.16.C.
  3. 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. *Engineer's Review of Shop Drawings and Samples*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. 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, comply with the requirements of 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, or to safety precautions or programs incident thereto.
  3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
  4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.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 will

document any such approved variation from the requirements of the Contract Documents in a Field Order or other appropriate Contract modification.

5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for complying with the requirements of Paragraphs 7.16.A and B.
6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, will not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
7. Neither Engineer's receipt, review, acceptance, or approval of a Shop Drawing or Sample will result in such item becoming a Contract Document.
8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.C.4.

*D. Resubmittal Procedures for Shop Drawings and Samples*

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.
2. Contractor shall furnish required Shop Drawing and Sample submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved Shop Drawing or Sample, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

*E. Submittals Other than Shop Drawings, Samples, and Owner-Delegated Designs*

1. The following provisions apply to all Submittals other than Shop Drawings, Samples, and Owner-delegated designs:
  - a. Contractor shall submit all such Submittals to the Engineer in accordance with the Schedule of Submittals and pursuant to the applicable terms of the Contract Documents.
  - b. Engineer will provide timely review of all such Submittals in accordance with the Schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the Schedule of Submittals will be deemed accepted.
  - c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Contract Documents as to general form and content of the Submittal.

- d. If any such Submittal is not accepted, Contractor shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.
  2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.03, 2.04, and 2.05.
- F. Owner-delegated Designs: Submittals pursuant to Owner-delegated designs are governed by the provisions of Paragraph 7.19.

7.17 *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 is entitled to rely on Contractor's warranty and guarantee.
- B. Owner's rights under this warranty and guarantee are in addition to, and are not limited by, Owner's rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights; provided, however, that after the end of the correction period under Paragraph 15.08:
1. Owner shall give Contractor written notice of any defective Work within 60 days of the discovery that such Work is defective; and
  2. Such notice will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the notice.
- C. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
1. abuse, or improper modification, 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.
- D. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents, a release of Contractor's obligation to perform the Work in accordance with the Contract Documents, or a release of Owner's warranty and guarantee rights under this Paragraph 7.17:
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;
  6. The issuance of a notice of acceptability by Engineer;
  7. The end of the correction period established in Paragraph 15.08;
  8. Any inspection, test, or approval by others; or

9. Any correction of defective Work by Owner.
- E. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract will govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from losses, damages, costs, and judgments (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 from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, cost, judgment or damage is attributable to bodily injury, sickness, disease, or death, or to damage 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 officers, directors, members, partners, employees, agents, consultants, or subcontractors, 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 7.18.A will 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.

7.19 *Delegation of Professional Design Services*

- A. Owner may require Contractor to provide professional design services for a portion of the Work by express delegation in the Contract Documents. Such delegation will specify the performance and design criteria that such services must satisfy, and the Submittals that Contractor must furnish to Engineer with respect to the Owner-delegated design.
- B. Contractor shall cause such Owner-delegated professional design services to be provided pursuant to the professional standard of care by a properly licensed design professional, whose signature and seal must appear on all drawings, calculations, specifications, certifications, and Submittals prepared by such design professional. Such design professional must issue all certifications of design required by Laws and Regulations.
- C. If a Shop Drawing or other Submittal related to the Owner-delegated design is prepared by Contractor, a Subcontractor, or others for submittal to Engineer, then such Shop Drawing or other Submittal must bear the written approval of Contractor's design professional when submitted by Contractor to Engineer.

- D. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, and approvals performed or provided by the design professionals retained or employed by Contractor under an Owner-delegated design, subject to the professional standard of care and the performance and design criteria stated in the Contract Documents.
- E. Pursuant to this Paragraph 7.19, Engineer's review, approval, and other determinations regarding design drawings, calculations, specifications, certifications, and other Submittals furnished by Contractor pursuant to an Owner-delegated design will be only for the following limited purposes:
  - 1. Checking for conformance with the requirements of this Paragraph 7.19;
  - 2. Confirming that Contractor (through its design professionals) has used the performance and design criteria specified in the Contract Documents; and
  - 3. Establishing that the design furnished by Contractor is consistent with the design concept expressed in the Contract Documents.
- F. Contractor shall not be responsible for the adequacy of performance or design criteria specified by Owner or Engineer.
- G. Contractor is not required to provide professional services in violation of applicable Laws and Regulations.

## **ARTICLE 8—OTHER WORK AT THE SITE**

### **8.01 *Other Work***

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any third-party utility work that Owner has arranged to take place at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work.
- D. 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 such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.

- E. If the proper execution or results of any part of Contractor's Work depends upon work performed by others, 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.
- F. The provisions of this article are not applicable to work that is performed by third-party utilities or other third-party entities without a contract with Owner, or that is performed without having been arranged by Owner. If such work occurs, then any related delay, disruption, or interference incurred by Contractor is governed by the provisions of Paragraph 4.05.C.3.

#### 8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
  - 1. The identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
  - 2. An itemization of the specific matters to be covered by such authority and responsibility; and
  - 3. The extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

#### 8.03 *Legal Relationships*

- A. If, in the course of performing other work for Owner at or adjacent to the Site, the Owner's employees, any other contractor working for Owner, or any utility owner that Owner has arranged to perform work, causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment will take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract, and any remedies available to Contractor under Laws or Regulations concerning utility action or inaction. When applicable, any such equitable adjustment in Contract Price will be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times or Contract Price is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.
  - 1. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this Paragraph 8.03.B.
  - 2. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due Contractor.
- C. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all 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 damage, delay, disruption, or interference.

## **ARTICLE 9—OWNER'S RESPONSIBILITIES**

### **9.01 *Communications to Contractor***

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

### **9.02 *Replacement of Engineer***

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents will be that of the former Engineer.

### **9.03 *Furnish Data***

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

### **9.04 *Pay When Due***

- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

- 9.05 *Lands and Easements; Reports, Tests, and Drawings*
- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
  - B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
  - C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.
- 9.06 *Insurance*
- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.
- 9.07 *Change Orders*
- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.
- 9.08 *Inspections, Tests, and Approvals*
- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.
- 9.09 *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.
- 9.10 *Undisclosed Hazardous Environmental Condition*
- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.
- 9.11 *Evidence of Financial Arrangements*
- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract (including obligations under proposed changes in the Work).
- 9.12 *Safety Programs*
- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
  - B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

## ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

### 10.01 *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.

### 10.02 *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 10.07. 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.

### 10.03 *Resident Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in the Supplementary Conditions and in Paragraph 10.07.
- B. If Owner designates an individual or entity who is not Engineer's consultant, agent, or employee to represent Owner at the Site, then the responsibilities and authority of such individual or entity will be as provided in the Supplementary Conditions.

### 10.04 *Engineer's Authority*

- A. Engineer has the authority to reject Work in accordance with Article 14.
- B. Engineer's authority as to Submittals is set forth in Paragraph 7.16.
- C. Engineer's authority as to design drawings, calculations, specifications, certifications and other Submittals from Contractor in response to Owner's delegation (if any) to Contractor of professional design services, is set forth in Paragraph 7.19.
- D. Engineer's authority as to changes in the Work is set forth in Article 11.

E. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.05 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

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

A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.07 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, 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, will 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 Contractor under Paragraph 15.06.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 10.07 also apply to the Resident Project Representative, if any.

10.08 *Compliance with Safety Program*

A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs of which Engineer has been informed.

## ARTICLE 11—CHANGES TO THE CONTRACT

### 11.01 *Amending and Supplementing the Contract*

- A. The Contract may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
- B. If an amendment or supplement to the Contract includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order.
- C. All changes to the Contract that involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of the Engineer.

### 11.02 *Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
  - 1. Changes in 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;
  - 2. Changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
  - 3. Changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.05, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters; and
  - 4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Work Change Directive; Paragraph 11.09, concerning Change Proposals; Article 12, Claims; Paragraph 13.02.D, final adjustments resulting from allowances; Paragraph 13.03.D, final adjustments relating to determination of quantities for Unit Price Work; and similar provisions.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

### 11.03 *Work Change Directives*

- A. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.07 regarding change of Contract Price.

- B. If Owner has issued a Work Change Directive and:
  - 1. Contractor believes that an adjustment in Contract Times or Contract Price is necessary, then Contractor shall submit any Change Proposal seeking such an adjustment no later than 30 days after the completion of the Work set out in the Work Change Directive.
  - 2. Owner believes that an adjustment in Contract Times or Contract Price is necessary, then Owner shall submit any Claim seeking such an adjustment no later than 60 days after issuance of the Work Change Directive.

#### 11.04 *Field Orders*

- A. Engineer may authorize minor changes in the Work if the changes 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. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly.
- B. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

#### 11.05 *Owner-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. Changes involving the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.
- B. Such changes in the Work may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work must be performed under the applicable conditions of the Contract Documents.
- C. Nothing in this Paragraph 11.05 obligates Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

#### 11.06 *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, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.C.2.

#### 11.07 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment of Contract Price must comply with the provisions of Article 12.
- B. 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, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03);
  2. Where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.07.C.2); or
  3. Where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.07.C).
- C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit will 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 13.01.B.1 and 13.01.B.2, the Contractor's fee will be 15 percent;
    - b. For costs incurred under Paragraph 13.01.B.3, the Contractor's fee will be 5 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 Paragraphs 11.07.C.2.a and 11.07.C.2.b is that the Contractor's fee will be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of 5 percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted Work the maximum total fee to be paid by Owner will be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;
    - d. No fee will be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
    - e. The amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in Cost of the Work will be the amount of the actual net decrease in Cost of the Work and a deduction of an additional amount equal to 5 percent of such actual net decrease in Cost of the Work; and
    - f. When both additions and credits are involved in any one change or Change Proposal, the adjustment in Contractor's fee will be computed by determining the sum of the costs in each of the cost categories in Paragraph 13.01.B (specifically, payroll costs, Paragraph 13.01.B.1; incorporated materials and equipment costs, Paragraph 13.01.B.2; Subcontract costs, Paragraph 13.01.B.3; special consultants costs, Paragraph 13.01.B.4; and other costs, Paragraph 13.01.B.5) and applying to each such cost category sum the appropriate fee from Paragraphs 11.07.C.2.a through 11.07.C.2.e, inclusive.

#### 11.08 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment in the Contract Times must comply with the provisions of Article 12.
- B. Delay, disruption, and interference in the Work, and any related changes in Contract Times, are addressed in and governed by Paragraph 4.05.

#### 11.09 *Change Proposals*

A. *Purpose and Content:* Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; contest an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; challenge a set-off against payment due; or seek other relief under the Contract. The Change Proposal will specify any proposed change in Contract Times or Contract Price, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents. Each Change Proposal will address only one issue, or a set of closely related issues.

#### B. *Change Proposal Procedures*

1. *Submittal:* Contractor shall submit each Change Proposal to Engineer within 30 days after the start of the event giving rise thereto, or after such initial decision.
2. *Supporting Data:* The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal.
  - a. Change Proposals based on or related to delay, interruption, or interference must comply with the provisions of Paragraphs 4.05.D and 4.05.E.
  - b. Change proposals related to a change of Contract Price must include full and detailed accounts of materials incorporated into the Work and labor and equipment used for the subject Work.

The supporting data must be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event.

3. *Engineer's Initial Review:* Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal. If in its discretion Engineer concludes that additional supporting data is needed before conducting a full review and making a decision regarding the Change Proposal, then Engineer may request that Contractor submit such additional supporting data by a date specified by Engineer, prior to Engineer beginning its full review of the Change Proposal.
4. *Engineer's Full Review and Action on the Change Proposal:* Upon receipt of Contractor's supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor's supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change

Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

5. *Binding Decision*: Engineer's decision is final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- C. *Resolution of Certain Change Proposals*: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties in writing that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice will be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.
- D. *Post-Completion*: Contractor shall not submit any Change Proposals after Engineer issues a written recommendation of final payment pursuant to Paragraph 15.06.B.

#### 11.10 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety 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), 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.

### **ARTICLE 12—CLAIMS**

#### 12.01 *Claims*

- A. *Claims Process*: The following disputes between Owner and Contractor are subject to the Claims process set forth in this article:
  1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
  2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents;
  3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters; and
  4. Subject to the waiver provisions of Paragraph 15.07, any dispute arising after Engineer has issued a written recommendation of final payment pursuant to Paragraph 15.06.B.
- B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim rests with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge

and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

- C. *Review and Resolution*: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim will be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation*
  - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate will stay the Claim submittal and response process.
  - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process will resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process will resume as of the date of the conclusion of the mediation, as determined by the mediator.
  - 3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action will be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim will be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.
- G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim will be incorporated in a Change Order or other written document to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

## **ARTICLE 13—COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK**

### **13.01 *Cost of the Work***

- A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
  - 1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or

2. When needed to determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included:* Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work will be in amounts no higher than those commonly incurred in the locality of the Project, will not include any of the costs itemized in Paragraph 13.01.C, and will include only the following items:
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 in advance of the subject Work. Such employees include, without limitation, superintendents, foremen, safety managers, safety representatives, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work will be apportioned on the basis of their time spent on the Work. Payroll costs include, but are not limited to, salaries and wages plus the cost of fringe benefits, which include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, will 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 accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts will accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment will 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, which 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 will be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
  4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed or retained for services specifically related to the Work.
  5. Other costs consisting of 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, 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.

- 1) In establishing included costs for materials such as scaffolding, plating, or sheeting, consideration will be given to the actual or the estimated life of the material for use on other projects; or rental rates may be established on the basis of purchase or salvage value of such items, whichever is less. Contractor will not be eligible for compensation for such items in an amount that exceeds the purchase cost of such item.

c. *Construction Equipment Rental*

- 1) Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner as to price (including any surcharge or special rates applicable to overtime use of the construction equipment or machinery), and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs will be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts must cease when the use thereof is no longer necessary for the Work.
- 2) Costs for equipment and machinery owned by Contractor or a Contractor-related entity will be paid at a rate shown for such equipment in the equipment rental rate book specified in the Supplementary Conditions. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs.
- 3) With respect to Work that is the result of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price ("changed Work"), included costs will be based on the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, must cease to accrue when the use thereof is no longer necessary for the changed Work.

- d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as 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 builder's risk or other property insurance established in accordance with Paragraph 6.04), 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 include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses will 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 communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. *Costs Excluded*: The term Cost of the Work does not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals, general 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 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
- 2. The cost of purchasing, renting, or furnishing small tools and hand tools.
- 3. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 4. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 5. 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.
- 6. Expenses incurred in preparing and advancing Claims.
- 7. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee*

- 1. When the Work as a whole is performed on the basis of cost-plus-a-fee, then:
  - a. Contractor's fee for the Work set forth in the Contract Documents as of the Effective Date of the Contract will be determined as set forth in the Agreement.
  - b. for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work, Contractor's fee will be determined as follows:
    - 1) When the fee for the Work as a whole is a percentage of the Cost of the Work, the fee will automatically adjust as the Cost of the Work changes.
    - 2) When the fee for the Work as a whole is a fixed fee, the fee for any additions or deletions will be determined in accordance with Paragraph 11.07.C.2.
- 2. When the Work as a whole is performed on the basis of a stipulated sum, or any other basis other than cost-plus-a-fee, then Contractor's fee for any Work covered by a Change

Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work will be determined in accordance with Paragraph 11.07.C.2.

- E. *Documentation and Audit:* Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor and pertinent Subcontractors will establish and maintain records of the costs in accordance with generally accepted accounting practices. Subject to prior written notice, Owner will be afforded reasonable access, during normal business hours, to all Contractor's accounts, records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and Contractor's fee. Contractor shall preserve all such documents for a period of three years after the final payment by Owner. Pertinent Subcontractors will afford such access to Owner, and preserve such documents, to the same extent required of Contractor.

### 13.02 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:* Contractor agrees that:
1. 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
  2. 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 for any of the foregoing will be valid.
- C. *Owner's Contingency Allowance:* Contractor agrees that an Owner's 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 for Work covered by allowances, and the Contract Price will be correspondingly adjusted.

### 13.03 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. Payments to Contractor for Unit Price Work will be based on actual quantities.
- 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. 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, and the final adjustment of Contract Price will be set forth in a Change Order, subject to the provisions of the following paragraph.

E. *Adjustments in Unit Price*

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:
  - a. the quantity of the item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
  - b. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.
2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.
3. Adjusted unit prices will apply to all units of that item.

**ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK**

14.01 *Access to Work*

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

14.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work will be governed by the provisions of Paragraph 14.05.
- 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, obtaining, and paying for all inspections and tests required:
1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
  2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
  3. by manufacturers of equipment furnished under the Contract Documents;
  4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
  5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests will be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. 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, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering will be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

#### 14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt written notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages:* In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs,

losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

#### 14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work will be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

#### 14.05 *Uncovering Work*

- A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then 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, and provide all necessary labor, material, and equipment.
  - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages 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 pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
  - 2. 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, 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, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

#### 14.06 *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, then 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 will 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.

**14.07 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 defective Work as required by Engineer, then Owner may, after 7 days' written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, 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, 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 incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. 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 14.07.

**ARTICLE 15—PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD**

**15.01 Progress Payments**

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments for Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *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.
  - 2. 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 must also be accompanied by: (a) a bill of sale, invoice, copies of subcontract or purchase order payments, or other documentation

establishing full payment by Contractor for the materials and equipment; (b) at Owner's request, documentation warranting that Owner has received the materials and equipment free and clear of all Liens; and (c) evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

3. Beginning with the second Application for Payment, each Application must include an affidavit of Contractor stating that all previous progress payments received by Contractor have been applied to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
4. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, 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 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, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and 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; or
  - b. 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;
  - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;
  - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work;
  - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid by Owner; 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 15.01.C.2.
6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
  - a. the Work is defective, requiring correction or replacement;
  - b. the Contract Price has been reduced by Change Orders;
  - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
  - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
  - e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

**D. *Payment Becomes Due***

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

**E. *Reductions in Payment by Owner***

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
  - a. Claims have been made against Owner based on Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages resulting from Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

- b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
  - c. Contractor has failed to provide and maintain required bonds or insurance;
  - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
  - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
  - f. The Work is defective, requiring correction or replacement;
  - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
  - h. The Contract Price has been reduced by Change Orders;
  - i. An event has occurred that would constitute a default by Contractor and therefore justify a termination for cause;
  - j. Liquidated or other damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
  - k. 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; or
  - l. Other items entitle Owner to a set-off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, 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, if Contractor remedies the reasons for such action. The reduction imposed will be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.
  3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld will be treated as an amount due as determined by Paragraph 15.01.D.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than 7 days after the time of payment by Owner.

15.03 *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 and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time

submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

- 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 preliminary certificate of Substantial Completion which will fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have 7 days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

#### 15.04 *Partial Use or Occupancy*

- 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. At any time, Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through 15.03.E for that part of the Work.
2. At any time, Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work 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 15.03 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 6.04 regarding builder's risk or other property insurance.

#### 15.05 *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, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

#### 15.06 *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, annotated record documents (as provided in Paragraph 7.12), and other documents, Contractor may make application for final payment.
2. The final Application for Payment must be accompanied (except as previously delivered) by:
  - a. all documentation called for in the Contract Documents;
  - b. consent of the surety, if any, to final payment;
  - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.

- d. a list of all duly pending Change Proposals and Claims; and
  - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, 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, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.
- B. *Engineer's Review of Final Application and Recommendation of Payment:* 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 have been fulfilled, Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the final Application for Payment to Owner for payment. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. 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. *Notice of Acceptability:* In support of its recommendation of payment of the final Application for Payment, Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 15.07.
- D. *Completion of Work:* The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment and issuance of notice of the acceptability of the Work.
- E. *Final Payment Becomes Due:* Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall pay the resulting balance due to Contractor within 30 days of Owner's receipt of the final Application for Payment from Engineer.

#### 15.07 *Waiver of Claims*

- A. By making final payment, Owner waives its claim or right to liquidated damages or other damages for late completion by Contractor, except as set forth in an outstanding Claim,

appeal under the provisions of Article 17, set-off, or express reservation of rights by Owner. Owner reserves all other claims or rights after final payment.

- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted as a Claim, or appealed under the provisions of Article 17.

#### 15.08 *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 Supplementary Conditions or the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor's repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
  - 1. correct the defective repairs to the Site or such adjacent areas;
  - 2. correct such defective Work;
  - 3. remove the defective Work from the Project and replace it with Work that is not defective, if the defective Work has been rejected by Owner, and
  - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting from the corrective measures.
- B. Owner shall give any such notice of defect within 60 days of the discovery that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.
- C. If, after receipt of a notice of defect within 60 days and within the correction period, 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. Contractor shall pay all 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). Contractor's failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.
- D. 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.
- E. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, 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.

- F. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph are not to be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

## **ARTICLE 16—SUSPENSION OF WORK AND TERMINATION**

### **16.01 *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 written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times directly attributable to any such suspension. Any Change Proposal seeking such adjustments must be submitted no later than 30 days after the date fixed for resumption of Work.

### **16.02 *Owner May Terminate for Cause***

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and 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);
  - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
  - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
  - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) 10 days' written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:
  - 1. declare Contractor to be in default, and give Contractor (and any surety) written notice that the Contract is terminated; and
  - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, 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 complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within 7 days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.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 the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects,

attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds 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.

- F. 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, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

#### 16.03 *Owner May Terminate for Convenience*

- A. Upon 7 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; and
  - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid for any loss of anticipated profits or revenue, post-termination overhead costs, or other economic loss arising out of or resulting from such termination.

#### 16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon 7 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 16.03.
- 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, 7 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 are not intended to preclude Contractor from submitting a Change Proposal 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 17—FINAL RESOLUTION OF DISPUTES**

### **17.01 *Methods and Procedures***

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this article:
1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full, pursuant to Article 12; and
  2. Disputes between Owner and Contractor concerning the Work, or obligations under the Contract Documents, that arise after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this article, Owner or Contractor may:
1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions;
  2. agree with the other party to submit the dispute to another dispute resolution process; or
  3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

## **ARTICLE 18—MISCELLANEOUS**

### **18.01 *Giving Notice***

- A. Whenever any provision of the Contract requires the giving of written notice to Owner, Engineer, or Contractor, it will be deemed to have been validly given only if delivered:
1. in person, by a commercial courier service or otherwise, to the recipient's place of business;
  2. by registered or certified mail, postage prepaid, to the recipient's place of business; or
  3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

### **18.02 *Computation of Times***

- A. When any period of time is referred to in the Contract 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.

18.03 *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. 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.

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

- A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

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

18.07 *Controlling Law*

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

18.08 *Assignment of Contract*

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party to this Contract of any rights under or interests in the Contract will be binding on the other party without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is 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.

18.09 *Successors and Assigns*

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

18.10 *Headings*

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

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

## SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared By



Endorsed By





# SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

## TABLE OF CONTENTS

	<b>Page</b>
Article 1— Definitions and Terminology.....	1
Article 2— Preliminary Matters .....	1
Article 3— Contract Documents: Intent, Requirements, Reuse .....	1
Article 4— Commencement and Progress of the Work .....	1
Article 5— Site, Subsurface and Physical Conditions, Hazardous Environmental Conditions.....	1
Article 6— Bonds and Insurance .....	2
Article 7— Contractor’s Responsibilities .....	5
Article 8— Other Work at the Site .....	5
Article 9— Owner’s Responsibilities .....	5
Article 10— Engineer’s Status During Construction .....	5
Article 11— Changes To the Contract.....	7
Article 12— Claims .....	<b>7</b>
Article 13— Cost of Work; Allowances, Unit Price Work.....	7
Article 14— Tests and Inspections; Correction, Removal, or Acceptance of Defective Work.....	7
Article 15— Payments to Contractor, Set Offs; Completions; Correction Period .....	7
Article 16— Suspension of Work and Termination .....	7
Article 17— Final Resolutions of Disputes .....	7
Article 18— Miscellaneous .....	7

# SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

These Supplementary Conditions amend or supplement EJCDC® C-700, Standard General Conditions of the Construction Contract (2018). The General Conditions remain in full force and effect except as amended.

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.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added—for example, "Paragraph SC-4.05."

## ARTICLE 1—DEFINITIONS AND TERMINOLOGY

No suggested Supplementary Conditions in this Article.

## ARTICLE 2—PRELIMINARY MATTERS

No suggested Supplementary Conditions in this Article.

## ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

No suggested Supplementary Conditions in this Article.

## ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

No suggested Supplementary Conditions in this Article.

## ARTICLE 5—SITE, SUBSURFACE AND PHYSICAL CONDITIONS, HAZARDOUS ENVIRONMENTAL CONDITIONS

### 5.03 *Subsurface and Physical Conditions*

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

- E. The following table lists the reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data, and specifically identifies the Technical Data in the report upon which Contractor may rely: **none**

Report Title	Date of Report	Technical Data
CCTV of Existing Sewer	1/31/25	Video Inspection of Existing Sewer

- F. The following table lists the drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to

the Site (except Underground Facilities), that contain Technical Data, and specifically identifies the Technical Data upon which Contractor may rely: **none**

Drawings Title	Date of Drawings	Technical Data
None		<b>none</b>

5.06 *Hazardous Environmental Conditions*

SC-5.06 Add the following new paragraphs immediately after Paragraph 5.06.A.3:

4. The following table lists the reports known to Owner relating to Hazardous Environmental Conditions at or adjacent to the Site, and the Technical Data (if any) upon which Contractor may rely: **none**

Report Title	Date of Report	Technical Data
<b>No such reports know to either Owner or Engineer</b>		

5. The following table lists the drawings known to Owner relating to Hazardous Environmental Conditions at or adjacent to the Site, and Technical Data (if any) contained in such Drawings upon which Contractor may rely: **none**

Drawings Title	Date of Drawings	Technical Data
<b>No such reports know to either Owner or Engineer</b>		

**ARTICLE 6—BONDS AND INSURANCE**

6.02 *Insurance—General Provisions*

SC-6.02 *Delete Paragraph 6.02.N in its entirety and insert the following in its place:*

At the time of execution of the Contract, the Contractor shall provide the Town with insurance certificates certifying that the foregoing insurance is in force; and such insurance certificates shall include provisions that the insurance shall not be cancelled, allowed to expire, or be materially changed without giving the Town thirty (30) days advance written notice by registered mail.

6.03 *Contractor’s Insurance*

SC-6.03 Supplement Paragraph 6.03 with the following provisions after Paragraph 6.03.C:

- D. *Other Additional Insureds:* As a supplement to the provisions of Paragraph 6.03.C of the General Conditions, the commercial general liability, automobile liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies must include as additional insureds (in addition to Owner and Engineer) the following: **Town of Smithfield and Sykes Environmental Engineering, PLLC.**

- E. *Workers' Compensation and Employer's Liability*: Contractor shall purchase and maintain workers' compensation and employer's liability insurance, including, as applicable, United States Longshoreman and Harbor Workers' Compensation Act, Jones Act, stop-gap employer's liability coverage for monopolistic states, and foreign voluntary workers' compensation (from available sources, notwithstanding the jurisdictional requirement of Paragraph 6.02.B of the General Conditions).

<b>Workers' Compensation and Related Policies</b>	<b>Policy limits of not less than:</b>
<b>Workers' Compensation</b>	
State	Statutory
Applicable Federal (e.g., Longshoreman's)	Statutory
Foreign voluntary workers' compensation (employer's responsibility coverage), if applicable	Statutory
<b>Jones Act (if applicable)</b>	
Bodily injury by accident—each accident	\$100,000
Bodily injury by disease—aggregate	\$500,000
<b>Employer's Liability</b>	
Each accident	\$1,000,000
Each employee	\$1,000,000
Policy limit	\$1,000,000
<b>Stop-gap Liability Coverage</b>	
For work performed in monopolistic states, stop-gap liability coverage must be endorsed to either the worker's compensation or commercial general liability policy with a minimum limit of:	\$2,000,000

- F. *Commercial General Liability—Claims Covered*: Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against claims for:
1. damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees,
  2. damages insured by reasonably available personal injury liability coverage, and
  3. damages because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- G. *Commercial General Liability—Form and Content*: Contractor's commercial liability policy must be written on a 1996 (or later) Insurance Services Organization, Inc. (ISO) commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage.
    - a. Such insurance must be maintained for three years after final payment.
    - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.

2. Blanket contractual liability coverage, including but not limited to coverage of Contractor’s contractual indemnity obligations in Paragraph 7.18.
  3. Severability of interests and no insured-versus-insured or cross-liability exclusions.
  4. Underground, explosion, and collapse coverage.
  5. Personal injury coverage.
  6. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together). If Contractor demonstrates to Owner that the specified ISO endorsements are not commercially available, then Contractor may satisfy this requirement by providing equivalent endorsements.
  7. For design professional additional insureds, ISO Endorsement CG 20 32 07 04 “Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured” or its equivalent.
- H. *Commercial General Liability—Excluded Content:* The commercial general liability insurance policy, including its coverages, endorsements, and incorporated provisions, must not include any of the following:
1. Any modification of the standard definition of “insured contract” (except to delete the railroad protective liability exclusion if Contractor is required to indemnify a railroad or others with respect to Work within 50 feet of railroad property).
  2. Any exclusion for water intrusion or water damage.
  3. Any provisions resulting in the erosion of insurance limits by defense costs other than those already incorporated in ISO form CG 00 01.
  4. Any exclusion of coverage relating to earth subsidence or movement.
  5. Any exclusion for the insured’s vicarious liability, strict liability, or statutory liability (other than worker’s compensation).
  6. Any limitation or exclusion based on the nature of Contractor’s work.
  7. Any professional liability exclusion broader in effect than the most recent edition of ISO form CG 22 79.
- I. *Commercial General Liability—Minimum Policy Limits*

<b>Commercial General Liability</b>	<b>Policy limits of not less than:</b>
General Aggregate	\$2,000,000
Products—Completed Operations Aggregate	\$1,000,000
Personal and Advertising Injury	\$1,000,000
Bodily Injury — Each Occurrence	\$500,000
Bodily Injury – per person	\$100,000
Property Damage	\$100,000

- J. *Automobile Liability*: Contractor shall purchase and maintain automobile liability insurance 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. The automobile liability policy must be written on an occurrence basis.

<b>Automobile Liability</b>	<b>Policy limits of not less than:</b>
<b>Bodily Injury</b>	
Each Person	\$1,000,000
Each Accident	\$1,000,000
<b>Property Damage</b>	
Each Accident	\$100,000
<b>[or]</b>	
<b>Combined Single Limit</b>	
Combined Single Limit (Bodily Injury and Property Damage)	\$2,000,000.00

#### **ARTICLE 7—CONTRACTOR’S RESPONSIBILITIES**

No suggested Supplementary Conditions in this Article.

#### **ARTICLE 8—OTHER WORK AT THE SITE**

No suggested Supplementary Conditions in this Article.

#### **ARTICLE 9—OWNER’S RESPONSIBILITIES**

No suggested Supplementary Conditions in this Article.

#### **ARTICLE 10—ENGINEER’S STATUS DURING CONSTRUCTION**

##### 10.03 *Resident Project Representative*

SC-10.03 Add the following new paragraphs immediately after Paragraph 10.03.B:

- C. The Resident Project Representative (RPR) will be Engineer's representative at the Site. RPR's dealings in matters pertaining to the Work in general will be with Engineer and Contractor. RPR's dealings with Subcontractors will only be through or with the full knowledge or approval of Contractor. The RPR will:
1. *Conferences and Meetings*: Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings (but not including Contractor’s safety meetings), and as appropriate prepare and circulate copies of minutes thereof.
  2. *Safety Compliance*: Comply with Site safety programs, as they apply to RPR, and if required to do so by such safety programs, receive safety training specifically related to RPR’s own personal safety while at the Site.

3. *Liaison*
    - a. Serve as Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.
    - b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.
    - c. Assist in obtaining from Owner additional details or information, when required for Contractor's proper execution of the Work.
  4. *Review of Work; Defective Work*
    - a. Conduct on-Site observations of the Work to assist Engineer in determining, to the extent set forth in Paragraph 10.02, if the Work is in general proceeding in accordance with the Contract Documents.
    - b. Observe whether any Work in place appears to be defective.
    - c. Observe whether any Work in place should be uncovered for observation, or requires special testing, inspection or approval.
  5. *Inspections and Tests*
    - a. Observe Contractor-arranged inspections required by Laws and Regulations, including but not limited to those performed by public or other agencies having jurisdiction over the Work.
    - b. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Work.
  6. *Payment Requests: Review Applications for Payment with Contractor.*
  7. *Completion*
    - a. Participate in Engineer's visits regarding Substantial Completion.
    - b. Assist in the preparation of a punch list of items to be completed or corrected.
    - c. Participate in Engineer's visit to the Site in the company of Owner and Contractor regarding completion of the Work, and prepare a final punch list of items to be completed or corrected by Contractor.
    - d. Observe whether items on the final punch list have been completed or corrected.
- D. The RPR will not:
1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).
  2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.
  3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.
  4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction.

- 5 Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.
6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.
7. Authorize Owner to occupy the Project in whole or in part.

#### **ARTICLE 11—CHANGES TO THE CONTRACT**

No suggested Supplementary Conditions in this Article.

#### **ARTICLE 12—CLAIMS**

No suggested Supplementary Conditions in this Article.

#### **ARTICLE 13—COST OF WORK; ALLOWANCES, UNIT PRICE WORK**

No suggested Supplementary Conditions in this Article.

#### **ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK**

No suggested Supplementary Conditions in this Article.

#### **ARTICLE 15—PAYMENTS TO CONTRACTOR, SET OFFS; COMPLETIONS; CORRECTION PERIOD**

No suggested Supplementary Conditions in this Article.

#### **ARTICLE 16—SUSPENSION OF WORK AND TERMINATION**

No suggested Supplementary Conditions in this Article.

#### **ARTICLE 17—FINAL RESOLUTIONS OF DISPUTES**

No suggested Supplementary Conditions in this Article.

#### **ARTICLE 18—MISCELLANEOUS**

No suggested Supplementary Conditions in this Article.

## Section 00010 - SPECIAL PROVISIONS

### 01. STANDARDS:

All workmanship, materials and installation practices shall comply with **Town of Smithfield Standard Specifications & Details** except as modified in the technical specifications.

### 02. SEQUENCE OF WORK:

The Project shall be completed the using the following general sequence of work. Items with the same number(s) may be performed simultaneously. Modifications to this sequence shall first be coordinated with, and approved by, the Engineer.

- 1) General pre-construction activities and proper notification
- 2) Preliminary verification and construction staking
- 3) ) Setup bypass pumping and traffic control
- 4) Install new sewer and appurtenances
- 5) Manhole coating
- 6) Acceptance testing/Post- CCTV inspection
- 7) Site restoration, seeding, etc.

### 03. WORK SCHEDULE:

The Contractor shall develop an overall project schedule. The project schedule shall meet all requirements specified herein, including working hours and sequence of work. The Contractor ***shall submit the overall project schedule to the Engineer prior to the Pre-construction Conference***, so that it may be reviewed and discussed at the pre-construction conference. The project schedule shall be updated at the request of the Engineer to reflect changes based on actual work progress, weather delays, or other factors. Close coordination between the Contractor and Engineer will be required to ensure work progresses with minimal disruptions.

A schedule shall be submitted on a weekly basis (by Thursday) for the following week. The weekly schedule shall define all construction activities for the following week including specific tasks on specific lines (road closings, detours, service interruptions, etc). The Owner and/or Engineer reserve the right to prevent the Contractor from beginning work the following Monday if no schedule is received by the prior Thursday.

### 04. CONTRACTOR FIELD SUPERINTENDENT:

The Contractor shall provide a Project Field Superintendent to supervise this Contract throughout its duration. The Field Superintendent's responsibilities shall include, but not be limited to, the following:

- The Project Field Superintendent shall be full-time on site during all construction activities, including those of any subcontractor, and shall be the main point of contact for the Engineer in the field
- Coordinate all work and work schedules with the Engineer on site
- Supervise all field work including primary contractor and all subcontractors

- Coordinate with property owners and the public
- Review quantities for monthly payment applications with the Engineer on site
- Ensure that all work meets all Contract requirements

05. SAFETY REQUIREMENTS:

The Contractor shall comply with the “Rules and Regulations Governing the Construction Industry” as promulgated for the Health, Safety and General Welfare of Employees by the Commission of Labor under North Carolina General Statutes, Section 95-131. In addition, the Contractor shall assume responsibility for and comply with the Department of Labor Safety and Health Act of 1970. Where the requirements of these acts are in excess of those requirements specified, the requirements of these acts shall govern.

06. WORKING HOURS:

Normal working hours are Monday through Friday 7:00 A.M. to 5:00 P.M. Night work may be approved at the discretion of the Authority. When working within NCDOT Right-of-Way, no lane closures shall occur between the hours of 7 and 9 AM and 4 and 7 PM, Monday through Friday. NCDOT certified Work Zone Flaggers shall perform any necessary traffic flagging.

07. CONSTRUCTION SUBMITTALS:

Contractor shall provide three (3) copies of all construction submittal data for review and approval. Submittals shall include at a minimum: (1) the manufacturer's name, (2) type of material, (3) ASTM, ANSI, AWWA or other quality standard listings, and (4) pressure class, if applicable. Shop drawings shall be provided for all castings, such as manholes and vaults. If the materials do not meet the quality standards specified, the submittals will be rejected and other materials submitted as specified. Approval of all products and materials must be obtained prior to commencing construction. An approved set of submittals and shop drawings shall be maintained on-site for the duration of construction and shall be available for review upon request.

08. CONSTRUCTION STAKING:

The Contractor shall provide construction staking. During construction staking, the Contractor’s surveyor shall provide adequate Temporary Bench Marks for field confirmation of rim elevations. Cost for construction staking shall not be paid directly but shall be included in line item cost for pipe. The Engineer shall not provide staking or re-staking.

09. PROPERTY PROTECTION:

The Contractor shall be responsible for performing work within the areas specified. The Contractor shall not damage public or private property outside of the work areas. Damage to property caused by the Contractor’s actions shall be repaired to original condition at the Contractor’s expense. This shall include but is not limited to trees, shrubs, landscaped areas,

mailboxes, fences, lampposts, signs, driveways and culverts. Wavers/Releases for any repairs to private property shall be obtained by the Contractor. The release shall be signed by the property Owner and submitted to the Engineer.

Any damage to water mains or services not scheduled to be replaced shall be repaired at the Contractor's expense.

10. WASTE MATERIALS AND CONSTRUCTION DEBRIS:

The Contractor shall properly dispose of all removed materials and construction debris in compliance with all applicable laws and regulations. The Contractor will be responsible for removing, hauling, and disposal of all sewer debris removed from sewer cleaning prior to CIPP Lining. The Owner does not have a disposal site available for sewer debris. All materials removed and replaced during construction shall become the property of the Contractor.

11. TRAFFIC CONTROL:

The Contractor shall provide and maintain all necessary barricades, suitable and sufficient red lights, danger signals, detour and other signs, provide a sufficient number of watchmen and flagmen, and take all necessary precautions for the protection of the work and the safety of the public. All material piles, equipment and pipe which may serve as obstructions to traffic shall be enclosed by barricades and shall be protected by proper lights. The rules and regulations of the local authorities and the North Carolina Department of Transportation (NCDOT) regarding safety provisions and traffic control shall be observed at all times.

The Contractor shall carry on the work in a manner which will cause the least interruption to traffic and may close a street only with the permission of the Engineer and/or the Local Municipality or NC Department of Transportation. Should it become necessary to allow only one way traffic, the Contractor shall provide one flagman with a stop-slow paddle for each end of the one way strip for proper direction of traffic, as shown in the drawing details.

The standard procedures for construction signing of the NCDOT and the Manual on Uniform Traffic Control Devices (MUTCD) shall be followed.

12. WATER FOR CONSTRUCTION:

Water for construction may be obtained per Town of Smithfield at no cost. The Contractor shall be responsible for the delivery of water to the construction site from any approved water source. Use of water from the potable water system shall be in accordance with the North Carolina Department of Environment and Natural Resources Rules Governing Public Water Systems (15A NCAC 18C .0100 through .2100) with respect to backflow prevention. When filling water trucks or vessels, an air gap shall be present to prevent backflow.

13. RECORD DRAWINGS:

The Contractor shall maintain, in readable condition at the job site, one complete set of working drawings and specifications for his work, including all shop drawings. Such drawings

and specifications shall be available for use by the Owner or Engineer at all times. This set shall be marked, or acceptable notes to the Engineer provided, in order to reflect “as-built” conditions. Upon completion of the Project, this complete set of drawings, specifications and notes shall be returned to the Owner or Engineer.

14. WARRANTY:

The Contractor shall guarantee all materials, workmanship and construction for a period of one year from the date of acceptance. During the warranty period, any defects, malfunctions or failures which affect the integrity or strength of the product or its ability to perform the task for which it was designed shall be repaired or replaced at the Contractor’s expense.

## Section 01015 – PROJECT REQUIREMENTS

1. NOTICE OF COMMENCEMENT OF WORK. Contractor shall notify the Owner at least 1 week prior to beginning of the Work.

### 2. RESPONSIBIITY FOR MATERIALS AND EQUIPMENT.

2.01. Items Furnished by Contractor. Contractor shall be fully responsible for all materials and equipment which he has furnished.

All items shall be unloaded promptly after arrival. All charges for demurrage due to negligence or delay by Contractor shall be paid by Contractor. Materials shall be handled by methods which will prevent damage.

Materials shall be protected from exposure to the elements. All material shall be stored in accordance with the General Equipment Stipulations, Supplementary Conditions, and/or the Manufacturers recommendation.

2.02. Payment of Stored Material. Receipt and payment of stored materials shall coincide with the construction schedule of work, as approved by the Owner.

3. PREPARATION FOR SHIPMENT. All materials shall be suitably packaged to facilitate handling and protect against damage during transit and storage. Painted surfaces shall be protected against impact, abrasion, discoloration, and other damage. All painted surfaces which are damaged prior to acceptance of equipment shall be repainted to the satisfaction of Engineer.

Each item, package, or bundle of material shall be tagged or marked as identified in the delivery schedule or on the Shop Drawings. Complete packing lists and bills of material shall be included which each shipment.

4. LAND FOR CONSTRUCTION PURPOSES. Any additional area required by Contractor shall be obtained from property owners by and at the expense of the Contractor. The Owner shall not be liable for any damages caused by Contractor to such premises. Yard areas shall be kept neat and clean.

The Contractor shall hold and save the Owner free and harmless from liability of any nature or kind arising from any use, trespass, or damage occasioned by his operations on premises of third persons. Upon completion of the construction, the Contractor shall provide the Owner with a copy of Release of Claim forms verifying that all trespasses or damages on premises of third persons have been sufficiently resolved, if necessary.

Contractor shall immediately move stored materials or equipment if any occasion arises, as determined by Owner, requiring access to the storage area. Materials or equipment shall not be placed on the property of Owner until Owner has agreed to the location to be used for storage.

5. EASEMENTS AND RIGHTS-OF-WAY. The easements and right-of-way for the pipelines will be provided by Owner. Contractor shall confine his construction operations within the limits indicated on the Drawings. Contractor shall use due care in placing construction tools, equipment, excavated materials, and pipeline materials and supplies in order to avoid damage to property and interference with traffic.

5.01. On Private Property. Easements across private property are indicated on the Drawings. Contractor shall set stakes to mark the boundaries of construction easements across private property. Contractor shall furnish, without charge, competent persons from his force and such tools, stakes, and other materials as Owner may require in staking out the boundaries of construction easements. The stakes shall be protected and maintained until completion of construction and cleanup.

Construction shall not enter any private property outside the designated construction easement boundaries without written permission from the owner of the property.

5.02. Work Within Highway and Railroad Rights-Of-Way. Permits shall be obtained by the Owner. All Work performed and all operations of Contractor, his employees, or Subcontractors, within the limits of railroad and highway rights-of-way, shall be in conformity with the requirements and be under the control (through Owner) of the railroad or highway authority owning, or having jurisdiction over and control of, the right-of-way in each case.

All work within the Highway and Railroad Rights-of-Way shall conform to the requirements of those sections of the specifications. The Contractor shall provide all bonds and insurance required by the governing agency, as defined and/or specified in the Supplementary Conditions.

6. NOTICES TO OWNERS AND AUTHORITIES. Contractor shall, as provided in General Conditions, notify owners of adjacent property and utilities when prosecution of the Work may affect them.

When it is necessary to temporarily deny access to property, or when any utility service connection must be interrupted, Contractor shall give notice sufficiently in advance to enable the affected persons to provide for their needs. Notices will conform to any applicable local ordinance, and shall be delivered in writing and will include appropriate information concerning the interruption and instructions on how to limit inconvenience caused thereby.

Utilities and other concerned agencies shall be notified at least 48 hours prior to cutting or closing streets or other traffic areas or excavating near underground utilities or pole lines. All utility location notifications shall be in accordance with the North Carolina Underground Damage Prevention Act, N.C. General Statute 87-100.

#### 6.01. NOTICES TO OWNERS.

a. Planned Utility Disruption or Loss. Prior to the issuance of the utility disruption notices, the Contractor shall submit a draft of a utility disruption notice to the Owner and/or affected utility

provider for review and approval. The Contractor shall coordinate the issuance of the utility disruption notices with the Owner and/or the affected utility provider at least 5 working days in advance of the utility disruption. The contractor shall be responsible for ensuring that all properties affected by utility disruption receive an approved utility disruption notice at least 3 working days in advance to the scheduled disruption in services.

b. Unplanned Utility Disruption or Loss. Unintentional, accidental, or unplanned disruption or loss of utility services must be reported to the Owner, the affected utility provider, and the applicable emergency personnel and/or agency immediately, but not later than 12 hours. The contractor shall be responsible for contacting all affected properties and taking all necessary emergency actions. Contractor shall submit to the Owner and/or affected utility provider, within 5 working days, a list of all property owners, emergency personnel, and utility companies and/or agencies contacted during the un-planned utility services disruption/loss. This list shall include written documentation of the time of contact, the method of contact, and the response or action taken to remedy or repair the utility service disruption/loss.

#### 6.02. NOTICE TO OWNER - MAJOR UTILITY SHUTDOWN

Contractor shall, as provided in the General Conditions, notify utilities when prosecution of the work shall result in a utility shutdown. Major Utility Shutdowns shall be identified in the Special Conditions of the Contract Documents.

When it is necessary to interrupt any utility or utility service connection, the Contractor shall prepare and present a detailed plan and schedule in writing as to the following:

1. Date of commencement of the shutdown
2. Planned completion date (when interruption will cease)
3. Designation of specific utility affected
4. Location sketch of planned interruption
5. Contractor contact names and phone numbers
6. List of affected property owners
7. Plan for maintaining service (bypass pumping, temporary pipeline, etc.)

This detailed plan shall be transmitted to the Owner one month in advance of the planned commencement date. Written approval of this detailed plan must be received by the Owner prior to commencing with the shutdown. All costs of shutting the utility down, maintaining service, and putting the affected utility back on line shall be included in the contractor's bid price.

7. LINES AND GRADES. All Work shall be done to the lines, grades, and elevations indicated on the Drawings.

Basic horizontal and vertical control points will be established or designated by the Owner and are shown on the Drawings. These points shall be used as datums for the Work. All additional survey, layout, and measurement Work shall be performed by Contractor as a part of the Work.

Contractor shall provide an experienced instrument person and competent assistants, under the supervision of a Registered Land Surveyor in the State of North Carolina, and such instruments, tools, stakes, and other materials required to complete the survey, layout, and measurement Work. In addition, Contractor shall furnish, without charge, competent persons from his force and such tools, stakes, and other materials as Owner may require in establishing or designating control points, in establishing construction easement boundaries, or in checking survey, layout, and measurement Work performed by Contractor.

Contractor shall keep Owner informed, a reasonable time in advance, of the times and places at which he wishes to do work, so that horizontal and vertical control points may be established and any checking deemed necessary by Owner/Engineer may be done with minimum inconvenience to Owner/Engineer and minimum delay to Contractor.

Contractor shall remove and reconstruct Work which is improperly located.

8. CONNECTIONS TO EXISTING FACILITIES. Unless otherwise specified or indicated, Contractor shall make all necessary connections to existing facilities, including structures, drainlines, and utilities such as water, sewer, gas, telephone, and electric. In each case, Contractor shall receive permission from Owner or the owning utility prior to undertaking connections. Contractor shall protect facilities against deleterious substances and damage.

Connections to existing facilities which are in service shall be thoroughly planned in advance, and all required equipment, materials, and labor shall be on hand at the time of undertaking the connections. Work shall proceed continuously (around the clock) if necessary to complete connections in the minimum time. Operation of valves or other appurtenances on existing utilities, when required, shall be by or under the direct supervision of the owning utility.

9. UNFAVORABLE CONSTRUCTION CONDITIONS. During unfavorable weather, wet ground, or other unsuitable construction conditions, Contractor shall confine his operations to Work which will not be affected adversely by such conditions. No portion of the Work shall be constructed under conditions which would affect adversely the quality or efficiency thereof, unless special means or precautions are taken by Contractor to perform the Work in a proper and satisfactory manner.

10. CUTTING AND PATCHING. As provided in General Conditions, Contractor shall perform all cutting and patching required for the Work and as may be necessary in connection with uncovering Work for inspection or for the correction of defective Work.

Contractor shall perform all cutting and patching required for an in connection with the Work, including but not limited to the following:

Removal of improperly timed Work.

Removal of samples of installed materials for testing.

Alteration of existing facilities.

Installation of new Work in existing facilities.

Contractor shall provide all shoring, bracing, supports, and protective devices necessary to safeguard all Work and existing facilities during cutting and patching operations. Contractor shall not undertake any cutting or demolition which may affect the structural stability of the Work or existing facilities without Owner's concurrence.

Materials shall be cut and removed to the extent indicated on the Drawings or as required to complete the Work. Materials shall be removed in a careful manner, with no damage to adjacent facilities or materials. Materials which are not salvageable shall be removed from the site by Contractor.

All Work and existing facilities affected by cutting operations shall be restored with new materials, or with salvaged materials acceptable to Engineer/Owner, to obtain a finished installation with the strength, appearance, and functional capacity required. If necessary, entire surfaces shall be patched and refinished.

At any time when Contractors will be crossing city streets with heavy equipment or open cutting said streets, it will be necessary to get a permit from the Owner and/or North Carolina Department of Transportation for such action. Contractors with equipment entering Owner or Department of Transportation maintained streets shall not spill debris or deposit mud, dirt, etc., on these streets without immediate clean-up. After two warnings, cleanup may be done by Owner forces and backed charged to the offending Contractor.

11. CLEANING UP. Contractor shall keep the premises free at all times from accumulations of waste materials and rubbish. Contractor shall provide adequate trash receptacles about the site and shall promptly empty the containers when filled.

Volatile waste shall be properly stored in covered metal containers and removed daily.

Wastes shall not be buried or burned on the site or disposed of into storm drains, sanitary sewers, streams, or waterways. All wastes shall be removed from the site and disposed of in a manner complying with local ordinances and anti-pollution laws.

Adequate cleanup will be a condition for recommendation of progress payment applications.

Contractor shall keep streets and roadways clean and accessible at all times. Street and roadway cleaning shall be as required by and to the satisfaction of the authority having jurisdiction over the street or roadway.

12. APPLICABLE CODES. Reference in the Contract Documents to local codes mean the following:

North Carolina Building Code (Current)

North Carolina Occupational Safety and Health Standards for General Industry

North Carolina Department of Transportation.

Other standard codes which apply to the Work are designated in the Specifications.

13. NSF CERTIFICATION. The following materials which come in contact with the treated water shall have certification to ANSI/NSF 60 or 61.

Joining and sealing materials, such as solvents, cements, welding materials, and gaskets.

Pipe and fittings.

Coatings, linings, and paints.

14. PRECONSTRUCTION CONFERENCE. Prior to the commencement of Work at the site, a preconstruction conference will be held at a mutually agreed time and place. The conference shall be attended by:

Contractor and his superintendent.

Principal subcontractors.

Representatives of principal Suppliers and manufacturers as appropriate.

Representatives of Owner.

Governmental representatives as appropriate.

Other as requested by Contractor or Owner.

Unless previously submitted to Engineer, Contractor shall bring to the conference a preliminary schedule for each of the following:

Progress

Procurement.

Shop Drawings and other submittals.

The purpose of the conference is to designate responsible personnel and establish a working relationship. Matters requiring coordination will be discussed and procedures for handling such matters established. The agenda will include:

Contractor's preliminary schedules.

Transmittal, review, and distribution of Contractor's submittals.

Processing applications for Payment.

Maintaining record documents.

Critical Work sequencing.

Field decisions and Change Orders.

Use of premises, office and storage areas, security, housekeeping, and Owner's needs.

Major equipment deliveries and priorities.

Contractor's assignments for safety and first aid.

Owner will preside at the conference and will arrange for keeping the minutes and distributing the minutes to all persons in attendance.

15. PROGRESS MEETINGS. Contractor shall schedule and hold regular progress meetings at least monthly and at other times as requested by Owner or required by progress of the Work. Contractor and all subcontractors active on the site shall be represented at each meeting. Contractor may at his discretion request attendance by representatives of his Suppliers, manufacturers, and other Subcontractors.

Owner shall preside at the meetings. Meeting minutes will be prepared and distributed by Engineer/Owner. The purpose of the meetings will be to review the progress of the Work, maintain coordination of efforts, discuss changes in scheduling, and resolve other problems which may develop.

16. EXISTING UTILITIES. Contractor shall be responsible for locating all existing utilities prior to any excavation. Contractor shall pay all costs for temporarily and permanently relocating all overhead and underground utilities. Contractor shall coordinate with the Owner all work near other utilities at least 1 week in advance of being near the other utility.

END OF SECTION

## SECTION 01270

### UNIT PRICES

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Delineation of measurement and payment criteria applicable to Work performed under Contract by the unit price payment method.

##### 1.02 FIELD MEASUREMENT

- A. Take measurements and compute quantities for submittal of the monthly pay request unless specified otherwise in the measurement paragraphs as indicated in this Section.

##### 1.03 CHANGE IN QUANTITIES

- A. Increase in the quantity of a bid item above what is indicated in the Bid Form shall only be made by a Change Order as required by the Contract Documents.
- B. A final adjusting Change Order shall be made for adjustment of the actual quantities installed prior to submittal of the final pay request.

##### 1.04 GENERAL

- A. Items with a "(X)" in the title of the following bid items represents the size or depth as indicated on the Bid Form.
- B. Method of measurement for the individual Bid Items shall be as specified below.
- C. Payment for each item shall be in accordance with the Contract Unit Price times the number of units installed in accordance with the Contract Documents.
- D. Work for each bid item shall include, but not be limited to, the work listed below and the labor, materials, equipment, and services required and reasonably implied by the Contract Documents for a complete installation.
- E. Payment for work required by the Contract Documents shall be based upon the pay items described herein. The Work associated with pay items is intended to include all of the work and materials as required for a complete installation as required by the Contract Documents. The descriptions herein may not be complete; however, the project shall be constructed in accordance with Contract Documents and for the cost associated with the unit prices in the Bid Form.

##### 1.05 MOBILIZATION (BID ITEM #1)

- A. Measurement shall not be made for this item.
- B. Work shall include administrative cost including, but not limited to, construction staking, necessary movement of personnel, equipment, supplies, and incidentals to or near the project site, the subsequent removal of personnel, equipment, supplies and incidentals from the work site at the completion of the work, bonds, insurance, preconstruction video inspections, construction progress photos, shop drawing

submittal, as-built documentation/surveys and construction trailers. General office administration for the Project construction shall be included in the individual unit price items.

- C. Bid Price for Mobilization shall not exceed 5 percent of the total bid. Half of the mobilization may be requested on the first pay request and the remainder on the second.

1.06 NCDOT PERFORMANCE BOND (\$20,000) (BID ITEM #2)

- A. Measurement shall not be made for this item.
- B. Contractor shall obtain A Performance and Indemnity Bond in the amount of \$20,000 shall be posted with the District Engineer's Office at 67 JR Rd Suite 700 Selma, NC 27576 by the Party of the Second Part
- C. Reimbursement may be requested on the first pay request.

1.07 18-INCH C900 DR18 GRAVITY SEWER (DIG & REPL. 10") (10'-16' DEEP) (BID ITEM #3)

- A. Measurement: Measure horizontally or from station to station as shown or indicated on the Drawings for the various types and sizes of pipes installed.
  - 1. Measure pipe from center to center of manholes. No deduction will be made for space occupied by manholes. Measure depth of pipe vertically from pipe invert to original grade.
    - a. When connecting to existing pipe instead of manhole, measure pipe from center of manhole to final connection to existing pipe.
    - b. When outside drops are involved, measure from upstream edge of wye/cross on outside drop to center of upstream manhole or to final connection to existing pipe, whichever is applicable
- B. Work shall include, but not be limited to (unless specifically noted otherwise on the Bid Form and this specification Section), the following:
  - 1. Clearing and grubbing of the permanent and temporary easement where necessary, including but not limited to, removing, piling, clearing material, stump grinding, windrowing, or disposing of the cleared and grubbed material and restoring and leveling the ground surface after debris removal. Trim branches of existing trees extending over the area occupied by the easement as directed by Owner to give a clear height of 16 feet above the easement. Onsite burning and backfilling of cleared and grubbed material is prohibited.
  - 2. Temporary removal and restoration/relocation or temporary support of, but not limited to, existing mailboxes, signs, fences, shrubs, plants, guardrails, power and telephone poles.
  - 3. **Removal of existing sewer when replacing in-place.**
  - 4. Cutting and removal of existing paved surfaces including curb and sidewalk. Patching/repair of existing paved surfaces, curb and sidewalk shall be paid as indicated in subsequent paragraphs.
  - 5. Excavating around pipe and manholes, shoring and bracing installation and removal where required, excess material disposal, existing pipe removal, removal of existing manholes, loading, hauling and stockpiling material, subgrade preparation, dewatering and/or well pointing as required, piping with required coatings, installing, backfilling and compacting (including Class I material as specified for the pipe bedding, haunching, and initial backfill), and trench maintenance after backfilling.
  - 6. Warning / identification tape over utilities

7. Core-drilling of existing manholes, gaskets, couplings, adapters.
  8. Temporary support and protection of existing underground facilities.
  9. Pipe, coatings, gaskets, concrete blocking, connection to existing piping and fittings.
  10. Flushing of utility lines and testing of utility lines, manholes, valves, etc. before placing in service.
  11. Repair to damaged new and existing utilities.
  12. All labor, materials and equipment necessary for a complete installation.
  13. Steel plating to secure open trenches.
  14. Replacing gutters, storm sewers, and inlets (that are not indicated to be replaced either on the Drawings or in the Specifications) and utilities removed as part of construction. Storm sewers, inlets and utilities damaged through fault of the Contractor or removed at the convenience of the Contractor shall be replaced at the Contractor's expense.
- C. Payment: The first Application for Payment will be approved based on the utilities installed during the agreed upon payment period without testing. Subsequent Application for Payments shall not be approved by the Engineer unless utilities installed during the previous payment period have passed the specified tests and clean up and seeding is complete.
1. No payment will be allowed for excavation below the planned subgrade of the trench, except that excavation directed by the Owner.

1.08 VALVING / PIPING INSTALLATION AT WET WELL FOR TEMPORARY BYPASS OF WET WELL (BID ITEM #4)

- A. Measurement shall not be made for this item.
- B. Work shall include, but not be limited to (unless specifically noted otherwise on the Bid Form and this specification Section), the following:
1. Accessing above ground Smith & Loveless pump station.
  2. Disconnecting / Assembly of new plumbing, piping, and valving required to connect bypass piping to existing discharge side of pumps(s).
  3. Coordination with Town staff to temporary shut off / operate pump station during all work.
  4. Removal of temporary connection piping / valving unless accepted as a permanent installation.
  5. All labor, materials and equipment necessary for a complete installation.
  6. Replacing gutters, storm sewers, and inlets (that are not indicated to be replaced either on the Drawings or in the Specifications) and utilities removed as part of construction. Storm sewers, inlets and utilities damaged through fault of the Contractor or removed at the convenience of the Contractor shall be replaced at the Contractor's expense.
- C. Payment: Payment: The first Application for Payment will be approved based on the utilities installed and accepted on a lump sum basis.

1.09 CORE AND CONNECT NEW 18" SEWER TO EXISTING WET WELL (BID ITEM #5)

- A. Measurement shall not be made for this item.
- B. Work shall include, but not be limited to (unless specifically noted otherwise on the

Bid Form and this specification Section), the following:

1. Clearing and grubbing of the permanent and temporary easement where necessary, including but not limited to, removing, piling, clearing material, stump grinding, windrowing, or disposing of the cleared and grubbed material and restoring and leveling the ground surface after debris removal. Trim branches of existing trees extending over the area occupied by the easement as directed by Owner to give a clear height of 16 feet above the easement. Onsite burning and backfilling of cleared and grubbed material is prohibited.
  2. Temporary removal and restoration/relocation or temporary support of, but not limited to, existing mailboxes, signs, fences, shrubs, plants, guardrails, power and telephone poles.
  3. Removal of existing sewer piping.
  4. Cutting and removal of existing paved surfaces including curb and sidewalk. Patching/repair of existing paved surfaces, curb and sidewalk shall be paid as indicated in subsequent paragraphs.
  5. Excavating around pipe and manholes, shoring and bracing installation and removal where required, excess material disposal, existing pipe removal, removal of existing manholes, loading, hauling and stockpiling material, subgrade preparation, dewatering and/or well pointing as required, piping with required coatings, installing, backfilling and compacting (including Class I material as specified for the pipe bedding, haunching, and initial backfill), and trench maintenance after backfilling.
  6. Warning / identification tape over utilities
  7. Core-drilling of existing wet well, gaskets, seals, and adaptors.
  8. Temporary support and protection of existing underground facilities.
  9. Pipe, coatings, gaskets, concrete blocking, connection to existing piping and fittings.
  10. Flushing of utility lines and testing of utility lines, manholes, valves, etc. before placing in service.
  11. Repair to damaged new and existing utilities.
  12. All labor, materials and equipment necessary for a complete installation.
  13. Replacing gutters, storm sewers, and inlets (that are not indicated to be replaced either on the Drawings or in the Specifications) and utilities removed as part of construction. Storm sewers, inlets and utilities damaged through fault of the Contractor or removed at the convenience of the Contractor shall be replaced at the Contractor's expense.
- C. Payment: The first Application for Payment will be approved based on the utilities installed and accepted on a lump sum basis.
- 1.10 INSTALL NEW 5' DIA. MANHOLE IN NEW LOCATION (10'-16' DEEP) (BID ITEMS #6)
- A. Measurement: By each at the location shown on the Drawings regardless of size and depth.
  - B. Work shall include, but not be limited to (unless specifically noted otherwise on the Bid Form and this specification Section), the following:
    1. Stone sub-base, furnishing and installing precast concrete sections as required for the depth, top adjusting rings, pipe boots, frame and cover (as indicated), coatings, anchor bolts, washers, gasket material, non-shrink grout, concrete channel fill, debris removal and stainless steel clamps.
    2. Reconnect existing side connections including gravity mains and service lateral connections to new manhole.

3. Vacuum testing.
  4. All labor, materials and equipment necessary for a complete installation.
  5. Rock excavation is not included and will be paid separately.
- C. Payment: Payment will be made per each manhole installed and accepted.
- 1.11 REPLACE EXISTING MANHOLE WITH NEW 5' DIA. MANHOLE (10'-16' DEEP) (BID ITEMS #7)
- A. Measurement: By each at the location shown on the Drawings regardless of size and depth.
  - B. Work shall include, but not be limited to (unless specifically noted otherwise on the Bid Form and this specification Section), the following:
    1. Removal and offsite disposal of existing manhole.
    2. Stone sub-base, furnishing and installing precast concrete sections as required for the depth, top adjusting rings, pipe boots, frame and cover (as indicated), coatings, anchor bolts, washers, gasket material, non-shrink grout, concrete channel fill, debris removal and stainless steel clamps.
    3. Reconnect existing side connections including gravity mains and service lateral connections to new manhole.
    4. Vacuum testing.
    5. All labor, materials and equipment necessary for a complete installation.
    6. Rock excavation is not included and will be paid separately.
  - C. Payment: Payment will be made per each manhole installed and accepted
- 1.11 ABANDON EXISTING MANHOLE IN-PLACE (BID ITEM #8)
- A. Measurement: for each location indicated on the drawings and in accordance with the Contract Documents.
  - B. Work: shall include all labor, material, equipment, and accessories required to fully abandon the existing manhole or structure in place. This shall include removal of existing tops, backfilling and compacting, grading, disposal of materials, cleanup, and restoration.
- 1.12 BYPASS PUMPING (BID ITEM #9)
- A. Measurement: Measure by lump sum for all bypass pumping required to divert sewer necessary for installation of the proposed utility lines as shown on the Drawings. Payment shall include all labor, material, equipment, piping, and accessories necessary to bypass the encountered flow.
  - B. Work: Delivery and setup of equipment and piping, burying piping where indicated on the drawings, temporary bridges, fuel, oil, maintenance, monitoring, diversion blocking/isolation, scour protection, pumping, pipe supports and anchoring, manhole and siphon box top and riser removal and reinstatement, disassembling and removal of all equipment and piping, and cleanup.

1.13 30" STEEL CASING INSTALLATION BY JACK & BORE (BID ITEM #10)

- A. Measurement: by linear foot not exceeding 58 linear feet measured per foot of casing installed on line and grade.
- B. Work shall include, but not be limited (unless specifically noted otherwise on the Bid Form and this specification section), the following:
  - 1. Mobilization and demobilization of boring equipment, materials and personnel.
  - 2. Stabilization of existing utilities.
  - 3. Bore pit excavation, bulkheads, shoring, and maintenance.
  - 4. Steel carrier pipe with required coatings, gaskets, pipe supports, and all labor and equipment necessary for completed installation.
  - 5. Grade control monitoring/surveying and reporting.
  - 6. Costs for bonds, insurance and provisions established by the NCDOT as indicated in the encroachment permit.
  - 7. Stockpiling, loading, hauling and disposal of all material from excavation and boring activities.
  - 8. All dewatering required for completion of the Work.
- C. Payment:
  - 1. No payment shall be made for unusable pipe that is installed.
  - 2. Payment will not be made until the carrier pipe passes the low-pressure air test.
  - 3. The installations are guaranteed at the bid price established in the Bid Form.

1.14 EXTEND / RECONNECT SEWER LATERAL TO NEW SEWER MAIN (BID ITEM #11)

- A. Measurement: Measure by each service lateral transferred from exiting sewer to new sewer main where indicated on the Drawings.
- B. Work shall include, but not be limited to (unless specifically noted otherwise on the Bid Form and this specification Section), the following:
  - 1. Locating existing service lateral.
  - 2. Clearing and grubbing
  - 3. Cutting and removal of existing paved surfaces including curb and sidewalk. Patching/repair of existing paved surfaces, curb and sidewalk shall be paid as indicated in subsequent paragraphs.
  - 4. Temporary removal and restoration/relocation or temporary support of, but not limited to, existing mailboxes, signs, fences, shrubs, plants, guardrails, power and telephone poles.
  - 5. Removal of existing sewer when replacing in-place.
  - 6. Excavating around pipe and manholes, shoring and bracing installation and removal where required, excess material disposal, existing pipe removal, removal of existing manholes, loading, hauling and stockpiling material, subgrade preparation, dewatering and/or well pointing as required, piping with required coatings, installing, backfilling and compacting (including Class I material as specified for the pipe bedding, haunching, and initial backfill), and trench maintenance after backfilling.
  - 7. Warning / identification tape over utilities
  - 8. Connecting new lateral to factory wye connection on new sewer main.
  - 9. Connecting new lateral to existing lateral with non-shear coupling.
  - 10. Temporary support and protection of existing underground facilities.
  - 11. Repair to damaged new and existing utilities.

- 12. All labor, materials and equipment necessary for a complete installation.
  - 13. Replacing gutters, storm sewers, and inlets (that are not indicated to be replaced either on the Drawings or in the Specifications) and utilities removed as part of construction. Storm sewers, inlets and utilities damaged through fault of the Contractor or removed at the convenience of the Contractor shall be replaced at the Contractor's expense.
- C. Payment: Payment shall be made per Each.
- 1.15 INSTALL 100 MIL DRT EPOXY COATING – 5' DIA. MANHOLE (BID ITEM #12)
- A. Measurement: By the vertical foot measured from invert out to bottom of manhole frame for each manhole coated and accepted.
  - B. Work shall include, but not be limited to (unless specifically noted otherwise on the Bid Form and this specification Section), the following:
    - 1. Surface preparation to remove any loose or unsound material, surface repairs, surface priming and any additional manufacturer required surface preparation.
    - 2. Spray application of epoxy coating to achieve of final dry film thickness of 100 mils
    - 3. Cleanup, testing, and touch-ups as required prior to acceptance.
  - C. Payment: Payment shall be made per VF.
- 1.16 ALLOWANCE FOR MISCELLANEOUS SEWER OR UTILITY ADJUSTMENTS (BID ITEM #20)
- A. Measurement shall not be made for this item.
  - B. An allowance has been established for miscellaneous sewer, water, storm drain, or utility installation or adjustments if identified or request in the field. (i.e., sewer installation above normal installation by Contractor, adjustment of surrounding utility for convenience of Owner). This allowance shall only be utilized upon request by the Owner for these installation services.
  - C. Where services are requested by Owner, Contractor shall submit invoices to show actual cost of goods and services for use in fulfillment of allowance in addition to time and materials for Contractor's services.
  - D. Payment: Payment will be made out of the established allowance based on the direct cost of materials, labor, and equipment with a 20% markup for general overhead and profit.
- 1.17 ASPHALT CUT & PATCH NCDOT (7" B25.OB OR B25.OC AND 2" MIN. S9.5B OR S9.5C) (BID ITEM #13)
- A. Measurement: Measure by the square yard along centerline of roadway cut times width of cut. Cut width shall not exceed (10) feet unless approved by Engineer. Payment shall not be made for pavement repair required due to excessive open cut caused by Contractor.
  - B. Work shall include, but not be limited to (unless specifically noted otherwise on the Bid Form and this specification Section), the following:
    - 1. Backfilling, compacting, producing, transporting, grading, stone sub-base, asphalt at the depths as specified, hauling, placing and compaction of stone base, primer, placing, and compaction of asphalt, pavement markings, protection and reinstallation of traffic signal loops, adjustments to manhole rings, valves boxes, etc.
    - 2. Backfilling with Aggregate Base Course (tested in accordance with Section 520 of the latest NCDOT Standard Specifications or backfilling with flowable fill.

3. Temporary patching or steel plating of trench when left opened outside of work hours or as required to maintain traffic.
- C. Payment: per SY of final asphalt patch installed and accepted.
- 1.18 MIL EXISTING PAVEMENT 2-INCH DEEP 25-FEET ON EACH SIDE OF TRENCH (NCDOT) (MILL 2", 2" S9.5B OVERLAY) (BID ITEM #14)
- A. Measurement: Measure by the square yard along centerline of the roadway cut times 50' width. Milling shall be performed 25' in each direction over the center line of the proposed sewer main across College Road. Mill 2" of existing pavement and overlay with 2".
  - B. Work: Milling, disposal, transporting, paving, pavement markings, protection and reinstallation of traffic signal loops, adjustments to manhole rings, valves boxes, etc.
  - C. Payment: per SY of final asphalt patch installed and accepted.
- 1.19 ASPHALT CUT & PATCH TOWN STREETS (PARKING LOTS) (7" B25.OB OR B25.OC AND 2" MIN. S9.5B OR S9.5C) (BID ITEM #15)
- A. Measurement: Measure by the square yard along centerline of roadway cut times width of cut. Cut width shall not exceed (10) feet unless approved by Engineer. Payment shall not be made for pavement repair required due to excessive open cut caused by Contractor.
  - B. Work: Backfilling, compacting, producing, transporting, grading, stone sub-base, asphalt at the depths as specified, hauling, placing and compaction of stone base, primer, placing, and compaction of asphalt, pavement markings, protection and reinstallation of traffic signal loops, adjustments to manhole rings, valves boxes, etc.
  - C. Payment: per SY of final asphalt patch installed and accepted.
- 1.20 CONCRETE SIDEWALK REPLACEMENT (BID ITEM #16)
- A. Measure by the square yard installed.
  - B. Work shall include the cutting of concrete and asphalt as necessary at surface points to remain, protecting existing facilities to remain, remove and properly dispose of sidewalk excavation, forming, concrete placement and finishing, construction and expansion joints, and backfill.
- 1.21 CONCRETE CURB & GUTTER REPLACEMENT (BID ITEM #17)
- A. Measure by the linear foot as taken along the face of the curb and gutter installed. Depressed curb at wheelchair ramps will be measured as curb and gutter and paid for at the price as the adjacent curb and gutter.
  - B. Work shall include demolishing, removal, and disposal of existing, excavation, forming, concrete placement and finishing, construction and expansion joints, and backfill.
- 1.22 REPLACE / INSTALL ADA SIDEWALK RAMP (BID ITEM #18)
- A. Measure by per Each replace or installed.
  - B. Work shall include demolishing, removal, and disposal of existing, excavation, forming, concrete placement and finishing, construction and expansion joints, backfill, landings, flares, and slip pads.

1.23 UNDERCUT PIPE TRENCH AND REPLACE WITH NO. 67 STONE FOR PIPE FOUNDATION (BID ITEM #19)

- A. Measurement: Measure along the centerline of the trench times the undercut depth below the pipe bedding as approved by Engineer times the pipe OD plus two feet. Measure unstable soils at manholes on the maximum basis of 1 foot greater diameter than the outside diameter of the manhole and a depth as approved by the Engineer. Measurement shall be based on the actual quantities removed but not exceeding the maximum specified trench dimensions. Take measurements in the presence of the Engineer. Maintain daily log sheets of measured quantities. Log sheets must be signed by Engineer and submitted with payment request. Payment shall not be made for quantities that have not been field verified by the Engineer.
- B. Work: Complete removal and disposal of unstable soil including, but not limited to, excavating, loading, hauling, properly disposing of excavated material, and providing stone for backfill. Providing stone material for backfilling shall include, but not be limited to, material, loading, hauling, placing and compacting.

1.24 SELECT BACKFILL (BID ITEM #20)

- A. Measurement: by the cubic yard as follows, as directed by Engineer:
  - 1. Pipes: Linear feet along the centerline of the trench, times the depth removed as approved by Engineer, times the pipe bell OD plus four (4) feet.
  - 2. Manholes: The maximum basis is 1-foot greater diameter than the outside diameter of the manhole (excluding extended base) and a depth as approved by the Engineer.
  - 3. Measurement shall be based on the actual quantities removed, but not exceeding the maximum specified trench dimensions.
  - 4. Take measurements in the presence of the Engineer.
  - 5. Maintain daily log sheets of measured quantities.
  - 6. Log sheets must be signed by Engineer and submitted with payment request.
- B. Work shall include, but not be limited to (unless specifically noted otherwise on the Bid Form and this specification Section), the following:
  - 1. Complete removal of unstable soil including, but not limited to, excavating, stockpiling, loading, hauling and disposal of excavated material off-site.
  - 2. Hauling, installing, compacting suitable, select backfill.
- C. Payment:
  - 1. Payment shall not be made for quantities that have not been field verified by the Engineer.
  - 2. This pay item applies to material above the pipe bedding zone.

1.25 ROCK EXCAVATION MECHANICAL METHODS (BID ITEM #21)

- A. Measurement: by the cubic yard as follows:
  - 1. Pipe: Measure along the centerline of the trench, times the depth from the top of rock profile to the bottom of the rock profile or specified depth below the pipe (whichever is encountered first), times the pipe bell OD plus four (4) feet.
  - 2. Structure: Measure two (2) feet beyond the outside wall of the structure (excluding extended base) and for a depth from the top of rock profile to the bottom of the rock profile or for one foot below bottom of structure (whichever is encountered first).
  - 3. Take measurements in the presence of the Engineer.
  - 4. Maintain daily log sheets of measured quantities.
  - 5. Log sheets must be signed by the Engineer and submitted with payment request.

- B. Work shall include, but not be limited to (unless specifically noted otherwise on the Bid Form and this specification Section), the following:
    - 1. Complete removal and disposal of excavated rock material including, but not limited to, drilling, monitoring, excavating, loading, hauling, and properly disposing of excavated material.
    - 2. Providing specified material for backfilling shall include, but not be limited to, material, bedding material, loading, hauling, placing and compacting.
  - C. Mechanical rock excavation shall be as described above with the exception of the blasting. Mechanical rock excavation shall only be paid for separately if it is the only means allowed for excavation due to restrictions against blasting. Restrictions may be due to location of adjacent utilities or other infrastructure, other factors described in the Contract Documents, or as determined by the Owner during construction. If the Contractor chooses to utilize mechanical excavation as a means for rock removal where blasting is allowed, the Contractor will not be paid for the rock excavation under the bid item for Rock Excavation by Blasting.
  - D. Payment: Payment shall not be made for quantities that have not been field verified by the Engineer.
- 1.26 RESTORE DRAINAGE DITCH WITH RIP RAP (BID ITEM #22)
- A. Measurement shall by the square yard installed as indicated on the Drawings or directed in the field by Engineer.
  - B. Work: Excavation, grading, filter fabric under stone, stone, hauling, placement, maintenance, replacement, removal, cleanup, and restoration.
  - C. Payment shall be for all the labor, material and accessories required for a complete installation including, but not be limited to, the cost of fine grading, bedding stone, and rip rap.
- 1.27 WATTLE (BID ITEM #23)
- A. Measurement: Measure by each inlet protector as shown on the Drawings.
  - B. Work: Washed stone, wire mesh, maintenance during construction, and final removal and cleanup.
- 1.28 INLET PROTECTION (BID ITEM #24)
- A. Measurement shall be for each, no matter the stone size or overall dimensions, inlet protection location per the details and locations in the drawings.
  - B. Work: Excavation, grading, filter fabric under stone, stone, hauling, placement, maintenance, replacement, removal, cleanup, and restoration.
- 1.29 SILT FENCE (BID ITEM #25)
- A. Measurement: Measure by the linear foot along the base of the silt fence installed.
  - B. Work: Posts, wire mesh, fabric, base trench, stone, and maintenance during construction, removal and clean up.
- 1.30 TREE PROTECTION FENCING (BID ITEM #26)
- A. Measurement: Measure by the linear foot along the base of the tree protection fencing furnished and installed.
  - B. Work: Posts, fabric, signs, maintenance during construction, removal, and cleanup.

1.31 TRAFFIC CONTROL (BID ITEM #27)

- A. Measurement: Measure by lump sum for all traffic and pedestrian control required for installation and rehabilitation of the proposed utilities as shown on the Drawings.
- B. Work: Furnishing, installing, maintaining, adjusting, removal and operations of signage, signals, security gates, stone, rip-rap, ramps, and temporary bridges.
- C. Payment shall include all labor, material, equipment, and accessories required to furnish, install, maintain, adjust, and remove all traffic and pedestrian control.

1.32 CLEARING AND GRUBBING (BID ITEM #28)

- A. Measurement shall not be made for this item.
- B. Payment for the clearing and grubbing shall be in accordance with the Contract lump sum price. Payment shall be for the labor, material, equipment, and accessories required for the clearing and grubbing as indicated in the Contract Documents.

1.33 CLEANUP AND SEEDING (MIN. 5% OF BID ITEMS #3-8) (BID ITEM #29)

- A. Measurement: lump sum.
- B. Work: Shall include the full width of the disturbed area for the cleanup and seeding along pipeline construction. Work shall include, but not be limited to, the following:
  - 1. Removal and proper disposal of debris and excess material.
  - 2. Grade disturbed areas to original surface profile prior to trench excavation.
  - 3. Cleaning of paved surfaces.
  - 4. Proper seeding of disturbed area including mulching.
  - 5. Obtain approval of cleanup from owner of right-of-way.
  - 6. Soil amendments (fertilizer/lime).

Total Contract Price of cleanup and seeding **must be equal to a minimum of five (5) percent** of the total cost of pipeline work (Bid Items #3-8)

1.34 ALLOWANCE FOR PARKING LOT RESTORATION (BID ITEM #30)

- A. Measurement shall not be made for this item.
- B. An allowance has been established for addition restoration of the Golden Corral parking lot. The Work may include but not be limited to replacement of striping, curb stops, or other items approved by the Town. This allowance shall only be utilized upon request by the Owner for these restoration services.
- C. Where services are requested by Owner, Contractor shall submit invoices to show actual cost of goods and services for use in fulfillment of allowance in addition to time and materials for Contractor's services.
- D. Payment: Payment will be made out of the established allowance based on the direct cost of materials, labor, and equipment with a 20% markup for general overhead and profit.

1.35 ADDITIONAL FOR LANDSCAPING (BID ITEM #31)

- A. Measurement shall not be made for this item.
- B. An allowance has been established for landscaping defined as replacement of trees, ornamental bushes, and flowers, much, hardscapes or other landscaping features demolished during construction. Does not include damage outside of limits of disturbance.
- C. Where services are requested by Owner, Contractor shall submit invoices to show actual cost of goods and services for use in fulfillment of allowance in addition to time and materials for Contractor's services.
- D. Payment: Payment will be made out of the established allowance based on the direct cost of materials, labor, and equipment with a 20% markup for general overhead and profit.

1.36 ALLOWANCE FOR MISCELLANEOUS UTILITY ADJUSTMENTS (BID ITEM #32)

- A. Measurement shall not be made for this item.
- B. An allowance has been established for miscellaneous sewer, water, storm drain, or utility installation or adjustments if identified or request in the field. (i.e., sewer installation above normal installation by Contractor, adjustment of surrounding utility for convenience of Owner). This allowance shall only be utilized upon request by the Owner for these installation services.
- C. Where services are requested by Owner, Contractor shall submit invoices to show actual cost of goods and services for use in fulfillment of allowance in addition to time and materials for Contractor's services.
- D. Payment: Payment will be made out of the established allowance based on the direct cost of materials, labor, and equipment with a 20% markup for general overhead and profit.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

Section 01300 - SUBMITTALS

1. PROGRESS SCHEDULE. After the preconstruction conference and before Work is started, Contractor shall submit to Owner for review a schedule of the proposed construction operations. The progress schedule shall indicate the sequence of the Work, the time of starting and completion of each part, and the time for making connections to existing piping, structures, or facilities.

At least every 30 days the schedule shall be revised as necessary to reflect changes in the progress of the Work.

Owner may require Contractor, at Contractor's expense, to add to his plant, equipment, or construction forces, as well as increase the working hours, if operations fall behind schedule at any time during the construction period.

2. PROGRESS REPORTS. A progress report shall be furnished to Owner with each Application for Payment. If the Work falls behind schedule, Contractor shall submit additional progress reports at such intervals as Owner may request.

Each progress report shall include sufficient narrative to describe current and anticipated delaying factors, their effect on the progress schedule, and proposed corrective actions. Any Work reported complete, but which is not readily apparent to Owner, must be substantiated with satisfactory evidence.

Each progress report shall also include three prints of the accepted graphic schedule marked to indicate actual progress.

3. SCHEDULE OF PAYMENTS. Within 15 days after award of contract, Contractor shall furnish to Owner a schedule of estimated monthly payments. The schedule shall be revised and resubmitted each time an Application for Payment varies more than 10 percent from the estimated payment schedule.

4. SCHEDULE OF SHOP DRAWINGS. Within 3 days after award of contract, Contractor shall submit a schedule of shop drawings.

5. LIST OF SUBCONTRACTORS. Within 3 days after award of contract, Contractor shall submit a list of subcontractors.

6. LIST OF PROPOSED MATERIALS. Within 15 days after award of contract, Contractor shall submit a list of proposed materials.

7. LIST OF EMERGENCY CONTACTS. Within 15 days after award of contract, Contractor shall submit a list of four names for emergency contact.

8. SUBMISSION OF SCHEDULES. As indicated above, the schedule of payments, schedule of shop drawings, list of subcontractors, list of proposed materials, and list of

emergency contacts shall be submitted within 15 days after the award of contract. Partial payment invoices will not be processed until these items are properly submitted and accepted.

9. SURVEY DATA. All field books, notes, and other data developed by Contractor in performing surveys required as part of the Work shall be available to Owner for examination throughout the construction period. All such data shall be submitted to Owner with the other documentation required for final acceptance of the Work.

10. SHOP DRAWINGS AND ENGINEERING DATA.

10.01. General. Shop Drawings and engineering data covering all equipment and materials which will become a permanent part of the Work under this Contract shall be submitted to the Owner for review. The data shall include drawings and descriptive information in sufficient detail to show the kind, size, arrangement, and operation of component materials and devices; the external connections, anchorages, and supports required; performance characteristics; and dimensions needed for installation and correlation with other materials and equipment.

All submittals, regardless of origin, shall be stamped with the approval of Contractor and identified with the name and number of this Contract, Contractor's name, and references to applicable specification paragraphs and Contract Drawings. Each submittal shall indicate the intended use of the item in the Work. When catalog pages are submitted, applicable items shall be clearly identified and inapplicable data crossed out. The current revision, issue number, and date shall be indicated on all drawings and other descriptive data.

Contractor's stamp of approval is a representation to Owner that Contractor accepts full responsibility for determining and verifying all quantities, dimensions, field construction criteria, materials, catalog numbers, and similar data, and that he has reviewed and coordinated each submittal with the requirements of the Work and the Contract Documents.

Contractor shall accept full responsibility for the completeness of each submission. When an item consists of components from several sources, Contractor shall submit a complete initial submittal including all components.

All deviations from the Contract Documents shall be identified on each submittal and shall be tabulated in Contractor's letter of transmittal. Such submittals shall, as pertinent to the deviation, indicate essential details of all changes proposed by Contractor (including modifications to other facilities that may be a result of the deviation) and all required piping and wiring diagrams.

One electronic copy of each drawing and necessary data shall be submitted to Owner. Owner will return marked copies in digital to Contractor. Owner will not accept

submittals from anyone but Contractor. Submittals shall be consecutively numbered in direct sequence of submittal and without division by subcontracts or trades.

10.02. Engineer's Review of Drawings and Data. Engineer's review of drawings and data submitted by Contractor will cover only general conformity to the Drawings and Specifications, external connections, and dimensions which affect the layout. Engineer's review does not indicate a thorough review of all dimensions, quantities, and details of the material, equipment, device, or item shown. Engineer's review shall not relieve Contractor of Contractor's responsibility for errors, omissions, or deviations in the drawings and data, nor of sole responsibility for compliance with the Contract Documents.

Engineer's submittal review period shall be 21 consecutive calendar days in length and shall commence on the first calendar day immediately following the date of arrival of the submittal or resubmittal in Engineer's office. The time required to mail the submittal or resubmittal back to Contractor shall not be considered a part of the submittal review period.

When the drawings and data are returned marked "NOT ACCEPTABLE" or "RETURNED FOR CORRECTION", the corrections shall be made as noted thereon and as instructed by Engineer and five corrected copies (or one corrected reproducible copy) resubmitted. Facsimile (fax) copies will not be acceptable.

When the drawings and data are returned marked "EXCEPTIONS NOTED", "NO EXCEPTIONS NOTED", or "RECORD COPY", no additional copies need be furnished unless requested by Engineer at time of review.

10.03. Resubmittal of Drawings and Data. Contractor shall accept full responsibility for the completeness of each resubmittal. Contractor shall verify that all corrected data and additional information previously requested by Engineer are provided on the resubmittal.

When corrected copies are resubmitted, Contractor shall in writing direct specific attention to all revisions and shall list separately any revisions made other than those called for by Engineer on previous submissions.

Requirements specified for initial submittals shall also apply to resubmittals. Resubmittals shall bear the number of the first submittal followed by a letter (A, B, etc.) to indicate the sequence of the resubmittal.

If more than one resubmission is required because of failure of Contractor to provide all previously requested corrected data or additional information, Contractor shall reimburse Owner for the charges of Engineer for review of the additional resubmissions. This does not include initial submittal data such as shop tests and field tests which are submitted after initial submittal.

Resubmittals shall be made within 30 days of the date of the letter returning the material to be modified or corrected, unless within 14 days Contractor submits an acceptable request for an extension of the stipulated time period, listing the reasons the resubmittal cannot be completed within that time.

Any need for more than one resubmission, or any other delay in obtaining Engineer's review of submittals, will not entitle Contractor to extension of the Contract Times unless delay of the Work is directly caused by a change in the Work authorized by a Change Order or by failure of Engineer to review any submittal within the submittal review period specified herein and to return the submittal to Contractor.

11. OPERATION AND MAINTENANCE DATA AND MANUALS. Adequate operation and maintenance information shall be supplied for all equipment requiring maintenance or other attention. The equipment Supplier shall prepare an operation and maintenance manual for the items listed below:

Butterfly valves

Gate valves

Pumping units

Meters

Check valves

Electrical equipment

Operation and maintenance manuals shall include the following:

- a. Equipment function, normal operating characteristics, and limiting conditions.
- b. Assembly, installation, alignment, adjustment, and checking instructions.
- c. Operating instructions for startup, routine and normal operation, regulation and control, shutdown, and emergency conditions.
- d. Lubrication and maintenance instructions.
- e. Guide to "troubleshooting".
- f. Parts lists and predicted life of parts subject to wear.
- g. Outline, cross-section, and assembly drawings; engineering data; and wiring diagrams.
- h. Test data and performance curves, where applicable.
- i. Any other items requested by the owner.

The operation and maintenance manuals shall be in addition to any instructions or parts lists packed with or attached to the equipment when delivered, or which may be required by Contractor.

Manuals and other data shall be printed on heavy, first quality paper, 8-1/2 by 11 inch size, with standard three-hole punching. Drawings and diagrams shall be reduced to 8-1/2 by 11 inches or 11 by 17 inches. Where reduction is not practicable, larger drawings shall be folded separately and placed in envelopes which are bound into the manuals. Each envelope shall bear suitable identification on the outside. Three copies of the manual shall be provided.

All material shall be marked with project identification, and inapplicable information shall be marked out or deleted.

Shipment of equipment will not be considered complete until all required manuals and data have been received.

12. LAYOUT DATA. Contractor shall keep neat and legible notes of measurements and calculations made by him in connection with the layout of the Work. Copies of such data shall be furnished to the Owner for use in checking Contractor's layout as provided in the project requirements section. All such data considered of value to Owner will be transmitted to Owner with other records upon completion of the Work.

13. CONSTRUCTION PHOTOGRAPHS. Contractor shall video tape the entire alignment and submit digital video on an external storage device (.mp4, .mov, .avi or .wmv files) for approval by Engineer prior to beginning any clearing.

End of Section

## Section 01400 - QUALITY CONTROL

1. TESTING SERVICES. All tests to determine compliance with the Contract Documents shall be performed by an independent commercial testing firm acceptable to Owner. The testing firm's laboratory shall be staffed with experienced technicians, properly equipped and fully qualified to perform the tests in accordance with the specified standards.

Testing services provided by Owner are for the sole benefit of Owner; however, test results shall be available to Contractor. Testing necessary to satisfy Contractor's internal quality control procedures shall be the sole responsibility of Contractor.

1.01. Testing Services Furnished by Contractor. Unless otherwise specified, Contractor shall provide all testing services in connection with the following:

Concrete materials and mix designs.

Asphaltic concrete materials and mix designs.

Embedment, fill, and backfill materials.

All other tests and engineering data required for Owner's review of materials and equipment proposed to be used in the Work.

Contractor shall obtain Owner's acceptance of the testing firm before having services performed, and shall pay all costs for these testing services. Testing allowances may be included in the Contract.

1.02. Transmittal of Test Reports. Written reports of tests and engineering data furnished by Contractor for Owner's review of materials and equipment proposed to be used in the Work shall be submitted as specified for Shop Drawings.

End of Section



## Section 01500 – TEMPORARY FACILITIES

1. WATER. Water in reasonable amounts required for an in connection with the Work to be performed will be furnished at locations as approved by Owner at rates specified by Owner and in accordance with the federal, state and local regulations, ordinances and policies. Contractor shall furnish necessary pipe, hose, reduced pressure zone back flow device, as approved by the Owner and meter approved by Owner, nozzles, and tools and shall perform all necessary labor. Contractor shall ensure that the equipment has been inspected by and approved by the Owner and has obtained the applicable permits and certifications prior to water system connection. Contractor shall make arrangements with the Owner (who will fix the location, time, rate, and duration of each withdrawal from the distribution system) as to the amount of water required and the time when the water will be needed. Unnecessary waste of water will not be tolerated. Special hydrant wrenches shall be used for opening and closing fire hydrants. In no case shall pipe wrenches be used for this purpose.

If Contractor wastes water, as determined by Owner, Contractor shall be required to obtain all remaining water necessary for completion of the Work measured through a meter and at the Contractor's expense.

2. POWER. Contractor shall provide all power for any other use by Contractor. This service shall be installed by a licensed electrical contractor. Lighting shall be provided by the Contractor in all spaces as times necessary for good and proper workmanship, for inspection, and for safety. Contractor must obtain all necessary permits and provide copies of the permits to the Owner prior to initiating the work.

3. SANITARY FACILITIES. Contractor shall furnish temporary sanitary facilities at the site, as provided herein, for the needs of all construction workers and others performing work or furnishing services on the Project, in compliance with the state health department regulations.

Sanitary facilities shall be of reasonable capacity, properly maintained throughout the construction period, and obscured from public view to the greatest practical extent. If toilets of the chemically treated type are used, at least one toilet will be furnished for each 20 men. Contractor shall enforce the use of such sanitary facilities by all personnel at the site.

4. MAINTENANCE OF TRAFFIC. Contractor shall obtain the required approvals encroachments, and permits from State of North Carolina Department of Transportation and or the Owner as applicable prior to initiating any work within highway or road rights-of-ways or in Owner streets. Contractor shall conduct his work to interfere as little as possible with public travel, whether vehicular or pedestrian. Whenever it is necessary to cross, obstruct, or close roads, driveways, and walks, whether public or private, Contractor shall provide and maintain suitable and safe bridges, detours, or other temporary expedients for the accommodation of public and private travel, and shall give reasonable notice to owners of private drives before interfering with them. Such maintenance of traffic will not be required when Contractor has obtained permission from the owner and tenant of private property, or from the authority having

jurisdiction over public property involved, and submit written documentation of such agreements to the Owner prior to obstruct traffic at the designated point.

In making open-cut street crossings, Contractor shall not block more than one half of the street at a time. Whenever possible, Contractor shall widen the shoulder on the opposite side to facilitate traffic flow. Temporary surfacing shall be provided as necessary on shoulders.

All work performed within the highway rights-of-way or in Owner streets shall be in accordance with the State of North Carolina Department of Transportation “Policies, North Carolina State Traffic Control Guidelines”, OSHA Regulations, and Procedures for Accommodating Utilities on Highway Rights-of-Way and shall be approved by Owner.

4.01. Temporary Bridges. Contractor shall obtain the required plan approvals, encroachments, and permits from State of North Carolina Department of Transportation, NCDENR, OSHA and/or the Owner, as applicable prior to initiating the construction of substantial bridges at all points where it is necessary to maintain traffic across pipeline construction. Contractor shall submit written documentation of such plan approvals, encroachments, and permits from State of North Carolina Department of Transportation, NCDENR and OSHA to the Owner prior initiating work. Bridges in public streets, roads, and highways shall be acceptable to the authority having jurisdiction thereover. Bridges erected in private roads and driveways shall be adequate for the service to which they will be subjected. Bridges shall be provided with substantial guardrails and with suitably protected approaches. Foot bridges shall be not less than 4 feet wide, provided with handrails and uprights of dressed lumber. Bridges shall be maintained in place as long as the conditions of the Work require their use for safety of the public. When necessary for the proper prosecution of the Work in the immediate vicinity of a bridge, the bridge may be relocated or temporarily removed for such period as Engineer may permit.

All work performed within the highway rights-of-way or in Owner streets shall be in accordance with the State of North Carolina Department of Transportation “Policies, North Carolina State Traffic Control Guidelines”, OSHA Regulations, and Procedures for Accommodating Utilities on Highway Rights-of-Way and shall be approved by Owner.

4.02. Detours. Where required by the authority having jurisdiction thereover that traffic be maintained over any construction work in a public street, road, or highway, and the traffic cannot be maintained on the alignment of the original roadbed or pavement, Contractor shall, at his own expense, construct and maintain a detour around the construction work. Each detour shall include a bridge across the pipe trench and all necessary barricades, guardrails, approaches, lights, signals, signs, and other devices and precautions necessary for protection of the Work and safety of the public.

All work performed within the highway rights-of-way or in Owner streets shall be in accordance with the State of North Carolina Department of Transportation “Policies, North Carolina State Traffic Control Guidelines”, OSHA Regulations, and Procedures for Accommodating Utilities on Highway Rights-of-Way and shall be approved by Owner.

5. BARRICADES AND LIGHTS. All streets, roads, highways, and other public thoroughfares which are closed to traffic shall be protected by effective barricades on which shall be placed

acceptable warning signs. Barricades shall be located at the nearest intersecting public highway or street on each side of the blocked section.

All open trenches and other excavations shall have suitable barricades, signs, and lights to provide adequate protection to the public. Obstructions such as material piles and equipment shall be provided with similar warning signs and lights.

All barricades and obstructions shall be illuminated with warning lights from sunset to sunrise. Material storage and conduct of the work on or alongside public streets and highways shall cause the minimum obstructions and inconvenience to the traveling public.

All barricades, signs, lights, and other protective devices shall be installed and maintained in conformity with applicable statutory requirements and, where within railroad and highway rights-of-way, as required by the authority having jurisdiction thereover.

All work performed within the highway rights-of-way shall be in accordance with the state of North Carolina Department of Transportation "Policies, North Carolina State Traffic Control Guidelines, OSHA Regulations, and Procedures for Accommodating Utilities on Highway Rights-of-Way."

6. FENCES. All existing fences affected by the Work shall be maintained by Contractor until completion of the Work. Fences which interfere with construction operations shall not be relocated or dismantled until written permission is obtained from the owner of the fence, and the period the fence may be left relocated or dismantled has been agreed upon. Where fences must be maintained across the construction easement, adequate gates shall be installed. Gates shall be kept closed and locked at all times when not in use.

On completion of the work across any tract of land, Contractor shall restore all fences to their original or to a better condition and to their original location.

All work performed within the highway rights-of-way shall be in accordance with the State of North Carolina Department of Transportation "Policies, North Carolina State Traffic Control Guidelines, OSHA Regulations, and Procedures for Accommodating Utilities on Highway Rights-of-Way."

7. PROTECTION OF PUBLIC AND PRIVATE PROPERTY. Contractor shall protect, shore, brace, support and maintain all underground pipes, conduits, drains, and other underground construction uncovered or otherwise affected by his construction operations. All pavement, surfacing, driveways, curbs, walks, buildings, utility poles, guy wires, fences, and other surface structures affected by construction operations, together with all sod and shrubs in yards, parkways, and medians, shall be restored to their original condition, whether within or outside the easement. All replacements shall be made with new materials.

No trees shall be removed outside of the permanent easement, except where authorized by Engineer. Hand excavation shall be employed as necessary to prevent injury to trees. Trees left standing shall be adequately protected against damage by construction operations.

Contractor shall be responsible for all damage to streets, roads, highways, shoulders, ditches, embankments, culverts, bridges, and other public or private property, regardless of location of character, which may be caused by transporting equipment, materials, or men to or from the Work or any part or site thereof, whether by him or his Subcontractors. Contractor shall make satisfactory and acceptable arrangements with the owner of, or the agency or authority having jurisdiction over, the damaged property concerning its repair or replacement or payment of costs incurred in connection with the damage.

All fire hydrants and water control valves shall be kept free from obstruction and available for use at all times.

All property irons/monuments distributed during construction shall be replaced by a North Carolina Registered Land Surveyor at the Contractor's expense. The Contractor shall maintain reasonable cleanliness of all streets which are being used in the construction of the project.

8. TREE AND PLANT PROTECTION. No trees shall be removed outside of excavated or fill areas, unless their removal is authorized by Owner. All trees and other vegetation which must be removed to perform the Work shall be removed and disposed of by Contractor; however, no trees or cultured plants shall be unnecessarily removed unless their removal is indicated on the Drawings. All trees and plants not removed shall be protected against injury from construction operations.

Contractor shall take extra measures to protect trees designated to be preserved, such as erecting barricades, trimming to prevent damage from construction equipment, and installing pipe and other Work by means of hand excavation or tunneling methods. Such trees shall not be endangered by stockpiling excavated material or storing equipment against the trunk.

When the injury or removal of trees designated to be preserved cannot be avoided, or when removal and replacement is indicated on the Drawings, each tree injured beyond repair or removed shall be replaced with a similar tree of the nearest size possible.

All trimming, repair, and replacement of trees and plants shall be performed by qualified nurserymen or horticulturists.

All damaged areas on trees to be left standing shall be made smooth and then covered completely with asphaltum base tree paint. Damaged roots are to be pruned-back to healthy tissues and then treated and backfilled as soon as possible. Air pockets shall not be left in root system backfill areas. Canopy area is to be selectively pruned (NOT TOPPED) to match the area of remaining root system up to 50 percent if the total area.

9. SECURITY. Contractor shall be responsible for protection of the site, and all Work, materials, equipment, and existing facilities thereon, against vandals and other unauthorized persons.

No claim shall be made against Owner by reason of any act of any employee or trespasser, and Contractor shall make good all damage to Owner's property resulting from his failure to provide security measures as specified.

10. ACCESS ROADS. If access roads are required by Contractor, Contractor shall obtain rights to access roads from property owners at no additional cost to Owner. Contractor shall establish and maintain temporary access roads to various parts of the site as required to complete the Project. Such roads shall be available for the use of Owner and all others performing work or furnishing services in connection with the Project.

11. PARKING. Contractor shall provide and maintain suitable parking areas for the use of the Owner, all construction workers and others performing work or furnishing services in connection with the Project, as required to avoid any need for parking personal vehicles where they may interfere with public traffic, Owner's operations, or construction activities.

12. NOISE CONTROL. Contractor shall taken all necessary measure to comply with and abide by the applicable federal, state and local regulations, ordinances regarding noise pollution and control. Contractor shall take reasonable measures to avoid unnecessary noise. Such measures shall be appropriate for the normal ambient sound levels in the area during working hours. All construction machinery and vehicles shall be equipped with practical sound-muffling devices, and operated in a manner to cause the least noise consistent with efficient performance of the Work.

During construction activities on or adjacent to occupied buildings, and when appropriate, Contractor shall erect screens or barriers effective in reducing noise in the building and shall conduct his operations to avoid unnecessary noise which might interfere with the activities of building occupants.

13. SEDIMENTATION AND EROSION CONTROL. Contractor shall taken all necessary measure to comply with and abide by the applicable federal, state and local regulations, ordinances regarding pollution, sedimentation and erosion control, including but not limited to sedimentation control, dust reduction, temporary diversions, pollution control and erosion control.

Contractor shall take reasonable measures to prevent unnecessary dust. Earth surfaces to dusting shall be kept moist with water or by application of a chemical dust suppressant. When practicable, dusty materials in piles or in transit shall be covered to prevent blowing.

Buildings or operating facilities which may be affected adversely by dust shall be adequately protected from dust. Existing or new machinery, motors, instrument panels, or similar equipment shall be protected by suitable dust screens. Proper ventilation shall be included with dust screens.

Contractor shall provide for the drainage of storm water and such water as may be applied or discharged on the site in performance of the Work and in accordance with the applicable regulations, permits and approved plans. Contractor shall prevent the pollution of drains and watercourses by sanitary wastes, sediment, debris, and other substances resulting from construction activities. No sanitary wastes will be permitted to enter any drain or watercourse other than sanitary sewers. No sediment, debris, or other substance will be permitted to enter sanitary sewers, and reasonable measures will be taken to prevent such materials from entering any drain or watercourse.

END OF SECTION

## Section 00300 - WASTEWATER FLOW CONTROL

### 1. SCOPE:

The work specified in this section includes all labor, materials, accessories, equipment, power and tools necessary to plug or bypass pump sewage around a manhole or section of sewer in which work is to be performed.

### 2. EXECUTION:

A. Intent: The Contractor shall be responsible for planning, handling and accommodating all existing wastewater flows during the project. The Contractor shall submit, for approval by the Engineer, detailed plans for each method of flow control to be used.

B. Pumping and Bypassing: When pumping/bypassing is required, the Contractor will supply the necessary pumps, conduits and other equipment needed to divert the flow of sewage around the section being surveyed or repaired. For each section to be bypassed, the Contractor must submit a written bypass plan to the Engineer for approval. This plan shall include:

- Schedules
- Locations and staging areas for pumps
- Bypass pump sizes, capacity, pump curves, number of each size to be on site, and power requirements
- Calculations of static lift, friction losses, and flow velocity
- Number, size, material, location and method of installation of suction piping
- Number, size, material, location, method of installation, and downstream discharge plan for discharge piping
- Standby power generator size and location
- Description of all ancillary equipment to be used

The bypass system shall be of sufficient capacity to handle **2.5 times** existing average daily flows. The Contractor will be responsible for furnishing the necessary labor and supervision to set-up and operate the pumping and bypassing system. The Contractor shall maintain a backup pump at the project site at all times in the event that something should happen to the main pump. If pumping is required on a 24-hour basis, engines shall be equipped in a manner to keep noise to a minimum.

C. Traffic Control: The Contractor shall take adequate steps to ensure that all pumps, piping and hoses that carry raw sewage are protected from damage caused by traffic.

D. Sewage Spills: In the event any raw sewage is spilled, discharged, leaked or otherwise deposited in the open environment due to the Contractor's work, the Contractor is responsible for cleaning up solids and disinfection of the area affected. This work will be performed at the Contractor's expense with no additional expense to the Owner. The Contractor is also responsible for immediately notifying the Engineer and the Owner's maintenance personnel and complying with any and all regulatory

requirements and fines in regards to the size of the spill with no additional cost to the Owner.

3. CLEANUP:

After the flow control has been completed, the Contractor shall clean up the entire project area and return the ground cover to its original condition. The Contractor shall dispose of all excess material and debris not incorporated into the permanent installation.

4. PAYMENT:

Payment for items included in this section shall not be paid for directly but shall be included in the unit cost for the repair or rehabilitation being performed. ALL facets of flow control including setup, pumping and piping components, operation, removal, etc. shall be incidental and included in the cost of rehabilitation being performed.

Section 00400 - MANHOLE REHABILITATION

01. SCOPE:

The work specified in this section includes all labor, materials, accessories, equipment and tools necessary for the repair and rehabilitation of sanitary sewer manholes.

02. MATERIALS:

A. Patching Material: All non-leaking holes, cracks or voids shall be patched with a quick setting (less than 30 minutes), non-shrink, fiber reinforced, corrosion resistant calcium aluminate or equivalent material that is compatible with the chosen liner system and shall be applied in accordance with the manufacturer's recommendation for basecoat materials. Patch material must meet the following minimum requirements:

Compressive Strength	ASTM C-109	>5000 psi (28 day)
Bond Strength	ASTM C-882	>2000 psi (28 day)
Flexural Strength	ASTM C-293	>1200 psi (28 day)
Tensile Strength	ASTM C-900	>800 psi
Shrinkage	ASTM C-596	0% at 90% R.H.

Cementitious repair mortar shall be QSR Plus manufactured by The Strong Company, Silatec CAM manufactured by A.W. Cook Cement Products, or approved equal.

B. Infiltration Control Material (Chemical Grout): Active leaks and infiltration shall be stopped by injecting a chemical grout through the source to the outside of the manhole. The grout used shall be an acrylamide, acrylic or hydrophobic urethane gel and might require the addition of a shrink control agent, gel reinforcing agent or accelerator. The chemical grout shall be volume stable and have a minimum 28 day compressive strength of 250 psi and a minimum one day strength of 50 psi.

C. Cementitious Liner: The material shall be a 100% calcium aluminate mortar designed to stop infiltration, restore structural integrity, and provide protection against microbiologically-induced corrosion. It shall be spray applied to form a structurally enhanced monolithic liner covering all interior substrate surfaces with the following minimum requirements:

Compressive Strength	ASTM C-109	>8000 psi (28 Days)
Tensile Strength	ASTM C-900	>800 psi
Flexural Strength	ASTM C-293	>1200 psi (28 Days)
Shrinkage @ 90% R.H.	ASTM C-596	<0.08% (28 Days)
Freeze/Thaw	ASTM C-666	No Damage After 300 Cycles
Air Void Content	ASTM C-457	2-4% (7 Days)
Specific Gravity /Absorption Test	ASTM C-642	3-5% (7 Days)

Cementitious liner shall be Quadex Aluminaliner, manufactured by Quadex, Inc.; SewperCoat, manufactured by LaFarge Aluminates, CemTec Silatec CAM, manufactured by A. W. Cook Cement, Inc.; MS-2C and High Performance Mix, manufactured by Strong-Seal Systems; PerpetuCrete CA, manufactured by Protective Liner Systems; or approved equal.

D. Frame/Cone Seal:

1. Applied Seal: Applied seals shall be achieved by applying an aromatic urethane resin compound to the internal surface between the manhole frame and the cone section to stop inflow under the manhole frame. Sufficient material shall be applied to achieve a minimum thickness of 120 mils. The material shall comply with the following requirements:

Hardness	ASTM D-2240	75
Tensile Strength	ASTM D-412	1150 psi
Elongation	ASTM D-442	800%
Adhesive Strength.	ASTM D-903	175 lb/l. inch
Tear Resistance	ASTM D-1004	155 lb/l. inch

The material shall be Flex-Seal Utility Sealant as manufactured by Sealing Systems, Inc. or approved equal.

- E. Inflow Collector: The contractor shall supply and install, to the manufacturer's recommendations, manhole inflow collectors as specified hereafter. The completed manhole inflow collector shall be manufactured of corrosion proof 304 or 316 stainless steel. The associate valve body and components shall be manufactured from material suitable for atmospheres containing hydrogen sulfide and dilute sulfuric acid as well as other gases associated with wastewater collection systems. The inflow collector shall be equipped with a gas relief valve designed to relieve at a pressure of 1 psi and have a water leak down rate not to exceed 5 gallons per 24 hours. The insert gasket shall be made of closed cell neoprene and have a pressure sensitive adhesive on one side and be placed under the insert body rim by the manufacturer. The adhesive shall be compatible with the insert body material so as to form a long lasting bond in either wet or dry conditions of use. The inflow collector shall be equipped with a non-deteriorating lifting strap strong enough to lift a collector full to capacity with water out of the manhole. The lifting strap shall be fastened to the insert body with stainless steel rivets.

The inflow collector shall be RainStopper or approved equal.

- F. Water: All water used on this project shall be clean and potable.

### 03. EXECUTION:

- A. Patching Holes or Voids: All loose or disintegrated material shall be removed from the area to be patched. Holes or voids around steps, joints or pipes, spalled areas, and cavities caused by missing or broken brick or mortar shall be repaired using patching material conforming to the requirements of Section 02, Part A of these specifications. The patching material shall be mixed and applied in accordance with the manufacturer's requirements. Active leaks shall be stopped in accordance with Section 03, Part B of this specification.
- B. Stopping Active Leaks and Infiltration: All active leaks and infiltration shall be repaired using chemical grout conforming to the requirements of Section 02, Part B. Any areas that show evidence of leakage either active or non-active during inspection shall be injected. At each point of leakage within the manhole structure a hole shall be carefully drilled through the wall to the exterior of the manhole. Grout ports or sealant injection devices shall be placed in these holes in a way as to provide a watertight seal between the holes and the injection device. Chemical grout shall be pumped through the hole until material refusal is recorded on a pressure gauge mounted on the pumping unit. Care shall be taken during the pumping operation to insure that excessive pressures do not develop and cause damage to the manhole structure. Upon completion of the injection, the ports shall be removed and the remaining holes filled with mortar and troweled flush with the surface of the manhole wall. The injected section joints, pipe connection, holes, or seams shall be sealed with patching material conforming to the requirements of Section 02, Part A and smoothed flush with the surface of the manhole wall. To prevent the migration of infiltration leaks the Contractor shall comply with the following requirements for points of injection:
1. Pre-cast Section Joint Leaks: A minimum of 4 injection points shall be evenly spaced around the circumference of the manhole joint.
  2. Pipe Connection Leaks: A minimum of 2 injection points shall be evenly spaced around pipe connection. Note: Large diameter pipe may require more than 2 injection points.
  3. Pipe Invert Leaks: A minimum of 2 injection points, one on each side of trough.
  4. Lift Holes / Voids: A minimum of 1 injection point below the center of the lift hole / void.
- C. Reform/Repair Existing Bench and Invert: Manhole inverts and benches shall be reformed as identified in the plans using the patching material identified in Section 02, Part A. Fast setting hydraulic cement may be used to repair the invert. The patch material shall be applied to the invert and bench at a minimum thickness of 1/2", extending sufficiently to the wall to tie into the cementitious liner to be applied later. The finished invert and bench shall be troweled to a smooth finish free of any ridges. The bench shall be sloped a minimum of 2 inches from the manhole wall toward the invert to prevent debris build-up on the bench. Repairs on the invert shall not compromise grade. The

invert and bench shall be allowed to cure for a minimum of 30 minutes before being subject to active flow; flow shall be bypassed by the requirements of Section 2: Wastewater Flow Control.

D. Building Bench and Invert: Inverts and benches shall be constructed in manholes with no hard bottom and no defined invert (channel of flow) using the patching material identified in Section 02, Part A. Fast setting hydraulic cement may be used to repair the invert. The bench shall be constructed of brick or block and finished by troweling smooth with patching material. The patching material shall have a minimum thickness of 1". The finished invert and bench shall be troweled to a smooth finish free of any ridges. The bench shall be sloped from the manhole wall toward the invert to prevent debris build-up on the bench. The invert and bench shall be allowed to cure for a minimum of 30 minutes before being subject to active flow; flow shall be bypassed by the requirements of Section 2: Wastewater Flow Control.

E. Cementitious Liner Application:

1. Surface Preparation: All foreign material shall be removed from the manhole wall and bench using a high-pressure water spray (minimum 3500 psi). Loose or protruding brick, mortar and concrete shall be removed using a mason's hammer and chisel or scraper. All concrete or mortar that is not sound or has been damaged by chemical exposure shall be removed to a sound concrete surface. Any holes or voids shall be filled in accordance with Section 03, Part A. The surface to be repaired must be clean and free of any loose materials. Active leaks and infiltration shall be stopped in accordance with Section 03, Part B.
2. Step Removal: Prior to application of the cementitious liner, all steps that are deemed defective or unsafe shall be cut off and ground flush with the manhole wall. The contractor shall be responsible for the removal and disposal of old steps.
3. Liner Application: No application shall be made to frozen surfaces or if freezing is expected to occur inside the manhole within 24 hours after application. If ambient temperatures are in excess of 95 degrees, precautions shall be taken to keep the mix temperature below 90 degrees. For each bag of product, use the amount of water specified by the manufacturer and mix for 30 seconds to 1 minute using equipment per manufacturer's recommendation.

First Application: The surface prior to spraying shall be damp without noticeable free water, but totally saturated. Materials shall be applied using low-pressure spray equipment from the bottom of the wall (including the bench but not invert) to the top (terminating at the frame / cone connection), to a minimum uniform thickness to insure that all cracks, crevices, and voids are filled and a relatively smooth surface remains after light troweling. The light troweling is performed to compact the material into voids and to set the bond.

Second Application: A second application is applied after the first application has begun to take an initial set (disappearance of surface sheen which could be 15 minutes

to 1 hour depending upon ambient conditions) to assure a minimum total finished thickness of 1 inch. Again application shall be from the bottom up using low-pressure spray equipment. The surface is then troweled to a smooth finish being careful not to over trowel so as to bring additional water to the surface and weaken it.

4. Curing: Caution should be taken to minimize exposure of applied product to sunlight and air movement. If application of second coat is to be longer than 15 minutes after completion of first coat, the manhole cover shall be set back in place. At no time should the finished product be exposed to sunlight or air movement for longer than 15 minutes before replacing the manhole cover. The final application shall have a minimum of 4 hours cure time before being subjected to active flow. Flow shall be bypassed by the requirements of Section 4: Wastewater Flow Control. Traffic shall not be allowed over manholes for 12 hours after application is complete.

F. Frame/Chimney Seal Installation:

1. Applied Seal: All foreign material, bituminous coating, rust or scale build-up, etc. shall be removed from the area to be coated by sandblasting in accordance with the manufacturers requirements. Wire brushing will not be allowed. After the area is cleaned, it must be completely dried prior to application of the seal material. The urethane resin compound shall then be applied from the bottom 3 inches of the frame to the top three inches of the cone, including the grade adjustment area, to a minimum thickness of 120 mils. Application shall be in accordance with the manufacturer's instructions.

- G. Cleaning Manhole: Any rocks, pieces of broken pipe or any other debris not desired in the manhole or invert shall be removed and disposed of by methods deemed appropriate by the engineer. The bench and invert shall be pressure washed to remove organic material and return undisturbed wastewater flow to the invert.

- H. Plugging Abandoned Line: Abandoned lines shall be filled with non-shrink grout conforming to the requirements of Section 02, Part A. Grout plug shall extend at least 1.5 times the thickness of the manhole wall. **Plugging abandoned lines shall be performed prior to cementitious lining.**

- I. Raising Manhole with Pre-Cast Grade Ring: The frame shall be removed from the cone. The top of the cone and bottom of the frame shall be cleaned to new surface. A pre-cast grade ring shall be inserted to raise the manhole with ample butyl rubber mastic applied between the cone and grade ring and the grade ring and the frame. If adjustment is made between the barrel and the cone section, butyl rubber shall be inserted between each joint.

- J. Raising Manhole with Steel Grade Adjustment Ring: The frame shall receive a SSPC-SP3 Power Tool Cleaning to remove all rust and loose material. Silicone shall be used to seat the steel grade adjustment ring on the frame. The grade ring shall be secured to the existing frame by four spot welds spaced equal distance around the circumference of the frame. This method shall only be used to raise manholes prior to asphalt overly of the road.

- K. Install Flat Top Slab on Existing Square Top Manhole: Existing square top slab, frame, and cover shall be removed. Brick or block courses shall be removed to allow for the installation of new flat top slab to grade. Standard NCDOT approved pre-cast flat top slabs may be used when applicable. Where standard size top slabs will not suffice, a custom pre-cast, NCDOT approved flat top slab shall be installed. Frames shall be bolted to the flat top using SS expansion bolts and butyl rubber mastic. The finished elevation shall be level with the existing or proposed finished grade.
- L. Realign and Reset Frame: Manhole frames for manholes not in pavement shall be bolted to the cone section using SS Expansion Bolts. Frame shall have a minimum of 2 bolts (5/8" diameter, 4" in length). Frames shall be sealed to the top of manhole with butyl rubber mastic. Grout shall then be placed, inside and outside, the height of the adjustment.
- M. Grouting Bench/Barrel Joint: Bench/Barrel joints shall be repaired with cementitious material conforming to the requirements of Section 02, Part C. Adequate material shall be applied to fill the void between the bench/barrel joint to assure no leakage. The material shall be applied and smoothed to an even thickness around the entire circumference of the joint.
- N. Grouting Section Joints: Section joints shall be repaired with cementitious material conforming to the requirements of Section 02., Part C. Material shall be applied to fill any holes, voids, or cracks at the section joint. The material shall be applied at an even thickness around the entire circumference of the joint and smoothed flush to the surface of the manhole wall.
- O. Grouting Chimney: Manhole chimneys shall be repaired with calcium aluminate cementitious material conforming to the requirements of Section 02, Part C at a minimum thickness of 1 inch. The cementitious material shall be applied and smoothed to an even thickness around the entire circumference of the chimney.
- P. Cast in Place Concrete Manhole Base: Cast in place bases shall be installed on the existing benches in manholes where indicated on the manhole repair schedule. 1/2-inch rebar shall be installed 3-inches into the existing bench on 6-inch centers (rebar length is illustrated in Detail 128). Portland cement shall be used to cast the base at the thickness indicated in the manhole repair schedule.

#### 04. ACCEPTANCE:

After the various types of rehabilitation and repair have been completed, the work shall be visually inspected by the Contractor in the presence of the Engineer for compliance with these specifications and the manufacturer's recommendations. The Engineer and Owner shall also inspect the work during the 1-year warranty period. Any leakage or defects in the work shall be corrected by the Contractor at no additional cost to the Owner.

- A. Field acceptance of manhole lining system shall be based on the Engineer's evaluation of the appropriate installation of the lining per field inspections. Acceptance shall also be

based on the Engineer’s evaluation of the curing test data and vacuum testing results, where appropriate, and still photographs of the finished manholes.

- B. There shall be no groundwater infiltration or other leakage through the manhole wall after it has been lined. If leakage is found, it shall be eliminated with an appropriate method as recommended by the liner manufacturer and approved by the Engineer at no additional cost to the Owner.
- C. All pipe connections shall be open and clear.
- D. There shall be no cracks, voids, pinholes, uncured spots, dry spots, lifts, delaminations or other type defects in the lining.
- E. If any defective lining is discovered after it has been installed, it shall be repaired or replaced in a satisfactory manner within 72 hours and at no additional cost to the Owner. This requirement shall apply for the entire guarantee period.
- F. For each pay request, 20% of the manholes submitted on that pay request shall be inspected via vacuum testing once the liner has sufficiently cured. The vacuum testing shall be accomplished prior to submitting the pay request for the manholes. The manholes inspected shall be chosen by the Engineer or their designated representative and the testing shall be witnessed by the Engineer or their designated representative. For the final pay request, the number of manholes necessary for 20% of the manholes rehabilitated throughout the project shall be so inspected. If 10% or more of the total system manholes fail the vacuum testing due to defects in the liner, the Contractor shall be required to test 100% of the manholes rehabilitated in the project at no additional cost to the Owner. The vacuum testing shall be conducted in conformance with ASTM C1244-02. All detected defects in the liner shall be immediately repaired and the manhole retested until passing. All repair procedures shall follow manufacturer’s recommended procedures.

Manholes that are completely rehabilitated using the cementitious liner shall be vacuum tested prior to final acceptance. Vacuum testing shall not be performed earlier than 72 hours after application of the liner. A vacuum of 10 inches of mercury shall be drawn and vacuum pump shut off. With the valves closed, the time shall be measured for which it takes the vacuum to drop to 9 inches of mercury. The manhole shall be approved as passing the test if the time is greater than the values shown below:

<u>Manhole Depth</u>	<u>Manhole Diameter</u>		
	<u>48”</u>	<u>60”</u>	<u>72”</u>
Less than 10’	60 sec	75 sec	90 sec
10’-15’	75 sec	90 sec	105 sec
15’-20’	90 sec	105 sec	120 sec

If the manhole fails the initial test, necessary repairs shall be made with an approved material. Retesting shall continue until the manhole satisfactorily passes the test. All tests shall be performed in the presence of the Owner and/or Engineer.

Where the vacuum test failed due to defects not in the liner (such as cracked pipes or defects in the manhole frame), the Contractor shall note the cause of the failure on the test log and provide a still photograph of the defect. In addition, the Contractor shall provide to the Owner, through the Engineer, a still photograph of all finished manholes with the manhole identification number visible in the photograph (for instance written on a dry erase board) and not obscuring the view of the manhole. The Owner, through the Engineer, shall have final say as to the acceptability of the photographs. If a photograph is deemed unacceptable, the Contractor shall be required, at no additional cost to the Owner, to take additional photographs of the manhole until an acceptable photograph is submitted.

The Contractor will furnish all personnel, facilities, and equipment necessary to conduct the testing. Testing of the manholes shall not be paid for directly, but shall be included in the contract unit price for Manhole Rehabilitation.

05. CLEANUP:

After the work has been completed and accepted, the Contractor shall clean up the entire project area and return the ground cover to its original condition. The Contractor shall dispose of all excess material and debris not incorporated into the permanent installation.

06. WARRANTY:

All work shall be certified by the Contractor and manufacturer for specified material properties for a period of one year from the date of acceptance. During the warranty period, any defects which affect the integrity or strength of the product or its ability to perform the task for which it was designed shall be repaired at the Contractor's expense in a mutually agreed upon manner.

07. PAYMENT:

Payment shall be made at the Contract unit price on items measured and described above. Payment for items incidental to the work, such as preparatory cleaning and root cutting, flow control, vacuum testing, clean-up, etc. shall not be paid for directly but shall be included in the unit cost for each pay item. **(Note: miscellaneous repairs, including chemical grout injection, made to manholes to be completely rehabilitated using a sprayed liner (cement and / or epoxy) shall not be paid for directly but shall be included in the unit cost for complete rehabilitation.)**

## Section 00500 - TELEVISION INSPECTION OF GRAVITY SEWER

### 01. SCOPE:

The work specified in this section includes all labor, materials, accessories, equipment and tools necessary to perform internal closed circuit television inspection of sewer mains and service laterals.

### 02. EQUIPMENT:

The television equipment used for the survey shall be specifically designed and constructed for such a survey and shall be of the pan-and-tilt type. Lighting for the camera shall be suitable to allow a clear picture of the entire periphery of the pipe. The camera shall be able to operate in 100% humidity. The camera, television monitor and other components of the video system shall be capable of producing a minimum 700 line resolution color video picture. The Contractor shall maintain the camera in clear focus at all times. The picture and resolution shall be to the satisfaction of the Engineer. The video camera shall include a tilter capable of showing the City and State, date, Contractor's name, line size, manhole identification, and ongoing footage counter. The equipment shall be capable of recording the video digitally, with the exception of service lateral video equipment.

### 03. RECORDED VIDEO:

The Contractor shall submit recorded inspections in digital format on an external storage device. All recorded video shall be submitted to the Engineer and will become the property of the Owner. NASSCO PACP compliant video logs and database shall also be provided with the recordings.

### 04. EXECUTION:

- A. The camera shall be moved through the line at a moderate, uniform rate, stopping whenever necessary to permit proper documentation of any defects. Flow level shall be less than 20%, less than 5% for post-installation video inspection. In no instances shall the camera move at more than 30 feet per minute. If the camera cannot move through the entire pipe section because of an obstruction, the Contractor shall set up his equipment on the opposite manhole and the survey completed from the other direction.
- B. Television Survey Logs: Printed survey logs shall be kept by the Contractor, and will clearly show the location in relation to an adjacent manhole. All points of significance, such as service connections, defects, misaligned joints, or other unusual conditions will be recorded on the log.

### 05. ACCEPTANCE:

Acceptance of internal sewer television inspection shall be made upon the successful completion of the survey and shall be to the satisfaction of the Engineer.

06. CLEANUP:

After the cleaning process has been completed, the Contractor shall clean up the entire project area and return the ground cover to its original condition. The Contractor shall dispose of all excess material and debris not incorporated into the permanent installation.

07. PAYMENT:

Payment for items included in this section shall not be paid for directly but shall be included in the unit cost for the replacement being performed.

## Section 02200 - EARTHWORK

1. SCOPE. This section covers earthwork and shall include the necessary clearing, grubbing, and preparation of the site; removal and disposal of all debris; excavation and trenching as required; the handling, storage, transportation, and disposal of all excavated material; all necessary sheeting, shoring, and protection work; preparation of subgrades; pumping and dewatering as necessary or required; protection of adjacent property; backfilling; pipe embedment; construction of fills and embankments; surfacing and grading; and other appurtenant work.

2. GENERAL REQUIREMENTS. With reference to the terms and conditions of the construction standards for excavations set forth in the OSHA "Safety and Health Regulations for Construction", Chapter XVII of Title 29, CFR, Part 1926, the Contractor shall employ a competent person and, when necessary, a registered professional engineer, to act upon all pertinent matters of the Work of this section.

Excavations shall provide adequate working space and clearances for the Work to be performed therein and for installation and removal of concrete forms. In no case shall excavation faces be undercut for extended footings.

Subgrade surfaces shall be clean and free of loose material of any kind when concrete is placed thereon.

Monolithic concrete manholes and other concrete structures, or parts thereof, which do not have footings that extend beyond the outside face of exterior walls, may be placed directly against excavation faces without the use of outer forms, provided that such faces are stable and also provided that a layer of polyethylene film is placed between the earth and the concrete.

Backfilling and construction of fills and embankments during freezing weather shall not be done except by permission of the Engineer. No backfill, fill, or embankment materials shall be installed on frozen surfaces, nor shall frozen materials, snow, or ice be placed in any backfill, fill, or embankment.

### 3. LATERAL SEPARATION MAINS.

3.01. Water and Sanitary Sewer Mains. Refer to Standard Details for additional information. Water mains shall be laid at least ten feet laterally from existing or proposed sanitary sewers, unless local conditions or barriers prevent a 10 foot lateral separation in which case:

- a. The water main is laid in a separate trench, with the elevation of the bottom of the water main at least 18 inches above the top of the sanitary sewer, or

- b. The water main is laid in the same trench as the sanitary sewer with the water main located at one side on a bench of undisturbed earth, and with the elevation of the bottom of the water main at least 18 inches above the top of the sanitary sewer.

Crossing a water main over a sewer: Whenever it is necessary for a water main to cross over a sewer, the water main shall be laid at such an elevation that the bottom of the water main is at least 18 inches above the top of the sewer, unless local conditions or barriers prevent an 18 inch vertical separation - in which case both the water main and sewer shall be constructed of ferrous materials and with joints that are equivalent to water main standards for a distance of 10 feet on each side of the point of crossing.

Crossing a water main under a sewer: Whenever it is necessary for a water main to cross under a sewer, both the water main and the sewer shall be constructed of ferrous materials and with joints equivalent to water main standards for a distance of 10 feet on each side of the point of crossing. A section of water main pipe shall be centered at the path point of crossing.

3.02. Storm Sewer and Sanitary Sewer. When a sanitary sewer crosses over or under a storm sewer, the sanitary sewer shall have 12 inches of vertical separation from the storm sewer or the sanitary sewer shall be constructed of ductile iron pipe with joints that are equivalent to water main standards for a minimum distance of 10 feet on each side of point of crossing.

3.03. Storm Sewer and Water Mains. When a water main crosses over or under a storm sewer, the water main shall have 12 inches of vertical separation from the storm sewer or the water main shall be constructed of ductile iron pipe with joints that are equivalent to water main standards for a minimum distance of 10 feet on each side of point of crossing.

3.04. Streams and Other Water Bodies and Sanitary Sewer. Sewers entering or crossing streams shall be constructed of ferrous material pipe with mechanical joints; otherwise they shall be constructed so they will remain watertight and free from changes in alignment or grade and tested to 150 psi. PVC pipe may be used where a minimum of 3 feet of cover can be maintained. Material used to backfill the trench shall be of material which will not easily erode, cause siltation, damage pipe during placement, or corrode the pipe.

3.05. Minimum Separation. Where the required minimum separations cannot be maintained, ferrous sewer pipe with joints equivalent to water main standards must be used. However, minimum separations shall not be less than 25 feet from a private well or 50 feet from a public water supply well in accordance with NCAC 2H .0219(i)(2)(G)(xii).

4. CLASSIFICATION OF EXCAVATED MATERIALS. Classification of excavated materials will be made as follows:

- a. Rock. Rock is defined as being sandstone, limestone, flint, granite, quartzite, slate, hard shale, or similar material in masses more than 1 cubic yard in volume or in ledges 4 inches or more in thickness, and the Observer agrees that the excavated material is rock.

Should rock be encountered in two or more ledges, each ledge being not less than 3 inches thick and with interlying strata of earth, clay, or gravel not more than 12 inches thick in each stratum, the entire volume between the top of the top ledge and the bottom of the bottom ledge will be classified as rock.

- b. Earth. All material not classified as rock.

5. CLEARING. All clearing on the temporary and permanent easements shall be performed as necessary for access, stringing of pipeline materials, and construction of the pipeline and appurtenant structures.

The permanent easement or other limits as shown on the Drawings shall be cleared of all logs, trees, roots, brush, tree trimmings, and other objectionable materials and debris. All stumps shall be grubbed. Subgrades for fills and embankments shall be cleaned and stripped of all surface vegetation, sod, and organic topsoil. All waste materials shall be removed from the site and disposed of by and at the expense of the Contractor.

Trees 6 inches in diameter and larger shall only be removed from temporary construction easement when it is necessary for the trenching operation; and only then with permission of the Owner.

6. BLASTING. The Contractor shall be responsible for all damage caused by blasting operations. Suitable methods shall be employed to confine all materials lifted by blasting within the limits of the excavation or trench.

The local Fire Authority shall be contacted to obtain blasting permits as may be required.

All rock which cannot be handled and compacted as earth shall be kept separate from other excavated materials and shall not be mixed with backfill or embankment materials except as specified or directed.

Rock shall be removed to provide a minimum clearance of 6 inches below and 8 inches to the sides of the pipe barrel, valves and fittings. Compacted suitable job excavated material shall be used to backfill to the bottom of the appropriate pipe embedment.

7. UNAUTHORIZED EXCAVATION. Except where otherwise authorized, indicated, or specified, all materials excavated below the bottom of concrete walls, footings, slabs

on grade, and foundations shall be replaced, by and at the expense of the Contractor, with concrete placed at the same time and monolithic with the concrete above.

8. DEWATERING. Dewatering equipment shall be provided to remove and dispose of all surface water and groundwater entering excavations, trenches, or other parts of the Work. Each excavation shall be kept dry during subgrade preparation and continually thereafter until the structure to be built, or the pipe to be installed therein, is completed to the extent that no damage from hydrostatic pressure, flotation, or other cause will result.

All excavations for concrete structures or trenches which extend down to or below groundwater shall be dewatered by lowering and keeping the groundwater level beneath such excavations 12 inches or more below the bottom of the excavation.

Surface water shall be diverted or otherwise prevented from entering excavated areas or trenches to the greatest extent possible without causing damage to adjacent property.

The Contractor shall be responsible for the condition of any pipe or conduit which he may use for drainage purposes, and all such pipe or conduit shall be left clean and free of sediment.

9. SHEETING AND SHORING. Except where banks are cut back on a stable slope, excavation for structures and trenches shall be sheeted, braced, and shored, as necessary to prevent caving or sliding and to comply with OSHA trenching and excavation regulations as revised in Subpart P of Part 1926 in the Federal Register.

Trench sheeting shall be removed slowly and in a manner not to disturb the pipelines. The pipe shall be backfilled with at least the first lift prior to removing the sheeting. When directed by the Owner, sheeting shall be left permanently in the trench. Payment for the timber portion of the sheeting will be made in accordance with the provisions of the Contract Documents for changes in the Work and the Contract Price at the local market price for such timber and no allowance being made for any labor used in connection with handling or placing thereof.

Where trench sheeting is left in place, such sheeting shall not be braced against the pipe, but shall be supported in a manner which will preclude concentrated loads or horizontal thrusts on the pipe. Cross braces installed above the pipe to support sheeting may be removed after pipe embedment has been completed.

10. STABILIZATION. Subgrades for concrete structures and trench bottoms shall be firm, dense, and thoroughly compacted and consolidated; shall be free from mud and muck; and shall be sufficiently stable to remain firm and intact under the feet of the workmen.

Subgrades for concrete structures or trench bottoms which are otherwise solid, but which become mucky on top due to construction operations, shall be reinforced with crushed

rock or gravel. The stabilizing material shall be spread and compacted to a depth of not more than 4 inches; if the required depth exceeds 4 inches, the material shall be furnished and installed as specified for granular fills. The finished elevation of stabilized subgrades shall not be above subgrade elevations indicated on the Drawings.

11. TRENCH EXCAVATION. No more trench shall be opened in advance of pipe laying than is necessary to expedite the Work. One block or 200 feet (whichever is the shorter) shall be the maximum length of open trench on any line under construction. Failure to comply with this requirement shall be cause for the shutdown of that portion of the project until such backfilling is accomplished.

Except where tunneling is indicated on the Drawings, is specified, or is permitted by the Engineer, all trench excavation shall be open cut from the surface.

11.01. Alignment, Grade, and Minimum Cover. The alignment and grade or elevation of each pipeline shall be fixed and determined from offset stakes. Vertical and horizontal alignment of pipes, and the maximum joint deflection used in connection therewith, shall be in conformity with requirements of the section covering installation of pipe.

Where pipe grades or elevations are not definitely fixed by the Contract Drawings, trenches shall be excavated to a depth sufficient to provide a minimum depth of backfill cover over the top of the pipe of 36 inches. Greater pipe cover depths may be necessary on vertical curves or to provide necessary clearance beneath existing pipes, conduits, drains, drainage structures, or other obstructions encountered at normal pipe grades. Measurement of pipe cover depth shall be made vertically from the outside top of pipe to finished ground or pavement surface elevation, except where future surface elevations are indicated on the Drawings.

11.02. Limiting Trench Widths. Trenches shall be excavated to a width which will provide adequate working space and sidewall clearances for proper pipe installation, jointing, and embedment. However, the limiting trench widths from the bottom of the trench to an elevation one foot above the top of installed pipe, and the minimum permissible sidewall clearances between the installed pipe and each trench wall, shall be as follows:

<u>Nominal Pipe Size</u> inches	<u>Minimum Trench Width</u> inches
36 to 6	Pipe OD plus 16

Cutting trench banks on slopes to reduce earth load to prevent sliding and caving shall be used only in areas where the increased trench width will not interfere with surface features or encroach on right-of-way limits. Slopes shall not extend lower than one foot above the top of the pipe.

Where, for any reason, the width of the lower portion of the trench, as excavated at any point, exceeds the maximum permitted in the foregoing table, pipe of adequate strength, special pipe embedment, or concrete arch encasement, as required by loading conditions and with the concurrence of the Engineer, shall be furnished and installed by and at the expense of the Contractor.

11.03. Mechanical Excavation. The use of mechanical equipment will not be permitted in locations where its operation would cause damage to trees, buildings, culverts, or other existing property, utilities, or structures above or below ground. In all such locations, hand excavating methods shall be used.

Mechanical equipment used for trench excavation shall be of a type, design, and construction, and shall be so operated that the rough trench excavation bottom elevation can be controlled, that uniform trench widths and vertical sidewalls are obtained at least from an elevation one foot above the top of the installed pipe to the bottom of the trench, and that trench alignment is such that pipe, when accurately laid to specified alignment, will be centered in the trench with adequate sidewall clearance. Undercutting the trench sidewall to obtain sidewall clearance will not be permitted.

11.04. Cutting Concrete Surface Construction. Cuts in concrete pavement and concrete base pavements shall be no larger than necessary to provide adequate working space for proper installation of pipe and appurtenances. Cutting shall be started with a concrete saw in a manner which will provide a clean groove at least 1-1/2 inches deep along each side of the trench and along the perimeter of cuts for structures.

Concrete pavement and concrete base pavement over trenches excavated for pipelines shall be removed so that a shoulder not less than 12 inches in width at any point is left between the cut edge of the pavement and the top edge of the trench. Trench width at the bottom shall not be greater than at the top and no undercutting will be permitted. Pavement cuts shall be made to and between straight or accurately marked curved lines which, unless otherwise required, shall be parallel to the center line of the trench.

Pavement removed for connections to existing lines or structures shall not be of greater extent than necessary for the installation.

Where the trench parallels the length of concrete walks, and the trench location is all or partially under the walk, the entire walk shall be removed and replaced. Where the trench crosses drives, walks, curbs, or other surface construction, the surface construction shall be removed and replaced between existing joints or between saw cuts as specified for pavement.

11.05. Excavation Below Pipe Subgrade. Except where otherwise required, pipe trenches shall be excavated below the underside of the pipe, as indicated on Figure 11 of Standard Details, to provide for the installation of granular embedment.

11.06. Stabilization Stone. Whenever unsuitable or unstable soil conditions are encountered, trenches shall be excavated below grade and the trench bottom shall be brought to grade with stabilization stone. Stabilization stone shall be No. 467 washed crushed stone having a maximum size of 2 inches. Approval to use stabilization stone shall be specifically obtained from the Owner prior to excavating below the bottom of the required depth for the pipe embedment. In such cases, stabilization stone shall be paid for at the unit price included in the Bid Form. Stabilization stone installed without approval of Owner will not be paid for, and the cost shall be the sole responsibility of the Contractor.

11.07. Bell Holes. Bell holes shall provide adequate clearance for tools and methods used in installing pipe. No part of any bell or coupling shall be in contact with the trench bottom, trench walls, or granular embedment when the pipe is jointed.

12. PIPE EMBEDMENT. Embedment materials both below and above the bottom of the pipe, classes of embedment to be used, and placement and compaction of embedment materials shall conform to the requirements indicated on the Standard Details and to the following supplementary requirements.

Embedment material shall contain no cinders, clay lumps, or other material which may cause pipe corrosion.

12.01. Embedment Classes. The following embedment classes shall be used on all pipe. The embedment class selected for a particular installation shall depend on the trench conditions and the type and size of the pipe. The Contractor shall use the embedment class indicated herein or as specified in the Special Conditions.

- a. Class A Arch Encasement. Class A arch encasement shall be used where specified in Special Conditions or on the Drawings.
- b. Class B Bedding. Class B bedding may be used for all steel, ductile iron, concrete, reinforced concrete cylinder, PVC, FRP, and all other pipelines not otherwise specified.
- c. Class C Bedding. Class C bedding may be used for all reinforced concrete, prestressed concrete, steel, PVC, and ductile iron pipelines.
- d. Class D Bedding. Class D bedding may be used for all reinforced concrete, steel, and ductile iron.

12.01.01. Water lines shall be installed using Class D embedment.

12.01.02. PVC sewer lines shall be installed using Class B embedment. DIP sewer lines shall be installed using Class C embedment.

12.02. Placement and Compaction. Granular embedment material shall be spread and the surface graded to provide a uniform and continuous support beneath the pipe at all points between bell holes or pipe joints. It will be permissible to slightly disturb the finished subgrade surface by withdrawal of pipe slings or other lifting tackle.

After each pipe has been graded, aligned, and placed in final position on the bedding material, and shoved home, sufficient pipe embedment material shall be deposited and compacted under and around each side of the pipe and back of the bell or end thereof to hold the pipe in proper position and alignment during subsequent pipe jointing and embedment operations.

Embedment material shall be deposited and compacted uniformly and simultaneously on each side of the pipe to prevent lateral displacement.

Class C and D embedment shall be compacted to the top of the pipe.

Granular embedment for 20 inch and larger pipe shall be vibrated with a mechanical probe type vibrator during placement to ensure that all spaces beneath the pipe are filled.

12.03. Groundwater Barrier. Continuity of embedment material shall be interrupted by low permeability groundwater barriers to impede passage of water through the embedment. Groundwater barriers for sewer lines shall be compacted soil, meeting soil classification GC, SC, CL, or ML-CL, compacted to 95 percent of maximum density and spaced not more than 400 feet apart. Material may be finely divided, suitable job excavated material, free from stones, organic matter, and debris.

13. TRENCH BACKFILL. All trench backfill above pipe embedment shall conform to the following requirements.

A layer of backfill material not more than 8 inches deep may be placed over concrete arch encasement or concrete reaction blocking after the concrete has reached its initial set, to aid curing.

13.01. Compacted Backfill. Compacted backfill will be required for the full depth of the trench above the embedment in all locations.

The top portion of backfill beneath established lawn areas shall be finished with at least 6 inches of topsoil corresponding to, or better than, that underlying adjoining lawn areas.

At the option of the Contractor, compacted backfill may be (a) suitable job excavated material, or (b) suitable borrow pit material, as described below:

- a. Job Excavated Material. Job excavated material may be used for compacted backfill when the job excavated material is finely divided and free from debris, organic material, cinders or other corrosive material, and stones larger

than 3 inches in greatest dimension. Masses of moist, stiff clay shall not be used. Job excavated materials shall be placed in uniform layers not exceeding 8 inches in uncompacted thickness. Each layer of material shall have the best possible moisture content for satisfactory compaction. The material in each layer shall be wetted or dried as required and thoroughly mixed to ensure uniform moisture content and adequate compaction. Increased layer thickness may be permitted for noncohesive material if the Contractor demonstrates to the satisfaction of the Engineer that the specified compacted density will be obtained. The method of compaction and the equipment used shall be appropriate for the material to be compacted and shall not transmit damaging shocks to the pipe. Job excavated material shall be compacted to 95 percent of maximum density at optimum moisture content, as determined by ASTM D698 when that test is appropriate, or to 70 percent relative density, as determined by ASTM D4253 and D4254 when those tests are appropriate.

- b. Suitable Borrow Pit Material. When job excavated material is unsuitable for use as compacted backfill, suitable material shall be delivered to the site from an acceptable borrow pit. Suitable material shall be placed in the same manner as suitable job excavated material.

All permits associated with the borrow pit shall be obtained by the Contractor or borrow pit operator. The Owner accepts no responsibility for the work at the borrow pit.

The material shall be free from large roots, broken pavement, rocks, and stones larger than 6 inches in any dimension, frozen earth, debris, organic material, or other objectionable matter.

No stone larger than 6 inches in any dimension shall be placed in the upper 12 inches of the trench nor shall any stone larger than 6 inches in any dimension be placed within 18 inches of the top of the pipe.

14. TESTS. As stipulated in the quality control section, all tests required for preliminary review of materials shall be made by an acceptable independent testing laboratory at the expense of the Contractor. Two initial gradation tests shall be made for each type of embedment, fill, or backfill material, and one additional gradation test shall be made for each additional 500 tons of each material. Moisture-density (Proctor) tests and relative density tests on the materials, and all in-place field density tests, shall be made at the expense of the Owner.

15. DRAINAGE MAINTENANCE. Trenches across roadways, driveways, walks, or other trafficways adjacent to drainage ditches or watercourses shall not be backfilled prior to completion of backfilling the trench on the upstream side of the trafficway, to prevent impounding water after the pipe has been laid. Bridges and other temporary structures required to maintain traffic across such unfilled trenches shall be constructed

and maintained by the Contractor. Backfilling shall be done so that water will not accumulate in unfilled or partially filled trenches. All material deposited in roadway ditches or other watercourses crossed by the line of trench shall be removed immediately after backfilling is completed, and the original section, grades, and contours of ditches or watercourses shall be restored. Surface drainage shall not be obstructed longer than necessary.

16. PROTECTION OF TRENCH BACKFILL IN DRAINAGE COURSES. Where trenches are constructed in ditches or other watercourses, backfill shall be protected from surface erosion. Where the grade of the ditch exceeds one percent, ditch checks shall be installed. Ditch checks shall extend at least 2 feet below the original ditch or watercourse bottom for the full bottom width and at least 18 inches into the side slopes, and shall be at least 12 inches thick.

17. FINAL GRADING AND PLACEMENT OF TOPSOIL. After other outside work has been finished, and backfilling and embankments completed and settled, all areas which are to be graded shall be brought to grade at the indicated elevations, slopes, and contours. All cuts, fills, embankments, and other areas which have been disturbed or damaged by construction operations shall be surfaced with topsoil to a depth of at least 4 inches. Topsoil shall be of a quality at least equal to the existing topsoil in adjacent areas, free from trash, stones, and debris, and well suited to support plant growth.

Use of graders or other power equipment will be permitted for final grading and dressing of slopes, provided the result is uniform and equivalent to hand work. All surfaces shall be graded to secure effective drainage. Unless otherwise indicated, a slope of at least one percent shall be provided.

Final grading and surfacing shall be smooth, even, and free from clods and stones larger than one inch in greatest dimension, weeds, brush, and other debris.

18. DISPOSAL OF EXCESS EXCAVATED MATERIALS. Except as otherwise permitted, all excess excavated materials shall be disposed of away from the site of the Work.

Broken concrete and other debris resulting from pavement or sidewalk removal, excavated rock in excess of the amount permitted to be installed in trench backfill, debris encountered in excavation work, and other similar waste materials shall be disposed of away from the site of the Work.

Excess earth from excavations located in unimproved property may be distributed directly over the pipe trench and within the pipeline right-of-way to a maximum depth of 6 inches above the original ground surface elevation at and across the trench and sloping uniformly each way. Material thus wasted shall be carefully finished with a drag, blade machine, or other suitable tool to a smooth, uniform surface without obstructing drainage at any point. Wasting of excess excavated material in the above manner will not be permitted where the line of trench crosses or is within a railroad, public road, or highway right-of-way. The disposal of waste and excess excavated materials, including hauling, handling, grading, and surfacing, shall be a subsidiary obligation of the Contractor and no separate payment will be made therefore.

19. SETTLEMENT. The Contractor shall be responsible for all settlement of backfill, fills, and embankments which may occur within the correction period stipulated in the General Conditions.

The Contractor shall make, or cause to be made, all repairs or replacements made necessary by settlement within 30 days after notice from the Engineer or the Owner.

End of Section

## Section 02270 – EROSION AND SEDIMENT CONTROL

1. SCOPE. This section covers temporary erosion and sediment control measures to be exercised by the Contractor as necessary to stabilize disturbed areas.

Seeding is covered in the seeding and mulching section.

2. GENERAL. Contractor shall prevent erosion of soil on the site and on adjacent property resulting from his construction activities. Effective erosion and sediment control measures shall be initiated prior to the commencement of clearing, excavation, or other operations that will disturb the natural protection.

Work shall be scheduled to expose areas subject to erosion for the shortest possible time, and natural vegetation shall be preserved to the greatest extent practicable. Temporary storage and construction buildings shall be located, and construction traffic routed, to minimize erosion.

Erosion and sediment control shall be provided at the locations indicated on the Drawings as required by construction activities. Erosion and sediment control devices shall be constructed as indicated on the Drawings. In addition, the Contractor shall be required to provide additional erosion control at other locations designated by the Engineer, Owner, or state regulatory agency.

At the completion of the Work or at such time as the Engineer, Owner, and state regulatory agency determine that adequate permanent erosion control measures have been established, the Contractor shall remove the erosion control measures and dispose them off site. All disturbed areas shall be seeded.

Erosion and sediment control measures shall be in accordance with the North Carolina “Erosion and Sediment Control Planning and Design Manual.”

If erosion control measures, in addition to those specified and required on the Drawings, are required by NCDEHNR due to the actions or processes of the Contractor, all costs shall be at the Contractor’s expense and at no additional cost to the Owner.

3. STATUTORY REQUIREMENTS. As required by the North Carolina Sedimentation Pollution Control Act, the Contractor shall protect all natural resources and properties adjoining the site from the effects of accelerated erosion resulting from land-disturbing activities during construction. The Contractor shall comply with the following minimum standards of the Act:

- a. A copy of the Owner’s approved soil erosion and control plan shall be on file in the Contractor’s office at the site.
- b. A buffer zone, sufficient to restrain sedimentation, shall be maintained between the land-disturbing activity and any adjacent property or watercourse.

- c. New of affected slopes shall be at an angle that can be retained by vegetative cover, and exposed slopes shall be provided with a ground cover sufficient to restrain erosion within 30 working days of completion of any phase (rough or final) of grading. Rye grass is not an acceptable substitute for the providing of a ground cover.
- d. A permanent ground cover, sufficient to restrain erosion, shall be provided within the shorter of 30 working or 120 calendar days after completion of construction or development.

4. EROSION AND SEDIMENT CONTROL PRACTICES. The minimum erosion and sediment control practices shall consist of the following types or other means acceptable to the Engineer, Owner, and state regulatory agency and shall be installed in accordance with Division of Land Resources, Land Quality Section manual. If there are any conflicts between this specification and the Division of Land Resources, Land Quality Section manual, the manual shall govern.

4.01 Temporary Construction Entrances. Temporary construction entrances shall be provided where indicated on the Drawings. In locations where grass is established and no change in grade is to be made, the temporary construction entrance shall be installed on top of existing grade to the dimensions indicated.

4.02 Silt Fences. Contractor shall use silt fences as a temporary erosion and sediment control measure in the locations indicated on the Drawings and where required. Silt fences shall be constructed in accordance with the details indicated on the Drawings and the following.

Silt fence posts shall be 6 feet in height and of the self-fastener angle steel type. Posts shall be spaced not greater than 8 feet on centers, or as required by the Engineer.

Woven wire fencing shall conform to ASTM A116 for Class 3 galvanizing. Fabric shall be a minimum of 32 inches in width and shall have a minimum of 6 line wires with 12 inch stay spacing. The top and bottom wires shall be 10-gage while the intermediate wires shall be 12-1/2 gage. Wire fabric shall be fastened to wood posts with not less than No. 9 wire staples 1-1/2 inches long.

Filter fabric shall be burlap unless the silt fence is to be used more than 45 days, in which case a synthetic filter fabric shall be used. Burlap shall be 10 ounces in weight per 3 foot width, with a minimum width of 36 inches. Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of 6 months of expected usable construction life. The filter fabric shall have a minimum 85 percent filtering efficiency, slurry flow rate of 0.3 gal/sq ft/min, and 30 lb/inch tensile strength at 20 percent elongation.

4.03 Sediment Basins. Sediment basins shall be installed where indicated on the Drawings and shall be the size indicated at each location. The area which will be covered by the berms for each basin shall be stripped of all vegetation and top soil. The basin shall be excavated and

suitable excavated material shall be used to build the berms around the excavated areas. The berm shall be compacted and filled to six inches above the desired height. All cut and fill slopes shall be 2 horizontal to 1 vertical or flatter.

The outlet for each basin shall be constructed of riprap and gravel and shall have a minimum width at the base of three feet with a side slope of 1:1 tying into the berm. The top of the outlet shall have a weir 1.5 feet below the top of the berm. The outlet shall extend beyond the toe of the berm until stable conditions are reached.

After the basin is installed, the berms and all disturbed areas around the basin shall be stabilized with grass or by other acceptable means.

4.04. Drop Inlet Protection. Drop inlets shall be protected by the Contractor with sediment filters as indicated on the Drawings. Filters shall have concrete blocks surrounding the inlet with one block on each side of the basin placed on its side. The base of the block shall rest against the top of the basin to provide adequate lateral support. A wire screen shall be placed over the blocks and rock shall be placed against the wire to the top of the barrier. Drop inlet protection shall be maintained such that it can retain sediment as designed.

4.05. Curb Inlet Protection. Curb inlets shall be protected by the Contractor with burlap bags filled with clean gravel or stone. Three bags shall be placed on their sides abutting the curb at either side of the inlet. Curb inlet protection shall be maintained such that it can retain sediment as designed.

4.06. Matting. Matting shall be placed where needed to aid in stabilizing disturbed areas. Matting for erosion control shall be jute matting or excelsior matting. Other acceptable material manufactured especially for erosion control may be used when approved by the Engineer in writing before being used. Matting for erosion control shall not be dyed, bleached, or otherwise treated in a manner that will result in toxicity to vegetation.

Jute matting shall be of uniform open plain weave of single jute yarn, 48 inches in width plus or minus 1 inch. The yarn shall be of loosely twisted construction and shall not vary in thickness by more than one half its normal diameter. There shall be 78 warp ends, plus or minus 2, per width of the matting; 41 weft ends, plus or minus 1, per linear yard; and the weight shall average 1.22 pounds per linear yard of the matting with a tolerance of plus or minus 5 percent.

Excelsior matting shall be wood excelsior 48 inches in width plus or minus 1 inch, shall have a minimum thickness of ¼ inch, and the weight shall average 1.07 pounds per linear yard of the matting with a tolerance of plus or minus 5 percent. The excelsior matting shall be covered on one side with a woven fabric consisting of either twisted paper cord or cotton cord having a minimum mesh size of 1 inch by 1 inch, and a maximum mesh size of 1-1/2 inch x 3 inches.

Staples shall be machine made of No. 11 gage new steel wire formed in a “U” shape. The size when formed shall not be less than 6 inches in length with a throat of not less than 1 inch in width.

Matting shall be installed on seeded areas on slopes and in ditches where it is needed to aid in stabilization of areas not otherwise protected by riprap, or on other areas as directed by the Engineer. Matting shall be placed immediately following seeding. The earth surface shall be smooth and free from stones, clods, or debris which will prevent the contact of the matting with the soil. Care shall be taken to preserve the required line, grade and cross section of the area treated.

Matting shall be unrolled in the direction of the flow of water and without stretching so that it will lie smoothly but loosely on the soil surface. The up-channel or top of slope end of each piece of matting shall be buried in a narrow row trench at least 5-inches deep. The trench shall be closed and firmly tamped after the end of the matting is buried. Where one roll of matting ends and a second roll begins, the end of the upper roll shall be brought over the buried end of the second roll so that there will be a 4 to 6 inch overlap. Check slots shall be constructed at 50 feet longitudinally or as directed by the Engineer. Slots shall be narrow trenches at least 5 inches deep. Matting shall be folded over and buried to the full depth of the trench, and the trench shall then be closed and firmly tamped. Where two or more widths of matting are laid side by side, the overlap shall be at least 4 inches.

Staples shall be placed approximately 10 inches apart across matting ends, junctions, and check slots. Staples shall be placed 3 feet apart along the outer edges and down the center of each strip of matting. Lapped edges shall be stapled every 24 to 36 inches.

When excelsior matting is used, the matting shall be installed with the fabric on the top side.

After matting has been placed and stapling completed, the matting shall be rolled with an approved roller to assure that it is in proper contact with the soil.

In the installation of erosion control matting on cut or fill slopes, the Engineer may require adjustments in the trenching or stapling requirements to fit individual slope conditions.

4.07 Riprap. Stone for riprap shall conform to the NCDOT Standard Specifications for Road and Structures, Section 942-1.

The stone shall be graded to meet the following requirements:

For Class A Riprap: Stone shall be of hard, durable, natural rock and shall range in size from 2-inches to 6-inches with the stone gradation being equally distributed within the required size range.

For Class B Riprap: Stone shall be of hard, durable, natural rock and shall range in size from 5 inches to 15 inches with the stone gradation being equally distributed within the required size range.

For Class I Riprap: Stone shall vary in weight from 5 to 200 pounds. At least 30 percent of total weight of the riprap shall be in individual pieces weighing a minimum of 60 pounds each. Not more than 10 percent of the total weight of the riprap may be individual pieces weighing less than 15 pounds each.

For Class II Riprap: Stone shall vary in weight from 25 to 250 pounds. At least 60 percent of the total weight of the riprap shall be in individual pieces weighing a minimum of 100 pounds each. Not more than 5 percent of the total weight of the riprap may be individual pieces weighing less than 50 pounds each.

All disturbed soil at creek crossings or other areas shown on the Engineer's Drawings shall be riprapped. Riprap shall be placed a minimum of 10 feet on each side of the centerline of the pipe. Riprap shall be placed to the satisfaction of the Engineer.

Stone for riprap shall be sound, durable, weather-resistant rock and shall be free from overburden soil.

The use of broken concrete will not be permitted.

4.07.01. Preparation. Prepare subgrade to the required lines and grades as shown on the details or indicated on the Drawings. Place any fill required in the subgrade to a density equal to that of the surrounding area.

4.07.02. Filter Cloth. The filter cloth shall be composed of strong rot-proof synthetic fibers formed into a fabric of the nonwoven type. Fabric shall be free of any treatment or coating that might significantly alter its physical properties after installation.

During all periods of shipment and storage, the cloth shall be maintained, wrapped in a heavy duty protective covering to protect the fabric from direct sunlight, ultraviolet rays, mud, dirt, dust, and debris.

The filter cloth shall have a puncture strength to withstand a minimum force of 80 pounds, in accordance with ASTM D751.

Installation shall be in accordance with the manufacturer's recommendations. Care shall be taken to insure that the cloth develops no rips, holes, deterioration or damage during installation.

Filter cloth as manufactured by Enka, Monsanto, Carthage Mills, Inc., or equal will be acceptable.

4.07.03. Installation. Deliver and place riprap in a manner that will insure that riprap shall be reasonably homogeneous with the smaller stones and spalls filling in the voids between the larger stones. Place riprap in a manner that will prevent damage to the filter cloth. Repair any damage cloth in a manner acceptable to the Engineer. Place riprap by mechanical methods,

augmented by hand placing where necessary to prevent damage to permanent works, provided that when the riprap is completed it forms a properly graded, dense, neat layer of stone.

The completed riprap shall be at least the thickness indicated on the plans. Toe walls and other construction details shall be as indicated on the plans.

5. MAINTENANCE OF EROSION CONTROL MEASURES. The Contractor shall be responsible for maintaining all erosion control measures. Maintenance items shall include, but not be limited to, the following:

- a. Check for points of scour or bank failure and deposition, rubbish or channel obstructions, rodent holes, and excessive wear.
- b. Remove deposition and undesirable plant growth. Repair damages from scour, rodents, and loss of freeboard.
- c. Correct unauthorized modifications, tampering, or vandalism.

The Contractor shall inspect the erosion control measures frequently and after each rain.

End of Section

## Section 02930 - SEEDING AND MULCHING

1. SCOPE. This section covers the operations necessary to produce established grass covered areas, including preparations of the soil surface, application of lime, seeding, compacting, mulching, watering, and maintenance.

Areas to be seeded include all areas disturbed by construction operations including grading, parking of equipment, trenching, or any other operation that has destroyed the existing vegetative cover.

2. PERSONNEL AND EQUIPMENT. All work shall be performed by personnel who are experienced and qualified in the work required, utilizing equipment such as a fertilizer spreader; tilling equipment; cyclone seeder, drill, or cultipacker type seeder; cultipacker or roller; mulch blower or hydromulcher; and mulch puncher.

3. SUBMITTALS. The Contractor shall furnish to the Engineer in duplicate a typed and signed statement which certifies that each container of seed for use on this Project is fully labeled in accordance with the Federal Seed Act and is at least equal to the requirements for seed listed herein. This certification shall appear on or with all copies of invoices for the seed. Each lot of seed shall be subject to sampling and testing at the discretion of the Engineer. Sampling and testing will be in accordance with the latest Rules and Regulations under the Federal Seed Act and North Carolina seed laws.

### 4. MATERIALS.

4.01. Soil for Repairs. The soil used in repair work shall be of a quality at least equal to that which exists in areas adjacent to the area to be repaired. Soil shall be used that is free from tree roots, clay balls, stones, and other materials that hinder grading, planting, and maintenance operations and that is free from noxious and other objectionable weed seeds and toxic substances.

4.02. Seed. Seed shall be certified seed labeled in accordance with the U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act and shall comply with the State Seed Laws of North Carolina. Seed shall be furnished in sealed, standard containers unless written exception is granted.

Seed that is wet or moldy or that has been otherwise damaged in transit or storage will not be acceptable. The seed shall be free of field bindweed, hedgeweed, and nutgrass seed. The seed shall not contain other noxious weed seed in excess of the limits allowable under the Federal Seed Act.

Samples of all seed used shall have been tested within 9 months prior to seeding by a legally authorized seed testing laboratory.

4.03. Lime. Lime shall be ground dolomitic limestone passing a 10 mesh sieve with at least 50 percent passing a 100 mesh sieve.

4.04. Fertilizer. Fertilizer shall be delivered in standard size bags of the manufacturer, showing weight, analysis, and the name of the manufacturer. If the fertilizer is not used immediately after delivery, it shall be stored in a dry place in such a manner that its effectiveness will not be impaired.

4.05. Mulch. Mulch for application to seedbed areas shall include threshed straw of oats, wheat, barley, rye, or wood cellulose fiber.

Straw mulch shall be baled, dry, unweathered, and show no signs of discoloration and mold damage.

A minimum of 50 percent of weight of the herbage making up the material shall be 10 inches in length or longer. Mulch material containing an excessive amount of weed and crop seeds will not be acceptable.

Wood cellulose fiber mulch shall be "Hydro Mulch 2000" as manufactured by Conwed Corporation or similar wood fiber mulch containing an organic mulch binder.

A weight certificate for each load of mulch delivered to the site shall be furnished to the Engineer at the time of delivery.

## 5. CONSTRUCTION.

5.01. Time and Conditions for Seeding. The work shall not be started until substantially all earthwork has been completed in the area to be seeded. Backfills and fills shall be allowed to settle and the topsoil spread and finish grading completed immediately before the work is started. Seeding shall be performed within 15 days after the completion of clearing and grubbing unless otherwise noted on the drawings or if permission is given otherwise.

Seeding and fertilizing shall not be done during periods of severe drought, high winds, excessive moisture, or frozen ground as determined by the Engineer, so that unsatisfactory results are not likely to be obtained.

Seeding shall be performed according to Table 1 in this section.

5.02. Clearing. Prior to grading and tilling, vegetation that may interfere with operations shall be mowed, grubbed, and raked. The collected material shall be removed from the site. The surface shall be cleared of stumps, stones larger than 6 inches, roots, cable, wire, and other materials that might hinder the work or subsequent maintenance.

5.03. Application of Fertilizer and Lime. Fertilizer and lime as specified shall be applied within 24 hours prior to the tilling operation. The fertilizer and lime shall be distributed uniformly over the entire area to be seeded at the rates indicated in Table 1 of this section.

The Contractor shall submit to the Engineer a laboratory soil analysis of a representative topsoil sample and use the recommended rates for fertilizer and lime. For the purpose of bidding, the Contractor will assume an application rate as indicated in Table 1 of this section. Adjustments for recommended rate will be made in accordance with the provisions of the Contract Documents for changes in the work and contract price.

5.04. Grading. Established grades, as indicated on the drawings, shall be maintained in a true and even condition. Eroded areas and areas having inadequate drainage, as indicated by the ponding of water, shall be filled. Ruts, deep tracks, dead furrows, and ridges shall be eliminated.

5.05. Tillage. After the areas have been backfilled, compacted, and fine graded with topsoil and fertilizer and lime spread, tillage shall be accomplished in such a manner as to destroy existing vegetation and to prepare an acceptable seedbed. All areas shall be tilled to a depth of 4 inches with a heavy-duty disc or chisel type breaking plow followed by discing with a disc harrow and smoothing with a weighted spike tooth harrow, railroad irons, or bridge timber float drag. When a chisel plow is used, the chisels shall be set not more than 10 inches apart, and the areas shall be cross or double tilled. All areas shall be left smooth for ease of mowing. All operations shall be done in a direction parallel to the contour lines on the slope and not uphill and downhill.

5.06. Application of Seed. Seeding equipment calibration tests shall be made in the presence of the Engineer to determine the equipment setting required to broadcast the seed at the specified rates.

The seed box shall be kept at least half full during seeding operations to insure even distribution of seed over all the areas seeded.

The seeder shall uniformly distribute the seed mixture over the area. Markers shall be used to assure that no significant gaps will exist between successive passes after there is a show of green. If unplanted skips and areas are noted after germination and growth of the grass, the unplanted areas shall be seeded at no additional cost to the Owner.

When hydraulic seeding equipment is used, no tillage to mix soil and fertilizer is required. However, some compacted areas may require scarification.

Seeding shall be applied at the following rates:



10-10-10 Fertilizer	1,000
Limestone	4,000

5.07. Covering and Firming. Unless hydroseeding or a cultipacker type seeder is used, the seed shall be covered with a shallow-set spike tooth harrow or a chain, plank, or brush drag immediately after sowing. The depth of cover shall not exceed 1/4 inch. In small areas, covering may need to be performed by light hand raking. After covering, the areas shall be firmed by rolling or with the use of a cultipacker.

5.08. Application of Mulch. Mulch shall be applied immediately after sowing, covering, and firming. Straw shall be spread uniformly in a continuous blanket at the rate of 2 tons per acre. Mulch shall be spread by hand or by a blower type mulch spreader. Blower type mulch spreaders shall be adjusted and operated in such a manner as to prevent excessive breakage of the mulch material. If this cannot be accomplished, the mulch shall be spread by hand. Care shall be exercised to insure that all wire or twine from baled straw is collected as it is removed from the bale. Mulching shall be started at the windward side of relatively flat areas, or at the upper part of a steep slope and continued uniformly until the area is covered. The mulch shall not be bunched.

Wood cellulose fiber mulch shall be applied at the rate indicated on the bag when applied by hydroseeding.

The Contractor shall take sufficient precautions to prevent mulch from entering drainage structures through displacement by wind, water, or other causes and shall promptly remove any blockage to drainage facilities which may occur.

5.09. Anchoring Mulch. Immediately following application, straw mulch shall be anchored by applying a sufficient amount of emulsified asphalt or other approved binding material to assure that the mulch is properly held in place. Where the binding material is not applied directly with the mulch it shall be applied immediately following the mulch application.

The method of application of binding material shall meet the approval of the Engineer. The rate of application of emulsified asphalt shall be not less than 4.5 gallons per 400 square feet of mulch.

During application of asphalt binding material, or other binding materials which may cause damage, adequate precautions shall be taken to prevent damage to surrounding structures, manholes, frames and covers, vents, or any other appurtenances. The Contractor shall either provide adequate covering or change method of application as required to avoid such damage.

Wood cellulose fiber applied as part of the hydroseeding should not require anchoring.

5.10. Cleanup. After completion of the construction operations, the entire area shall be cleared of excess soil and waste material, including but not limited to stones, stumps, roots, brush, wire, grade stakes, and all objects that might be a hindrance to maintenance operations and affect the visual appearance of the site. All roads over which hauling operations have been conducted, despite the type of surfacings, shall be kept clean, and soil clods and debris left on the surface shall be removed. The wheels of vehicles shall be cleaned to avoid leaving soil upon the surface of roads, and other paved areas.

5.11. Protection. Immediately after completion of construction operations, the entire area shall be protected as necessary against traffic by erecting barricades or placing warning signs in appropriate areas. Such protective devices shall be maintained until final acceptance of the project.

6. GRASS ESTABLISHMENT. All seeded areas shall be maintained until final acceptance of the Project. Maintenance shall include mowing, reseeding, repair of erosion damage, maintenance of mulch, refertilize at end of warranty period, and all other operations necessary to obtain an acceptable grass cover.

6.01. Watering. Watering to expedite germination and establishment of the grass will not be required. However, the Contractor shall guarantee a uniform stand of grass in all areas. The Project will not receive final acceptance until all areas have a stand of turf. The Contractor may elect to water areas to expedite germination and establishment, but in such cases he shall supply all water and the equipment necessary for its application.

6.02. Maintenance of Grades and Repair of Erosion Damage. Original grades of the grass areas shall be maintained after commencement of planting operations and during the maintenance period. Any damage to the finished surface from construction operations shall be promptly repaired. In the event erosion occurs from either watering operations or rainfall, such damage shall be promptly repaired. Ruts, ridges, tracks, and other surface irregularities shall be corrected and areas replanted where required.

6.03. Maintenance of Mulch. Mulch shall be maintained until covered with growing grass seedlings. Material that has been removed from the site by wind, water, or other causes shall be replaced and secured. Repair work that is required because of faulty operations or negligence on the part of the Contractor shall be performed at no additional cost to the Owner.

7. COMPLETION. In the event that all of the Work required by the Contract Documents, with the exception of the establishment of a satisfactory grass growth by seeding, is completed before a satisfactory grass growth is established, partial acceptance of the work will be made with final acceptance delayed until a satisfactory grass growth has been established.

End of Section

## SECTION 02950

### SITE WORK

#### 01. SCOPE:

The work specified in this section includes all labor, materials, accessories, equipment and tools necessary to perform the site work required to complete the project.

#### 02. PRELIMINARY WORK:

The Contractor shall provide protection for all existing structures, buildings, and utilities against all construction activity. The Contractor shall protect and preserve the Owner harmless against damage and claims resulting from project activities.

A. Streets and Highways: Effective barricades, signals and signs on all streets and in other locations where required for the protection of the work and the safety of the public, shall be provided, erected and maintained by the Contractor. Traffic control shall conform to all federal, state and local requirements.

B. Traffic Flow and Continuance of Services: The Contractor shall provide and be responsible for all barricades, warning light signs, signals, flagmen, and all else required to provide safe vehicular movement in the vicinity of construction operations. All flagging operations within the NCDOT roadway and right-of-way require qualified and trained Work Zone Flaggers. Barricades and obstructions that encroach on, or are adjacent to, public rights-of-way shall be lighted between the hours of sunset and sunrise. The Contractor shall adhere to all applicable requirements of the **“Manual on Uniform Traffic Control Devices for Streets and Highways”** published by the U.S. Department of Transportation, Federal Highway Administration and the “North Carolina Supplement” prepared by the North Carolina Department of Transportation. The work shall be arranged in a manner that will cause a minimum of disturbance to vehicular and pedestrian traffic. Adequate ingress and egress to both private and public property shall be provided by the Contractor during all stages of construction.

No public streets shall be closed without prior permission of the Engineer. Road closure requests should be included with the weekly work schedule submitted to the Engineer on Thursday of each week for the work to be performed the following week. This policy shall be strictly followed as the Town Police Department and Fire Department must be contacted a minimum of 48 hours before any road closures. If road closures are needed on NCDOT roads, the contractor needs to provide a minimum of 2 weeks notice to the Engineer so that the closure can be coordinated with NCDOT.

#### 03. ASPHALT REMOVAL AND REPAIR:

Existing pavement thickness is not known. Where the project impacts paved areas, the pavement shall be saw cut first and repaired to NCDOT standards as required in the Encroachment Agreement. Pavement shall be neatly removed by the methods prescribed regardless of type or thickness. Trench widths in road cut shall be kept to the narrowest possible, generally no more than 12 inches plus the pipe outside diameter.

Pipe trenches shall be backfilled and properly compacted and pavement, both asphalt and concrete, shall be replaced in accordance with the details in the project plans and the NCDOT Standard Specifications for Roads and Structures, latest revision. Cut areas shall be maintained by the Contractor in a safe, passable condition until paved.

Debris generated by pavement removal shall be removed and disposed of in an approved manner. Debris removal shall be considered incidental.

Road surfaces shall be kept clean. Should the work create dusty or muddy road surface conditions, the Contractor shall remedy this condition by cleaning the road surface daily.

04. **WASTE MATERIALS AND CONSTRUCTION DEBRIS:**

All materials removed and replaced during construction shall become the property of the contractor except for existing meter boxes and setters. The Contractor shall properly dispose of all removed materials and construction debris in compliance with all applicable laws and regulations.

05. **DEWATERING:**

Excavations and trenches shall be made free from standing water. Installation of utilities or structures shall not be performed where standing water or muck exists. The Contractor shall provide dewatering equipment and facilities as required to dewater construction areas. The cost for all dewatering shall be incidental to the project. Gravel, stone or other material used in lieu of well points or underdrains to stabilize trenches or other excavation will be considered an alternate method of dewatering and the cost incidental to the project.

06. **FILLING OF EXCAVATIONS:**

Where allowed, excavations in right-of-ways shall be filled with compactable earthen material free of rock and debris. Fill material shall contain proper moisture content for the material being used and placed in lifts and compacted to 95% Standard Proctor. Areas failing compaction testing shall be removed and replaced.

Excavations within NCDOT roadways shall be backfilled using Flowable Fill per NCDOT 2018 Standard Specifications, Division 10 Materials, Section 1000-6. Flowable Fill shall be discharged from the truck directly to the space to be filled.

07. **SELECT FILL MATERIAL:**

Select fill material shall meet the Statewide Borrow Criteria. Select fill material shall be free from debris including rocks, roots, limbs, grass, ice or any other deleterious materials. Select fill material shall be a silty or clayey soil material which can readily and easily be compacted and resist settlement, slumping, cracking and shrink-swell conditions. Soil fill material shall be compactable to 100% (Standard Proctor) in roadways and 95% in right-of-way areas.

**Payment:**

08. **SOIL COMPACTION TESTING:**

The Contractor shall be required to make tests on the moisture content of fill materials and compaction tests on layers of fill as placed as required by the Engineer. The Contractor shall select a reputable commercial testing laboratory equipped to make the required tests and who are experienced in this type of work. All compaction tests shall be made and reported in accordance with ASTM D-2167, Standard Proctor Method. The Contractor shall pay for all tests, personnel, equipment and incidentals required to make the tests and it shall be incidental to the project.

09. **DRIVEWAY REPAIR:**

Gravel, concrete or asphalt driveways affected by the project shall be repaired in like or better condition. Repair shall include damage to culverts. Damaged culvert pipe shall be replaced with new meeting the requirements of NCDOT.

Reinforced concrete culvert pipe in specified sizes and meeting the requirements of AASHTO M170 shall be installed beneath driveways where needed or as shown on the plans. A trench shall be excavated to sufficient depth for installation of the pipe. The trench bottom shall be shaped to cradle the bottom 25% of the pipe. Suitable excavated materials shall be used for backfill. Backfill shall be placed in 6-inch lifts and thoroughly compacted. Compaction shall not compromise or shift the buried pipe or alter the grades or elevations.

10. **DRAINAGE STRUCTURES:**

Driveway and road culverts affected by construction shall be replaced in a manner that maintains drainage and traffic patterns the same as or better than prior to construction. Ditch sections shall be reestablished and stabilized with vegetation upon completion of pipe installation. Damaged culvert sections shall **not** be reused. New reinforced concrete culvert pipe consistent with NCDOT requirements shall be used to replace damaged culvert sections.

11. **EXPLORATORY EXCAVATIONS TO ASSESS EXISTING CONDITIONS:**

Exploratory excavations shall be utilized to investigate key points of interest, possible utility connections, possible subsurface conflicts in an area up to 4' x 4'. Exploratory excavation may be performed using conventional digging equipment such as a backhoe or with vacuum excavation equipment. Asphalt and/or concrete patching associated with exploratory excavations and other construction work will be paid at the appropriate unit rates in the Schedule of Bids Items. Exploratory excavations will be paid for as specified by "Exploratory Excavation" in the Schedule of Bids Items regardless of method used.

All exploratory excavation must be **pre-approved** in writing by the Engineer. Exploratory excavation shall be considered for payment only when used to investigate existing conditions to assess potential conflicts and potential connection locations. Exploratory excavation to locate services and hydrant connections or other items that would normally be excavated during the course of construction shall not be paid unless the activity was directed or authorized by the Engineer.

12. **CLEARING AND GRUBBING:**

Clearing and grubbing shall be performed within the right of way and shall be kept to the minimum required to construct the project. Clearing and grubbing shall include the complete removal and disposal of all brush, weeds, timber, stumps, rubbish and all other obstructions. All such material shall be removed to a depth of at least one foot below finished grade. The Contractor shall be responsible for the removal and proper, legal disposal of all refuse from the clearing and grubbing operation.

13. **SEDIMENTATION AND EROSION CONTROL:**

The Contractor is instructed to control sedimentation runoff during the course of construction of this project. All applicable rules of the NCDEQ Land Quality Section shall be observed.

All disturbed or denuded areas shall be seeded and mulched (or patched with asphalt or concrete, whichever applies) as per the specifications within 7 working days of disturbance or denudation. See plan details for the NCDOT seeding schedule required by the Encroachment Agreement. Erosion control devices shall be installed as needed or as specified before and during construction. Erosion control measures shall be removed by Contractor after denuded areas are repaired.

Contractor must provide proactive maintenance and upkeep of erosion control measures once per week and after a rainfall event of one-half inch or more. Contractor must keep a log of all maintenance to erosion control measures. Should NCDEQ Land Quality inspectors or NCDOT inspectors find the project site to be in violation and should issue fines or citations to the Owner, the Contractor shall be

responsible for all costs to bring the site into compliance and shall reimburse the Owner for fines paid. Reimbursement shall be obtained through deduction from the final payment application.

The contractor must immediately remove all objectionable materials spilled, washed, or tracked onto public roadways. Daily removal of sediment from all paved road surfaces is required. The use of fines is required for ease and effective removal.

Erosion control shall be considered incidental to the performance of the Project, except where pay items for erosion control measures are provided in the Bid Schedule and listed below:

A. Rip-Rap Check Dams: Rip-Rap Check Dams shall be constructed as shown on the detail sheet and shall be constructed at the locations shown on the plans and at other locations directed by the Engineer. The spacing between check dams shall be such that the elevation at the top of the lower dam is the same as the toe elevation of the upper dam. Check Dams shall be constructed with Class B erosion control stone with approximately 2:1 side slopes and shall be underlain by filter fabric. Check dams shall be constructed such that runoff passes over the middle of the check dam and does not bypass the check dam. The contractor shall maintain the temporary check dams and shall remove and dispose of sediment accumulations as required or as directed by the Engineer. A temporary check dam will be installed at the lower limits of each day's construction.

B. Wattle Check Dams:

C. Matting: Rolled erosion control matting shall be used if the bottom of ditches or channels have been disturbed and when the slope exceeds 3:1. Matting shall be North American Green S75BN or approved equivalent. Designed for high-maintenance areas where close mowing will occur soon after installation. Payment shall be made at the Contract unit price, measured per square yard of matting installed.

14. **SEEDING**:

All disturbed or denuded areas shall be treated, seeded and tended and an acceptable permanent ground cover established. All disturbed or denuded areas shall be seeded and mulched within 7 working days of disturbance or denudation. All sowing of seed shall be completed within the time limit of the contract, unless otherwise authorized by the Engineer. All seed shall be sufficiently covered with mulch and tacked to hold mulch in place. Mulch shall be spread uniformly over the area by hand or mechanical spreaders or blowers. No seeded areas shall be allowed to remain more than 24 hours without mulching. Any soil amendments necessary to establish a flourishing ground cover shall be applied. See plan details for the NCDOT seeding schedule required by the approved Encroachment Agreement.

15. **CLEANUP**:

The Contractor shall dispose of all excess material and debris not incorporated into the permanent installation.

DAILY removal of sediment from all paved road surfaces is required. The daily use of fines is also required for effective removal of soil. The work area shall be cleaned at the end of every day by sweeping and at the end of every week by washing all loose soil and other material off the road surface. Measures shall be taken to ensure that no soil enters the storm drains or leaves the area. If the Contractor fails to clean the roadway surface as required, the Owner will have the roadway cleaned and the cost deducted from the next invoice.

After site work has been completed, the Contractor shall clean up the entire project area and return the ground cover to its original condition. The restoration of existing landscaping will be required for each

property owner within the right-of-way including but not limited to; reinstalling garden fence and purchasing & planting pampas grass, small trees and shrubs.

16. **ACCEPTANCE:**

Acceptance of all site work discussed in the section shall be made upon approval of the Engineer.

## SECTION 7.00 SANITARY SEWER

### A. DESIGN

#### LOCATION

1. ALL PUBLIC SANITARY SEWER MAINS SHALL BE INSTALLED IN DEDICATED STREET RIGHT-OF-WAY OR IN DEDICATED UTILITY EASEMENTS. SANITARY SEWER MAINS INSTALLED IN TOWN OF SMITHFIELD MAINTAINED STREETS SHALL BE LOCATED IN THE CENTER OF THE PAVEMENT. MAINS LOCATED WITHIN NCDOT RIGHT-OF-WAY SHALL BE PLACED OUTSIDE OF PAVEMENT LIMITS, IN ACCORDANCE WITH NCDOT STANDARDS.
2. MINIMUM WIDTHS OF PUBLIC SANITARY SEWER EASEMENTS SHALL BE 30 FEET FOR ALL MAIN SIZES UP TO 24". FOR SANITARY SEWER MAINS GREATER THAN 24", THE EASEMENT SHALL BE 40 FEET. SEE SECTION 2.10 FOR LANDSCAPE PLANTINGS WITHIN UTILITY EASEMENTS.
3. SEWER MAINS SHALL BE CENTERED WITHIN THEIR EASEMENTS UNLESS OTHERWISE DETERMINED BY THE TOWN ENGINEER.
4. PROPOSED SANITARY SEWER PARALLELING A CREEK SHALL BE DESIGNED TO A PROPER DEPTH TO ALLOW LATERAL CONNECTIONS SUCH THAT ALL CREEK CROSSINGS WILL BE BELOW STREAM BED ELEVATION UNLESS APPROVED BY THE TOWN ENGINEER. THE TOP OF THE SEWER MAIN SHALL HAVE AT LEAST THREE (3) FEET OF COVER BETWEEN THE MAIN AND THE STREAM BED. WHEN SUFFICIENT COVER CANNOT BE ACHIEVED, THE SEWER MAIN MUST BE MADE OF DUCTILE IRON PIPE WITH RESTRAINED JOINTS EQUIVALENT TO WATER MAIN STANDARDS. NO CROSSING WILL BE PERMITTED WITH LESS THAN ONE (1) FOOT OF COVER.
5. SANITARY SEWER MAINS SHALL NOT BE INSTALLED UNDER ANY PART OF WATER IMPOUNDMENT.
6. THE FOLLOWING MINIMUM SEPARATIONS MUST BE MAINTAINED:
  - a) ANY PRIVATE OR PUBLIC WATER SUPPLY SOURCE - 100 FEET
  - b) ANY OTHER STREAM, LAKE, OR IMPOUNDMENT - 10 FEETWHERE THE REQUIRED MINIMUM SEPARATION CANNOT BE MAINTAINED, DUCTILE IRON PIPE WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS MUST BE USED. THE MINIMUM SEPARATIONS SHALL NOT BE LESS THAN 50 FEET FROM A PRIVATE WELL OR A PUBLIC WATER SUPPLY SOURCE.
7. SANITARY SEWER LINES SHALL BE EXTENDED ALONG NATURAL DRAINAGE COURSES TO THE ADJACENT PROPERTY LINES.



### STANDARD DETAIL AND SPECIFICATIONS MANUAL

SMITHFIELD, NORTH CAROLINA  
PUBLIC UTILITIES

SCALE:  
NTS

DETAIL NO.  
07.01\_P1

DATE: 04/03/2018

SIZE

1. THE MINIMUM SIZE OF A PUBLIC GRAVITY SANITARY SEWER MAIN SHALL BE 8".
2. MAJOR INTERCEPTORS SHALL BE SIZED IN ACCORDANCE WITH THE MOST CURRENT TOWN OF SMITHFIELD LONG RANGE DEVELOPMENT PLAN. NEW SEWER SYSTEMS SHALL BE SIZED IN ACCORDANCE WITH THE FOLLOWING FLOW FACTORS:

LAND USE	FLOW FACTOR
RESIDENTIAL	120 GAL/BEDROOM (MINIMUM 2 BEDROOMS)
OFFICE & INSTITUTIONAL	0.09 GPD/SQ.FT. BLDG. SPACE
COMMERCIAL	0.12 GPD/SQ.FT. BLDG. SPACE
INDUSTRIAL	0.20 GPD/SQ.FT. BLDG. SPACE

FLOW FACTORS NOT LISTED HEREIN SHALL BE IN ACCORDANCE WITH THE FACTORS RECOMMENDED BY THE NCDEQ.

THESE FIGURES COVER NORMAL INFILTRATION; HOWEVER, AN ADDITIONAL ALLOWANCE SHALL BE MADE WHERE CONDITIONS ARE UNFAVORABLE.

3. FOR EXISTING SEWER SYSTEMS AN ADDITIONAL ALLOWANCE SHALL BE MADE TO THE ABOVE FLOW FACTORS WHERE THE EXISTING FLOW EXCEEDS THESE VALUES AND IMMEDIATE REMEDIAL MEASURES ARE NOT PROPOSED.
4. THE RATIO OF PEAK TO AVERAGE DAILY FLOW SHALL BE 2.5.
5. SANITARY SEWERS SHALL BE DESIGNED TO CARRY THE PROJECTED PEAK FLOW AT NO MORE THAN  $\frac{1}{2}$  FULL. THE MINIMUM VELOCITY FOR SANITARY SEWER LINES IS 2.0 FPS.
6. THE MINIMUM GRADES FOR PUBLIC SANITARY SEWER SHALL BE AS FOLLOWS:

MAIN SIZE (IN)	MINIMUM SLOPE (%)
8	0.50
10	0.40
12	0.28
15	0.15
18	0.12
21	0.10
24	0.08
30	0.06

THE MINIMUM SLOPE FOR THE UPPERMOST REACH OF A SANITARY SEWER LINE SHALL BE 1.00%, REGARDLESS OF LINE SIZE.



STANDARD DETAIL AND  
SPECIFICATIONS MANUAL

SMITHFIELD, NORTH CAROLINA  
PUBLIC UTILITIES

SCALE:  
NTS

DETAIL NO.  
07.01\_P2

DATE: 04/03/2018

7. THE MAXIMUM GRADE FOR SANITARY SEWER SHALL BE 10%. THE MAXIMUM VELOCITY IN SANITARY SEWERS IS 15 FT/SEC. THESE LIMITS MAY BE EXCEEDED WITH THE APPROVAL OF THE TOWN ENGINEER AND THE INCORPORATION OF THE FOLLOWING PROVISIONS:
  - a. ALL SEWERS OF GREATER THAN 10% SLOPE SHALL BE DUCTILE IRON PIPE.
  - b. CONCRETE ANCHORS SHALL BE INSTALLED ON ALL SEWERS OF GREATER THAN 10% SLOPE AT THE FOLLOWING SPACINGS:
    1. NOT OVER 36' CENTER TO CENTER ON GRADES FROM 10% TO 25%
    2. NOT OVER 24' CENTER TO CENTER ON GRADES FROM 25% TO 40%
    3. NOT OVER 16' CENTER TO CENTER ON GRADES OVER 40%
8. SEWER EXTENSIONS SHOULD BE DESIGNED FOR PROJECTED FLOWS.
9. PIPE DIAMETER CHANGES SHALL OCCUR IN A MANHOLE WITH AN INVERT OF THE LARGER PIPE LOWERED SUFFICIENTLY TO MAINTAIN THE SAME ENERGY GRADIENT.
10. ALL RESIDENTIAL SUBDIVISION LOTS SHALL BE SERVED BY GRAVITY SEWER UNLESS OTHERWISE APPROVED BY THE TOWN ENGINEER. IF A PUMP IS APPROVED, IT SHALL BE PRIVATELY MAINTAINED, MUST PUMP INTO A SERVICE CONNECTION PLACED ON THE RESIDENTIAL LOT, AND MUST HAVE A NOTE ON THE RECORDED PLAT INDICATING A PRIVATE PUMP MAY BE REQUIRED TO SERVE THAT LOT WITH SANITARY SEWER SERVICE.

INSTALLATION

1. SANITARY SEWER MAINS SHALL BE DEEP ENOUGH TO SERVE THE ADJOINING PROPERTY AND ALLOW FOR SUFFICIENT SLOPE IN LATERAL LINES. ALL SANITARY SEWER MAINS SHALL HAVE THE FOLLOWING MINIMUM COVERS:
  - a. FOUR (4) FEET FROM THE TOP OF THE PIPE TO THE FINISHED SUBGRADE WHEN UNDER A ROADWAY
  - b. THREE (3) FEET FROM THE TOP OF PIPE TO THE FINISHED GRADE WHEN OUTSIDE A ROADWAY

THE ABOVE REQUIREMENTS MAY BE WAIVED AT THE DIRECTION OF THE TOWN ENGINEER, IN WHICH CASE DUCTILE IRON PIPE SHALL BE INSTALLED.
2. ALL CONSTRUCTION RELATING TO THE UTILITY IMPROVEMENTS WHICH WILL MAINTAINED BY THE TOWN MUST BE PERFORMED BY A CONTRACTOR LICENSED FOR UTILITIES IN THE STATE OF NORTH CAROLINA..
3. SEWER MAINS FROM 14 TO 20 FEET DEEP SHALL REQUIRE SPECIAL BEDDING IN ACCORDANCE WITH STANDARD DETAILS.



STANDARD DETAIL AND  
SPECIFICATIONS MANUAL

SMITHFIELD, NORTH CAROLINA  
PUBLIC UTILITIES

SCALE:  
NTS

DETAIL NO.  
07.01\_P3

DATE: 04/03/2018

4. SEWERS OVER TWENTY (20) FEET DEEP SHALL REQUIRE DUCTILE IRON PIPE FOR THE ENTIRE RUN BETWEEN MANHOLES.
5. PIPE TRENCH EXCAVATION AND BACKFILLING SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 5.00 OF THESE SPECIFICATIONS.
6. TRANSITIONS OF PIPE MATERIAL SHALL OCCUR ONLY AT MANHOLES.
7. SANITARY SEWERS SHALL BE LAID TEN (10) FEET Laterally edge to edge from existing or proposed water mains unless the top of the sewer main is at least eighteen (18) inches below the bottom of the water main and there is a horizontal separation of at least three (3) feet from the closest edge of the pipe.
8. WHERE SANITARY SEWERS CROSS BENEATH WATER MAINS WITH A VERTICAL SEPARATION OF EIGHTEEN (18) INCHES, OR LESS, OR WHERE WATER MAINS CROSS UNDER SEWER MAINS, THE ENTIRE LEG OF SEWER LINE SHALL BE DUCTILE IRON PIPE. THE WATER LINE PIPE SHALL BE CENTERED AT THE POINT OF CROSSING AND SHALL CROSS SANITARY SEWER LINES AT AN APPROXIMATE NINETY (90) DEGREE ANGLE.
9. SANITARY SEWERS SHALL HAVE THE TOP OF THE PIPE AT LEAST TWELVE (12) INCHES BELOW THE BOTTOM OF THE STORM SEWER PIPE WHEN THE HORIZONTAL SEPARATION BETWEEN THE CLOSEST EDGES OF THE TWO PIPES IS THREE (3) FEET OR LESS. WHERE SANITARY AND STORM SEWERS CROSS WITH A VERTICAL SEPARATION OF LESS THAN TWELVE (12) INCHES THE ENTIRE LEG OF SANITARY SEWER SHALL BE DUCTILE IRON PIPE WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS.
10. THERE SHALL BE A MINIMUM FIVE (5) FOOT HORIZONTAL SEPARATION BETWEEN PARALLEL GRAVITY AND/OR FORCE MAINS.
11. SEWER LINE EASEMENTS SHALL BE GRADED SMOOTH, FREE FROM ROCKS, BOULDERS, ROOTS, STUMPS, AND OTHER DEBRIS AND SEEDED & MULCHED UPON THE COMPLETION OF CONSTRUCTION.
12. THE DOWNSTREAM MANHOLES OF A SANITARY SEWER LINE EXTENSION UNDER CONSTRUCTION SHALL BE PLUGGED TO PREVENT THE INTRUSION OF GROUNDWATER, RUNOFF AND SEDIMENT INTO THE SANITARY SEWER SYSTEM. ALL WATER UPSTREAM OF THE PLUG SHALL BE PUMPED OUT OF THE SANITARY SEWER LINE AND ALL SEDIMENT AND SOLIDS SHALL BE REMOVED AND PROPERLY DISPOSED OF BY THE CONTRACTOR. THE PLUG SHALL NOT BE REMOVED UNTIL THE LINE HAS BEEN INSPECTED BY THE TOWN TO ENSURE THAT ALL POSSIBLE POINTS OF INFLOW AND INFILTRATION HAVE BEEN SECURED.

MANHOLES

1. ALL MANHOLE CONE SECTIONS SHALL BE THE ECCENTRIC TYPE
2. MANHOLES SHALL BE SPACED AT A MAXIMUM DISTANCE OF 400 FEET APART FROM CENTER OF MANHOLE TO CENTER OF MANHOLE.
3. MANHOLES FOR SEWERS UNDER 21 INCHES IN DIAMETER SHALL BE A MINIMUM OF FOUR (4) FEET IN DIAMETER. MANHOLES FOR SEWERS LARGER THAN 21 INCHES IN DIAMETER SHALL BE FIVE (5) FEET IN DIAMETER. MANHOLES WITH INSIDE DROPS SHALL BE A MINIMUM OF FIVE (5) FEET IN DIAMETER.



STANDARD DETAIL AND SPECIFICATIONS MANUAL

SMITHFIELD, NORTH CAROLINA  
PUBLIC UTILITIES

SCALE:  
NTS

DETAIL NO.  
07.01\_P4

DATE: 04/03/2018

4. MANHOLES SHALL BE INSTALLED AT EACH DEFLECTION OF THE LINE AND/OR GRADE. THE FLOW CHANNEL THROUGH MANHOLES SHOULD BE SMOOTH AND SHALL CONFORM TO THE SHAPE AND SLOPE OF THE ENTERING SANITARY SEWER MAIN. CENTERLINE INVERTS OF THE FLOW CHANNEL SHALL BE PROVIDED WITH THE "INVERT IN" ELEVATION COMPUTED AS PER THE ENTERING SEWER LINE SLOPE. THERE SHALL BE A MINIMUM DROP OF 0.2' ACROSS THE MANHOLE TO THE EXITING SEWER LINE, OR "INVERT OUT". ANY DEVIATION FROM THIS DESIGN WILL NEED THE APPROVAL OF THE PUBLIC UTILITIES DIRECTOR.

MANHOLE FLOW PATHS SHALL BE CONSTRUCTED OF SLICK SIDED RED BRICK OR PRECAST CONCRETE. THE INVERT SHALL BE SMOOTH AND UNIFORM IN SHAPE ALONG THE ENTIRE LENGTH. MANHOLES SHALL HAVE A MINIMUM OF FOUR (4) FEET IN DIAMETER, UNLESS THERE IS AN INSIDE DROP. FOR INSIDE DROP MANHOLES, A MINIMUM DIAMETER OF FIVE(5) FEET SHALL BE USED.

FOR INSIDE DROP MANHOLES, THE LAST LEG OF THE INCOMING SEWER MAIN SHALL BE DUCTILE IRON.

5. MANHOLES NOT LOCATED IN ROADWAYS SHALL HAVE A TOP ELEVATION BETWEEN 18" AND 36" ABOVE FINISHED GRADE.
6. MANHOLE TOPS SHALL BE ELEVATED TWO (2) FEET ABOVE THE FUTURE 500-YEAR FLOOD PLAIN, PER NCDEQ REQUIREMENTS, OR SHALL BE EQUIPPED WITH WATERTIGHT FRAMES AND COVERS.
7. MANHOLES LOCATED WITHIN THE 100-YEAR FLOODPLAIN, OR IN AREAS OF HIGH GROUND WATER SHALL BE WATERPROOFED AT THE JOINTS.

#### B. MATERIALS

MATERIALS TO BE UTILIZED SHALL BE THOSE AS SPECIFIED HEREIN, UNLESS AN APPROVED EQUAL IS AUTHORIZED BY THE PUBLIC UTILITIES DIRECTOR.

EACH LENGTH OF PIPE TO BE USED SHALL HAVE PLAINLY AND PERMANENTLY MARKED THEREON THE FOLLOWING INFORMATION, AS WELL AS, ANY ADDITIONAL INFORMATION SPECIFICALLY NOTED IN THE SECTIONS BELOW:

- a) PIPE CLASS DESIGNATION
- b) MANUFACTURER'S NAME OR TRADEMARK
- c) NOMINAL PIPE SIZE

ALL NEW CONSTRUCTION FOR SEWER MAINS SHALL BE MADE OF EITHER DUCTILE IRON PIPE (DIP) OR POLYVINYL CHLORIDE PIPE (PVC). NO OTHER MATERIAL WILL BE ALLOWED WITHOUT WRITTEN APPROVAL FROM THE PUBLIC UTILITIES DIRECTOR.



## STANDARD DETAIL AND SPECIFICATIONS MANUAL

SMITHFIELD, NORTH CAROLINA  
PUBLIC UTILITIES

SCALE:  
NTS

DETAIL NO.  
07.01\_P5

DATE: 04/03/2018

DUCTILE IRON PIPE (DIP)

DUCTILE IRON PIPE SHALL BE DESIGNED AND MANUFACTURED IN ACCORDANCE WITH AWWA C150 AND C151 FOR A LAYING CONDITION TYPE 2 AND A WORKING PRESSURE AS FOLLOWS:

3" - 12"	350 PSI
15" - 21"	250 PSI
24"	200 PSI
GREATER THAN 24"	150 PSI

PIPE JOINTS SHALL BE OF THE PUSH-ON TYPE AS PER AWWA CIII. PIPE LINING SHALL BE EPOXY COATED PROTECTO 401, OR APPROVED EQUAL, IN ACCORDANCE WITH AWWA C104.

POLYVINYL CHLORIDE PIPE (PVC)

PVC PIPE SHALL BE MADE OF PVC PLASTIC HAVING A CELL CLASSIFICATION OF 12454-B, 12454-C, OR 13364-B WITH MINIMUM TENSILE MODULUS OF 500,000 PSI. PVC PIPE SHALL HAVE INTEGRAL WALL BELL AND SPIGOT JOINTS FOR THE CONVEYANCE OF DOMESTIC SEWAGE. ALL FITTINGS SHALL BE MADE OF PVC PLASTIC. PVC FITTINGS MUST BE MANUFACTURED BY PIPE SUPPLIER, OR APPROVED EQUAL, AND HAVE BELL & SPIGOT CONFIGURATIONS COMPATIBLE WITH THAT OF THE PIPE.

ALL PIPE LESS THAN 18 INCHES IN DIAMETER SHALL HAVE A MAXIMUM STANDARD DIMENSION RATIO (SDR) OF 35. WHERE LAYING CONDITIONS SO WARRANT, AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, LOWER SDR VALUES (STRONGER PIPE) MAY BE REQUIRED.

PVC PIPE 18 INCHES IN DIAMETER AND LARGER MUST BE SPIRAL WOUND AS DEFINED IN ASTM F-794, SERIES 46. PIPE STRENGTH SHALL BE EQUAL TO OR EXCEED THAT REQUIRED FOR PIPE LESS THAN 18 INCHES IN SIZE.

INSTALLATION SHALL CONSIST OF CLASS I BEDDING MATERIAL PLACED 4 INCHES BELOW THE PIPE BARREL AND CONTINUING TO A MINIMUM OF THE PIPE SPRING LINE, AS PER ASTM D2321. IN ADDITION, THE INSTALLATION OF PVC PIPE SHALL INCLUDE A METALLIC LOCATION STRIP BURIED IN THE BACKFILL, IN ACCORDANCE WITH STANDARD DETAILS.

C. ADDITIONAL REQUIREMENTS FOR SEMI-RIGID PIPE (PVC)

THE INSTALLATION SHALL SATISFY THE REQUIREMENTS OF THE MANUFACTURER, AND/OR THE FOLLOWING, WHICHEVER IS MORE STRINGENT:

- 1) INSTALLATION OF PVC PIPE SHALL FOLLOW THE RECOMMENDATIONS OF ASTM D-2321 "UNDERGROUND INSTALLATION OF FLEXIBLE THERMOPLASTIC SEWER PIPE". FOR SEMI-RIGID PIPES BEDDING MATERIAL SHALL BE CLASS I. IN ANY AREA WHERE THE PIPE WILL BE INSTALLED BELOW EXISTING OR FUTURE GROUND WATER LEVELS OR WHERE THE TRENCH COULD BE SUBJECT TO UNDULATION, ADDITIONAL CLASS I MATERIAL SHALL BE USED FOR BEDDING. REFER TO STANDARD DETAILS FOR EMBEDMENT REQUIREMENTS.



STANDARD DETAIL AND  
SPECIFICATIONS MANUAL

SMITHFIELD, NORTH CAROLINA  
PUBLIC UTILITIES

SCALE:  
NTS

DETAIL NO.  
07.01\_P6

DATE: 04/03/2018

- 2) THE MANUFACTURER'S SPECIFICATIONS OR OTHERWISE APPROVED METHOD SHALL BE USED IN DETERMINING THE STIFFNESS CLASS OF THE PIPE TO BE INSTALLED SO AS TO ATTAIN THE REQUIRED DEFLECTION CONTROL. THE CLASS OF THE PIPE MUST BE APPROVED BY THE PUBLIC UTILITIES DIRECTOR.
- 3) THE MAXIMUM ALLOWABLE DEFLECTION AFTER INSTALLATION SHALL BE LESS THAN 3% FOR SEMI-RIGID PIPE. A MANDREL TEST ON TRUSS PIPE SHALL BE REQUIRED IF THE INSPECTOR FINDS A PROBLEM DURING VISUAL INSPECTION. THE MANDREL (GO/NO-GO) DEFLECTION TEST MUST BE PERFORMED ON EACH LINE PRIOR TO ACCEPTANCE, AND NO LESS THAT 30 DAYS AFTER INSTALLATION. THE CONTRACTOR SHALL SUPPLY THE MANDREL USED FOR THIS PERFORMANCE TEST. THE MANDREL DEVICE SHALL BE CYLINDRICAL IN SHAPE HAVING NINE (9) POSSIBLE CONTACT POINTS WITH THE PIPE. THE MANDREL'S LENGTH AND DIAMETER SHALL EQUAL THE DIMENSIONS IN THE FOLLOWING TABLE, AND SHALL BE SUBJECT TO THE INSPECTOR'S APPROVAL.

NOMINAL DIAMETER	MIN. LENGTH	DIA. MANDREL
8"	8"	7.52"
10"	10"	9.45"
12"	10"	11.40"
15"	12"	14.31"

- 4) FOR PVC PIPE, THE PIPE SHALL BE PRODUCED WITH BELL AND SPIGOT END CONSTRUCTION. JOINING SHALL BE ACCOMPLISHED BY RUBBER GASKET, IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION, UNLESS OTHERWISE DIRECTED BY THE PUBLIC UTILITIES DIRECTOR. EACH PIPE LENGTH SHALL BE CLEARLY MARKED WITH INFORMATION INCLUDING PIPE SIZE, PROFILE NUMBER AND CLASS NUMBER.
- 5) A MINIMUM TRENCH WIDTH SHALL BE THREE (3) FEET
- 6) THE BEDDING (6" MINIMUM) AND EMBEDMENT MATERIALS SHALL BE PER ASTM D2321. THE EMBEDMENT MATERIALS SHALL BE INSTALLED FROM TRENCH WALL TO TRENCH WALL AND FROM FOUR (4) INCHES BELOW THE INVERT TO A MINIMUM OF SIX (6) INCHES ABOVE THE CROWN OF THE PIPE.
- 7) THE BEDDING AND EMBEDMENT MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 90% STANDARD PROCTOR DENSITY FOR CLASS I MATERIALS.
- 8) IF HYDRAULIC JACK SHORING IS UTILIZED FOR TRENCH WALLS, WHERE SHORING IS USED, IT SHALL BE KEPT TO THE AREA JUST ABOVE THE TOP OF THE PIPE. THIS WILL ENSURE THE EMBEDMENT MATERIALS AND PIPE WILL NOT BE DISTURBED WHEN REMOVAL IS MADE.

BEDDING AND EMBEDMENT MATERIAL CLASSIFICATIONS SHALL BE DEFINED AS FOLLOWS:

CLASS I - ANGULAR, (1/4 TO 3/4 INCH) GRADED STONE, INCLUDING A NUMBER OF FILL MATERIALS THAT HAVE REGIONAL SIGNIFICANCE SUCH AS CRUSHED STONE AND CRUSHED GRAVEL.

CLASS II - COARSE SANDS AND GRAVEL WITH A MAXIMUM PARTICLE SIZE OF 1/2 INCH, INCLUDING VARIOUSLY GRADED SANDS AND GRAVELS CONTAINING SMALL PERCENTAGES OF FINES, GENERALLY GRANULAR AND NON-COHESIVE, EITHER WET OR DRY. SOIL TYPES GW, GP, SW AND SP ARE INCLUDED IN THIS CLASS.



## STANDARD DETAIL AND SPECIFICATIONS MANUAL

SMITHFIELD, NORTH CAROLINA  
PUBLIC UTILITIES

SCALE:  
NTS

DETAIL NO.  
07.01\_P7

DATE: 04/03/2018

CLASS III – FINE SAND AND CLAYEY GRAVELS, INCLUDING FINE SANDS, SAND-CLAY MIXTURES, AND GRAVEL-CLAY MIXTURES, SOIL TYPES GM, GC, SM AND SC ARE INCLUDED IN THIS CLASS.

CLASS IV – SILT, SILTY CLAYS, AND CLAYS, INCLUDING INORGANIC CLAYS AND SILTS OF MEDIUM TO HIGH PLASTICITY AND LIQUID LIMITS. SOIL TYPES MH, ML, CH, AND CL ARE INCLUDED IN THIS CLASS. THESE MATERIALS ARE NOT RECOMMENDED FOR EMBEDMENT.

## 7.02 FORCE SEWER MAINS

### A. MATERIALS

DUCTILE IRON PIPE SHALL BE DESIGNED AND MANUFACTURED IN ACCORDANCE WITH AWWA C150 AND C151 FOR ALL LAYING CONDITION TYPE 2 AND A WORKING PRESSURE AS FOLLOWS:

3" – 12"	350 PSI
14" – 20"	250 PSI
24"	200 PSI
> 24"	150 PSI

PIPE JOINTS SHALL BE PUSH-ON TYPE AS PER AWWA C111. PIPE LINING SHALL BE CEMENT MORTAR WITH A SEAL COAT OF BITUMINOUS MATERIAL, ALL IN ACCORDANCE WITH AWWA C104.

PVC PIPE SHALL MEET THE REQUIREMENTS OF AWWA C900. PIPE SHALL BE CLASS 150, SDR 18, INTEGRAL BELL WITH STRENGTH EQUAL TO THE PIPE WALL, CAST IRON O.C., 18 FOOT LENGTH, WITH A SOLID ELASTOMERIC RING

PVC PIPE FOR FORCE MAINS WITH A DIAMETER OF THREE (3) INCHES OR LESS SHALL BE SDR 21 OF SCHEDULE 40 IN ACCORDANCE WITH ASTM D1785.

PVC PIPE WILL REQUIRE THE INSTALLATION OF A DETECTOR TAPE PLACED A MAXIMUM OF TWO (2) FEET BELOW THE COVERING SURFACE. THE DETECTOR TAPE SHALL BE THREE (3) INCH WIDE TAPE.

PIPE FITTINGS SHALL BE DUCTILE IRON DESIGNED AND MANUFACTURED AS PER AWWA C110. SIZES OF FITTINGS UP TO AND INCLUDING 12 INCH SHALL BE DESIGNED FOR AN INTERNAL PRESSURE OF 250 PSI; LARGER SIZE FITTINGS SHALL BE DESIGNED FOR AN INTERNAL PRESSURE OF 150 PSI. JOINTS FOR FITTINGS SHALL BE MECHANICAL JOINT AND LINED WITH CEMENT MORTAR WITH A SEAL COAT OF BITUMINOUS MATERIAL, ALL IN ACCORDANCE WITH AWWA C104.

### B. INSTALLATION

REACTION BLOCKING FOR ALL FITTINGS OR COMPONENTS SUBJECT TO HYDROSTATIC THRUST SHALL BE SECURELY ANCHORED BY THE USE OF CONCRETE THRUST BLOCKS POURED IN PLACE. THE REACTION AREAS ARE SHOWN IN STANDARD DETAILS. NO CONCRETE SHALL INTERFERE WITH THE REMOVAL OF FITTINGS. MATERIAL FOR REACTION BLOCKING SHALL BE 3000 PSI CONCRETE.

FORCE MAINS SHALL BE INSTALLED WITH A MINIMUM COVER OF THREE (3) FEET MEASURED FROM THE TOP OF THE PIPE TO THE FINISHED SUBGRADE.



## STANDARD DETAIL AND SPECIFICATIONS MANUAL

SMITHFIELD, NORTH CAROLINA  
PUBLIC UTILITIES

SCALE:  
NTS

DETAIL NO.  
07.01\_P8

DATE: 04/03/2018

SEWAGE AIR RELEASE VALVES SHALL BE INSTALLED AT ALL THE HIGH POINTS OF THE FORCE MAINS IN ACCORDANCE WITH THE STANDARDS DETAILS. MANHOLES CONTAINING AIR RELEASE VALVES SHALL RECEIVE AN EPOXY COATING ON THE INSIDE. THE THICKNESS OF THE COATING SHALL BE DETERMINED BY THE PUBLIC UTILITIES DIRECTOR.

SEWER FORCE MAINS SHALL BE INSTALLED IN DEDICATED PUBLIC RIGHTS-OF-WAY OR IN DEDICATED UTILITY EASEMENTS. SEE SECTION 2.10 FOR LANDSCAPE PLANTING REQUIREMENTS WITHIN EASEMENTS. THE EASEMENTS SHALL HAVE THE FOLLOWING DIMENSIONS:

LINE SIZE	MINIMUM EASEMENT WIDTH
12" AND UNDER	30'
OVER 12"	30'

FORCE MAIN VALVES SHALL BE SPACED AT APPROPRIATE INTERVALS AS DETERMINED BY THE PUBLIC UTILITIES DIRECTOR, AND SHALL HAVE BOX CAPS MARKED "SEWER". FORCE MAIN VALVES SHALL BE RESILIENT WEDGE GATE TYPE.

THE RECEIVING MANHOLE FOR A FORCE MAIN SHALL RECEIVE AN INTERIOR EPOXY COATING WITH A THICKNESS OF 10 MILLS. THE FORCE MAIN SHALL DISCHARGE AT THE INVERT OF THE RECEIVING MANHOLE AND SHALL BE AS CLOSE AS POSSIBLE TO 180 DEGREES FROM THE OUTLET PIPE.

FORCE MAINS SHALL BE APPROPRIATELY IDENTIFIED UPON INSTALLATION SO THEY WILL NOT BE CONFUSED WITH POTABLE WATER LINES. THE PIPE MATERIAL SHALL BE DESIGNATED ON EACH JOINT OF PIPE AS "SEWER".

### 7.03 MANHOLES

MANHOLES SHALL BE PRECAST CONCRETE. ALL MANHOLES SHALL HAVE ECCENTRIC CONE SECTIONS.

PRECAST CONCRETE MANHOLES SHALL MEET ASTM C478 AS TO DESIGN AND MANUFACTURE. THE STANDARD JOINT SHALL BE SEALED WITH A PLASTIC CEMENT PUTTY MEETING FEDERAL SPECIFICATION SS-S-00210, SUCH AS RAM-NEK, OR A BUTYL RUBBER SEALANT. ALL LIFT HOLES MUST BE PLUGGED WITH NON-SHRINKING GROUT AFTER INSTALLATION. FOR PRECAST CONCRETE MANHOLES, SEE STANDARD DETAILS.

MANHOLE FRAMES AND COVERS SHALL BE CAST OR DUCTILE IRON WITH "SANITARY SEWER" STAMPED ON THE COVER AND TWO 1-INCH, PERFORATED HOLES. CASTINGS SHALL BE MACHINED TO GIVE EVEN AND CONTINUOUS BEARING TO THE FULL LENGTH OF THE FRAME. CASTINGS SHALL BE FREE OF POROSITY AND BLOW HOLES, AND SHALL RECEIVE ONE COAT OF EPOXY PAINT. PAINT SHALL BE KEPT OFF OF BOLT THREADS AND SURFACES SHALL BE THOROUGHLY WIRE BRUSHED BEFORE PAINTING. MANHOLE FRAMES SHALL BE BOLTED TO THE MANHOLE. ALL MANHOLE RINGS IN ROADWAYS SHALL BE ENCASED IN A CONCRETE COLLAR EIGHTEEN (18) INCHES BY SIX (6) INCHES OF 3000 PSI CONCRETE BENEATH THE ASPHALT, WITH THE COVER FLUSH TO THE TOP OF THE PAVEMENT, PER STANDARD DETAILS. MANHOLES LOCATED OUTSIDE OF THE PAVEMENT SHALL BE AT LEAST TWELVE (12) INCHES ABOVE THE FINISHED GRADE.



## STANDARD DETAIL AND SPECIFICATIONS MANUAL

SMITHFIELD, NORTH CAROLINA  
PUBLIC UTILITIES

SCALE:  
NTS

DETAIL NO.  
07.01\_P9

DATE: 04/03/2018

WATERTIGHT MANHOLE FRAMES AND COVERS SHALL HAVE NEOPRENE GASKET, BRONZE TIGHTENING BOLT, MACHINED BEARING SURFACES AND CHANNEL IRON LOCKING BAR. BOLTS SHALL BE STANDARD HEXAGONAL-HEAD, COUNTERSUNK SUCH THAT WHEN FULLY TIGHTENED BOLT HEAD IS FLUSH WITH THE TOP OF THE COVER. CASTINGS SHALL BE FREE OF POROSITY AND BLOW HOLES, AND SHALL RECEIVE ONE COAT OF EPXOY PAINT. PAINT SHALL BE KEPT OFF OF THE BOLT THREADS AND SURFACES SHALL BE THOROUGHLY WIRE BRUSHED BEFORE PAINTING.

MANHOLE STEPS SHALL BE FURNISHED WITH THE PRECAST SECTIONS. STEPS SHALL BE OF POLYPROPYLENE MATERIAL. REINFORCED WITH A 1/2" REINFORCING ROD. MANHOLE STEPS SHALL BE DESIGNED FOR A VERTICAL LOAD OF 400 POUNDS AND A HORIZONTAL PULL OUT LOAD OF 1,000 POUNDS. STEPS SHALL BE SET SIXTEEN (16) INCHES APART ON CENTER. HOLES FOR THE INSTALLATION OF MANHOLE STEPS SHALL NOT PROJECT THROUGH THE MANHOLE WALL. THERE SHALL BE A MINIMUM OF ONE (1) INCH WALL THICKNESS FORM THE DEEPEST PENETRATION OF THE STEP INSTALLATION HOLE AND THE OUTSIDE WALL. STEPS SHALL BE AT LEAST TEN (10) INCHES CLEAR WIDTH AND SHALL PROJECT AT LEAST FOUR (4) INCHES FROM THE WALL INTO WHICH IT IS EMBEDDED. STEPS SHALL NOT BE LOCATED OVER THE INFLUENT OR EFFLUENT PIPES AND SHALL BE INSTALLED ALONG A VERTICAL MANHOLE WALL FORM THE SHELF TO THE TOP OF THE CONE.

ALL MANHOLES SHALL HAVE 6 INCH, 3,000 PSI CONCRETE BOTTOMS RESTING ON A MINIMUM OF 6 INCHES OF #57 STONE. SEWER MAINS SHALL ENTER AND EXIT RADIALLY THROUGH THE MANHOLES. INVERTS SHALL BE CONSTRUCTED WITH A WIDTH AND HEIGHT EQUAL TO 1/2 THAT OF THE EFFLUENT PIPE AND SHALL BE SO BRUSHED AND TROWELED THAT A MINIMUM ENERGY LOSS OCCURS IN THE MANHOLE. AT EACH INLET AND OUTLET OF LINE EIGHT (8) INCHES, OR GREATER, WASTEWATER LINES ARE TO BE CONNECTED TO THE MANHOLES BY MEANS OF COMPRESSION CONNECTORS (FLEXIBLE SLEEVES) CAST INTO THE MANHOLE SECTION. FLEXIBLE CONNECTORS ARE TO BE MANUFACTURED OF HIGH QUALITY RUBBER OR SYNTHETIC RUBBER AND ALL STRAP CLAMPS OR DRAW BOLTS ARE TO BE MANUFACTURED FROM STAINLESS STEEL.

### 7.03 SERVICE CONNECTIONS

#### A. MATERIALS

PVC PIPE SHALL BE SCHEDULE 40 OR GREATER SUPPLIED IN EIGHTEEN (18) FEET LENGTHS. THE PIPE MAY BE JOINED BY ELASTOMERIC GASKETS.

DUCTILE IRON PIPE SHALL BE USED FOR SANITARY SEWER WITH SERVICES WITH LESS THAN THREE (3) FEET OF COVER OR WITH GREATER THAN FIFTEEN (15) FEET OF COVER.

SERVICE SADDLES FOR PVC SERVICES SHALL BE OF THE SAME MATERIAL AS THE MAIN; SOLVENT WELDED AND FASTENED WITH DOUBLE STAINLESS STEEL BANDS AS SHOWN IN THE STANDARD DETAILS.



## STANDARD DETAIL AND SPECIFICATIONS MANUAL

SMITHFIELD, NORTH CAROLINA  
PUBLIC UTILITIES

SCALE:  
NTS

DETAIL NO.  
07.01\_P10

DATE: 04/03/2018

**B. INSTALLATION**

INDIVIDUALLY OWNED STRUCTURES SHALL REQUIRE INDIVIDUAL SEWER TAPS TO PUBLIC SEWER. ALL SERVICE CONNECTIONS TO EXISTING SANITARY SEWER MAINS SHALL BE MADE BY, OR UNDER THE SUPERVISION OF THE TOWN OF SMITHFIELD PUBLIC UTILITIES DEPARTMENT. SERVICE CONNECTIONS TO NEW LINES ARE THE RESPONSIBILITY OF THE DEVELOPER/OWNER AND SHALL BE MADE BY A NORTH CAROLINA LICENSED UTILITY CONTRACTOR. SERVICE TAPS INTO MAINS SHALL BE MADE ON THE TOP QUARTER OF THE MAIN WITH THE WYE SADDLE ANGLED WITH THE DIRECTION OF FLOW IN THE MAIN.

SERVICE LINES BETWEEN THREE (3) AND TWELVE (12) FEET IN DEPTH DO NOT REQUIRE SPECIAL BEDDING. ALL SERVICE LINES BETWEEN TWELVE (12) AND FIFTEEN (15) FEET IN DEPTH SHALL REQUIRE CLASS I BEDDING FROM FOUR (4) INCHES BELOW THE PIPE TO FOUR (4) INCHES ABOVE THE PIPE. SERVICE LINES GREATER THAN FIFTEEN (15) FEET, OR LESS THAN THREE (3) FEET IN DEPTH SHALL BE DUCTILE IRON PIPE.

SERVICE CONNECTIONS TO THE MAIN LINES SHALL BE PERPENDICULAR TO THE MAIN LINE TO THE EDGE OF THE RIGHT-OF-WAY OR EASEMENT LINE. FOUR (4) INCH LINES SHALL HAVE A MINIMUM SLOPE OF 1.0 FT./100 FT. AND SIX (6) INCH LINES SHALL HAVE A MINIMUM SLOPE OF 0.60 FT./100 FT. CLEANOUTS SHALL BE REQUIRED ON ALL SEWER SERVICES WITH A MAXIMUM SPACING OF 75 FEET ON FOUR (4) INCH SERVICES AND 100 FEET ON SIX (6) INCH SERVICES. A CLEANOUT SHALL BE PLACED ON ALL SERVICE LINES AT THE RIGHT-OF-WAY OR AT THE EDGE OF THE EASEMENT. ALL CLEANOUTS SHALL EXTEND A MINIMUM OF SIX (6) INCHES ABOVE FINISHED GRADE OR MEET THE OPTIONAL CLEANOUT METHOD REQUIREMENTS IN ACCORDANCE WITH STANDARD DETAILS. SEWER CLEANOUTS LOCATED IN PAVED AREAS MUST HAVE CAST IRON RISERS, CAST IRON FITTINGS AND BRASS CAPS.

ALL SIX (6) INCH, OR GREATER, SERVICE CONNECTIONS SHALL BE INTO A MANHOLE UNLESS OTHERWISE APPROVED BY THE PUBLIC UTILITIES DIRECTOR.

ALL SERVICE LINES WHICH ARE CONNECTED INTO MANHOLES SHALL BE INSTALLED ON THE MANHOLE BENCH, OR HAVE LESS THAN THIRTY (30) INCHES OF CLEARANCE TO THE INVERT OF THE FLOW LINE. SERVICE LINE CONNECTIONS SHALL NOT BE INSTALLED THROUGH MANHOLE CONE SECTIONS OR AT MANHOLE JOINTS. THE USE OF WYES IN THE LINE IS PREFERRED OVER THE USE OF SERVICE SADDLES.

**7.05 TESTING AND INSPECTION**

ALL MATERIALS USED MUST HAVE PRELIMINARY INSPECTION BY THE CONSTRUCTION INSPECTOR BEFORE MATERIALS ARE USED FOR THE CONSTRUCTION PURPOSES. REJECTION OF MATERIAL NOT MEETING THESE SPECIFICATIONS WILL BE ORDERED AND SUCH MATERIALS SHALL BE IMMEDIATELY REMOVED FORM THE JOB.

SANITARY SEWER LINES SHALL BE FREE AND CLEAN FROM OBSTRUCTIONS AND SHALL BE VISUALLY INSPECTED FROM EVERY MANHOLE TO ENSURE ALL LINES EXHIBIT A FULLY CIRCULAR PATTERN. LINES WHICH DO NOT EXHIBIT A TRUE LINE AND GRADE OR HAVE STRUCTURAL DEFECTS SHALL BE CORRECTED. SANITARY SEWER SERVICE CONNECTIONS SHALL BE VISUALLY INSPECTED PRIOR TO BACK FILLING.



**STANDARD DETAIL AND  
SPECIFICATIONS MANUAL**

SMITHFIELD, NORTH CAROLINA  
PUBLIC UTILITIES

SCALE:  
NTS

DETAIL NO.  
07.01\_P11

DATE: 04/03/2018

THE CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR, AND EQUIPMENT TO PERFORM ALL TESTING TO THE SATISFACTION OF THE CONSTRUCTION INSPECTOR. WATER FOR TESTING WILL BE PROVIDED BY THE TOWN OF SMITHFIELD.

SEE SECTION 7.01C FOR ADDITIONAL TESTING REQUIREMENTS FOR SEMI-RIGID PIPE.

THE LOW-PRESSURE AIR TESTING SHALL BE PERFORMED BEFORE ALL LATERALS OR STUBS ARE INSTALLED ON THE LINE AND AFTER THE MAIN HAS BEEN BACKFILLED TO FINISHED GRADE. PLUGS SHALL BE INSTALLED AT EACH MANHOLE TO SEAL OFF THE TEST SECTION. THE LINE WILL BE PRESSURIZED WITH A SINGLE HOSE AND MONITORED BY A SEPARATE HOSE CONNECTION FROM THE PLUG. AIR THEN SHALL BE SLOWLY INTRODUCED INTO THE SEALED LINE UNTIL THE INTERNAL AIR PRESSURE REACHES 4.0 PSIG. THE AIR PRESSURE SHALL THEN BE ALLOWED TO STABILIZE FOR A MINIMUM OF 2 MINUTES AT NO LESS THAN 3.5 PSIG. WHEN THE PRESSURE REACHES 3.5 PSIG, THE TIME REQUIRED FOR THE PRESSURE TO DROP 1.0 PSI WILL BE OBSERVED AND RECORDED. THE LINE SHALL BE TERMED "ACCEPTABLE" IF THE PRESSURE DOES NOT DROP MORE THAN FOR THE TEST IN THE TOWN OF SMITHFIELD STANDARD DETAILS FOR AIR TEST TABLE.

IF THE SECTION FAILS TO MEET THESE REQUIREMENTS, THE SOURCE OF LEAKAGE SHALL BE DETERMINED AND REPAIRED. THE PIPE SECTION SHALL BE RETESTED AND MEET THE SPECIFIED REQUIREMENTS.

#### 7.06 REPAIR OF SANITARY SEWER LINES

THE REPAIR OF DAMAGED SANITARY SEWER LINES SHALL BE AS FOLLOWS:

VC PIPE – REPLACE DAMAGED SECTION WITH PVC PIPE AND INSTALL A FERNCO COUPLING AT EACH END.

PVC PIPE – REPLACE DAMAGED SECTION WITH PVC PIPE AND INSTALL A FERNCO COUPLING AT EACH END.

DIP PIPE – REPLACE DAMAGED SECTION WITH DIP PIPE AND INSTALL A FERNCO COUPLING AT EACH END.

ALL OTHER TYPES OF PIPE SHALL BE REPLACED FROM MANHOLE TO MANHOLE (ENTIRE RUN) WHEN DAMAGE OCCURS. THE REPLACEMENT PIPE SHALL BE EITHER DIP OR PVC, AS CONDITIONS WARRANT.

ALL REPAIRS TO ABANDONED SANITARY SEWER LINES SHALL BE BACKFILLED WITH ABC STONE (CRUSHER RUN) TO A DENSITY OF 95 PERCENT STANDARD PROCTOR.

#### 7.07 WASTEWATER PUMP STATIONS

SIZING, DESIGN, AND APPROVED MANUFACTURERS OF WASTEWATER PUMP STATIONS WHICH ARE TO BE MAINTAINED BY THE TOWN SHALL BE AS DETERMINED BY THE PUBLIC UTILITIES DIRECTOR. ALL PUMP STATIONS THAT WILL BE PRIVATELY OPERATED AND MAINTAINED MUST MEET THE NORTH CAROLINA BUILDING CODE IN ADDITION TO ANY OTHER SPECIFICATIONS REQUIRED BY THE TOWN.

#### 7.08 STEP SYSTEM

SEPTIC TANK EFFLUENT PUMP SYSTEMS SHALL BE APPROVED ON A CASE BY CASE BASIS BY THE PUBLIC UTILITIES DIRECTOR.

END OF SECTION 7.00



## STANDARD DETAIL AND SPECIFICATIONS MANUAL

SMITHFIELD, NORTH CAROLINA  
PUBLIC UTILITIES

SCALE:  
NTS

DETAIL NO.  
07.01\_P12

DATE: 04/03/2018



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

JOSH STEIN  
GOVERNOR

August 5, 2025

J.R. "JOEY" HOPKINS  
SECRETARY

Ted Credle  
Town of Smithfield  
PO Box 761  
Smithfield, NC 27577

**SUBJECT: Encroachment Contract Pre-Approval - Town of Smithfield  
E Market St Sewer Replacement  
Route(s): US70BUS, SR2560  
Encroachment Number: E043-051-25-00395  
Johnston County**

Dear Mr. Credle:

Attached for your files is a copy of the right-of-way encroachment agreement R/W 16.1 that has been preapproved. This contract will cover the following:

*Installation of approximately 1,230 LF of 18" C900 gravity sewer installed by open cut along the shoulder of Market St and through College Rd and bore and jack underneath Market St to Pine St*

This encroachment is approved subject to the standard and special provisions that are attached to and made part of the encroachment contract. Final approval will be issued once bond is received.

***Pay Attention to Special Provision(s) #1.***

Sincerely,

*Dalton J. Langston*

Dalton J. Langston, PE, Assistant District Engineer  
FOR W. Matthew Clarke, PE, Division Engineer

WMC/djl

Attachments

ecc: Jennifer K. Collins - District Engineer



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

JOSH STEIN  
GOVERNOR

J.R. "JOEY" HOPKINS  
SECRETARY

Town of Smithfield  
PO Box 761  
Smithfield, NC 27577

Subject: Encroachment Pre-Approval Letter  
Market Street Sewer Replacement  
Route(s): US70BUS, SR2560  
Encroachment Number: E043-051-25-00395  
Johnston County

Town of Smithfield –

This letter is to certify that the Town of Smithfield, upon selecting a contractor to perform the subject encroachment work, will ensure that said contractor will secure and provide the original copy of the required \$20,000 performance bond to the District 3 Office at 67 JR Rd Suite 700 Selma, NC 27576 **prior** to beginning any work within NCDOT ROW.

Failure to provide this bond before beginning work shall result in a suspension of any work within the NCDOT ROW and any damages sustained within the NCDOT ROW caused by said encroachment work shall have its cost covered by the Town of Smithfield.

Town of Smithfield Representative: *Jed Cudde*

NCDOT District 3 Representative: *Dalton J. Langston*

Please provide signature and Town Seal on this letter

NC DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
DIVISION 4 DISTRICT 3  
67 JR ROAD, SUITE 700  
SELMA, NC 27576

Telephone: (919) 739-5300

## Special Provisions

1. **The Encroaching party or their contractor shall provide a three (3) business days advance notices prior to construction activity within the NCDOT Right of Way to the District Engineer's Office by phone call at telephone (919) 739-5300. The Encroaching party or their contractor shall also have a copy of this Approval Package (cover letter and provisions) on site at all times during construction.**

**Failure to provide Approval Package when asked or these notifications prior to beginning construction is subject to the Division Engineer's discretion to cease construction activity for this encroachment. NCDOT reserves the right to cease any construction or maintenance work associated with this installation by the encroaching party until the construction or maintenance meets the satisfaction of the Division Engineer or their representative.**

2. A NOTIFICATION FOR UTILITY / NON-UTILITY ENCROACHMENT WITHIN NCDOT R/W form (See corresponding attachment) with the scheduled pre-construction meeting and associated construction schedule details must be completed and submitted to the District Engineer's office a minimum of one week prior to construction.
3. Excavation within 1000 feet of a signalized intersection will require notification by the encroaching party to the Division Traffic Engineer at telephone number (252) 640-6500 no less than one week prior to beginning work. All traffic signal or detection cables must be located prior to excavation. Cost to replace or repair NCDOT signs, signals, pavement markings or associated equipment and facilities shall be the responsibility of the encroaching party.
4. All maintenance associated with the utility and/or sidewalk will be the responsibility of the 2nd or 3rd party (If applicable) and not NCDOT.
5. A Performance and Indemnity Bond in the amount of \$20000 shall be posted with the District Engineer's Office at 67 JR Rd Suite 700 Selma, NC 27576 by the Party of the Second Part prior to beginning any work within the NCDOT Right of Way.
6. The release of the bond is subject to a final inspection by NCDOT. The bond shall be held for a minimum of one year after a satisfactory final inspection of the installation by NCDOT. The bond may be held for a period longer than one year after completion if, in the opinion of NCDOT, the size or complexity of the installation warrants a longer period. Contact the District office to schedule a Final Inspection and to request release of the bond.
7. Approved subject to the use of proper signs, lights, flagmen and other warning devices for the protection of traffic in conformance with the latest edition of the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD). Work will be stopped for noncompliance.

67 Jr Rd Suite 700  
Selma, NC 27576  
PH: (919)739-5300

8. Temporary and final pavement markings are the responsibility of the encroaching party. Final pavement markings and sign plans shall be submitted with the encroachment request to the Division Traffic Engineer prior to construction at P.O. Box 3165, Wilson, NC 27893, (252) 640-6500. Final pavement markings shall be thermoplastic unless otherwise directed by the Division Traffic Engineer or District Engineer.
9. If approval is granted in writing by the District Engineer to place excavated material on the roadway, some type of approved matting shall be placed prior to any excavated material. All material shall be removed from the roadway (leaving a clean safe passable surface) at the end of each work day.
10. Backfill material placed around utility lines, curb and gutter, manholes and/or drainage structures in NCDOT R/W outside travel lanes shall be placed at a maximum of 6 inch loose layers and each layer thoroughly compacted, obtaining a minimum of 98% density in Accordance with AASHTO T99 as modified by NCDOT. If this installation involves construction within any roadway travel area the final subgrade layer shall obtain 100% density. for sll material to a depth of 8 inches below the finished surface of the subgrade. NCDOT reserves the right to require density testing on backfill placed around any structure or utility with in NCDOT Right of Way. Approval, or recommendations for compliance, will be provided upon receipt and review of the report. The subgrade shall be compacted at a moisture content which is approximately that required to produce the maximum density indicated by the above test method. The contractor shall dry or add moisture to the subgrade when required to provide a uniformly compacted and acceptable subgrade. The option to backfill any trenches with dirt or either #57 stone or #78 stone with consolidation with a plate tamp and without a conventional density test may be pursued with the written consent of the District Engineer.
11. Excavated areas adjacent to pavement having more than a 2 inch drop shall be made safe with a 6:1 or flatter slope and shall be designated by appropriate delineation during periods of construction inactivity including, but not limited to, night and weekend hours.
12. A minimum of Three (3) feet clearance is required for trenched utility installations beneath or near drainage pipes, headwalls, and a minimum of two (2) foot clearance below the flowline of streams. All lines shall be placed around the end or under all existing storm drains. There SHALL be no lines placed over the top of any existing storm drains.
13. At points where the utility is placed under existing storm drainage, the trench will be backfilled with excavatable flowable fill up to the outside diameter of the existing pipe.

67 Jr Rd Suite 700  
Selma, NC 27576  
PH: (919)739-5300

14. In no circumstance should any installed utility have less than minimum depth of 2 feet below the roadway ditch grade, 3 feet below roadway travel surface, or 3 feet below natural ground in a fill section. At no time should all utilities be installed that conflict with any roadway ditch. All utilities should be installed within 5 feet of the ROW line, and at least 5 feet from the edge of pavement. All utility crossings under any NCDOT road including service taps/lines shall be installed by a boring method.
15. With any dry bore & bore/jack installations the utility shall be placed at a minimum depth of 2 feet below the roadway ditch grade, 3 feet below roadway travel surface, 3 feet below all pipe crossings, and 3 feet below natural ground in a fill section. If encasement pipe is required, it shall extend from ditch line to ditch line in a cut section and 5 feet beyond toe of fill in a fill section. The bore holes and/or boring equipment shall be set with sufficient recovery area to protect the traveling public and personnel making the installation.
16. Boring equipment will be provided of a type and size to facilitate boring in the local geologic conditions and shall be able to facilitate the encroachment work. There SHALL be no excavating or drilling equipment operating within the roadway.
17. All utility access points, such as manholes, vaults, handholes, splice boxes and junction boxes shall be located as close to the right of way line as possible and shall not be placed in the ditch line, side slopes of the ditches or in the pavement. All manholes, handholes, splice boxes, junction boxes and vaults and covers shall be flush with the ground when located within the vehicle clear zone. Slack loops for telecommunications in industry standard housing units shall be buried a minimum of 18 inches when buried or meet minimum NCDOT vertical and horizontal clearances when installed aerially.
18. Precast concrete manholes or structures of any type shall be preapproved by NCDOT for use within highway Rights of Way and shall be installed flush with natural ground. Manhole rings and covers, valves, and storm drainage grates and frames shall be traffic bearing types approved by NCDOT for use within highway Rights of Way.
19. Detection tape, where required by NCGS § 87-115 through § 87-130 of the Underground Utility Safety and Damage Prevention Act, shall be buried in the trench approximately 1 foot above the installed facility. Where conduit is installed in the right of way and is not of ferrous material, locating tape or detection wire shall be installed with the conduit. After installation is complete, markers should be placed noting the line to prevent risk of accidental damage for all fiber installations.
20. Regulator stations, metering stations, cathodic test stations, and anode beds are not permitted within NCDOT right of way. Header wires are permitted.

67 Jr Rd Suite 700  
Selma, NC 27576  
PH: (919)739-5300

21. Hot box (aka ASSE 1060) or Safe-T-Cover type enclosures covering utility main pipe joints, backflow preventers, valves, vent pipes, cross connections, pumps, grinders, irrigation assemblies, transformers, generators, and other similar large appurtenances shall be located outside sight distance triangles and off of the NCDOT Right-of-Way.
22. Open cuts will not be allowed for any utility installation, repair, or service tap without written approval from District Engineer. Transverse open cuts will only be considered on select secondary roads with an ADT of less than 1,000 VPD.
23. The open cut installation as shown on the plans is permitted with the following requirements:
  - The minimum width for the open cut shall be according to NCDOT Standard Drawing 654.01 (<https://connect.ncdot.gov/resources/Specifications/2018StandardRdwyDrawings/Division%2006%20Asphalt%20Bases%20and%20Pavements.pdf>)
  - Only one half of the roadway shall be open cut at a time in order to maintain traffic flow.
  - The owner/contractor shall repair the open cut by backfilling with flowable fill or compacted Aggregate Base Course flush to existing pavement or to within 7 inches of the asphalt surface whichever is greater depth.
  - If Aggregate Base Course is used in lieu of flowable fill, a density test sealed by a professional engineer SHALL be required on the compacted Aggregate Base Course and SHALL be installed in accordance with Section 520 of the latest NCDOT Standard Specifications.
  - The final patch for the Road Way cut area shall be a minimum of 5 inches of B-25.0C or greater to match existing pavement structure finished flush with existing pavement. B-25.0C shall only be placed in 3 - 5.5 inch layers.
  - The entire roadway shall be milled 2" for 25' on both sides on open cut. The entire milled section and open cut will then be mechanical overlaid with 2" of S9.5B to maintain existing pavement slope and grade.
24. After repairs have been satisfactorily completed the encroaching party shall notify the district engineer for a review to determine if a portion or the entire roadway should have an overlay. If an overlay is required then the encroaching party shall pave the entire roadway throughout the construction area with a minimum of 1.25 inches of superpave mix S-9.5 B.

67 Jr Rd Suite 700  
Selma, NC 27576  
PH: (919)739-5300

25. Pavement cuts shall be repaired the same day the cuts are made unless an asphalt patch cannot be accomplished the same day due to material availability or time restrictions. When the asphalt patch is not feasible, the following apply:
- The pavement cut shall be filled to the surface with ABC stone or Flowable Fill per NCDOT's Standards and Specifications.
  - Once the cut is filled, a minimum ¾-inch steel plate shall be placed and pinned to prevent moving. Plates shall be designed large enough to span a minimum of 1-foot on all sides on the pavement cut.
  - When flowable fill is used, it shall cure for 24 hours prior to any asphalt material placement. Flowable fill bleed water shall not be present during paving operations. Paving shall not cause damage (shoving, distortion, pumping, etc.) to the flowable fill.
  - Install and leave "BUMP" signs according to MUTCD until the steel plate has been removed. Once the flowable fill has cured, remove the steel plate, and mill/fill according to the directions of the District Engineer.
  - All pavement cuts must be sealed with NCDOT approved sealant to prevent future pavement separation or cracking.
26. The paving of this roadway shall be in accordance with the latest version of NCDOT Standard Specifications, Sections 610, 1012 and 1020. The Contractor shall follow all procedures of the latest Quality Management System (QMS) Asphalt Manual for asphalt pavement - Maintenance Version (see <https://connect.ncdot.gov/resources/Materials/MaterialsResources/Forms/Default.aspx>) to find the most recent version. The Contractor must adhere to all testing requirements and quality control requirements specified. The Contractor shall contact the NCDOT Division QA Supervisor prior to producing plant mix and make the Supervisor aware that the mix is being produced for a future NCDOT road. Contact the District Engineer to determine the NCDOT Division QA Supervisor. Only NCDOT approved mix designs will be acceptable. A Quality Control Plan shall be submitted (as Directed by the District Engineer) to the District Engineer's Office prior to asphalt production utilizing form QMS-MV1. Failing mixes and/or densities are subject to penalties including monetary payments or removal and replacement. To minimize traffic queuing in construction areas, the possibility of traffic detours may be considered when working on high traffic routes even if traffic control is used. The District Engineer may require traffic detours. A 1/4 inch per foot pavement slope based on the existing centerline in tangent sections is required. In addition, a smooth transition must be maintained along areas of superelevation.

67 Jr Rd Suite 700  
Selma, NC 27576  
PH: (919)739-5300

27. “Potholing” pavement cores to expose existing utilities shall be made with an 18” diameter keyhole pavement core. Pavement core locations shall not be placed in the wheel path whenever possible. Vacuum excavation shall be utilized to expose underground utilities. Pavement cores shall be repaired within the same working day. The pavement core shall be retained and reused to fill the core hole.
- The excavation shall be backfilled and compacted with select material to the bottom of the existing pavement structure or as indicated by the District Engineer. The retained core shall be placed in the hole and secured with a waterproof, mechanical joint. If the pavement core is damaged and cannot be re-used, the core may be replaced with the surface mix, S9.5B. The asphalt patch shall match the thickness of the existing asphalt or four inches, whichever is greater. All materials must be listed on the NCDOT Approved Products List (APL) found at: <https://apps.ncdot.gov/vendor/approvedproducts/>.
28. Any pavement damaged because of settlement of the pavement or damaged by equipment used to perform encroachment work, shall be re-surfaced to the satisfaction of the District Engineer. This may include the removal of pavement and a 50’ mechanical overlay. All pavement work and pavement markings (temporary and final) are the responsibility of the Encroaching Party.
29. As of July 17th, 2023, utility vaults and hand holes will no longer be found on the Approved Products List for the NCDOT. Moving forward all utility vaults and hand holes shall meet the requirements of Section 3.4.8 of the Utilities Accommodation Manual. These requirements are as follows:
- When under concrete or asphalt roadway pavement, the manholes, vaults, and handhole enclosures shall be rated for AASHTO HS-20 live load with traffic-bearing manhole frames or rings with covers, for deliberate heavy vehicular traffic applications.
  - When outside of concrete or asphalt roadway pavement but within NCDOT right of way, handhole enclosures shall be rated for ANSI/SCTE Tier 22 for off-roadway applications subject to occasional, non-deliberate heavy vehicular traffic.
  - When outside of concrete or asphalt roadway pavement, the manholes and vaults shall be rated for AASHTO HS-20 live load with traffic-bearing manhole frames or rings with covers, for deliberate heavy vehicular traffic applications.

# Standard Provisions

## Pre-Construction

Contact Offices & Outside Agency issues/contacts/info

1. Approval may be rescinded upon failure to follow any of the provisions in this permit and may be considered a violation of the encroachment agreement.
2. **The Encroaching party or their contractor shall provide a three (3) business days advance notices prior to construction activity within the NCDOT Right of Way:**
  - a. **For all work inside Johnston County contact the Johnston County Maintenance Department by phone call at telephone (919) 209-1110.**
  - b. **For all work inside Wayne County contact the Wayne County Maintenance Department by phone call at telephone (919) 739-5330.****Failure to provide these notifications prior to beginning construction is subject to the District Engineer's discretion to cease construction activity for this encroachment. NCDOT reserves the right to cease any construction or maintenance work associated with this installation by the encroaching party until the construction or maintenance meets the satisfaction of the District Engineer or their representative.**
3. NCDOT reserves the right to further limit, restrict, or suspend operations within the Right of Way if, in the opinion of NCDOT, safety or traffic conditions warrant such action.
4. Prior to beginning work, it is the requirement of the Encroaching Party to contact the appropriate Utility Companies involved and make arrangements to adjust or relocate any utilities that conflict with the proposed work.
5. It shall be the responsibility of the encroaching party to determine the location of utilities within the encroachment area. NCGS § 87-115 through § 87-130 of the Underground Utility Safety and Damage Prevention Act requires underground utilities to be located by calling 811 prior to construction. The encroaching party shall be responsible for notifying other utility owners and providing protection and safeguards to prevent damage or interruption to existing facilities and maintain access to them.
6. The encroaching party shall notify the appropriate municipal office prior to beginning any work within the municipality's limits of jurisdiction.
7. NCDOT approval of this Encroachment Agreement covers only the area within NCDOT R/W and does not grant permission to work in any RAILROAD RIGHT OF WAYS, Wet Land, Sensitive Environmental Areas, Private Property Etc. Permits and permission must be obtained from the appropriate authorities.
8. At the discretion of the District Engineer, the encroaching party (not the utility contractor) shall make arrangements to have a qualified inspector, under the supervision of a Professional Engineer registered in North Carolina, on site at all times during construction. The registered Professional Engineer shall be required to submit a signed and PE sealed certification that the utility was installed in accordance with the encroachment agreement.

9. The encroacher shall furnish verification signed by a Professional Engineer certifying this utility was installed as shown on the final approved construction plan. A Contractor Certification Memo is attached to the encroaching party's contract and shall be signed, sealed, and returned to the District Engineer's office upon completion.
10. The encroaching party SHALL contact the Division's Bridge Maintenance Department at (252) 640-6400 before excavating around any bridge, culvert, or cross line.

Legal & Right-of-Way Issues

11. All COST, LIABILITY and MAINTENANCE of the installation SHALL be the responsibility of the encroaching party.
12. This approval and associated plans and supporting documents shall not be interpreted to allow any design change or change in the intent of the design by the Owner, Design Engineer, or any of their representatives. Any revisions or changes to these approved plans or intent for construction must be obtained in writing from the District Engineer's office or their representative prior to construction or during construction, if an issue arises during construction to warrant changes.
13. NCDOT does not guarantee the right of way on this road, nor will it be responsible for any claim for damages brought about by any property owner by reason of this installation. It is the responsibility of the encroaching party to verify the right of way.
14. Prior to the approval of any privately maintained facility within NCDOT right of way which the State of North Carolina is not the fee simple owner, written permission that each and every property owner affected by the installation shall be provided to NCDOT by the encroaching party. (See corresponding attachment.)
15. Encroaching party shall be responsible for obtaining all necessary permanent and/or temporary construction, drainage, utility and/or sight distance easements.
16. All Right of Way and easements necessary for construction and maintenance shall be dedicated to NCDOT with proof of dedication furnished to the District Engineer prior to beginning work.
17. No commercial advertising shall be allowed within NCDOT Right of Way.
18. The encroaching party shall obtain proper approval from all affected pole owners prior to attachment to any pole.

## Work Zone Traffic

19. Traffic control shall be coordinated with the District Engineer or the Division Traffic Engineer at telephone (252) 640-6500, prior to construction.
  
20. WORK ZONE TRAFFIC CONTROL QUALIFICATIONS AND TRAINING PROGRAM

All personnel performing any activity inside the highway right of way are required to be familiar with the NCDOT Maintenance / Utility Traffic Control Guidelines (MUTCG). No specific training course or test is required for qualification in the Maintenance /Utility Traffic Control Guidelines (MUTCG).

All flagging, spotting, or operating Automated Flagger Assist Devices (AFAD) inside the highway right of way requires qualified and trained Work Zone Flaggers. Training for this certification is provided by NCDOT approved training resources and by private entities that have been pre-approved to train themselves.

All personnel involved with the installation of Work Zone Traffic Control devices inside the highway right of way are required to be qualified and trained Work Zone Installers. Training for this certification is provided by NCDOT approved training resources and by private entities that have been pre-approved to train themselves.

All personnel in charge of overseeing work zone Temporary Traffic Control operations and installations inside the highway right of way are required to be qualified and trained Work Zone Supervisors. Training for this certification is provided by NCDOT approved training resources and by private entities that have been pre-approved to train themselves.

For questions and/or additional information regarding this training program please refer to <https://connect.ncdot.gov/projects/WZTC/Pages/Training.aspx> or call the NCDOT Work Zone Traffic Control Section (919) 814-5000.
  
21. The party of the second part shall employ traffic control measures that are in accordance with the prevailing federal, state, local, and NCDOT policies, standards, and procedures. These policies, standards, and procedures include, but are not limited to the following:
  - a. Manual on Uniform Traffic Control Devices (MUTCD) – North Carolina has adopted the MUTCD to provide basic principles and guidelines for traffic control device design, application, installation, and maintenance. North Carolina uses the MUTCD as a minimum requirement where higher supplemental standards specific to North Carolina are not established. Use fundamental principles and best practices of MUTCD (Part 6, Temporary Traffic Control).
  - b. NCDOT Maintenance / Utility Traffic Control Guidelines – This document enhances the fundamental principles and best practices established in MUTCD Part 6, Temporary Traffic Control, incorporating NCDOT-specific standards and details. It also covers important safety knowledge for a wide range of work zone job responsibilities.

22. The traveling public shall be warned of construction **48 hours before start and during any work** within the NCDOT ROW with complete and proper signing and traffic control devices in accordance with the current NCDOT Standard Specifications of Roads and Structures and NCDOT Roadway Standard Drawings. No work shall be performed in the Right of Way unless this requirement is satisfied. NCDOT reserves the right to require a written traffic control plan for encroachment operations.
23. Ingress and egress shall be maintained to all businesses and dwellings affected by the project. Special attention shall be paid to police, EMS and fire stations, fire hydrants, secondary schools, and hospitals.
24. Traffic shall be maintained at all times in both directions. All lanes of traffic are to be open during the hours of 7:00 A.M. to 9:00 A.M. and from 4:00 P.M. to 6:00 P.M. Monday through Friday, during any time of inclement weather, **or as directed by the District Engineer**. If the location of work calls for a rolling roadblock on Interstates and divided highway US routes, the restriction is to work only on Sunday from 1:00 A.M. to 10:00 A.M., or as Directed by the District Engineer. Any violation of these hours will result in ceasing any further construction by the Encroaching Party or their contractor.
25. Nighttime and weekend operations will NOT be allowed unless written approval is received from the District Engineer. If nighttime or weekend work is allowed or required, all signs must be retro-reflective, and a work zone lighting plan must be submitted for approval prior to construction.
26. If this installation requires traffic stoppage written approval must be received from the District Engineer before work should take place. Appropriate law enforcement shall be available on site to direct traffic.
27. Two-way traffic shall be maintained at all times unless designated by the District Engineer. Traffic shall not be rerouted or detoured without the prior written approval from the District Engineer. No utility work will be allowed on state holidays from 7:00 PM the night before through 9:00 AM the day prior to, following or during local events without prior approval from the District Engineer. If the construction is within 1000 feet of a school location or on a designated bus route, the construction shall be coordinated with the school start and end times to avoid traffic delays.
28. Work requiring lane or shoulder closures shall not be performed on both sides of the road simultaneously within the same area. Any traffic control including lane closure or detour shall be the responsibility of the encroaching party notifying the DOT of closure or detour one week prior to closure.
29. Any work requiring equipment or personnel within 5 feet of the edge of any travel lane of an undivided facility and within 10 feet of the edge of any travel lane of a divided facility shall require a lane closure with appropriate tapers per current *NCDOT Roadway Standard Drawings* or *MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES*. **Work inside the median of a divided highway will require lane closures on both sides of the roadway.**
30. Any pavement markings or reflector that are damaged or obliterated shall be restored by the encroaching party at no expense to NCDOT. The encroaching party SHALL repaint all existing lines through the construction area if damage occurs.

31. Sidewalk closures shall be installed as necessary. Pedestrian traffic shall be detoured around these closures and shall be signed appropriately and in accordance with The American with Disabilities Act Accessibility Guidelines, if it cannot be maintained safely and up to standards within the Utility Work Zone. The encroaching party must adhere to the guidelines for accommodating pedestrians in encroachment work zones as described in the NCDOT Pedestrian Work Zone Accommodations Training found at <https://www.youtube.com/watch?v=A0uYa5IW3dg&feature=youtu.be>

#### Roadside Environmental

32. The encroaching party shall comply with all applicable Federal, State and local environmental regulations and shall obtain all necessary Federal, State and local environmental permits, including but not limited to, those related to sediment control, stormwater, wetland, streams, endangered species and historical sites. Additional information can be obtained by contacting the NCDOT Roadside Environmental Engineer regarding the North Carolina Natural Heritage Program or the United States Fish and Wildlife Services. Contact the Division Roadside Environmental Engineer's Office at (252) 640-6400.
33. When surface area in excess of one acre will be disturbed, the Encroacher shall submit a Sediment and Erosion Control Plan which has been approved by the appropriate regulatory agency or authority prior to beginning any work on the Right of Way. Failure to provide this information shall be grounds for suspension of operations. Proper temporary and permanent measures shall be used to control erosion and sedimentation in accordance with the approved sediment and erosion control plan.
34. The Verification of Compliance with Environmental Regulations (VCER-1) form is required for all non-utility encroachment agreements or any utility encroachments when land disturbance within NCDOT right of way exceeds 1 acre. The VCER-1 form must be PE sealed by a NC registered professional engineer who has verified that all appropriate environmental permits (if applicable) have been obtained and all applicable environmental regulations have been followed.
35. All erosion control devices and measures shall be constructed, installed, maintained, and removed by the Encroacher in accordance with all applicable Federal, State, and Local laws, regulations, ordinances, and policies. Permanent vegetation shall be established on all disturbed areas in accordance with attached seeding instruction. All areas disturbed (shoulders, ditches, removed accesses, etc.) shall be graded and seeded in accordance with the latest *NCDOT Standards Specifications for Roads and Structures* and within 15 calendar days with an approved NCDOT seed mixture (all lawn type areas shall be maintained and reseeded as such). Seeding rates per acre shall be applied according to the Division Roadside Environmental Engineer. Any plant or vegetation in the NCDOT planted sites that is destroyed or damaged as a result of this encroachment shall be replaced with plants of like kind or similar shape.
36. No trees within NCDOT shall be cut without authorization from the Division Roadside Environmental Engineer. An inventory of trees measuring greater than 4 caliper inches (measured 6" above the ground) is required when trees within C/A right of way will be impacted by the encroachment installation. Mitigation is required and will be determined by the Division Roadside Environmental Engineer's Office.

37. Prior to installation, the Encroaching Party shall contact the County Maintenance Engineer's office to discuss any environmental issues associated with the installation to address concerns related to the root system of trees impacted by boring or non-utility construction of sidewalk, roadway widening, etc.
38. The applicant is responsible for identifying project impacts to waters of the United States (wetlands, intermittent streams, perennial streams and ponds) located within the NCDOT right-of-way. The discharge of dredged or fill material into waters of the United States requires authorization from the United States Army Corps of Engineers (USACE) and certification from the North Carolina Division of Water Quality (NCDWQ). The applicant is required to obtain pertinent permits or certification from these regulatory agencies if construction of the project impacts waters of the United States within the NCDOT right-of-way. The applicant is responsible for complying with any river or stream Riparian Buffer Rule as regulated by the NCDWQ. The Rule regulates activity within a 50-foot buffer along perennial streams, intermittent streams and ponds. Additional information can be obtained by contacting the NCDWQ or the USACE.
39. The contractor shall not begin the construction until after the traffic control and erosion control devices have been installed to the satisfaction of the District Engineer or their agent.
40. The contractor shall perform all monitoring and record keeping and any required maintenance of erosion and sediment control measures to maintain compliance with stormwater regulations.

#### Upcoming Projects

41. Should the installation of the entirety or any portion of the utility be deemed, by the Department or delegated authority for project representation thereof, be in conflict with future project construction or future utility relocations in the area, **FOR ANY REASON, the Encroacher/Utility Owner will need to perform necessary relocations within a period not to exceed 30 calendar days and entirely at the expense of the Encroacher/Utility Owner.**

## Construction

#### General

42. All materials and construction shall be in accordance with NCDOT standards and specifications, including but not limited to, the current NCDOT Standard Specifications of Roads and Structures, NCDOT Roadway Standard Drawings, and NCDOT Policies, & Procedures for Accommodating Utilities on Highway Rights of Way.
43. **An executed copy of the encroachment agreement, provisions and approved plans shall be present at the construction site at all times. NCDOT reserves the right to stop all work unless evidence of approval can be shown. If safety or traffic conditions warrant such an action, NCDOT reserves the right to further limit, restrict or suspend operations within the right of way.**

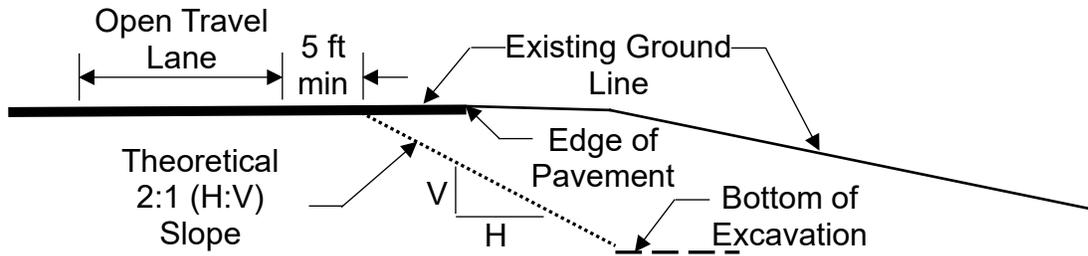
44. All drainage pipe shall be installed on a straight uniform grade. All pipe protruding inside drainage structures shall be cut off and properly grouted, leaving box with a smooth inside finish.
45. The Encroaching Party and/or their Contractor shall comply with all OSHA requirements. If OSHA visits the work area associated with this encroachment, the District Office shall be notified by the encroaching party immediately if any violations are cited.
46. All disturbed or damaged areas are to be fully restored to current NCDOT minimum roadway standards or as directed by the District Engineer or their representative. Disturbed areas within NCDOT Right-of-Way include, but not limited to, any excavation areas, pavement removal, drainage, curb/gutter or other features.
47. The encroaching party shall notify the District Engineer or their representative immediately in the event any drainage structure is blocked, disturbed or damaged. All drainage structures disturbed, damaged or blocked shall be restored to its original condition as directed by the District Engineer or their representative.
48. Unless specified otherwise, during non-working hours, equipment shall be located away from the job site or parked as close to the right of way line as possible and be properly barricaded in order not to have any equipment obstruction within the Clear Recovery Area. Also, during non-working hours, no parking or material storage shall be allowed along the shoulders of any state-maintained roadway.
49. Guardrail removed or damaged during construction shall be replaced or repaired to its original condition, meeting current NCDOT standards or as directed by the District Engineer or their representative.
50. Right of Way monuments disturbed during construction shall be referenced by a registered Land Surveyor and reset after construction.
51. All Traffic signs moved during construction shall be reinstalled as soon as possible to the satisfaction of the Division Traffic Engineer or their representative.
52. All driveways disturbed during construction shall be returned to a state comparable with the condition of the driveways prior to construction.
53. Conformance with driveway permit review should be required in conjunction with this encroachment agreement. In the event there is a conflict between the driveway permit and the encroachment agreement, the District Engineer should resolve the conflict and notify the parties involved.
54. If the approved method of construction is unsuccessful and other means are required, prior approval must be obtained through the District Engineer before construction may continue.

### Engineering

55. All traffic control, asphalt mixes, structures, construction, workmanship and construction methods, and materials shall be in compliance with the most-recent versions of the following resources: *ASTM Standards, Manual on Uniform Traffic Control Devices, NCDOT Utilities Accommodations Manual, NCDOT Standard Specifications for Roads and Structures, NCDOT Roadway Standard Drawings, NCDOT Asphalt Quality Management System manual, and the approved plans.*
56. Prior approval for any blasting must be obtained from the District Engineer or their representative.
57. All wiring and related electrical work shall conform to the latest edition of the National Electrical Safety Code.
58. Curb cuts and ramps for handicapped persons shall be constructed in accordance with the current NCDOT "Standard for Wheelchair Ramp Curb Cuts" and the Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities.

### Excavation

59. Excavation material shall not be placed on pavement at any time.
60. It is the responsibility of the encroaching party or their contractor to prevent any mud/dirt from tracking onto the roadway. Any dirt which may collect on the roadway pavement from equipment and/or truck traffic on site shall be immediately removed to avoid any unsafe traffic conditions.
61. All utilities shall be installed within 5 feet of the right of way line and outside the 5-foot minimum from travel lane plus theoretical 2:1 slope from the edge of pavement to the bottom of the nearest excavation wall for temporary shoring should. If the 2:1 slope plus 5 feet requirement above is met for traffic, then temporary shoring is typically only necessary to protect roadways from damage when a theoretical 1:1 slope from the edge of pavement intersects the nearest excavation wall. This rule of thumb should be used with caution and does not apply to all subsurface conditions, surcharge loadings and excavation geometries. Situations where this 1:1 slope is not recommended include groundwater depth is above bottom of excavation or excavation is deeper than 10 feet or in Type B or C soils as defined by OSHA Technical Manual. Temporary shoring may be avoided by locating trenches, bore pits, and other excavations far enough away from the open travel lane, edge of pavement and any existing structure, support, utility, property, etc. to be protected. Temporary shoring is required when a theoretical 2:1 slope from the bottom of excavation will intersect the existing ground line less than 5 feet from the outside edge of an open travel lane as shown in the figure below or when a theoretical 2:1 slope from the bottom of excavation will intersect any existing structure, support, utility, property, etc. to be protected.



Temporary shoring shall be designed and constructed in accordance with current NCDOT Standard Temporary Shoring provisions (refer to <https://connect.ncdot.gov/resources/Specifications/Pages/2018-Specifications-and-Special-Provisions.aspx> and see SP11 R002).

- a. Temporary excavation shoring, such as sheet piling, shall be installed. The design of the shoring shall include the effects of traffic loads. The shoring system shall be designed and sealed by a licensed North Carolina Professional Engineer. Shoring plans and design calculations shall be submitted to the District Engineer for review and approval prior to construction. (See NCDOT *Utilities Accommodations Manual* for more information on requirements for shoring plans and design calculations.) **Trench boxes shall not be accepted as temporary shoring and will not be approved for use in instances where shoring is required to protect the highway, drainage structure, and/or supporting pavement or structure foundation.**
  - b. All trench excavation inside the limits of the theoretical one-to-one slope, as defined by the policy, shall be completely backfilled and compacted at the end of each construction day. No portion of the trench shall be left open overnight. Any excavation that is not backfilled by the end of the workday must address any safety and traveling public concerns including accommodations for bicycles, pedestrians and persons with disabilities.
  - c. The trench backfill material shall meet the Statewide Borrow Criteria. The trench shall be backfilled in accordance with Section 300-7 of the latest *NCDOT Standard Specifications for Roads and Structures*, which basically requires the backfill material to be placed in layers not to exceed 6 inches loose and compacted to at least 95% of the density obtained by compacting a sample in accordance with AASHTO T99 as modified by DOT.
  - d. At the discretion of the District Engineer, a qualified NCDOT inspector shall be on the site at all times during construction. The encroaching party shall reimburse NCDOT for the cost of providing the inspector. If NCDOT cannot supply an inspector, the encroaching party (not the utility contractor) should make arrangements to have a qualified inspector, under the supervision of a licensed North Carolina Professional Engineer, on the site at all times. The Professional Registered Engineer shall certify that the utility was installed in accordance with the encroachment agreement and that the backfill material meets the Statewide Borrow Criteria.
  - e. The length of parallel excavation shall be limited to the length necessary to install and backfill one joint of pipe at a time, not to exceed twenty-five (25) feet.
62. Excavated areas adjacent to pavement having more than a 2 inch drop shall be made safe with a 6:1 or flatter slope and shall be designated by appropriate delineation during periods of construction inactivity including, but not limited to, night and weekend hours.

63. In no circumstance should any installed utility have less than minimum depth of 2 feet below the roadway ditch grade, 3 feet below roadway travel surface, or 3 feet below natural ground in a fill section. At no time should all utilities be installed that conflict with any roadway ditch. All utilities should be installed within 5 feet of the ROW line.

#### Pavement Detail and Repair

64. All utility crossings under any NCDOT road including service taps/lines shall be installed by a boring method. Open cuts will not be allowed for any utility installation, repair, or service tap without written approval from District Engineer.
65. Any pavement damaged because of settlement of the pavement or damaged by equipment used to perform encroachment work, shall be re-surfaced to the satisfaction of the District Engineer. This may include the removal of pavement and a 50' mechanical overlay. All pavement work and pavement markings (temporary and final) are the responsibility of the Encroaching Party.

### Post Construction

66. The Encroaching party shall notify the District Engineer's office in writing within 2 business days after construction is complete. The District Engineer may perform a construction inspection. Any deficiencies may be noted and reported to the encroaching party to make immediate repairs or resolve any issues to restore the right-of-way to a similar condition prior to construction, including pavement, signage, traffic signals, pavement markings, drainage, structures/pipes, curb/gutter, or other highway design features.
67. At the discretion of the District Engineer, a final inspection report may be provided to the encroaching party upon satisfactory completion of the work.
68. A written acknowledgement of the completed work by the District Engineer's office begins the one-year warranty period associated with any required performance bond.
69. If the actual construction differs from the approved plans associated with this encroachment, a copy of "as-built" plans shall be submitted to the District Engineer's office in a PDF format and in a current ESRI GIS format within 4 weeks of construction.

**North Carolina Department of Transportation  
Subdivision Road Construct, Driveway Access, and Encroachment Installation  
Contractor Certification Memo**

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
(District Engineer Name & Address)

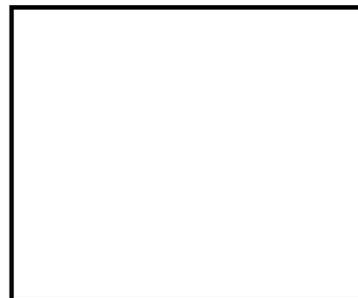
RE: CONSTRUCTION CERTIFICATION  
County: \_\_\_\_\_  
Driveway Permit #: \_\_\_\_\_  
*and/or* Subdivision I.D. #: \_\_\_\_\_  
*and/or* Encroachment #: \_\_\_\_\_  
Recording Information (*if applicable*): \_\_\_\_\_  
Route(s) and/or Street(s): \_\_\_\_\_  
\_\_\_\_\_  
Project Name/Phase/Description: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I, \_\_\_\_\_, have reviewed the construction within the right-of-way and/or easements required under subject project(s) for the above development and in accordance with the design drawings approved by the North Carolina Department of Transportation (NCDOT) on the following dates:

Driveway Permit #: \_\_\_\_\_ Date: \_\_\_\_\_  
*and/or* Subdivision I.D. #: \_\_\_\_\_ Date: \_\_\_\_\_  
*and/or* Encroachment #: \_\_\_\_\_ Date: \_\_\_\_\_

Construction reviewed includes the items listed on the reverse side of this page. My inspection and attached testing report(s) and/or supporting documentation indicate the construction within the right-of-way and/or easements have been constructed in accordance with the standards established by current NCDOT Standard Specifications for Roads and Structures, and with the approved plans.

Name: \_\_\_\_\_  
NC PE #: \_\_\_\_\_  
Signature: \_\_\_\_\_



**SEAL**

Received by NCDOT: \_\_\_\_\_



**STABILIZATION REQUIREMENTS:**

Stabilization for this project shall comply with the time frame guidelines as specified by the NCG-010000 general construction permit effective August 3, 2011 issued by the North Carolina Department of Environment and Natural Resources Division of Water Quality. Temporary or permanent ground cover stabilization shall occur within 7 calendar days from the last land-disturbing activity, with the following exceptions in which temporary or permanent ground cover shall be provided in 14 calendar days from the last land-disturbing activity:

- Slopes between 2:1 and 3:1, with a slope length of 10 ft. or less
- Slopes 3:1 or flatter, with a slope of length of 50 ft. or less
- Slopes 4:1 or flatter

The stabilization timeframe for High Quality Water (HQW) Zones shall be 7 calendar days with no exceptions for slope grades or lengths. High Quality Water Zones (HQW) Zones are defined by North Carolina Administrative Code 15A NCAC 04A.0105 (25). Temporary and permanent ground cover stabilization shall be achieved in accordance with the provisions in this contract and as directed.

**SEEDING AND MULCHING:**

**(East)**

The kinds of seed and fertilizer, and the rates of application of seed, fertilizer, and limestone, shall be as stated below. During periods of overlapping dates, the kind of seed to be used shall be determined. All rates are in pounds per acre.

All Roadway Areas

<b>March 1 - August 31</b>		<b>September 1 - February 28</b>	
50#	Tall Fescue	50#	Tall Fescue
10#	Centipede	10#	Centipede
25#	Bermudagrass (hulled)	35#	Bermudagrass (unhulled)
500#	Fertilizer	500#	Fertilizer
4000#	Limestone	4000#	Limestone

Waste and Borrow Locations

<b>March 1 – August 31</b>		<b>September 1 - February 28</b>	
75#	Tall Fescue	75#	Tall Fescue
25#	Bermudagrass (hulled)	35#	Bermudagrass (unhulled)
500#	Fertilizer	500#	Fertilizer
4000#	Limestone	4000#	Limestone

Note: 50# of Bahiagrass may be substituted for either Centipede or Bermudagrass only upon Engineer’s request.

Approved Tall Fescue Cultivars

06 Dust	Escalade	Justice	Scorpion
2 <sup>nd</sup> Millennium	Essential	Kalahari	Serengeti
3 <sup>rd</sup> Millennium	Evergreen 2	Kentucky 31*	Shelby
Apache III	Falcon IV	Kitty Hawk 2000	Sheridan
Avenger	Falcon NG	Legitimate	Signia
Barlexas	Falcon V	Lexington	Silver Hawk
Barlexas II	Faith	LSD	Sliverstar
Bar Fa	Fat Cat	Magellan	Shenandoah Elite
Barrera	Festnova	Matador	Sidewinder
Barrington	Fidelity	Millennium SRP	Skyline
Barrobusto	Finelawn Elite	Monet	Solara
Barvado	Finelawn Xpress	Mustang 4	Southern Choice II
Biltmore	Finesse II	Ninja 2	Speedway
Bingo	Firebird	Ol' Glory	Spyder LS
Bizem	Firecracker LS	Olympic Gold	Sunset Gold
Blackwatch	Firenza	Padre	Taccoa
Blade Runner II	Five Point	Patagonia	Tanzania
Bonsai	Focus	Pedigree	Trio
Braveheart	Forte	Picasso	Tahoe II
Bravo	Garrison	Piedmont	Talladega
Bullseye	Gazelle II	Plantation	Tarheel
Cannavaro	Gold Medallion	Proseeds 5301	Terrano
Catalyst	Grande 3	Prospect	Titan ltd
Cayenne	Greenbrooks	Pure Gold	Titanium LS
Cessane Rz	Greenkeeper	Quest	Tracer
Chipper	Gremlin	Raptor II	Traverse SRP
Cochise IV	Greystone	Rebel Exeda	Tulsa Time
Constitution	Guardian 21	Rebel Sentry	Turbo
Corgi	Guardian 41	Rebel IV	Turbo RZ
Corona	Hemi	Regiment II	Tuxedo RZ
Coyote	Honky Tonk	Regenerate	Ultimate
Darlington	Hot Rod	Rendition	Venture
Davinci	Hunter	Rhambler 2 SRP	Umbrella
Desire	Inferno	Rembrandt	Van Gogh
Dominion	Innovator	Reunion	Watchdog
Dynamic	Integrity	Riverside	Wolfpack II
Dynasty	Jaguar 3	RNP	Xtremegreen
Endeavor	Jamboree	Rocket	

**\*Note: Kentucky 31 will no longer be an approved NCDOT Tall Fescue Cultivar after December 31, 2015.**

On cut and fill slopes 2:1 or steeper Centipede shall be applied at the rate of 5 pounds per acre and add 20# of Sericea Lespedeza from January 1 - December 31.

Fertilizer shall be 10-20-20 analysis. A different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as a 10-20-20 analysis and as directed.

**TEMPORARY SEEDING:**

Fertilizer shall be the same analysis as specified for *Seeding and Mulching* and applied at the rate of 400 pounds and seeded at the rate of 50 pounds per acre. Sweet Sudan Grass, German Millet or Browntop Millet shall be used in summer months and Rye Grain during the remainder of the year. The Engineer will determine the exact dates for using each kind of seed.

**FERTILIZER TOPDRESSING:**

Fertilizer used for topdressing on all roadway areas except slopes 2:1 and steeper shall be 10-20-20 grade and shall be applied at the rate of 500 pounds per acre. A different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as 10-20-20 analysis and as directed.

Fertilizer used for topdressing on slopes 2:1 and steeper and waste and borrow areas shall be 16-8-8 grade and shall be applied at the rate of 500 pounds per acre. A different analysis of fertilizer may be used provided the 2-1-1 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as 16-8-8 analysis and as directed.

**SUPPLEMENTAL SEEDING:**

The kinds of seed and proportions shall be the same as specified for *Seeding and Mulching*, with the exception that no centipede seed will be used in the seed mix for supplemental seeding. The rate of application for supplemental seeding may vary from 25# to 75# per acre. The actual rate per acre will be determined prior to the time of topdressing and the Contractor will be notified in writing of the rate per acre, total quantity needed, and areas on which to apply the supplemental seed. Minimum tillage equipment, consisting of a sod seeder shall be used for incorporating seed into the soil as to prevent disturbance of existing vegetation. A clodbuster (ball and chain) may be used where degree of slope prevents the use of a sod seeder.

**MOWING:**

The minimum mowing height on this project shall be 4 inches.

# ATTACHMENT FORM

## NOTIFICATION FOR UTILITY / NON-UTILITY ENCROACHMENT WITHIN NCDOT R/W

### Instructions for use:

This form must be completed in its entirety and submitted directly to the designated personnel in the District Engineer's office via email, fax or hand delivery a minimum of one week prior to construction for the encroachment. If the designated NCDOT personnel names are unknown by the person completing this form, please contact the District Engineer's office to determine that contact info.

Date: \_\_\_\_\_ Submitted by Name: \_\_\_\_\_

To: District Personnel Name: \_\_\_\_\_  
District Personnel Email: \_\_\_\_\_  
District Fax No.: \_\_\_\_\_

This notification is to inform you that we (encroaching party or their contractor) will begin construction work on the following project in a minimum of one week.

**Encroachment number**  
(assigned by NCDOT) for the project: \_\_\_\_\_

Construction start date: \_\_\_\_\_

Approximate ending date: \_\_\_\_\_

Contact NCDOT inspector a minimum of 72 hrs. in advance to set-up Preconstruction meeting in the District Engineer's office or other location as directed by the District Engineer

Preconstruction meeting date & time: \_\_\_\_\_

Preconstruction meeting address: \_\_\_\_\_  
\_\_\_\_\_

Type of project: \_\_\_\_\_  
[Examples: power, telecommunication, water, sewer, gas, petroleum, other (describe)]

### Contact Info for this project:

Contractor Company Name: \_\_\_\_\_

Contractor Contact Name: \_\_\_\_\_

Contractor Phone Number: \_\_\_\_\_

Contractor Email: \_\_\_\_\_

NCDOT Utility Inspector Name: \_\_\_\_\_

NCDOT Utility Inspector Phone: \_\_\_\_\_

NCDOT Utility Inspector Email: \_\_\_\_\_

NCDOT Utility Project Manager Name: \_\_\_\_\_

NCDOT Utility Project Manager Phone: \_\_\_\_\_

NCDOT Utility Project Manager Email: \_\_\_\_\_

**Private Facility Encroachment  
Hold Harmless Declaration**

Encroachment Agreement Second Party:

Encroachment Number:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

County:

\_\_\_\_\_

\_\_\_\_\_

The party of the second part of the above-referenced encroachment agreement agrees to indemnify and save harmless the North Carolina Department of Transportation from all claims of liability for the overburdening of right of way easements caused by the installation of private facilities owned by the party of the second part and installed under the approval of the above-referenced encroachment agreement.

Second Party:

Attest or Witness:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Date: \_\_\_\_\_

## Clear - Zone Table

TABLE 3.1 (Cont'd)

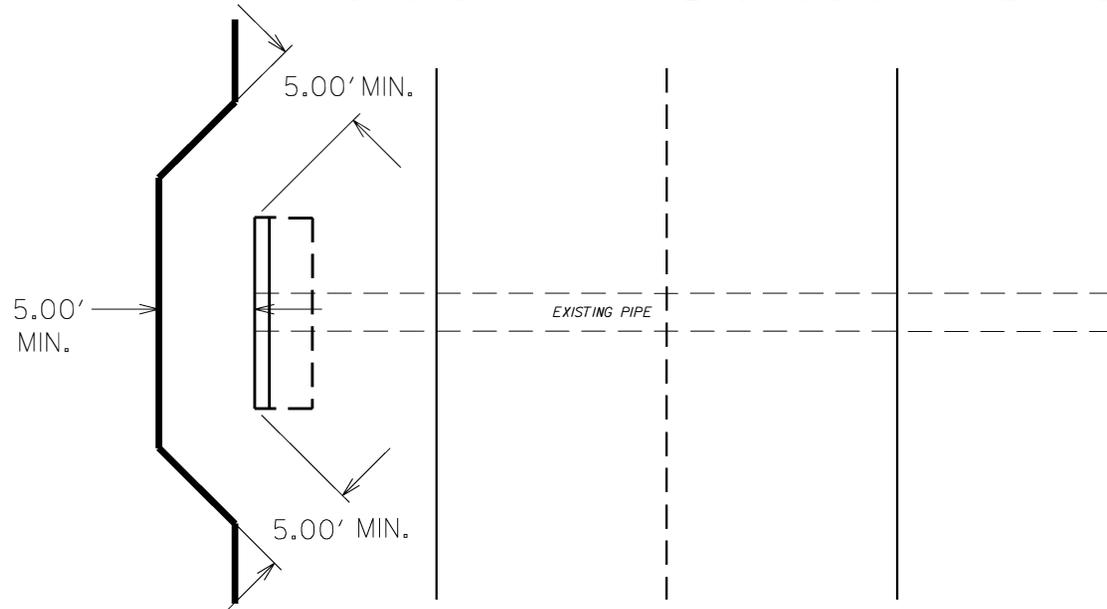
[U.S. Customary Units]

DESIGN SPEED	DESIGN ADT	FORESLOPES			BACKSLOPES		
		1V:6H or flatter	1V:5H TO 1V:4H	1V:3H	1V:3H	1V:5H TO 1V:4H	1V:6H or flatter
40 mph or less	UNDER 750	7 - 10	7 - 10	**	7 - 10	7 - 10	7 - 10
	750 - 1500	10 - 12	12 - 14	**	10 - 12	10 - 12	10 - 12
	1500 - 6000	12 - 14	14 - 16	**	12 - 14	12 - 14	12 - 14
	OVER 6000	14 - 16	16 - 18	**	14 - 16	14 - 16	14 - 16
45-50 mph	UNDER 750	10 - 12	12 - 14	**	8 - 10	8 - 10	10 - 12
	750 - 1500	14 - 16	16 - 20	**	10 - 12	12 - 14	14 - 16
	1500 - 6000	16 - 18	20 - 26	**	12 - 14	14 - 16	16 - 18
	OVER 6000	20 - 22	24 - 28	**	14 - 16	18 - 20	20 - 22
55 mph	UNDER 750	12 - 14	14 - 18	**	8 - 10	10 - 12	10 - 12
	750 - 1500	16 - 18	20 - 24	**	10 - 12	14 - 16	16 - 18
	1500 - 6000	20 - 22	24 - 30	**	14 - 16	16 - 18	20 - 22
	OVER 6000	22 - 24	26 - 32 *	**	16 - 18	20 - 22	22 - 24
60 mph	UNDER 750	16 - 18	20 - 24	**	10 - 12	12 - 14	14 - 16
	750 - 1500	20 - 24	26 - 32 *	**	12 - 14	16 - 18	20 - 22
	1500 - 6000	26 - 30	32 - 40 *	**	14 - 18	18 - 22	24 - 26
	OVER 6000	30 - 32 *	36 - 44 *	**	20 - 22	24 - 26	26 - 28
65-70 mph	UNDER 750	18 - 20	20 - 26	**	10 - 12	14 - 16	14 - 16
	750 - 1500	24 - 26	28 - 36 *	**	12 - 16	18 - 20	20 - 22
	1500 - 6000	28 - 32 *	34 - 42 *	**	16 - 20	22 - 24	26 - 28
	OVER 6000	30 - 34 *	38 - 46 *	**	22 - 24	26 - 30	28 - 30

\* Where a site specific investigation indicates a high probability of continuing crashes, or such occurrences are indicated by crash history, the designer may provide clear-zone distances greater than the clear-zone shown in Table 3.1. Clear zones may be limited to 30 ft for practicality and to provide a consistent roadway template if previous experience with similar projects or designs indicates satisfactory performance.

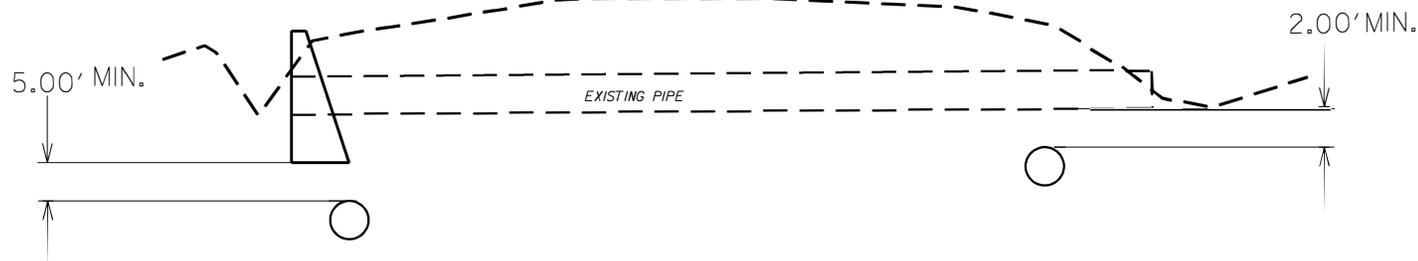
\*\* Since recovery is less likely on the unshielded, traversable 1V:3H slopes, fixed objects should not be present in the vicinity of the toe of these slopes. Recovery of high-speed vehicles that encroach beyond the edge of the shoulder may be expected to occur beyond the toe of slope. Determination of the width of the recovery area at the toe of slope should take into consideration right-of-way availability, environmental concerns, economic factors, safety needs, and crash histories. Also, the distance between the edge of the through traveled lane and the beginning of the 1V:3H slope should influence the recovery area provided at the toe of slope. While the application may be limited by several factors, the foreslope parameters which may enter into determining a maximum desirable recovery area are illustrated in Figure 3.2.

# TRENCHING METHOD



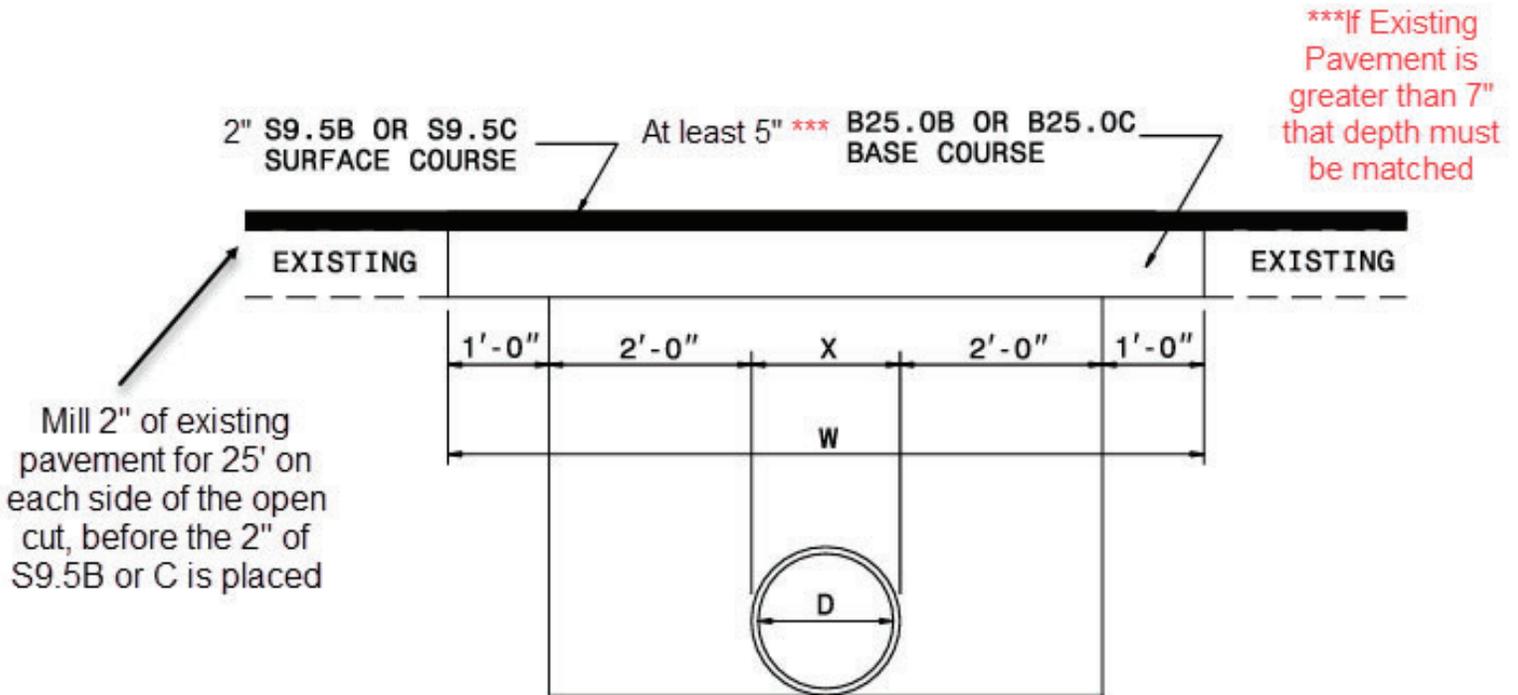
## NOTE:

A minimum of five (5) feet clearance is required for trenched utility installations beneath or near drainage pipes, headwalls, and a minimum of two (2) foot clearance below the flow line of streams. All lines shall be placed around the end or under all existing storm drains. There SHALL be no lines placed over the top of any existing storm drains. 17. At points where the utility is placed under existing storm drainage, the trench will be backfilled with excavatable flowable fill up to the outside diameter of the existing pipe.



# PAVEMENT REPAIR FOR OPEN CUT INSTALLATION

(Not to Scale)



- The minimum width for the open cut shall be according to the drawing above
- Only one half of the roadway shall be open cut at a time in order to maintain traffic flow.
- Pavement cuts shall be repaired the same day a cut is made. If the open cut is required for more than one day, the Encroacher shall place a temporary bituminous patch or steel plate at the close of each day's operations.
- The owner/contractor shall repair the open cut by backfilling with flowable fill or compacted Aggregate Base Course flush to existing pavement or to within 7 inches of the asphalt surface whichever is greater depth.
- If Aggregate Base Course is used in lieu of flowable fill, a density test sealed by a professional engineer SHALL be required on the compacted Aggregate Base Course and SHALL be installed in accordance with Section 520 of the latest NCDOT Standard Specifications.
- The final patch for the Road Way cut area shall be a minimum of 7 inches of B-25.0C or greater to match existing pavement structure finished flush with existing pavement. B-25.0C shall only be placed in 3 - 5.5 inch layers.
- The entire roadway shall be milled 2" for 25' on both sides on open cut. The entire milled section and open cut will then be mechanical overlaid with 2" of S9.5B to maintain existing pavement slope and grade. If any portion of a travel lane is open cut the entire lane must be milled.

DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY ENCROACHMENT AGREEMENT

-AND-

PRIMARY AND SECONDARY HIGHWAYS

Town of Smithfield

PO Box 761

Smithfield, NC 27577

THIS AGREEMENT, made and entered into this the \_\_\_\_\_ day of \_\_\_\_\_ 20 25 by and between the Department of Transportation, party of the first part; and Town of Smithfield party of the second part,

WITNESSETH

THAT WHEREAS, the party of the second part desires to encroach on the right of way of the public road designated as Route(s) US70BUS (E Market Street) SR2560 (College Rd), located Johnston County, Beginning on the southwestern side of the intersection of US70BUS and Town Center Pl., continuing on the south side of US70BUS to SR2560, crossing SR2560, continuing to Intersection of US70BUS and Pine Street, crossing under US70BUS to Pine Street. with the construction and/or erection of: Approximately 2,140 LF of 18-inch C900 gravity sewer to replace existing. Approximately 1,230 LF to be located in ROW of E Market Street (US70BUS) and College Road (SR2560). Proposed installation by open-cut along the shoulder of E Market Street through College Road and bore-and-jack underneath E Market Street to Pine Street.

WHEREAS, it is to the material advantage of the party of the second part to effect this encroachment, and the party of the first part in the exercise of authority conferred upon it by statute, is willing to permit the encroachment within the limits of the right of way as indicated, subject to the conditions of this agreement;

NOW, THEREFORE, IT IS AGREED that the party of the first part hereby grants to the party of the second part the right and privilege to make this encroachment as shown on attached plan sheet(s), specifications and special provisions which are made a part hereof upon the following conditions, to wit:

That the installation, operation, and maintenance of the above described facility will be accomplished in accordance with the party of the first part's latest UTILITIES ACCOMMODATIONS MANUAL, and such revisions and amendments thereto as may be in effect at the date of this agreement. Information as to these policies and procedures may be obtained from the Division Engineer or State Utilities Manager of the party of the first part.

That the said party of the second part binds and obligates himself to install and maintain the encroaching facility in such safe and proper condition that it will not interfere with or endanger travel upon said highway, nor obstruct nor interfere with the proper maintenance thereof, to reimburse the party of the first part for the cost incurred for any repairs or maintenance to its roadways and structures necessary due to the installation and existence of the facilities of the party of the second part, and if at any time the party of the first part shall require the removal of or changes in the location of the said facilities, that the said party of the second part binds himself, his successors and assigns, to promptly remove or alter the said facilities, in order to conform to the said requirement, without any cost to the party of the first part.

That the party of the second part agrees to provide during construction and any subsequent maintenance proper signs, signal lights, flagmen and other warning devices for the protection of traffic in conformance with the latest Manual on Uniform Traffic Control Devices for Streets and Highways and Amendments or Supplements thereto. Information as to the above rules and regulations may be obtained from the Division Engineer of the party of the first part.

That the party of the second part hereby agrees to indemnify and save harmless the party of the first part from all damages and claims for damage that may arise by reason of the installation and maintenance of this encroachment.

That the party of the second part agrees to restore all areas disturbed during installation and maintenance to the satisfaction of the Division Engineer of the party of the first part. The party of the second part agrees to exercise every reasonable precaution during construction and maintenance to prevent eroding of soil; silting or pollution of rivers, streams, lakes, reservoirs, other water impoundments, ground surfaces or other property; or pollution of the air. There shall be compliance with applicable rules and regulations of the North Carolina Division of Environmental Management, North Carolina Sedimentation Control Commission, and with ordinances and regulations of various counties, municipalities and other official agencies relating to pollution prevention and control. When any installation or maintenance operation disturbs the ground surface and existing ground cover, the party of the second part agrees to remove and replace the sod or otherwise reestablish the grass cover to meet the satisfaction of the Division Engineer of the party of the first part.

That the party of the second part agrees to assume the actual cost of any inspection of the work considered to be necessary by the Division Engineer of the party of the first part.

That the party of the second part agrees to have available at the construction site, at all times during construction, a copy of this agreement showing evidence of approval by the party of the first part. The party of the first part reserves the right to stop all work unless evidence of approval can be shown.

Provided the work contained in this agreement is being performed on a completed highway open to traffic; the party of the second part agrees to give written notice to the Division Engineer of the party of the first part when all work contained herein has been completed. Unless specifically requested by the party of the first part, written notice of completion of work on highway projects under construction will not be required.

That in the case of noncompliance with the terms of this agreement by the party of the second part, the party of the first part reserves the right to stop all work until the facility has been brought into compliance or removed from the right of way at no cost to the party of the first part.

That it is agreed by both parties that this agreement shall become void if actual construction of the work contemplated herein is not begun within one (1) year from the date of authorization by the party of the first part unless written waiver is secured by the party of the second part from the party of the first part.

During the performance of this contract, the second party, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor"), agrees as follows:

- a. Compliance with Regulations: The contractor shall comply with the Regulations relative to nondiscrimination in Federally-assisted programs of the U. S. Department of Transportation, Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.
- b. Nondiscrimination: The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials

and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

- c. Solicitations for Subcontracts, including Procurements of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.
- d. Information and Reports: The contractor shall provide all information and reports required by the Regulations, or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Department of Transportation or the Federal Highway Administration to be pertinent to ascertain compliance with such Regulations or directives. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information, the contractor shall so certify to the Department of Transportation, or the Federal Highway Administration as appropriate, and shall set forth what efforts it has made to obtain the information.
- e. Sanctions for Noncompliance: In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, the Department of Transportation shall impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to,
  - (1) withholding of payments to the contractor under the contract until the contractor complies, and/or
  - (2) cancellation, termination or suspension of the contract, in whole or in part.
- f. Incorporation of Provisions: The contractor shall include the provisions of paragraphs "a" through "F" in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The contractor shall take such action with respect to any subcontract or procurement as the Department of Transportation or the Federal Highway Administration may direct as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, that, in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request the Department of Transportation to enter into such litigation to protect the interests of the State, and, in addition, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

R/W (161) : Party of the Second Part certifies that this agreement is true and accurate copy of the form R/W (161) incorporating all revisions to date.

IN WITNESS WHEREOF, each of the parties to this agreement has caused the same to be executed the day and year first above written.

DEPARTMENT OF TRANSPORTATION

ATTEST OR WITNESS:

DIVISION ENGINEER

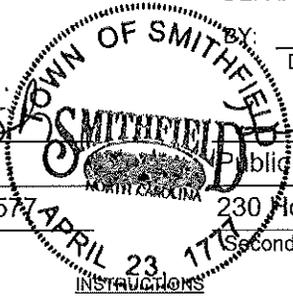
*Sharon Parrish*  
Deputy  
Town Clerk, Town of Smithfield

*Ed Crutch*  
Public Utilities Director, Town of Smithfield

350 E. Market St., Smithfield NC 27577

230 Hospital Rd., Smithfield NC 27577

Second Party



When the applicant is a corporation or a municipality, this agreement must have the corporate seal and be attested by the corporation secretary or by the empowered city official, unless a waiver of corporate seal and attestation by the secretary or by the empowered city official is on file in the Raleigh office of the State Utilities Manager. In the space provided in this agreement for execution, the name of the corporation or municipality shall be typed above the name, and title of all persons signing the agreement should be typed directly below their signature.

When the applicant is not a corporation, then his signature must be witnessed by one person. The address should be included in this agreement and the names of all persons signing the agreement should be typed directly below their signature.

This agreement must be accompanied, in the form of an attachment, by plans or drawings showing the following applicable information:

1. All roadways and ramps.
2. Right of way lines and where applicable, the control of access lines.
3. Location of the existing and/or proposed encroachment.
4. Length, size and type of encroachment.
5. Method of installation.
6. Dimensions showing the distance from the encroachment to edge of pavement, shoulders, etc.
7. Location by highway survey station number. If station number cannot be obtained, location should be shown by distance from some identifiable point, such as a bridge, road, intersection, etc. (To assist in preparation of the encroachment plan, the Department's roadway plans may be seen at the various Highway Division Offices, or at the Raleigh office.)
8. Drainage structures or bridges if affected by encroachment (show vertical and horizontal dimensions from encroachment to nearest part of structure).
9. Method of attachment to drainage structures or bridges.
10. Manhole design.
11. On underground utilities, the depth of bury under all traveled lanes, shoulders, ditches, sidewalks, etc.
12. Length, size and type of encasement where required.
13. On underground crossings, notation as to method of crossing - boring and jacking, open cut, etc.
14. Location of vents.

GENERAL REQUIREMENTS

1. Any attachment to a bridge or other drainage structure must be approved by the State Utilities Manager in Raleigh prior to submission of encroachment agreement to the Division Engineer.
2. All crossings should be as near as possible normal to the centerline of the highway.
3. Minimum vertical clearances of overhead wires and cables above all roadways must conform to clearances set out in the National Electric Safety Code.
4. Encasements shall extend from ditch line to ditch line in cut sections and 5' beyond toe of slopes in fill sections.
5. All vents should be extended to the right of way line or as otherwise required by the Department.
6. All pipe encasements as to material and strength shall meet the standards and specifications of the Department.
7. Any special provisions or specifications as to the performance of the work or the method of construction that may be required by the Department must be shown on a separate sheet attached to encroachment agreement provided that such information cannot be shown on plans or drawings.
8. The Department's Division Engineer should be given notice by the applicant prior to actual starting of installation included in this agreement.

# MARKET STREET SEWER REPLACEMENT

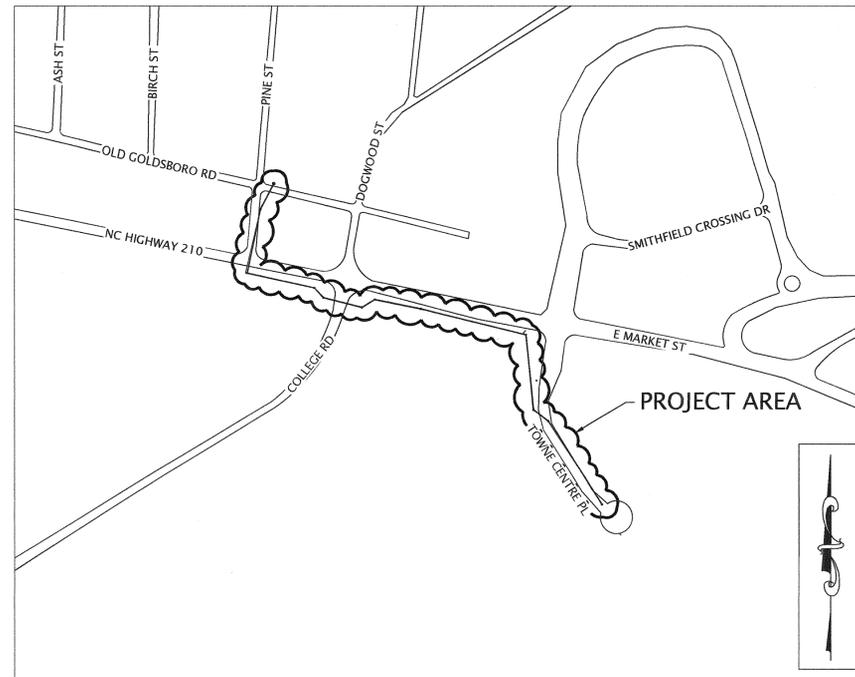
## FOR

### TOWN OF SMITHFIELD, NORTH CAROLINA

#### MAY, 2025

### GENERAL NOTES

1. CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING AT LEAST SEVEN (7) DAYS PRIOR TO COMMENCING WORK WITH TOWN OF SMITHFIELD PUBLIC UTILITIES DIRECTOR AND ENGINEER.
2. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SIZE, DEPTH AND LOCATION OF ALL WATER, SEWER, AND STORM DRAINAGE AFFECTED BY CONSTRUCTION. DAMAGED UTILITIES AND SERVICES WILL BE REPAIRED BY THE CONTRACTOR.
3. THE CONTRACTOR SHALL CONTACT NC811 ONE-CALL AND OWNERS OF ALL BURIED UTILITIES FOR THE EXACT LOCATION OF ALL UNDERGROUND MAINS, CABLES OR LINES BEFORE CONSTRUCTION BEGINS.
4. THE CONTRACTOR SHALL UNCOVER ALL EXISTING TOWN UTILITY LINES BEING TIED INTO TO VERIFY MATERIAL, SIZE, CONDITION, LOCATION, AND OTHER INFORMATION TO DETERMINE THAT THE UTILITY CONNECTION WILL FUNCTION AS DESIGNED.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF THE ADJUSTMENT OF EXISTING UTILITIES, INCLUDING POWER POLES. EXISTING UTILITIES SHALL NOT BE COMPROMISED OR DAMAGED BY CONTRACTOR'S ACTIVITIES. EXCAVATION NEAR POWER/TELEPHONE POLES SHALL BE COORDINATED WITH THE UTILITY COMPANY. CONTRACTOR SHALL SUPPORT UTILITY POLES WHERE CONSTRUCTION ACTIVITIES MAY AFFECT POLE STABILITY.
6. CONTRACTOR SHALL PERFORM WITHIN THE EASEMENT PROVIDED. PROPERTY DAMAGED OUTSIDE THE EASEMENT SHALL BE REPAIRED, REPLACED OR COMPENSATED AT THE EXPENSE OF THE CONTRACTOR.
7. CONTRACTOR SHALL KEEP THE PUBLIC NOTIFIED OF THE WORK BEING PERFORMED AT ALL TIMES. CONTRACTOR SHALL DISTRIBUTE DOOR HANGER TO ALL CUSTOMERS AFFECTED BY SERVICE INTERRUPTIONS.
8. NO WORK SHALL BE PERFORMED ON WEEKEND, AFTER WORK HOURS OR HOLIDAYS WITHOUT PRIOR NOTICE TO AND APPROVAL FROM TOWN.
9. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION.
10. WORK AND MATERIAL NOT IN CONFORMANCE WITH THE SPECIFICATION IS SUBJECT TO REMOVAL AND REPLACEMENT. THE TOWN OF SMITHFIELD IS NOT RESPONSIBLE FOR LIABILITY INCURRED DUE TO DELAYS AND/OR DAMAGES TO UTILITIES IN CONJUNCTION WITH THE THIS CONSTRUCTION.
11. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH NCDOT AND TOWN OF SMITHFIELD STANDARDS AND SPECIFICATIONS.



VICINITY MAP  
NOT TO SCALE

### SHEET INDEX

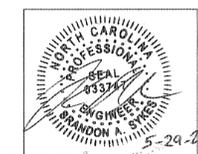
SHEET G-0.01	COVER SHEET/GENERAL NOTES
SHEETS C-2.00 TO C-2.04	SANITARY SEWER PLAN & PROFILE
SHEETS C-3.00	SANITARY SEWER DETAILS
SHEETS C-3.01	EROSION CONTROL DETAILS
SHEETS C-3.02	TRAFFIC CONTROL DETAILS

### LEGEND

EXISTING CHAIN-LINK FENCE	---
EXISTING CONTOUR MAJOR	---O---O---O---O---O---O---
EXISTING CONTOUR MINOR	---A---A---A---A---A---A---
EXISTING LANDSCAPE AREA	---
EXISTING OVERHEAD ELECTRIC	---OHE---OHE---OHE---OHE---
EXISTING RIGHT OF WAY	---
EXISTING SANITARY SEWER LINE	---SS---SS---SS---SS---
EXISTING STORM WATER LINE	---SD---SD---SD---SD---
EXISTING UNDERGROUND ELECTRIC	---E---
EXISTING UNDERGROUND GAS	---G---
EXISTING UNDERGROUND FIBER OPTIC (PHONE)	---TFO---
EXISTING UNDERGROUND FIBER OPTIC (TV)	---TVFO---
EXISTING UTILITY EASEMENT	---UE---
EXISTING WATERLINE	---W---
PROPOSED SANITARY SEWER MAIN	---
PROPOSED LIMITS OF DISTURBANCE	---
PROPOSED SANITARY SEWER MANHOLE	LoB/C --- LoB/C
CALCULATED POINT	CP
EXISTING CABLE BOX	CB
EXISTING CATCH BASIN	CO
EXISTING CLEAN-OUT	CGF
COMBINED GRID FACTOR	CGF
CONTROL POINT	
EXISTING ELECTRIC HANDHOLE	
EXISTING CONCRETE MONUMENT	ECM
EXISTING IRON PIPE	EIP
EXISTING IRON ROD	EIR
EXISTING FIBER OPTIC HANDHOLE (TV)	
EXISTING FIBER OPTIC HANDHOLE (PHONE)	
EXISTING FLARED END SECTION	FES
EXISTING FIRE HYDRANT	
EXISTING GAS TEST STATION	GTS
EXISTING LIGHT POLE	LP
EXISTING MAILBOX	MB
NORTH AMERICAN DATUM	NAD
EXISTING POWER POLE	PP
EXISTING STORM DRAIN MANHOLE	SDMH
EXISTING SANITARY SEWER MANHOLE	SSMH
EXISTING SINGLE POST SIGN	SI
EXISTING TELEPHONE BOX	
TEMPORARY BENCHMARK	TBM
TOP OF CURB	T/C
EXISTING TRAFFIC SIGNAL POLE	TSP
EXISTING TRAFFIC SIGNAL BOX	
EXISTING TRANSFORMER	
EXISTING WATER METER	
EXISTING WATER VALVE	

NOT FOR CONSTRUCTION

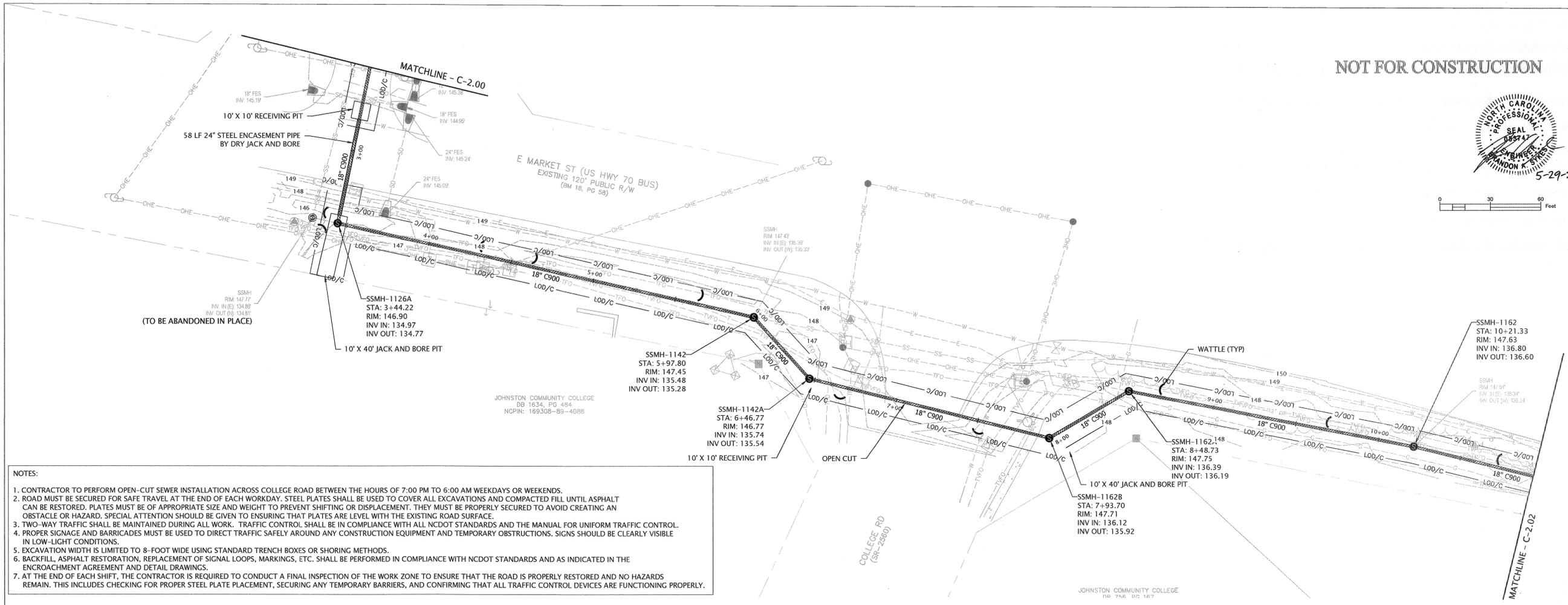
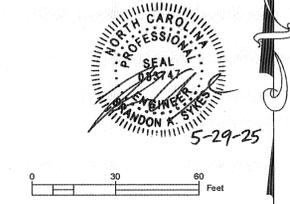
G-0.01



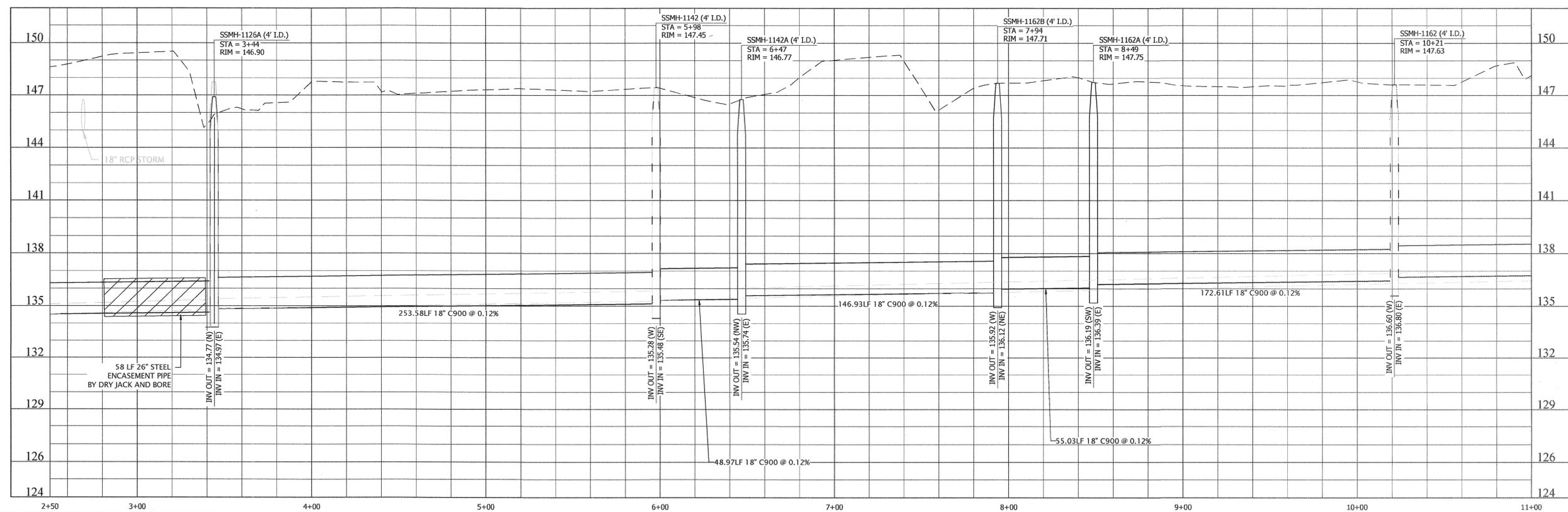
**SEE, PLLC.**  
 SYKES ENVIRONMENTAL ENGINEERING, PLLC.  
 9504 Barker Rd, New Hill, NC 27562  
 LICENSE # P-2436  
 919-819-5109



NOT FOR CONSTRUCTION



- NOTES:**
1. CONTRACTOR TO PERFORM OPEN-CUT SEWER INSTALLATION ACROSS COLLEGE ROAD BETWEEN THE HOURS OF 7:00 PM TO 6:00 AM WEEKDAYS OR WEEKENDS.
  2. ROAD MUST BE SECURED FOR SAFE TRAVEL AT THE END OF EACH WORKDAY. STEEL PLATES SHALL BE USED TO COVER ALL EXCAVATIONS AND COMPACTED FILL UNTIL ASPHALT CAN BE RESTORED. PLATES MUST BE OF APPROPRIATE SIZE AND WEIGHT TO PREVENT SHIFTING OR DISPLACEMENT. THEY MUST BE PROPERLY SECURED TO AVOID CREATING AN OBSTACLE OR HAZARD. SPECIAL ATTENTION SHOULD BE GIVEN TO ENSURING THAT PLATES ARE LEVEL WITH THE EXISTING ROAD SURFACE.
  3. TWO-WAY TRAFFIC SHALL BE MAINTAINED DURING ALL WORK. TRAFFIC CONTROL SHALL BE IN COMPLIANCE WITH ALL NCDOT STANDARDS AND THE MANUAL FOR UNIFORM TRAFFIC CONTROL.
  4. PROPER SIGNAGE AND BARRICADES MUST BE USED TO DIRECT TRAFFIC SAFELY AROUND ANY CONSTRUCTION EQUIPMENT AND TEMPORARY OBSTRUCTIONS. SIGNS SHOULD BE CLEARLY VISIBLE IN LOW-LIGHT CONDITIONS.
  5. EXCAVATION WIDTH IS LIMITED TO 8-FOOT WIDE USING STANDARD TRENCH BOXES OR SHORING METHODS.
  6. BACKFILL, ASPHALT RESTORATION, REPLACEMENT OF SIGNAL LOOPS, MARKINGS, ETC. SHALL BE PERFORMED IN COMPLIANCE WITH NCDOT STANDARDS AND AS INDICATED IN THE ENCROACHMENT AGREEMENT AND DETAIL DRAWINGS.
  7. AT THE END OF EACH SHIFT, THE CONTRACTOR IS REQUIRED TO CONDUCT A FINAL INSPECTION OF THE WORK ZONE TO ENSURE THAT THE ROAD IS PROPERLY RESTORED AND NO HAZARDS REMAIN. THIS INCLUDES CHECKING FOR PROPER STEEL PLATE PLACEMENT, SECURING ANY TEMPORARY BARRIERS, AND CONFIRMING THAT ALL TRAFFIC CONTROL DEVICES ARE FUNCTIONING PROPERLY.



**SEE, PLLC.**

**SYKES ENVIRONMENTAL ENGINEERING, PLLC.**  
 9504 Barker Rd, New Hill, NC 27562 LICENSE # P-2436

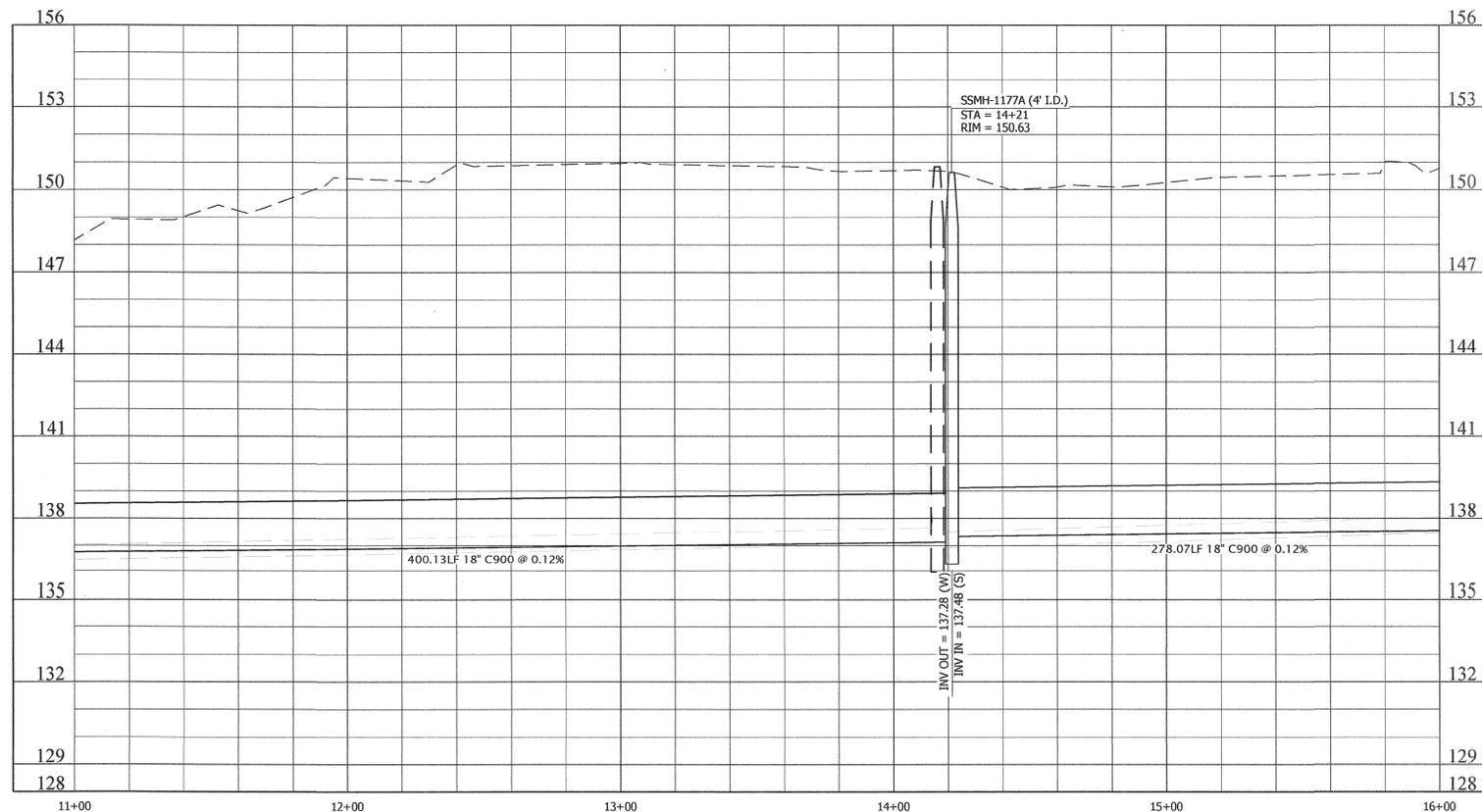
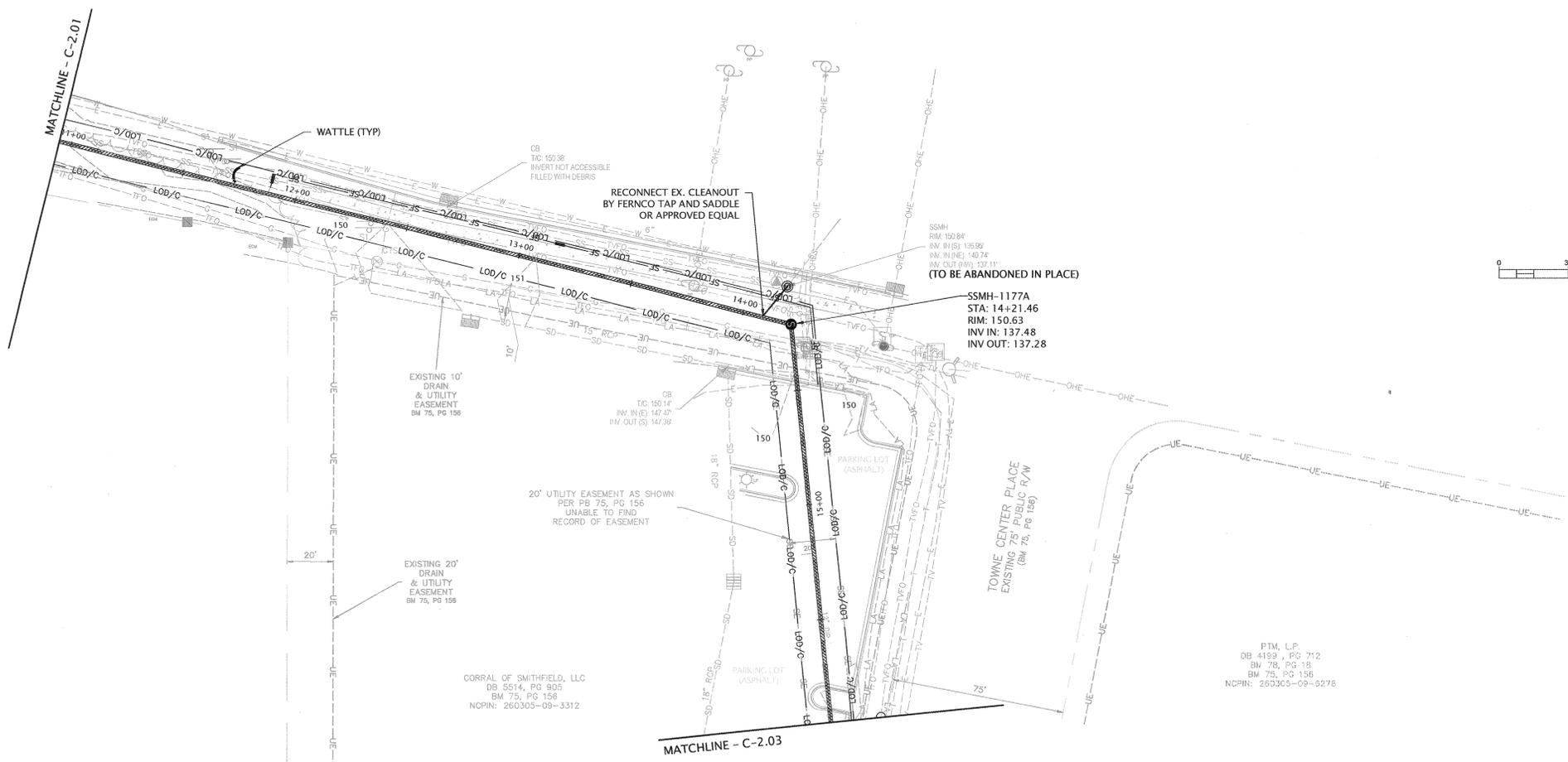
MARKET STREET SEWER REPLACEMENT  
 TOWN OF SMITHFIELD, NC

PROPOSED SANITARY SEWER  
 PLAN & PROFILE

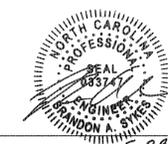
NO.	REVISIONS DESCRIPTION	DATE	BY

DATE: MAY-2025  
 DESIGNED: BAS  
 DRAWN: BAS  
 CHECKED: BAS  
 SHEET:

C-2.01



NOT FOR CONSTRUCTION



**SEE, PLLC.**  
 SYKES ENVIRONMENTAL ENGINEERING, PLLC.  
 9504 Barker Rd, New Hill, NC 27562 LICENSE # P-2436

MARKET STREET SEWER REPLACEMENT  
 TOWN OF SMITHFIELD, NC  
 PROPOSED SANITARY SEWER  
 PLAN & PROFILE

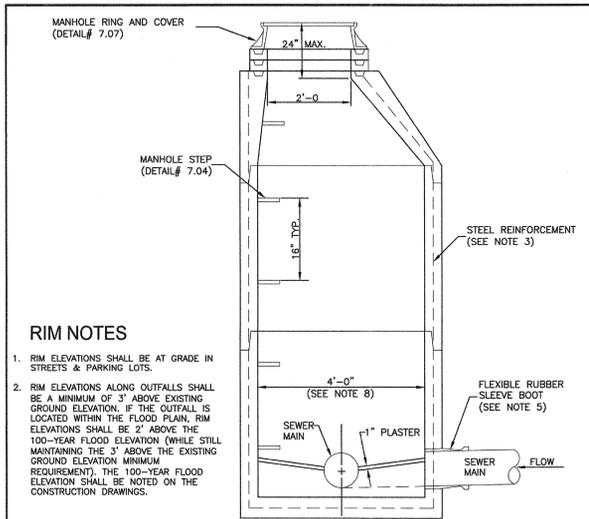
NO.	REVISIONS DESCRIPTION	DATE	BY

DATE: MAY-2025  
 DESIGNED: BAS  
 DRAWN: BAS  
 CHECKED: BAS  
 SHEET: C-2.02

5-29-25







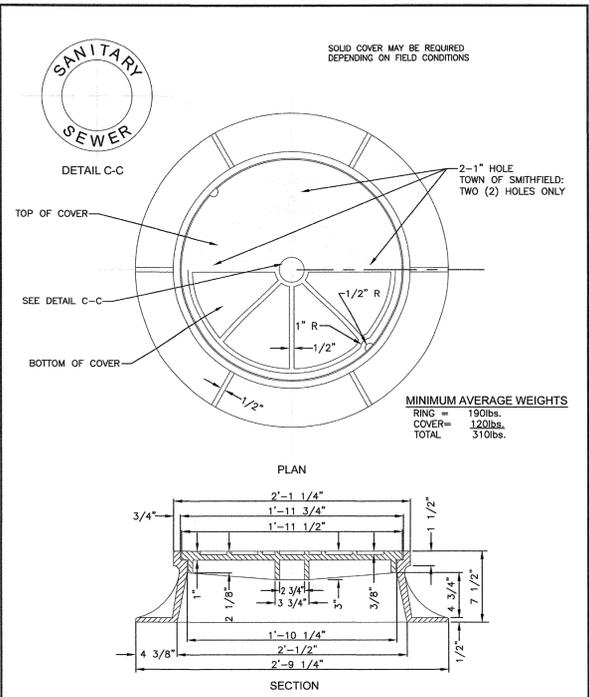
- RIM NOTES**
- RIM ELEVATIONS SHALL BE AT GRADE IN STREETS & PARKING LOTS.
  - RIM ELEVATIONS ALONG OUTFALLS SHALL BE A MINIMUM OF 3' ABOVE EXISTING GROUND ELEVATION. IF THE OUTFALL IS LOCATED WITHIN THE FLOOD PLAIN, RIM ELEVATIONS SHALL BE 2' ABOVE THE 100-YEAR FLOOD ELEVATION (WHILE STILL MAINTAINING THE 3' ABOVE THE EXISTING GROUND ELEVATION MINIMUM REQUIREMENT). THE 100-YEAR FLOOD ELEVATION SHALL BE NOTED ON THE CONSTRUCTION DRAWINGS.
- GENERAL NOTES**
- ALL PRE CAST CONCRETE MANHOLES SHALL CONFORM TO THE LATEST REVISION OF ASTM C478.
  - CONCRETE SHALL BE 4000 PSI AT 28 DAYS MINIMUM.
  - STEEL REINFORCEMENT SHALL BE GRADE 40 BILLET STEEL CONFORMING TO THE LATEST REVISION OF ASTM-A-185 FOR WALL REINFORCEMENT, AND THE LATEST REVISION OF ASTM-A-615 FOR THE BASE REINFORCEMENT.
  - STANDARD JOINTS SHALL BE SEALED WITH PUTTY TYPE PLASTIC CEMENT PER FED. SPEC. SS-C-153 OR AN O-RING TYPE JOINT CONFORMING TO THE LATEST REVISION OF ASTM-C443.
  - MANHOLE INLETS AND OUTLETS SHALL BE CAST IN PLACE FLEXIBLE RUBBER SLEEVES BOOTS PER THE LATEST REVISION OF ASTM-C923.
  - INVERTS TO BE CONSTRUCTED OF BRICK WITH A CONCRETE BENCH (DETAIL# 07.xx).
  - THE MAXIMUM SEPARATION OR INVERT IN TO INVERT OUT WITHIN A MANHOLE IS 0.50 FEET.
  - MANHOLES GREATER THAN 18 FEET IN DEPTH SHALL HAVE AN INSIDE DIAMETER OF 5'-0". FOR SANITARY SEWER MAINS GREATER THAN EIGHTEEN INCHES (18") IN DIAMETER, MANHOLES SHALL BE A MINIMUM OF 5'-0" IN DIAMETER.

**SMITHFIELD** NORTH CAROLINA

**STANDARD SANITARY SEWER MANHOLE**

SMITHFIELD, NORTH CAROLINA PUBLIC UTILITIES

SCALE: NTS  
DETAIL NO. 07.03  
DATE: 04/03/2018



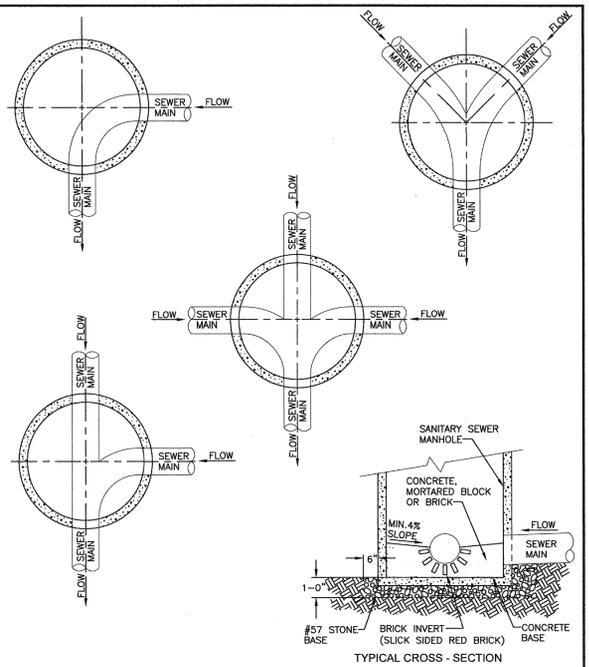
PROVIDE MANHOLE INSERTS MANUFACTURED FROM HIGH DENSITY POLYETHYLENE, MEETING THE REQUIREMENTS OF ASTM D-1248, CLASS A, CATEGORY 5. TYPE III. INSERTS SHALL BE EQUIPPED WITH 1 GAS RELIEF VALVE, 1 VACUUM RELIEF VALVE, A CROSS-LINKED POLYETHYLENE GASKET AND ONE HEAVY WEIGHT POLYPROPYLENE LIFTING STRAP.

**SMITHFIELD** NORTH CAROLINA

**STANDARD MANHOLE RING & COVER**

SMITHFIELD, NORTH CAROLINA PUBLIC UTILITIES

SCALE: NTS  
DETAIL NO. 07.06  
DATE: 04/03/2018



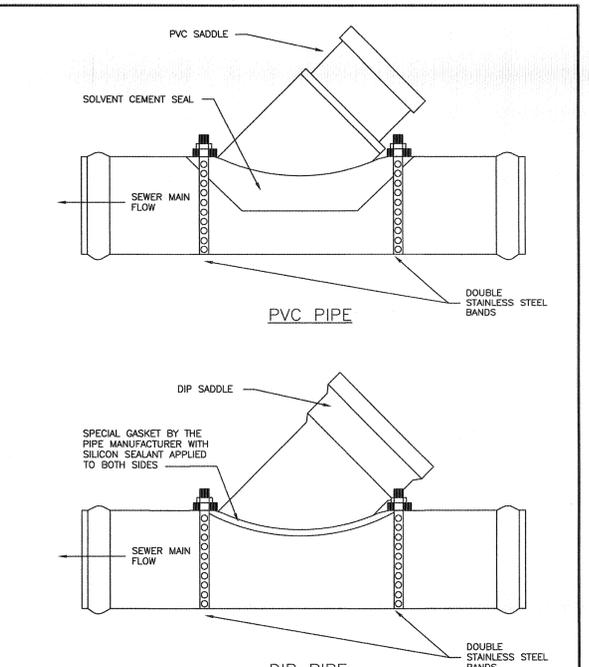
- NOTES:**
- INVERT MATERIAL SHALL BE CONCRETE CAST IN PLACE WITH A SMOOTH FINISH.
  - WIDTH OF INVERT SHALL MATCH INSIDE DIAMETER OF INCOMING AND OUTGOING PIPES.
  - BRICK INVERT SHALL BE FORMED AS SHOWN.
  - ALL INVERT ELEVATIONS SHALL BE AS SHOWN ON APPROVED CONSTRUCTION PLANS.
  - BENCHES TO BE BUILT OUT OF CONCRETE, MORTARED BLOCK OR BRICK. STONE IS NOT ACCEPTABLE.

**SMITHFIELD** NORTH CAROLINA

**INSIDE DROP MANHOLE**

SMITHFIELD, NORTH CAROLINA PUBLIC UTILITIES

SCALE: NTS  
DETAIL NO. 07.10  
DATE: 04/03/2018



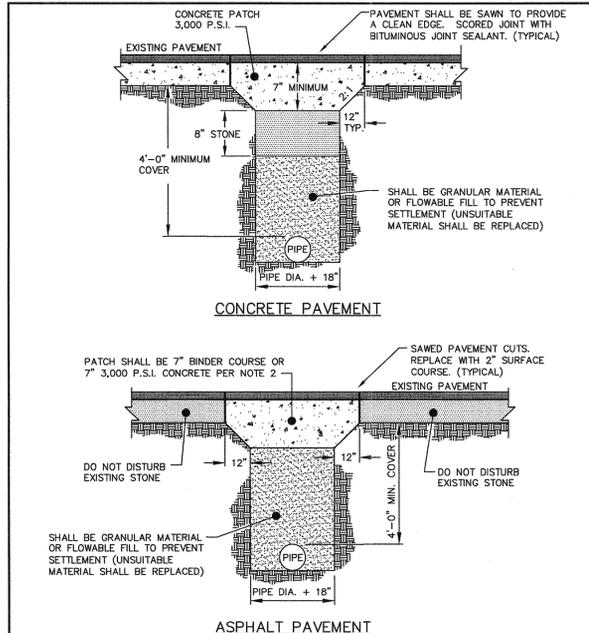
- NOTES:**
- IN LINE WYE'S TO BE USED WHERE POSSIBLE ON NEW CONSTRUCTION AND REPAIR PROJECTS
  - PVC SOLVENT CEMENT SHALL BE USED FOR PVC SADDLES
  - ALL BANDS SHALL BE STAINLESS STEEL

**SMITHFIELD** NORTH CAROLINA

**STANDARD LATERAL CONNECTION**

SMITHFIELD, NORTH CAROLINA PUBLIC UTILITIES

SCALE: NTS  
DETAIL NO. 07.02  
DATE: 04/03/2018



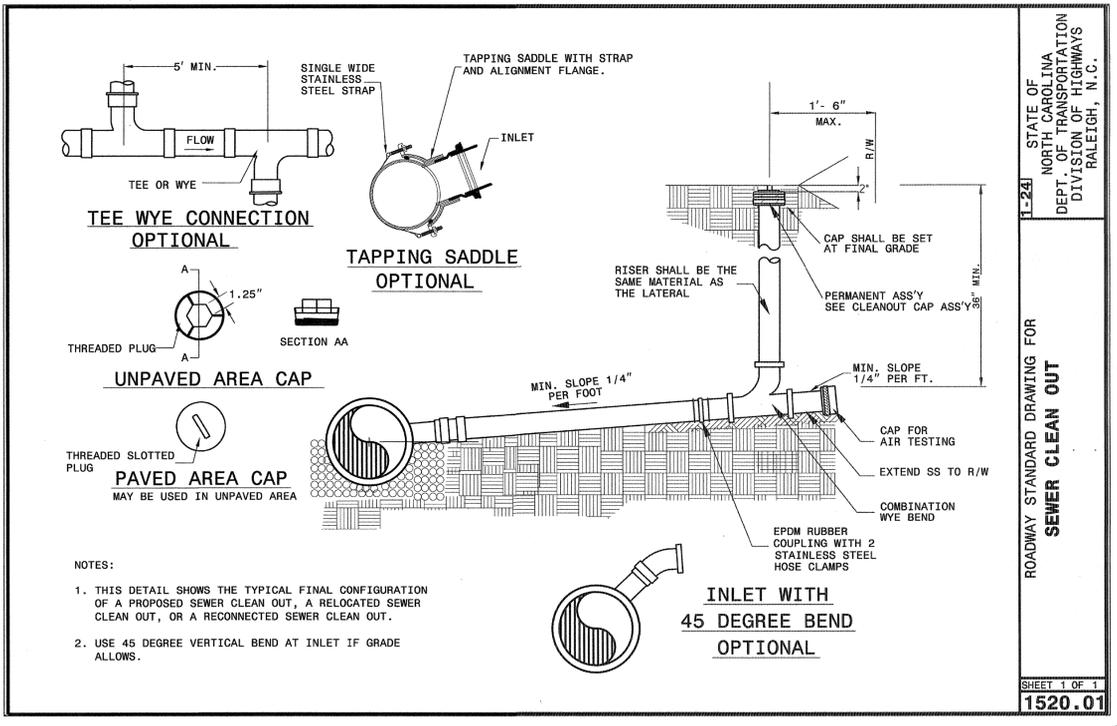
- NOTES:**
- ALL PAVEMENT CUTS SHALL BE REPAIRED WITHIN A MAXIMUM OF THREE (3) DAYS FROM THE DATE THE CUT IS MADE.
  - CONCRETE TRENCH CAP ON ASPHALT STREETS SHALL BE USED ONLY DURING INCLEMENT WEATHER WHEN ASPHALT PLANTS ARE NOT OPERATING.
  - IN ALL OPEN TRENCHES, BACKFILL SHALL BE COMPACTED TO 95% MAXIMUM DRY DENSITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING COMPACTION REQUIREMENTS BY SOILS TESTING CERTIFIED BY A LICENSED PROFESSIONAL GEOTECHNICAL ENGINEER.
  - BACKFILL WITH A HIGH CLAY CONTENT, HIGH SHRINK-SWELL POTENTIAL, OR HIGH MOISTURE CONTENT THAT CANNOT MEET COMPACTION REQUIREMENTS SHALL BE DEEMED UNSUITABLE AND SHALL BE REPLACED WITH SUITABLE BACKFILL MATERIAL.
  - ALL PAVEMENT PATCHES SHALL PROVIDE A UNIFORM AND SMOOTH DRIVING SURFACE.

**SMITHFIELD** NORTH CAROLINA

**BEDDING FOR SANITARY SEWER PIPE**

SMITHFIELD, NORTH CAROLINA PUBLIC UTILITIES

SCALE: NTS  
DETAIL NO. 07.16  
DATE: 04/03/2018



- NOTES:**
- THIS DETAIL SHOWS THE TYPICAL FINAL CONFIGURATION OF A PROPOSED SEWER CLEAN OUT, A RELOCATED SEWER CLEAN OUT, OR A RECONNECTED SEWER CLEAN OUT.
  - USE 45 DEGREE VERTICAL BEND AT INLET IF GRADE ALLOWS.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR SEWER CLEAN OUT

1520.01

DATE: MAY-2025  
DESIGNED: BAS  
DRAWN: BAS  
CHECKED: BAS  
SHEET:

**SEE, PLLC.**

SYKES ENVIRONMENTAL ENGINEERING, PLLC.

9504 Barker Rd, New Hill, NC 27562 LICENSE # P-2436

MARKET STREET SEWER REPLACEMENT TOWN OF SMITHFIELD, NC

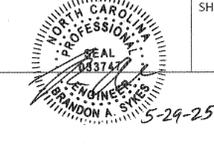
SANITARY SEWER DETAILS

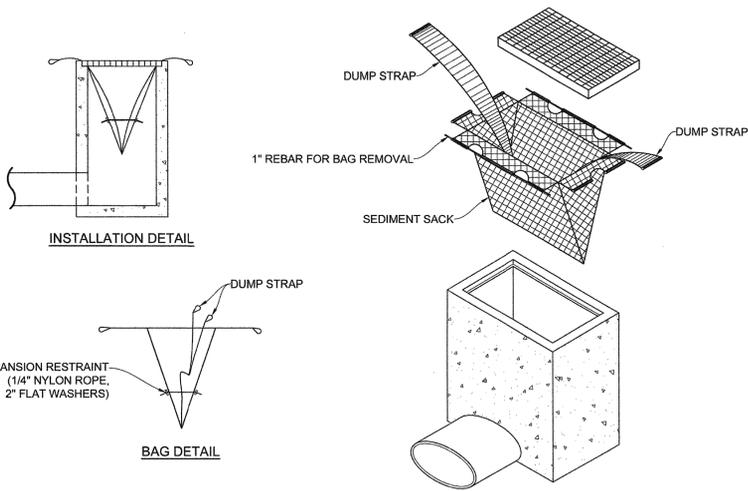
REVISIONS

NO.	DESCRIPTION	DATE	BY

DATE: MAY-2025  
DESIGNED: BAS  
DRAWN: BAS  
CHECKED: BAS  
SHEET:

C-3.00





**INLET SEDIMENT CONTROL DEVICE**  
NOT TO SCALE

**EROSION CONTROL MAINTENANCE NOTES:**

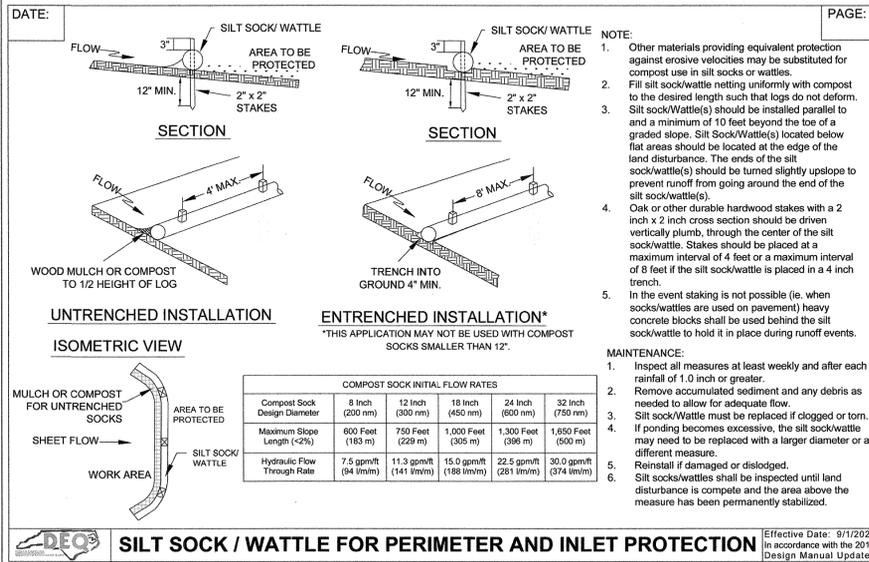
**INLET PROTECTION**  
INSPECT ROCK PIPE INLET PROTECTION AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE SEDIMENT STORAGE AREA TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP. PLACE THE SEDIMENT THAT IS REMOVED IN THE DESIGNATED DISPOSAL AREA AND REPLACE THE CONTAMINATED PART OF THE GRAVEL FACING. CHECK THE STRUCTURE FOR DAMAGE. ANY RIPRAP DISPLACED FROM THE STONE HORSESHOE MUST BE REPLACED IMMEDIATELY. AFTER ALL THE SEDIMENT-PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED, REMOVE THE STRUCTURE AND ALL THE UNSTABLE SEDIMENT. SMOOTH THE AREA TO BLEND WITH THE ADJOINING AREAS AND PROVIDE PERMANENT GROUND COVER (SURFACE STABILIZATION).

**WATTLE/WATTLE BARRIER/COMPOST FILTER SOCKS/SILT SOCK** INSPECT COMPOST SOCKS WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL EVENT (1/2 INCH OR GREATER). REMOVE ACCUMULATED SEDIMENT AND ANY DEBRIS. THE COMPOST SOCK MUST BE REPLACED IF CLOGGED OR TORN. IF PONDING BECOMES EXCESSIVE, THE SOCK MAY NEED TO BE REPLACED WITH A LARGER DIAMETER OR A DIFFERENT MEASURE. THE SOCK NEEDS TO BE REINSTALLED IF UNDERMINED OR DISLODGED. THE COMPOST SOCK SHALL BE INSPECTED UNTIL LAND DISTURBANCE IS COMPLETE AND THE AREA ABOVE THE MEASURE HAS BEEN PERMANENTLY STABILIZED.

**SILT SOCK / WATTLE FOR CHECK DAMS**  
INSPECT SILT SOCK/WATTLE(S) WEEKLY AND AFTER EACH 1 INCH OR GREATER RAIN. REMOVE CUMULATED SEDIMENT AND ANY DEBRIS. SILT SOCK/WATTLE MUST BE REPLACED IF CLOGGED OR TORN. IF PONDING BECOMES EXCESSIVE, THE SILT SOCK/WATTLE MAY NEED TO BE REPLACED WITH A LARGER DIAMETER OR A DIFFERENT MEASURE. REINSTALL IF DAMAGED OR DISLODGED. SILT SOCKS/WATTLES SHALL BE INSPECTED UNTIL LAND DISTURBANCE IS COMPLETE AND THE AREA ABOVE THE MEASURE IS PERMANENTLY STABILIZED.

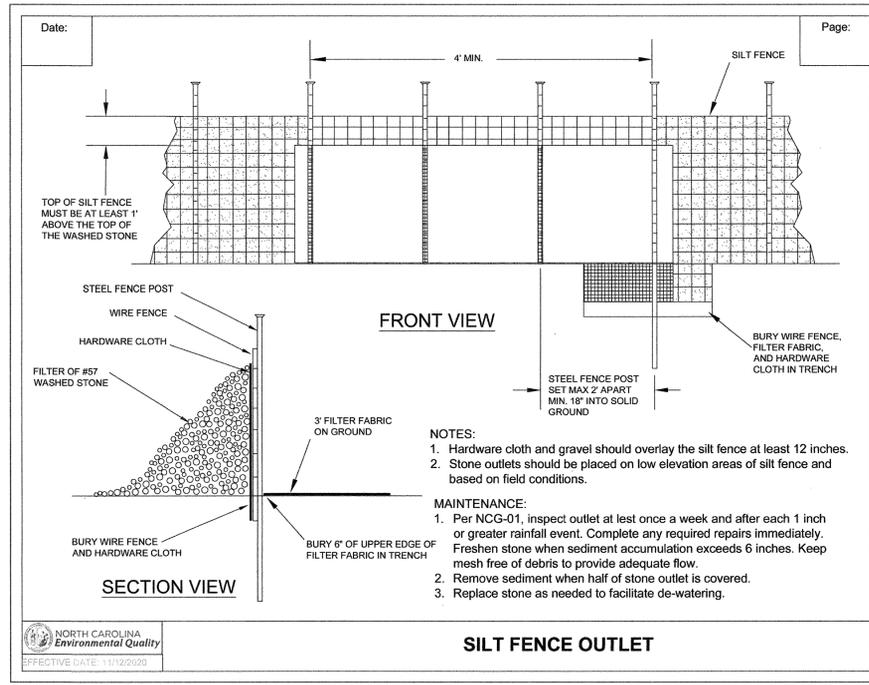
**SILT FENCE**  
INSPECT TEMPORARY DIVERSIONS ONCE A WEEK AND AFTER EVERY RAINFALL. IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE. CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED. WHEN THE AREA PROTECTED IS PERMANENTLY STABILIZED, REMOVE THE RIDGE AND THE CHANNEL TO BLEND WITH THE NATURAL GROUND LEVEL AND APPROPRIATELY STABILIZE IT.

CONTACT RESPONSIBLE FOR MAINTENANCE: TOWN OF SMITHFIELD



**SILT SOCK / WATTLE FOR PERIMETER AND INLET PROTECTION**

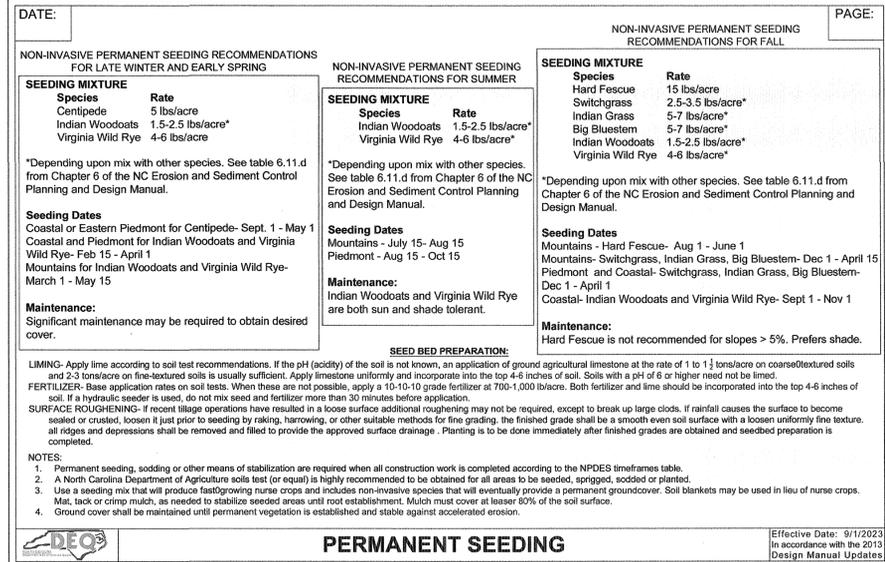
Effective Date: 9/1/2023  
in accordance with the 2013 Design Manual Updates



**SILT FENCE OUTLET**

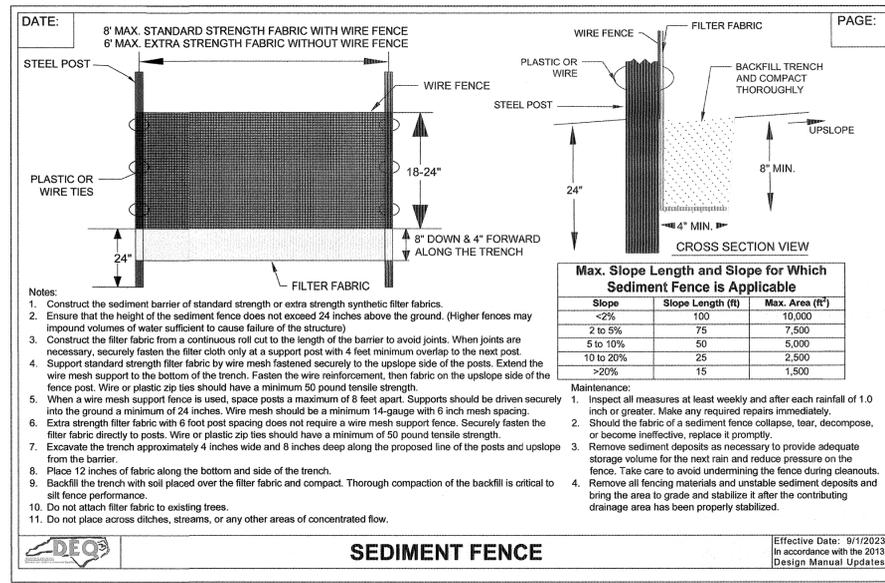
NORTH CAROLINA Environmental Quality  
EFFECTIVE DATE: 1/1/2020

- NOTES:**
- Hardware cloth and gravel should overlay the silt fence at least 12 inches.
  - Stone outlets should be placed on low elevation areas of silt fence and based on field conditions.
- MAINTENANCE:**
- Per NCG-01, inspect outlet at least once a week and after each 1 inch or greater rainfall event. Complete any required repairs immediately. Freshen stone when sediment accumulation exceeds 6 inches. Keep mesh free of debris to provide adequate flow.
  - Remove sediment when half of stone outlet is covered.
  - Replace stone as needed to facilitate de-watering.



**PERMANENT SEEDING**

Effective Date: 9/1/2023  
in accordance with the 2013 Design Manual Updates



**SEDIMENT FENCE**

Effective Date: 9/1/2023  
in accordance with the 2013 Design Manual Updates

- Notes:**
- Construct the sediment barrier of standard strength or extra strength synthetic filter fabrics.
  - Ensure that the height of the sediment fence does not exceed 24 inches above the ground. (Higher fences may impound volumes of water sufficient to cause failure of the structure)
  - Construct the filter fabric from a continuous roll cut to the length of the barrier to avoid joints. When joints are necessary, securely fasten the filter cloth only at a support post with a 4 feet minimum overlap to the next post.
  - Support standard strength filter fabric by wire mesh fastened securely to the upslope side of the posts. Extend the wire mesh support to the bottom of the trench. Fasten the wire reinforcement, then fabric on the upslope side of the fence post. Wire or plastic zip ties should have a minimum 50 pound tensile strength.
  - When a wire mesh support fence is used, space posts a maximum of 8 feet apart. Supports should be driven securely into the ground a minimum of 24 inches. Wire mesh should be a minimum 14-gauge with 6 inch mesh spacing.
  - Extra strength filter fabric with 6 foot post spacing does not require a wire mesh support fence. Securely fasten the filter fabric directly to posts. Wire or plastic zip ties should have a minimum of 50 pound tensile strength.
  - Excavate the trench approximately 4 inches wide and 8 inches deep along the proposed line of the posts and upslope from the barrier.
  - Place 12 inches of fabric along the bottom and side of the trench.
  - Backfill the trench with soil placed over the filter fabric and compact. Thorough compaction of the backfill is critical to silt fence performance.
  - Do not attach filter fabric to existing trees.
  - Do not place across ditches, streams, or any other areas of concentrated flow.
- Maintenance:**
- Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater. Make any required repairs immediately.
  - Should the fabric of a sediment fence collapse, tear, decompose, or become ineffective, replace it promptly.
  - Remove sediment deposits as necessary to provide adequate storage volume for the next rain and reduce pressure on the fence. Take care to avoid undermining the fence during cleanouts.
  - Remove all fencing materials and unstable sediment deposits and bring the area to grade and stabilize it after the contributing drainage area has been properly stabilized.



**SEE, PLLC.**  
SYKES ENVIRONMENTAL ENGINEERING, PLLC.  
9504 Barker Rd, New Hill, NC 27562 LICENSE # P-2436

**MARKET STREET SEWER REPLACEMENT  
TOWN OF SMITHFIELD, NC**

**EROSION CONTROL DETAILS**

NO.	REVISIONS	DATE	BY
	DESCRIPTION		

DATE: MAY-2025  
DESIGNED: BAS  
DRAWN: BAS  
CHECKED: BAS  
SHEET: C-3.01

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12 ENGLISH STANDARD DRAWING FOR TRAFFIC CONTROL DESIGN TABLES SPACING OF TEMPORARY SIGNS IN SERIES

ADVANCE WARNING SIGN	PORTABLE WORK ZONE SIGN	STATIONARY SIGN
1000'	1000'	1000'
500'	500'	500'
250'	250'	250'
100'	100'	100'
50'	50'	50'
25'	25'	25'
10'	10'	10'
5'	5'	5'
2.5'	2.5'	2.5'
1.25'	1.25'	1.25'

GENERAL NOTES:  
 1. REFER TO SIGN MANUAL.  
 2. USE THE STANDARD SPACING IN CONNECTION WITH THE SPECIFIC CONTROL ROADWAY SITUATION.  
 3. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.  
 4. ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE. FIELD ADJUST AS VARIOUS CONDITIONS OCCUR. SIGN TO SIGN SPACING DIMENSIONS ARE APPROXIMATE.

1-12 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12 ENGLISH STANDARD DRAWING FOR PORTABLE WORK ZONE SIGNS MOUNTING HEIGHT & LATERAL CLEARANCE

GENERAL NOTES:  
 1. DIMENSIONS SHOWN ARE MINIMUM VALUES. THEY WILL BE EXACTLY 1/8" LESS TO ACCOMMODATE TYPICAL SIGN MOUNTING HEIGHTS AND SPACING. THE REQUIREMENTS OF SIGN 300 AND SIGN 301 SHALL BE MAINTAINED. ALL PORTABLE WORK ZONE SIGNS AND STICKS SPECIFICALLY DESIGNED FOR ONE YEAR USE ONLY.  
 2. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.  
 3. PRODUCTS LIST AT: [www.trafficcontrol.com](http://www.trafficcontrol.com) AND [www.trafficcontrol.com/products](http://www.trafficcontrol.com/products).

1-12 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12 ENGLISH STANDARD DRAWING FOR CONES

GENERAL NOTES:  
 1. ADVISE SUBMITTER OF LUMBER SPECIES. MATERIALS MUST BE SOAKED FOR 48 HOURS BEFORE USE. CONES MUST BE IN THE MOISTURE CONDITION AT THE TIME OF USE.  
 2. SET THE EQUIPMENT'S APPROVED PRODUCT LIST.  
 3. SET THE 1/2" OF LUMBER FROM INTERNALLY PLASTIC BARRIER.

1-12 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12 ENGLISH STANDARD DRAWING FOR TEMPORARY LANE CLOSURES 2-LANE, 2-WAY ROADWAY-1 LANE CLOSED

GENERAL NOTES FOR FLAGGER OPERATIONS:  
 1. REFER TO SIGN MANUAL FOR THE TAPER CRITERIA, INCLUDING WITH SIGNS ON THE ROADWAY.  
 2. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.  
 3. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.  
 4. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.  
 5. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.  
 6. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.  
 7. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.  
 8. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.  
 9. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.  
 10. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.

1-12 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12 ENGLISH STANDARD DRAWING FOR TRAFFIC CONTROL DESIGN TABLES "L" DISTANCE AND CHANNELIZING DEVICE TAPER CRITERIA

GENERAL NOTES:  
 1. TABLE FOR "L" DISTANCE IS BASED ON CONNECTION TAPER FORMULA FROM THE M.U.T.C.D.  
 2. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.  
 3. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.  
 4. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.  
 5. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.  
 6. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.  
 7. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.  
 8. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.  
 9. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.  
 10. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.

TRUCK APPROACH	"L" DISTANCE TABLE
100'	100'
150'	150'
200'	200'
250'	250'
300'	300'
350'	350'
400'	400'
450'	450'
500'	500'
550'	550'
600'	600'
650'	650'
700'	700'
750'	750'
800'	800'
850'	850'
900'	900'
950'	950'
1000'	1000'

1-12 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12 ENGLISH STANDARD DRAWING FOR FLAGGING DEVICES

GENERAL NOTES:  
 1. REFER TO SIGN MANUAL FOR THE TAPER CRITERIA, INCLUDING WITH SIGNS ON THE ROADWAY.  
 2. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.  
 3. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.  
 4. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.  
 5. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.  
 6. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.  
 7. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.  
 8. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.  
 9. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.  
 10. ADV. THE ADVANCE WARNING SIGN SPACING MUST BE A SERIES OF 2 OR MORE SIGNS AND NOT A SINGLE SIGN.

1-12 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

**SEE, PLLC.**  
 SYKES ENVIRONMENTAL ENGINEERING, PLLC.  
 9504 Barker Rd, New Hill, NC 27562 LICENSE # P-2436

PS#11 AND OUTFALL IMPROVEMENTS - MARKET STREET SEWER REPLACEMENT - TOWN OF SMITHFIELD, NC  
 ROADWAY & TRAFFIC CONTROL DETAILS

NO.	DATE	DESCRIPTION	BY
DESIGNED:	BAS		
DRAWN:	BAS		
CHECKED:	BAS		

DATE: JULY 2025  
 SHEET: C-3.02

