



GREENVILLE UTILITIES COMMISSION
of
THE CITY OF GREENVILLE, NORTH CAROLINA

Request for Bids
for
GCP-10124
NC 11 NORTH NATURAL GAS MAIN EXTENSION

Request for Bids Issued:

April 30, 2024

Bids Due:

May 28, 2024



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REQUEST FOR BIDS
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Section A

Advertisement for Bids

RE-ADVERTISEMENT FOR BIDS

by

Greenville Utilities Commission of the City of Greenville, NC

for

The Greenville Utilities Commission
GCP10124 – NC 11 North Natural Gas Main Extension
Pitt County, North Carolina

Sealed Bids for the Construction of a 2.8-mile, 8-inch MDPE, medium-pressure natural gas main will be received by the Greenville Utilities Commission in the Engineering Center Conference Room at 3355 NC 43 N, Greenville, North Carolina 27834 until 2:00 PM on Thursday, June 20, 2024 and immediately thereafter publicly opened and read.

Bids must be enclosed in a sealed envelope, addressed to the Greenville Utilities Commission and the outside of the envelope must be marked BID FOR GCP10124 – NC 11 North Natural Gas Main Extension. All Bids must include the information specified in the format specified in the Instructions to Bidders, and all Bids must be made on blank forms provided with and included in the bound document. The name, address, and license number of the Bidder must be plainly marked thereon. Oral or faxed Bids are invalid and will be rejected.

Each Bid submitted must be accompanied by cash or a certified check, drawn on a bank or trust company authorized to do business in North Carolina, payable to the Greenville Utilities Commission in an amount at least equal to five percent (5%) of the total amount of the Bid, as a guarantee that a contract will be entered into. In lieu of cash or a certified check, the Bidder may submit a bid bond in the form prescribed in G.S. 143-129 as amended by Chapter 1104 of the Public Laws of 1951.

Contractors are notified that legislative acts relating to licensing of contractors will be observed in receiving bids and awarding contracts. It is the Bidder's responsibility to ensure and to provide proof of compliance with all applicable licensing requirements.

The major items of Work include:

- Constructing, testing, cleaning, drying, purging, and filling with gas a 2.8-mile, 8-inch MDPE, medium-pressure natural gas pipeline and,
- Tying in the proposed 8-inch MDPE medium-pressure natural gas pipeline to the existing 8-inch steel medium-pressure natural gas pipeline.

The complete Bid Package will be posted and available at <https://www.guc.com/your-business/doing-business-us/current-bids> for download.

RE-ADVERTISEMENT FOR BIDS

The right is reserved to reject any or all Bids, to waive informalities, and to award Contract or Contracts which, in the opinion of the Owner, appear to be in its best interest. The right is reserved to hold any or all Bids for a period of sixty (60) days from the opening thereof.

GREENVILLE UTILITIES COMMISSION
(Owner)

Mr. Dillon E. Wade, P.E.
(Gas Systems Engineer)

Kimley-Horn and Associates, Inc.
4525 Main Street, Suite 1000
Virginia Beach, Virginia 23462
Phone: (757) 213-8600

Section B

Background Information

INTRODUCTION AND PROJECT DESCRIPTION

The Greenville Utilities Commission (GUC) is requesting Bids for the construction, testing, and gassing-up of the NC 11 North Natural Gas Main Extension. The proposed 8-inch MDPE SDR 11, 0.784-inch wall thickness, natural gas main is approximately 2.8 miles in length. The route of the proposed gas main ties into an existing gas main near the US 264 (Martin Luther King Jr. Hwy) onramp from NC 11 (North Memorial Dr) and follows NC 11 (North Memorial Drive) to the North until reaching SR 1514 (Station Mill Rd) when we cross NC 11 (N. Memorial Dr) and follow SR 1514 (Station Mill Rd) Northeast and tie into an existing gas main approximately 650' northeast of the SR 1514 (Station Mill Rd) & SR 1522 (Futrell-Robeson Rd) Intersection. Construction will be within public road right-of-way. As designed, there is ten (10) horizontal directional drills (HDD), two (2) conventional jack and bore with 12" steel API-5L casing, and the remainder of the construction is designed to be performed by a conventional open trench method. The new gas main is to be pressure tested to 90 psig for a maximum allowable operating pressure (MAOP) of 60 psig. The Greenville Utilities Commission intends to operate the main at 60 psig.

The Contractor will be required to deliver a tested, cleaned, purged, and gassed-up pipeline. The Contractor shall make all tie-ins between the proposed NC 11 North Natural Gas Main Extension and the existing 4-inch and 8-inch steel natural gas pipelines. The Contractor shall coordinate the tie-ins of the proposed NC 11 North Natural Gas Main Extension and the existing 8-inch steel natural gas pipeline with the Greenville Utilities Commission.

GENERAL REQUIREMENTS

Contractor's bidding on the Work must have a minimum of five (5) years of experience constructing steel natural gas mains and/or pipelines according to the requirements of Title 49, Part 192, and the project Plans and Specification. Contractor must have a minimum of five (5) years of experience in horizontal directional drilling with similar diameter steel pipe, preferable in the geological region of the project.

The Owner shall provide all materials listed in the Bill of Materials contained in the drawings. The Contractor shall provide all other materials and equipment required for construction of the pipeline, fencing and asphalt paving; and for the restoration for the site following Construction.

SITE CONDITIONS

The terrain consists of gently rolling hills and low flat areas. There are no wetlands. The existing road right-of-way (ROW) is cleared and may require some brush cutting and removal for construction to begin. Some minor clearing of mature growth and secondary growth timber will be required. The land surrounding the pipeline route and existing road ROW is partially farmland or wooded with some developed suburban areas. Depending on the season and the rainfall, the site can be expected to be wet with a high-water table.

The site elevation is between approximately 32 feet above sea level (ASL) at the southern end of the gas main to approximately 41 feet above sea level (ASL) at the northern end of the gas main. The 100-year flood elevation at the site is 26.1 feet ASL.

INTENT TO BID

on the

Greenville Utilities Commission of the City of Greenville, NC

GCP10124 – NC 11 North Natural Gas Main Extension

Please submit the following information to the Greenville Utilities Commission one (1) week prior to the Pre-bid Meeting, scheduled for Tuesday, May 14, 2024 at 2:00 PM. Pre-bid meeting will be conducted virtually.

Submit your response to:

Dillon E. Wade, P.E.
Greenville Utilities Commission
3355 NC 43 N
Greenville, North Carolina 27834

Email: wadede@guc.com

Name:		Title:	
Organization:			
Address:			
City:		State:	Zip:
E-mail Address:		Phone No.: (____) - ____ - _____	
WEB Site:		FAX No.: (____) - ____ - _____	
Authorized Signature:			Date:

Please complete the following:

Indicate the number that will be attending the Pre-Bid Meeting:

THIS PAGE NOT APPLICABLE TO RE-ADVERTISEMENT. MINUTES FROM 5/14/24 PRE-BID MEETING ARE INCLUDED IN THE EXHIBITS.

Section C

Instructions to Bidders

INSTRUCTIONS TO BIDDERS FOR CONSTRUCTION CONTRACT

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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, and which registers plan holders.

**The Greenville Utilities Commission
Engineering and Operations Center
3355 NC Hwy 43 North
Greenville, North Carolina 27834**

ARTICLE 2—BIDDING DOCUMENTS

2.01 Bidder shall obtain a complete set of Bidding Requirements and proposed Contract Documents (together, the Bidding Documents). See the Agreement for a list of the Contract Documents. It is Bidder's responsibility to determine that it is using a complete set of documents in the preparation of a Bid. Bidder assumes sole responsibility for errors or misinterpretations resulting from the use of incomplete documents, by Bidder itself or by its prospective Subcontractors and Suppliers.

2.02 Bidding Documents are made available for the sole purpose of obtaining Bids for completion of the Project and permission to download or distribution of the Bidding Documents does not confer a license or grant permission or authorization for any other use. Authorization to download documents, or other distribution, includes the right for plan holders to print documents solely for their use, and the use of their prospective Subcontractors and Suppliers, provided the plan holder pays all costs associated with printing or reproduction. Printed documents may not be re-sold under any circumstances.

ARTICLE 3—QUALIFICATIONS OF BIDDERS

3.01 To demonstrate Bidder's qualifications to perform the Work, after submitting its Bid and Bidder must submit the following information:

- A. Written evidence establishing its qualifications such as financial data, previous experience, and present commitments.
- B. A written statement that Bidder is authorized to do business in the state where the Project is located, or a written certification that Bidder will obtain such authority prior to the Effective Date of the Contract.
- C. Bidder's state or other contractor license number, if applicable.
- D. Subcontractor and Supplier qualification information.
- E. Other required information regarding qualifications.
- F. Proof of five (5) years of recent and current experience with similar natural gas main or pipeline projects constructed under the requirements of Title 49, Part 192, having similar sized steel pipe, and including horizontal directional drilling length.

- 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 *OPERATOR QUALIFICATIONS*
- A. Successful Bidder will be required to meet the Greenville Utilities Commission Operator Qualification requirements for all covered tasks included in the Work under this Contract.

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 the following regarding existing conditions at or adjacent to the Site:
 - a. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data.
 - b. Those drawings known to Owner 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.
 - 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.
4. *Geotechnical Baseline Report/Geotechnical Data Report*: The Bidding Documents contain a Geotechnical Baseline Report (GBR) and Geotechnical Data Report (GDR).

- a. As set forth in the Supplementary Conditions, the GBR describes certain select subsurface conditions that are anticipated to be encountered by Contractor during construction in specified locations (“Baseline Conditions”). The GBR is a Contract Document.
 - b. The Baseline Conditions in the GBR are intended to reduce uncertainty and the degree of contingency in submitted Bids. However, Bidders cannot rely solely on the Baseline Conditions. Bids should be based on a comprehensive approach that includes an independent review and analysis of the GBR, all other Contract Documents, Technical Data, other available information, and observable surface conditions. Not all potential subsurface conditions are baselined.
 - c. Nothing in the GBR is intended to relieve Bidders of the responsibility to make their own determinations regarding construction costs, bidding strategies, and Bid prices, nor of the responsibility to select and be responsible for the means, methods, techniques, sequences, and procedures of construction, and for safety precautions and programs incident thereto.
 - d. As set forth in the Supplementary Conditions, the GDR is a Contract Document containing data prepared by or for the Owner in support of the GBR.
- B. *Underground Facilities:* Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05 of the General Conditions, and not in the drawings referred to in Paragraph 5.02.A of these Instructions to Bidders. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

4.03 *Site Visit and Testing by Bidders*

- A. Bidder is required to visit the Site and conduct a thorough visual examination of the Site and adjacent areas. During the visit, the Bidder must 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 general 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. Bidder is responsible for establishing access needed to reach specific selected test sites.
- D. Bidder must 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.

4.04 *Owner’s Safety Program*

- A. Site visits and work at the Site may be governed by an Owner safety program. 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 AND CERTIFICATIONS

5.01 *Express Representations and Certifications in Bid Form, Agreement*

- A. The Bid Form that each Bidder will submit contains express representations regarding the Bidder’s examination of Project documentation, Site visit, and preparation of the Bid, and certifications regarding lack of collusion or fraud in connection with the Bid. Bidder should review these representations and certifications and assure that Bidder can make the representations and certifications in good faith, before executing and submitting its Bid.
- B. If Bidder is awarded the Contract, Bidder (as Contractor) will make similar express representations and certifications when it executes the Agreement.

ARTICLE 6—PRE-BID CONFERENCE

- 6.01 A pre-Bid meeting will be held virtually on **April 30, 2024 at 2:00 PM EST**. Engineer will provide the virtual log-in information. 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 Owner on its own initiative may issue Addenda to clarify, correct, supplement, or change the Bidding Documents.
- 7.02 Bidder shall submit all questions about the meaning or intent of the Bidding Documents to Engineer in writing. Contact information and submittal procedures for questions are as follows:

Ryan Clark, P.E.
Kimley-Horn and Associates,
4525 Main Street, Suite 1000
Virginia Beach, Virginia 23462
Email: ryan.clark@kimley-horn.com

And Copied to:

Dillon E. Wade, P.E.
Greenville Utilities Commission
3355 NC Hwy 43 North
Greenville, North Carolina 27834
Email: wadede@guc.com

- 7.03 Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all registered plan holders. Questions received less than seven (7) days prior to the date for opening of Bids may not be answered.
- 7.04 Only responses set forth in an Addendum will be binding. Oral and other interpretations or clarifications will be without legal effect. Responses to questions are not part of the Contract Documents unless set forth in an Addendum that expressly modifies or supplements the Contract 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 Bid bond issued by a surety meeting the requirements of Paragraph 6.01 of the General Conditions. Such Bid bond will be issued in the form included in the Bidding Documents.
- 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, 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 and furnish the required Contract security within fifteen (15) 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, in whole in the case of a penal sum bid bond, and to the extent of Owner's damages in the case of a damages-form bond. Such forfeiture will 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 (7) days after the Effective Date of the Contract or sixty-one (61) days after the Bid opening, 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 (7) 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 (a) substantially completed and (b) ready for final payment, and (c) Milestones (if any) are to be achieved, 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 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration during the bidding and Contract award process of possible substitute or “or-equal” items. In cases in which the Contract allows the Contractor to request that Engineer authorize the use of a substitute or “or-equal” item of material or equipment, application for such acceptance may not be made to and will not be considered by Engineer until after the Effective Date of the Contract.
- 11.02 All prices that Bidder sets forth in its Bid will 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 must be prepared to retain specific Subcontractors and Suppliers for the performance of the Work if required to do so by the Bidding Documents or in the Specifications. If a prospective Bidder objects to retaining any such Subcontractor or Supplier and the concern is not relieved by an Addendum, then the prospective Bidder should refrain from submitting a Bid.
- 12.02 The apparent Successful Bidder, and any other Bidder so requested, must submit to Owner a list of the Subcontractors or Suppliers proposed for the following portions of the Work within five (5) days after Bid opening:
- A. 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.
- 12.03 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 and Suppliers. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor or Supplier, 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 7.07 of the General Conditions.

ARTICLE 13—PREPARATION OF BID

- 13.01 The Bid Form is included with the Bidding Documents.
- A. All blanks on the Bid Form must be completed in ink and the Bid Form signed in ink. Erasures or alterations must be initialed in ink by the person signing the Bid Form. A Bid price must 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 must 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 must be shown.
- 13.03 A Bid by a partnership must 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 official address of the partnership must be shown.
- 13.04 A Bid by a limited liability company must 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 official address of the firm must be shown.
- 13.05 A Bid by an individual must show the Bidder’s name and official address.
- 13.06 A Bid by a joint venture must be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The joint venture must have been formally established prior to submittal of a Bid, and the official address of the joint venture must be shown.
- 13.07 All names must be printed in ink below the signatures.
- 13.08 The Bid must contain an acknowledgment of receipt of all Addenda, the numbers of which must be filled in on the Bid Form.
- 13.09 Postal and e-mail addresses and telephone number for communications regarding the Bid must be shown.
- 13.10 The Bid must contain evidence of Bidder’s authority to do business in the state where the Project is located, or Bidder must certify in writing that it will obtain such authority within the time for acceptance of Bids and attach such certification to the Bid.

ARTICLE 14—BASIS OF BID

14.01 *Unit Price*

- A. Bidders must 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 must 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 The Bidding Documents include one separate unbound copy of the Bid Form, and, if required, the Bid Bond Form. The unbound copy of the Bid Form is to be completed and submitted with the Bid security and the other documents required to be submitted under the terms of Article 2 of the Bid Form.
- 15.02 A Bid must be received no later than the date and time prescribed and at the place indicated in the Advertisement or invitation to bid and must 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 must 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 must be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid must be addressed to the location designated in the Advertisement.
- 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.

ARTICLE 16—MODIFICATION AND WITHDRAWAL OF BID

- 16.01 An unopened Bid may be withdrawn 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 Paragraph 16.01 and submit a new Bid prior to the date and time for the opening of Bids.
- 16.03 If within seventy-two (72) hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, the Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, the Bidder will be disqualified from further bidding on the Work.

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 also reserves the right to waive all minor Bid informalities not involving price, time, or changes in the Work.
- 19.02 Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible.
- 19.03 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, whether in the Bid itself or in a separate communication to Owner or Engineer, then Owner will reject the Bid as nonresponsive.
- 19.04 If Owner awards the contract for the Work, such award will be to the lowest responsible, responsive Bidder.
- 19.05 *Evaluation of Bids*
- A. In evaluating Bids, Owner will consider whether 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.
- 19.06 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.
- 19.07 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.

ARTICLE 20—BONDS AND INSURANCE

- 20.01 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, other required bonds (if any), and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it must be accompanied by required bonds and insurance documentation.

ARTICLE 21—SIGNING OF AGREEMENT

- 21.01 When Owner issues a Notice of Award to the Successful Bidder, it will be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within fifteen (15) days thereafter, Successful Bidder must 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 (10) days thereafter, Owner will 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 22—SALES AND USE TAXES

22.01 The contractor shall prepare and provide to the Owner a sales tax report with all of the Contractor's invoices.

ARTICLE 23—CONTRACTS TO BE ASSIGNED

23.01 No separate contracts for equipment or material procurement will be executed by the Owner. All materials and equipment not specifically mentioned as furnished by Owner shall be furnished by the Contractor awarded the Work.

ARTICLE 24—RETAINAGE

24.01 Provisions concerning Contractor's rights to deposit securities in lieu of retainage are set forth in the Agreement.

ARTICLE 25—PARTNERING

25.01 Owner does not intend to participate in a partnering process with Contractor(s).

ARTICLE 26—EQUAL OPPORTUNITY EMPLOYMENT

26.01 The Contractor's employment practices shall be in accordance with North Carolina G.S. 168, and the North Carolina Civil Rights Act of 1964.

26.02 Greenville Utilities Commission has adopted an Affirmative Action and Minority and Women Business Enterprise Plan (M/WBE) Program. Firms submitting a proposal are attesting that they also have taken affirmative action to ensure equality of opportunity in all aspects of employment, and to utilize M/WBE suppliers of materials and/or labor. Greenville Utilities Commission's (Owner's) policy requires its contractors to document that sufficient good faith efforts have been made to provide equal opportunity for Minority and Women's Business Enterprises (M/WBE) to participate in the subcontracting and material supplier opportunities available under this contract.

26.03 The Contractor shall review the requirements and guidelines, and complete the Affidavits set forth in the Special Instructions to Bidders included in SECTION D. The Special Instructions to Bidders must be completed and submitted with the Contractor's Proposal.

Section C-1

Special Instructions to Bidders

Special Instructions to Bidders

City of Greenville/Greenville Utilities Commission Minority and/or Women Business Enterprise (M/WBE) Program

GUC Construction Guidelines and Affidavits \$100,000 and above

These instructions shall be included with each bid solicitation.

City of Greenville/Greenville Utilities Commission Minority and/or Women Business Enterprise Program \$100,000 and Construction Guidelines for M/WBE Participants

Policy Statement

It is the policy of the City of Greenville and Greenville Utilities Commission to provide minorities and women equal opportunity for participating in all aspects of the City's and Utilities' contracting and procurement programs, including but not limited to, construction projects, supplies and materials purchases, and professional and personal service contracts.

Goals and Good Faith Efforts

Bidders responding to this solicitation shall comply with the M/WBE program by making Good Faith Efforts to achieve the following aspiration goals for participation.

	GUC	
	MBE	WBE
Construction This goal includes Construction Manager at Risk.	7%	4%

Bidders shall submit M/WBE information with their bids on the forms provided. This information will be subject to verification by GUC prior to contract award. **As of July 1, 2009, contractors, subcontractors, suppliers, service providers, or M/WBE members of joint ventures intended to satisfy GUC M/WBE goals shall be certified by the NC Office of Historically Underutilized Businesses (NC HUB) only.** Firms qualifying as "WBE" for GUC's goals must be designated as a "women-owned business" by the HUB Office. Firms qualifying as "MBE" for the GUC's goals must be certified in one of the other categories (i.e.: Black, Hispanic, Asian American, American Indian, Disabled, or Socially and Economically Disadvantaged). Those firms who are certified as both a "WBE" and "MBE" may only satisfy the "MBE" requirement. A complete database of NC HUB certified firms may be found at <http://www.doa.nc.gov/hub/>. An internal database of firms who have expressed interest to do business with the City and GUC is available at www.greenvillencmwbe.org. However, the HUB status of these firms must be verified by the HUB database. GUC shall accept NCDOT certified firms on federally funded projects only. Please note: A contractor may utilize any firm desired. However, for participation purposes, all M/WBE vendors who wish to do business as a minority or a female must be certified by NC HUB.

The Bidder shall make good faith efforts to encourage participation of M/WBEs prior to submission of bids in order to be considered as a responsive bidder. Bidders are cautioned that even though their submittal indicates they will meet the M/WBE goal, they should document their good faith efforts and be prepared to submit this information, if requested.

The M/WBE's listed by the Contractor on the **Identification of Minority/Women Business Participation** which are determined by the GUC to be certified shall perform the work and supply the materials for which they are listed unless the Contractors receive prior authorization from the GUC to perform the work with other forces or to obtain materials from other sources. If a contractor is proposing to perform all elements of the work with his own forces, he must be prepared to document evidence satisfactory to the owner of similar government contracts where he has self-performed.

The Contractor shall enter into and supply copies of fully executed subcontracts with each M/WBE or supply signed Letter(s) of Intent to the Project Manager after award of contract and prior to Notice to Proceed. Any amendments to subcontracts shall be submitted to the Project Manager prior to execution.

Instructions

The Bidder shall provide with the bid the following documentation:

Identification of Minority/Women Business Participation
(if participation is zero, please mark zero—Blank forms will be considered nonresponsive)

Affidavit A (if subcontracting)

OR

Identification of Minority/Women Business Participation
(if participation is zero, please mark zero—Blank forms will be considered nonresponsive)

Affidavit B (if self-performing; must attest that bidder does not customarily subcontract work on this type of project—includes supplies and materials)

Within 72 hours or 3 business days after notification of being the apparent low bidder who is subcontracting anything must provide the following information:

Affidavit C (if aspirational goals are met or are exceeded)

OR

Affidavit D (if aspirational goals are not met)

After award of contract and prior to issuance of notice to proceed:

Letter(s) of Intent or Executed Contracts

****With each pay request, the prime contractors will submit the Proof of Payment Certification, listing payments made to M/WBE subcontractors.**

*****If a change is needed in M/WBE Participation, submit a Request to Change M/WBE Participation Form. Good Faith Efforts to substitute with another M/WBE contractor must be demonstrated.**

Minimum Compliance Requirements:

All written statements, affidavits, or intentions made by the Bidder shall become a part of the agreement between the Contractor and the GUC for performance of contracts. Failure to comply with any of these statements, affidavits or intentions or with the minority business guidelines shall constitute a breach of the contract. A finding by the GUC that any information submitted (either prior to award of the contract or during the performance of the contract) is inaccurate, false, or incomplete, shall also constitute a breach of the contract. Any such breach may result in termination of the contract in accordance with the termination provisions contained in the contract. It shall be solely at the option of the GUC whether to terminate the contract for breach or not. In determining whether a contractor has made Good Faith Efforts, the GUC will evaluate all efforts made by the Contractor and will determine compliance in regard to quantity, intensity, and results of these efforts.

Greenville Utilities Commission **AFFIDAVIT A** – Listing of Good Faith Efforts

County of _____

(Name of Bidder)

Affidavit of _____

I have made a good faith effort to comply under the following areas checked:

Bidders must earn at least 50 points from the good faith efforts listed for their bid to be considered responsive. (1 NC Administrative Code 30 I.0101)

- 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.

The undersigned, if apparent low bidder, will enter into a formal agreement with the firms listed in the Identification of Minority/Women Business Participation schedule conditional upon scope of contract to be executed with the Owner. Substitution of contractors must be in accordance with GS143-128.2(d) Failure to abide by this statutory provision will constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of the minority/women business commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

Greenville Utilities Commission --AFFIDAVIT B-- Intent to Perform Contract with Own Workforce.

County of _____

Affidavit of _____
(Name of Bidder)

I hereby certify that it is our intent to perform 100% of the work required for the _____ contract.
(Name of Project)

In making this certification, the Bidder states that the Bidder does not customarily subcontract elements of this type project, and normally performs and has the capability to perform and will perform all elements of the work on this project with his/her own current work forces; and

The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement.

The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 20__

Notary Public _____

My commission expires _____

Greenville Utilities Commission - AFFIDAVIT C - Portion of the Work to be Performed by M/WBE Firms

County of _____

(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the portion of the work to be executed by M/WBE businesses as defined in GS143-128.2(g) and the COG/GUC M/WBE Plan sec. III is equal to or greater than 11% of the bidders total contract price, then the bidder must complete this affidavit. This affidavit shall be provided by the apparent lowest responsible, responsive bidder within **72 hours** after notification of being low bidder.

Affidavit of _____ I do hereby certify that on the _____
(Name of Bidder)

Project ID# _____ (Project Name) Amount of Bid \$ _____

I will expend a minimum of _____% of the total dollar amount of the contract with minority business enterprises and a minimum of _____% of the total dollar amount of the contract with women business enterprises. Minority/women businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. Attach additional sheets if required

Name and Phone Number	*M/WBE Category	Work description	Dollar Value

*Minority categories: Black, African American (B), Hispanic or Latino (L), Asian American (A) American Indian (I), Female (F) Socially and Economically Disadvantaged (S) Disabled (D)

Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with M/WBE Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____
Subscribed and sworn to before me this _____ day of _____ 20____
Notary Public _____
My commission expires _____

Greenville Utilities Commission **AFFIDAVIT D – Good Faith Efforts**

County of _____

(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the goal of 11% participation by minority/women business **is not** achieved, the Bidder shall provide the following documentation to the Owner of his good faith efforts:

Affidavit of _____ I do hereby certify
that on the _____

(Name of Bidder)

Project ID# _____ (Project Name) _____
Amount of Bid \$ _____

I will expend a minimum of _____% of the total dollar amount of the contract with minority business enterprises and a minimum of _____% of the total dollar amount of the contract with women business enterprises. Minority/women businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. (Attach additional sheets if required)

Name and Phone Number	*M/WBE Category	Work description	Dollar Value

*Minority categories: Black, African American (**B**), Hispanic or Latino (**L**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**S**) Disabled (**D**)

Examples of documentation required to demonstrate the Bidder's good faith efforts to meet the goals set forth in these provisions include, but are not necessarily limited to, the following:

- A. Copies of solicitations for quotes to at least three (3) minority business firms from the source list provided by the State for each subcontract to be let under this contract (if 3 or more firms are shown on the source list). Each solicitation shall contain a specific description of the work to be subcontracted, location where bid documents can be reviewed, representative of the Prime Bidder to contact, and location, date and time when quotes must be received.
- B. Copies of quotes or responses received from each firm responding to the solicitation.
- C. A telephone log of follow-up calls to each firm sent a solicitation.
- D. For subcontracts where a minority business firm is not considered the lowest responsible sub-bidder, copies of quotes received from all firms submitting quotes for that particular subcontract.
- E. Documentation of any contacts or correspondence to minority business, community, or contractor organizations in an attempt to meet the goal.
- F. Copy of pre-bid roster.
- G. Letter documenting efforts to provide assistance in obtaining required bonding or insurance for minority business.
- H. Letter detailing reasons for rejection of minority business due to lack of qualification.
- I. Letter documenting proposed assistance offered to minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letter of credit, including waiving credit that is ordinarily required.

Failure to provide the documentation as listed in these provisions may result in rejection of the bid and award to the next lowest responsible and responsive bidder.

Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with M/WBE Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

LETTER OF INTENT M/WBE Subcontractor Performance

Please submit this form or executed subcontracts with M/WBE firms after award of contract and prior to issuance of notice to proceed.

PROJECT: _____
(Project Name)

TO: _____
(Name of Prime Bidder/Architect)

The undersigned intends to perform work in connection with the above project as a:

____ Minority Business Enterprise ____ Women Business Enterprise

The M/WBE status of the undersigned is certified the NC Office of Historically Underutilized Businesses (required). ____ Yes ____ No

The undersigned is prepared to perform the following described work or provide materials or services in connection with the above project at the following dollar amount:

Work/Materials/Service Provided	Dollar Amount of Contract	Projected Start Date	Projected End Date

(Date)

(Address)

(Name & Phone No. of M/WBE Firm)

(Name & Title of Authorized Representative of M/WBE)

(Signature of Authorized Representative of M/WBE)

REQUEST TO CHANGE M/WBE PARTICIPATION

(Submit changes only if notified as apparent lowest bidder, continuing through project completion)

Project: _____

Bidder or Prime Contractor: _____

Name & Title of Authorized Representative: _____

Address: _____ **Phone #:** _____

_____ **Email Address:** _____

Total Contract Amount (including approved change orders or amendments): \$ _____

Name of subcontractor: _____

Good or service provided: _____

Proposed Action:

Replace subcontractor

Perform work with own forces

For the above actions, you must provide one of the following reasons (Please check applicable reason):

The listed MBE/WBE, after having had a reasonable opportunity to do so, fails or refuses to execute a written contract.

The listed MBE/WBE is bankrupt or insolvent.

The listed MBE/WBE fails or refuses to perform his/her subcontract or furnish the listed materials.

The work performed by the listed subcontractor is unsatisfactory according to industry standards and is not in accordance with the plans and specifications; or the subcontractor is substantially delaying or disrupting the progress of the work.

If replacing subcontractor:

Name of replacement subcontractor: _____

The M/WBE status of the contractor is certified by the NC Office of Historically Underutilized Businesses (required). Yes No

Dollar amount of original contract \$ _____

Dollar amount of amended contract \$ _____

Other Proposed Action:

Increase total dollar amount of work

Add additional subcontractor

Decrease total dollar amount of work

Other

Please describe reason for requested action: _____

If adding additional subcontractor:*

The M/WBE status of the contractor is certified by the NC Office of Historically Underutilized Businesses (required). Yes No

**Please attach Letter of Intent or executed contract document*

Dollar amount of original contract \$ _____

Dollar amount of amended contract \$ _____

Interoffice Use Only:

Approval Y N

Date _____

Signature _____

Pay Application No. _____
 Purchase Order No. _____

Proof of Payment Certification

M/WBE Contractors, Suppliers, Service Providers

Project Name: _____

Prime Contractor: _____

Current Contract Amount (including change orders): \$ _____

Requested Payment Amount for this Period: \$ _____

Is this the final payment? ___ Yes ___ No

Firm Name	M/WBE Category*	Total Amount Paid from this Pay Request	Total Contract Amount (including changes)	Total Amount Remaining

*Minority categories: Black, African American (B), Hispanic or Latino (L), Asian American (A) American Indian (I), Female (F) Socially and Economically Disadvantaged (S) Disabled (D)

Date: _____ Certified By: _____
Name

Title

Signature

Section D

Bid Form

BID FORM FOR CONSTRUCTION CONTRACT

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 1—OWNER AND BIDDER

1.01 This Bid is submitted to:

In Person Submission:

Dillon E. Wade, P.E.

Greenville Utilities Commission

3355 NC Hwy 43 North

Greenville, North Carolina 27834

Mail In Submission:

Dillon E. Wade, P.E.

Greenville Utilities Commission

701 Utility Way

Greenville, North Carolina 27834

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—ATTACHMENTS TO THIS BID

2.01 The following documents are submitted with and made a condition of this Bid:

- A. Required Bid security;
- B. List of Proposed Subcontractors;
- C. List of Proposed Suppliers;
- D. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such authority within the time for acceptance of Bids;
- E. Contractor's license number as evidence of Bidder's State Contractor's License or a covenant by Bidder to obtain said license within the time for acceptance of Bids; and
- F. Required Bidder Qualification Statement with supporting data.

3.01 *Unit Price Bids*

A. Bidder will perform the following Work at the indicated unit prices:

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Amount
3001	Mobilization	LS	1	\$	\$
3002	Demobilization	LS	1	\$	\$
3003	Install, Maintain & Remove Silt Fence	LF	10,700	\$	\$
3004	Furnish, Install & Remove Stone Check Dam	EA	10	\$	\$
3005	Restoration of LOD to Preconstruction Conditions (seeded, mulched, tacked, restore trees, cleaned, graded, stabilized)	ACRE	11.91	\$	\$
3006	Traffic Control – Provide, Install, Maintain & Remove	LS	1	\$	\$
3007	Furnish, Install & Remove One (1) #57 Stone Construction Entrance	EA	6	\$	\$
3008	Sawcut & Remove Existing Asphalt Driveway	SF	44	\$	\$
3009	Furnish & Install New Asphalt Driveway	SF	44	\$	\$
4000	Complete Survey Staking for the initial and refreshing as needed for the duration of construction	LS	1	\$	\$
4001	Fully Completed and Successful Horizontal Directional Drill	LF	3105	\$	\$
4002	Fully Completed and Successful Jack and Bore with casing vents	EA	2	\$	\$
4003	Install 8" Grade PE 2708 MDPE, SDR 11, W.T. 0.784 IN, ASTM D2513 by Conventional Trenching	LF	10,816	\$	\$
4004	Install one (1) 8" TDW Hot tap with Bypass	EA	1	\$	\$
4005	Cut, Cap & Abandon-in-Place Existing Pipeline at Tie-In Locations per Plans	LS	1	\$	\$
4006	Install Main Line Valve Assemblies	EA	8	\$	\$
4007	Install Locate Station	EA	11	\$	\$
5001	Pressure and Leak Testing	LS	1	\$	\$
5002	Pigging, Purging, and Gassing Up	LS	1	\$	\$
5003	Tie over of Existing Services and Mains as shown on plans	LS	1	\$	\$
Total of All Unit Price Bid Items					\$

- B. 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 Work will be based on actual quantities, determined as provided in the Contract Documents.

3.02 *Total Bid Price (Lump Sum and Unit Prices)*

Total Bid Price (Total of all Lump Sum and Unit Price Bids)	\$
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ARTICLE 4—TIME OF COMPLETION

- 4.01 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.
- 4.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 5—BIDDER’S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA

- 5.01 *Bid Acceptance Period*
 - A. This Bid will remain subject to acceptance for sixty (60) days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

- 5.02 *Instructions to Bidders*
 - A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security.

- 5.03 *Receipt of Addenda*
 - A. Bidder hereby acknowledges receipt of the following Addenda: [Add rows as needed. Bidder is to complete table.]

Addendum Number	Addendum Date

ARTICLE 6—BIDDER’S REPRESENTATIONS AND CERTIFICATIONS

- 6.01 *Bidder’s Representations*
 - A. In submitting this Bid, Bidder represents the following:
 - 1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.

2. Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
4. Bidder has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
5. Bidder has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
6. 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 the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, if selected as Contractor; and (c) Bidder's (Contractor's) safety precautions and programs.
7. Based on the information and observations referred to in the preceding paragraph, Bidder 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.
8. 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.
9. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
10. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
11. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

6.02 *Bidder's Certifications*

A. The Bidder certifies the following:

1. 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.

2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.
3. Bidder has not solicited or induced any individual or entity to refrain from bidding.
4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 8.02.A:
 - a. 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.
 - b. 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.
 - c. 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.
 - d. 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.

Bidder:

(typed or printed name of organization)

By:

(individual's signature)

Name:

(typed or printed)

Title:

(typed or printed)

Date:

(typed or printed)

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

Attest:

(individual's signature)

Name:

(typed or printed)

Title:

(typed or printed)

Date:

(typed or printed)

Address for giving notices:

Bidder's Contact:

Name:

(typed or printed)

Title:

(typed or printed)

Phone:

Email:

Address:

Bidder's Contractor License No.: (if applicable) _____

E-VERIFY LETTER OF COMPLIANCE

1. I have submitted a proposal for contract or desire to enter into a contract with the Greenville Utilities Commission;
2. As part of my duties and responsibilities pursuant to said proposal and/or contract, I affirm that I am aware of and in compliance with the requirements of E-Verify, Article 2 of Chapter 64 of the North Carolina General Statutes, to include (mark which applies):

3. ____ After hiring an employee to work in the United States I verify the work authorization of said employee through E-Verify and retain the record of the verification of work authorization while the employee is employed and for one year thereafter; or
4. ____ I employ less than twenty-five (25) employees in the State of North Carolina.

5. As part of my duties and responsibilities pursuant to said proposal and/or contract, I affirm that to the best of my knowledge and subcontractors employed as a part of this proposal and/or contract, are in compliance with the requirements of E-Verify, Article 2 of Chapter 64 of the North Carolina General Statutes, to include (mark which applies):

6. ____ After hiring an employee to work in the United States the subcontractor verifies the work authorization of said employee through E-Verify and retains the record of the verification of work authorization while the employee is employed and for one year thereafter; or

7. ____ Employ less than twenty-five (25) employees in the State of North Carolina.
Specify subcontractor: _____

_____ (Company Name)

By: _____ (Typed Name)

_____ (Authorized Signatory)

_____ (Title)

_____ (Date)

Section E

Bid Bond

BID BOND (PENAL SUM FORM)

Bidder Name: [Full formal name of Bidder] Address (<i>principal place of business</i>): [Address of Bidder's principal place of business]	Surety Name: [Full formal name of Surety] Address (<i>principal place of business</i>): [Address of Surety's principal place of business]
Owner Name: Greenville Utilities Commission Address: 401 South Greene Street Greenville, North Carolina 27834-1977	Bid Project (<i>name and location</i>): GCP-10124 – NC 11 North Natural Gas Main Extension, Pitt County, North Carolina Bid Due Date: 05/28/2024
Bond Penal Sum: [Amount] Date of Bond: [Date]	
Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth in this Bid Bond, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.	
Bidder _____ (<i>Full formal name of Bidder</i>)	Surety _____ (<i>Full formal name of Surety</i>) (<i>corporate seal</i>)
By: _____ (<i>Signature</i>)	By: _____ (<i>Signature</i>) (<i>Attach Power of Attorney</i>)
Name: _____ (<i>Printed or typed</i>)	Name: _____ (<i>Printed or typed</i>)
Title: _____	Title: _____
Attest: _____ (<i>Signature</i>)	Attest: _____ (<i>Signature</i>)
Name: _____ (<i>Printed or typed</i>)	Name: _____ (<i>Printed or typed</i>)
Title: _____	Title: _____
Notes: (1) Addresses are to be used for giving any required notice. (2) 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 will be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder occurs 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 will 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 thirty (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 does not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action will be commenced under this Bond prior to thirty (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 (1) year after the Bid due date.
7. Any suit or action under this Bond will be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder must 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 Postal Service registered or certified mail, return receipt requested, postage pre-paid, and will 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 will 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 governs and the remainder of this Bond that is not in conflict therewith continues in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

Section F

Qualifications Statement

ARTICLE 1—GENERAL INFORMATION

1.01 Provide contact information for the Business:

Legal Name of Business:			
Corporate Office			
Name:		Phone number:	
Title:		Email address:	
Business address of corporate office:			
Local Office			
Name:		Phone number:	
Title:		Email address:	
Business address of local office:			

1.02 Provide information on the Business’s organizational structure:

Form of Business:	<input type="checkbox"/> Sole Proprietorship <input type="checkbox"/> Partnership <input type="checkbox"/> Corporation		
<input type="checkbox"/> Limited Liability Company <input type="checkbox"/> Joint Venture comprised of the following companies:			
1.			
2.			
3.			
Provide a separate Qualification Statement for each Joint Venturer.			
Date Business was formed:		State in which Business was formed:	
Is this Business authorized to operate in the Project location?		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Pending	

1.03 Identify all businesses that own Business in whole or in part (25% or greater), or that are wholly or partly (25% or greater) owned by Business:

Name of business:		Affiliation:	
Address:			
Name of business:		Affiliation:	
Address:			
Name of business:		Affiliation:	
Address:			

1.04 Provide information regarding the Business’s officers, partners, and limits of authority.

Name:		Title:	
Authorized to sign contracts:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Limit of Authority:	\$
Name:		Title:	
Authorized to sign contracts:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Limit of Authority:	\$
Name:		Title:	
Authorized to sign contracts:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Limit of Authority:	\$
Name:		Title:	

ARTICLE 2—LICENSING

2.01 Provide information regarding licensure for Business:

Name of License:			
Licensing Agency:			
License No:		Expiration Date:	
Name of License:			
Licensing Agency:			
License No:		Expiration Date:	

ARTICLE 3—DIVERSE BUSINESS CERTIFICATIONS

3.01 Provide information regarding Business’s Diverse Business Certification, if any. Provide evidence of current certification.

Certification	Certifying Agency	Certification Date
<input type="checkbox"/> Disadvantaged Business Enterprise		
<input type="checkbox"/> Minority Business Enterprise		
<input type="checkbox"/> Woman-Owned Business Enterprise		
<input type="checkbox"/> Small Business Enterprise		
<input type="checkbox"/> Disabled Business Enterprise		
<input type="checkbox"/> Veteran-Owned Business Enterprise		
<input type="checkbox"/> Service-Disabled Veteran-Owned Business		
<input type="checkbox"/> HUBZone Business (Historically Underutilized) Business		
<input type="checkbox"/> Other		
<input type="checkbox"/> None		

ARTICLE 4—SAFETY

4.01 Provide information regarding Business’s safety organization and safety performance.

Name of Business’s Safety Officer:		
Safety Certifications		
Certification Name	Issuing Agency	Expiration

4.02 Provide Worker’s Compensation Insurance Experience Modification Rate (EMR), Total Recordable Frequency Rate (TRFR) for incidents, and Total Number of Recorded Manhours (MH) for the last 3 years and the EMR, TRFR, and MH history for the last 3 years of any proposed Subcontractor(s) that will provide Work valued at 10% or more of the Contract Price. Provide documentation of the EMR history for Business and Subcontractor(s).

Year									
Company	EMR	TRFR	MH	EMR	TRFR	MH	EMR	TRFR	MH

ARTICLE 5—FINANCIAL

5.01 Provide information regarding the Business’s financial stability. Provide the most recent audited financial statement, and if such audited financial statement is not current, also provide the most current financial statement.

Financial Institution:		
Business address:		
Date of Business’s most recent financial statement:		<input type="checkbox"/> Attached
Date of Business’s most recent audited financial statement:		<input type="checkbox"/> Attached
Financial indicators from the most recent financial statement		
Contractor’s Current Ratio (Current Assets ÷ Current Liabilities)		
Contractor’s Quick Ratio ((Cash and Cash Equivalents + Accounts Receivable + Short Term Investments) ÷ Current Liabilities)		

ARTICLE 6—SURETY INFORMATION

6.01 Provide information regarding the surety company that will issue required bonds on behalf of the Business, including but not limited to performance and payment bonds.

Surety Name:			
Surety is a corporation organized and existing under the laws of the state of:			
Is surety authorized to provide surety bonds in the Project location?	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Is surety listed in “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” published in Department Circular 570 (as amended) by the Bureau of the Fiscal Service, U.S. Department of the Treasury? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Mailing Address (principal place of business):			
Physical Address (principal place of business):			
Phone (main):		Phone (claims):	

ARTICLE 7—INSURANCE

7.01 Provide information regarding Business’s insurance company(s), including but not limited to its Commercial General Liability carrier. Provide information for each provider.

Name of insurance provider, and type of policy (CLE, auto, etc.):			
Insurance Provider		Type of Policy (Coverage Provided)	
Are providers licensed or authorized to issue policies in the Project location?		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Does provider have an A.M. Best Rating of A-VII or better?		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Mailing Address (principal place of business):			
Physical Address (principal place of business):			
Phone (main):		Phone (claims):	

ARTICLE 8— CONSTRUCTION EXPERIENCE

8.01 Provide information that will identify the overall size and capacity of the Business.

Average number of current full-time employees:	
Estimate of revenue for the current year:	
Estimate of revenue for the previous year:	

8.02 Provide information regarding the Business’s previous contracting experience.

Years of experience with projects like the proposed project:		
As a general contractor:		As a joint venturer:
Has Business, or a predecessor in interest, or an affiliate identified in Paragraph 1.03:		
Been disqualified as a bidder by any local, state, or federal agency within the last 5 years? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Been barred from contracting by any local, state, or federal agency within the last 5 years? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Been released from a bid in the past 5 years? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Defaulted on a project or failed to complete any contract awarded to it? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Refused to construct or refused to provide materials defined in the contract documents or in a change order? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Been a party to any currently pending litigation or arbitration? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Provide full details in a separate attachment if the response to any of these questions is Yes.		

8.03 List all projects currently under contract in Schedule A and provide indicated information.

8.04 List a minimum of three and a maximum of six projects completed in the last 5 years in Schedule B and provide indicated information to demonstrate the Business’s experience with projects similar in type and cost of construction.

8.05 In Schedule C, provide information on key individuals whom Business intends to assign to the Project. Provide resumes for those individuals included in Schedule C. Key individuals include the Project Manager, Project Superintendent, Quality Manager, and Safety Manager. Resumes may be provided for Business’s key leaders as well.

ARTICLE 9— REQUIRED ATTACHMENTS

9.01 Provide the following information with the Statement of Qualifications:

- A. If Business is a Joint Venture, separate Qualifications Statements for each Joint Venturer, as required in Paragraph 1.02.
- B. Diverse Business Certifications if required by Paragraph 3.01.
- C. Certification of Business’s safety performance if required by Paragraph 4.02.
- D. Financial statements as required by Paragraph 5.01.

- E. Attachments providing additional information as required by Paragraph 8.02.
- F. Schedule A (Current Projects) as required by Paragraph 8.03.
- G. Schedule B (Previous Experience with Similar Projects) as required by Paragraph 8.04.
- H. Schedule C (Key Individuals) and resumes for the key individuals listed, as required by Paragraph 8.05.
- I. Additional items as pertinent.

This Statement of Qualifications is offered by:

Business: _____
(typed or printed name of organization)

By: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Date: _____
(date signed)

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

Attest: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Address for giving notices:

Designated Representative:

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Address: _____

Phone: _____

Email: _____

Schedule A—Current Projects

Name of Organization					
Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Schedule B—Previous Experience with Similar Projects

Name of Organization					
Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Schedule B—Previous Experience with Similar Projects

Name of Organization					
Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Schedule C—Key Individuals

Project Manager			
Name of individual			
Years of experience as project manager			
Years of experience with this organization			
Number of similar projects as project manager			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	
Project Superintendent			
Name of individual			
Years of experience as project superintendent			
Years of experience with this organization			
Number of similar projects as project superintendent			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	

Safety Manager			
Name of individual			
Years of experience as project manager			
Years of experience with this organization			
Number of similar projects as project manager			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	
Quality Control Manager			
Name of individual			
Years of experience as project superintendent			
Years of experience with this organization			
Number of similar projects as project superintendent			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	

Section G

Notice of Award

NOTICE OF AWARD

Date of Issuance:

Owner: Greenville Utilities Commission Owner's Project No.: GCP-10124

Engineer: Kimley-Horn and Associates Engineer's Project No.: 116780001

Project: NC 11 North Natural Gas Main Extension

Contract Name: GCP10124 – NC 11 North Natural Gas Main Extension

Bidder:

Bidder's Address:

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:

GCP-10124 - NC 11 North Natural Gas Main Extension

The Contract Price of the awarded Contract is \$_____ (Subject to unit prices). Contract Price is subject to adjustment based on the provisions of the Contract, including but not limited to those governing changes, Unit Price Work, and Work performed on a cost-plus-fee basis, as applicable.

Two (2) 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.

Drawings will be delivered separately from the other Contract Documents.

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

1. Deliver to Owner Two (2) counterparts of the Agreement, signed by Bidder (as Contractor).
2. Deliver with the signed Agreement(s) the Contract security (such as required performance and payment bonds) and insurance documentation, as specified in the Instructions to Bidders and in the General Conditions, Articles 2 and 6.

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

Owner: Greenville Utilities Commission

By (signature): _____

Name (printed): _____

Title:

Copy: Engineer

Section H

Agreement

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

This Agreement is by and between Greenville Utilities Commission ("Owner") and _____ ("Contractor").

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

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: GCP-10124 - NC 11 NORTH NATURAL GAS MAIN EXTENSION

ARTICLE 2—THE PROJECT

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

- A. Construct, test, purge, and gas-up of the RTE 11 Distribution Main Extension. The proposed 8-inch ASTM D2513 & ASTM D2683, 0.784" min. wall thickness, 8.625" o.d., SDR 11, PE 2406/2708, 40 LF sticks, MARKED DOT SECT. 192.63, natural gas main is approximately 2.8 miles in length. The route of the proposed will run along NC 11 North from the intersection of MLK Jr. Hwy to Staton Mill Road. The proposed 8" natural gas main will extend along NC 903 N and Staton Mill Rd (SR1514). The 8" natural gas main along NC 903 North will terminate east of the CSX Railroad right-of-way. The 8" natural gas main along SR1514 Staton Mill Road will parallel Station Mill Road and terminate east of the CSX Railroad right-of-way. Construction will be within the public right of way. As designed, there is ten (10) horizontal directional drills (HDD), two (2) conventional jack and bore with casing, and the remainder of the construction is designed to be performed by a conventional open trench method. The new gas main is to be tested to 90 psig for a maximum allowable operating pressure (MAOP) of 60 psig. The Greenville Utilities Commission intends to operate the main at 60 psig.

ARTICLE 3—ENGINEER

3.01 The owner has retained Kimley-Horn and Associates ("Engineer") to act as Owner's representative, assume all duties and responsibilities of Engineer, and have the rights and authority assigned to Engineer in the Contract.

3.02 The part of the project that pertains to the Work has been designed by Kimley-Horn and Associates.

ARTICLE 4—CONTRACT TIMES

4.01 *Time is 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 complete 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 120 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 Contract Times, as duly modified. 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 \$1000 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for Substantial Completion, until the Work is substantially complete.
 2. Liquidated damages for failing to timely attain Milestones, Substantial Completion, and final completion are not additive, and will not be imposed concurrently.
- B. If Owner recovers liquidated damages for a delay in completion by Contractor, then such liquidated damages are Owner's sole and exclusive remedy for such delay, and Owner is precluded from recovering any other damages, whether actual, direct, excess, or consequential, for such delay, except for special damages (if any) specified in this Agreement.

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. For all Unit Price Work, an amount equal to the sum of the extended prices (established for each separately identified item of Unit Price Work by multiplying the unit price times the actual quantity of that item).
- B. The extended prices for Unit Price Work set forth as of the Effective Date of the Contract are based on estimated quantities. As provided in Paragraph 13.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer.

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 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 the value of the Work completed (with the balance being retainage). If 50 percent or more of the Work has been 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, Owner shall pay the remainder of the Contract Price in accordance with Paragraph 15.06 of the General Conditions.

6.04 *CONSENT OF SURETY*

- A. Owner will not make final payment, or return or release retainage at Substantial Completion or any other time, unless Contractor submits written consent of the surety to such payment, return, or release.

ARTICLE 7—INTEREST

7.01 All amounts not paid when due will bear interest at the rate of maximum legal rate of percent.

ARTICLE 8—CONTRACT DOCUMENTS

8.01 *Contents*

- A. The Contract Documents consist of all of the following:
1. This Agreement.
 2. Bonds:
 - a. Performance bond (together with power of attorney).
 - b. Payment bond (together with power of attorney).
 3. General Conditions.
 4. Supplementary Conditions.
 5. Specifications as listed in the table of contents of the project manual (copy of list attached).
 6. Drawings (not attached but incorporated by reference) consisting of 27 sheets with each sheet bearing the following general title: Gas Distribution System Improvements Route 11 N Natural Gas Extension
 7. Drawings listed on the attached sheet index.
 8. Addenda (numbers ____ to _____, inclusive).
 9. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid
 10. 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.
 - d. Field Orders.
 - e. Warranty Bond, if any.
- B. The Contract Documents listed in Paragraph 7.01.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 7.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the Contract.

ARTICLE 9—REPRESENTATIONS, CERTIFICATIONS, AND STIPULATIONS

9.01 *Contractor's Representations*

- A. In order to induce Owner to enter into this Contract, Contractor makes the following representations:
1. Contractor has examined and carefully studied the Contract Documents, including Addenda.
 2. Contractor has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 3. Contractor is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
 4. Contractor has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
 5. Contractor has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
 6. 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 Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (c) Contractor's safety precautions and programs.
 7. 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.
 8. 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.
 9. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
 10. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

11. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

9.02 *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 8.02:
 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.

9.03 *Standard General Conditions*

- A. Owner stipulates that if the General Conditions that are made a part of this Contract are EJCDC® C-700, Standard General Conditions for the Construction Contract (2018), published by the Engineers Joint Contract Documents Committee, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or "track changes" (redline/strikeout), or in the Supplementary Conditions.

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:

(typed or printed name of organization)

(typed or printed name of organization)

By: _____
(individual's signature)

By: _____
(individual's signature)

Date: _____
(date signed)

Date: _____
(date signed)

Name: _____
(typed or printed)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Title: _____
(typed or printed)

(If [Type of Entity] is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____
(individual's signature)

Attest: _____
(individual's signature)

Title: _____
(typed or printed)

Title: _____
(typed or printed)

Address for giving notices:

Address for giving notices:

Designated Representative:

Designated Representative:

Name: _____
(typed or printed)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Title: _____
(typed or printed)

Address:

Address:

Phone: _____

Phone: _____

Email: _____

Email: _____

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

License No.: _____
(where applicable)

State: _____

Section J

Performance Bond

PERFORMANCE BOND

Contractor Name: [Full formal name of Contractor] Address (<i>principal place of business</i>): [Address of Contractor's principal place of business]	Surety Name: [Full formal name of Surety] Address (<i>principal place of business</i>): [Address of Surety's principal place of business]
Owner Name: Greenville Utilities Commission Mailing address (<i>principal place of business</i>): 401 South Greene Street Greenville, North Carolina 27834-1977	Contract Description (<i>name and location</i>): GCP10124 – NC 11 North Natural Gas Main Extension, Pitt County, North Carolina Contract Price: [Amount from Contract] Effective Date of Contract: [Date from Contract]
Bond Bond Amount: [Amount] Date of Bond: [Date] (<i>Date of Bond cannot be earlier than Effective Date of Contract</i>) Modifications to this Bond form: <input type="checkbox"/> None <input type="checkbox"/> See Paragraph 16	
Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Performance Bond, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.	
Contractor as Principal	Surety
_____ (<i>Full formal name of Contractor</i>)	_____ (<i>Full formal name of Surety</i>) (<i>corporate seal</i>)
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature) (Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
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 is 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 will 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 may 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 will 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 does 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 does 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 will not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety will 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 will not be reduced or set off on account of any such unrelated obligations. No right of action will 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 must be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and must 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 will be applicable.
- 12. Notice to the Surety, the Owner, or the Contractor must 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 will be deemed deleted therefrom and provisions conforming to such

statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will 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 will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
16. Modifications to this Bond are as follows: None

Section K

Payment Bond

PAYMENT BOND

<p>Contractor</p> <p>Name: [Full formal name of Contractor]</p> <p>Address (<i>principal place of business</i>): [Address of Contractor's principal place of business]</p>	<p>Surety</p> <p>Name: [Full formal name of Surety]</p> <p>Address (<i>principal place of business</i>): [Address of Surety's principal place of business]</p>
<p>Owner</p> <p>Name: Greenville Utilities Commission</p> <p>Mailing address (<i>principal place of business</i>): 401 South Greene Street Greenville, North Carolina 27834-1977</p>	<p>Contract</p> <p>Description (<i>name and location</i>): GCP10124 - NC 11 North Natural Gas Main Extension, Pitt County, North Carolina</p> <p>Contract Price: [Amount, from Contract]</p> <p>Effective Date of Contract: [Date, from Contract]</p>
<p>Bond</p> <p>Bond Amount: [Amount]</p> <p>Date of Bond: [Date]</p> <p><i>(Date of Bond cannot be earlier than Effective Date of Contract)</i></p> <p>Modifications to this Bond form: <input type="checkbox"/> None <input type="checkbox"/> See Paragraph 18</p>	
<p>Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Payment Bond, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.</p>	
Contractor as Principal	Surety
<i>(Full formal name of Contractor)</i>	<i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature) (Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<p><i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i></p>	

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 will 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 will 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 will 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 will 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 will 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 will 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 satisfying 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 will 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 will be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, will 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 will be deemed deleted here from and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will 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:
 - 16.1.1. The name of the Claimant;
 - 16.1.2. The name of the person for whom the labor was done, or materials or equipment furnished;
 - 16.1.3. 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;
 - 16.1.4. A brief description of the labor, materials, or equipment furnished;

- 16.1.5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
 - 16.1.6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
 - 16.1.7. The total amount of previous payments received by the Claimant; and
 - 16.1.8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.
- 16.2. *Claimant*—An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic’s lien or similar statute against the real property upon which the Project is located. The intent of this Bond is to include without limitation in the terms of “labor, materials, or equipment” that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor’s subcontractors, and all other items for which a mechanic’s lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
- 16.3. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
- 16.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
- 16.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.
17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
18. Modifications to this Bond are as follows: None

Section L

Contractor's Application for Payment

Contractor's Application for Payment

Owner: <u>Greenville Utilities Commission</u>	Owner's Project No.: <u>GCP-10124</u>
Engineer: <u>Kimley-Horn and Associates</u>	Engineer's Project No.: <u>116780001</u>
Contractor: _____	Contractor's Project No.: _____
Project: <u>NC 11 North Natural Gas Main Extension</u>	
Contract: _____	
Application No.: _____	Application Date: _____
Application Period: From _____	to _____

1. Original Contract Price	\$	-
2. Net change by Change Orders	\$	-
3. Current Contract Price (Line 1 + Line 2)	\$	-
4. Total Work completed and materials stored to date (Sum of Column G Lump Sum Total and Column J Unit Price Total)	\$	-
5. Retainage		
a. _____ X \$ _____ Work Completed	\$	-
b. _____ X \$ _____ Stored Materials	\$	-
c. Total Retainage (Line 5.a + Line 5.b)	\$	-
6. Amount eligible to date (Line 4 - Line 5.c)	\$	-
7. Less previous payments (Line 6 from prior application)		
8. Amount due this application	\$	-
9. Balance to finish, including retainage (Line 3 - Line 4)	\$	-

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

Contractor: _____
 Signature: _____ Date: _____

<p>Recommended by Engineer</p> <p>By: _____</p> <p>Title: _____</p> <p>Date: _____</p> <p>Approved by Funding Agency</p> <p>By: _____</p> <p>Title: _____</p> <p>Date: _____</p>	<p>Approved by Owner</p> <p>By: _____</p> <p>Title: _____</p> <p>Date: _____</p> <p>By: _____</p> <p>Title: _____</p> <p>Date: _____</p>
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Progress Estimate - Lump Sum Work

Contractor's Application for Payment

Owner:	<u>Greenville Utilities Commission</u>	Owner's Project No.:	<u>GCP-10124</u>
Engineer:	<u>Kimley-Horn and Associates</u>	Engineer's Project No.:	<u>116780001</u>
Contractor:	<u></u>	Contractor's Project No.:	<u></u>
Project:	<u>NC 11 North Natural Gas Main Extension</u>		
Contract:	<u></u>		

Application No.: _____ Application Period: From _____ to _____ Application Date: _____

A	B	C	D E		F	G	H	I
Item No.	Description	Scheduled Value (\$)	Work Completed		Materials Currently Stored (not in D or E) (\$)	Work Completed and Materials Stored to Date (D + E + F) (\$)	% of Scheduled Value (G / C) (%)	Balance to Finish (C - G) (\$)
			(D + E) From Previous Application (\$)	This Period (\$)				
Original Contract								
			-			-		-
						-		-
						-		-
						-		-
						-		-
						-		-
						-		-
						-		-
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						-		-
						-		-
						-		-
						-		-
						-		-
						-		-
						-		-
						-		-
Original Contract Totals		\$ -	\$ -	\$ -	\$ -	\$ -		\$ -

Progress Estimate - Lump Sum Work

Contractor's Application for Payment

Owner:	Greenville Utilities Commission	Owner's Project No.:	GCP-10124
Engineer:	Kimley-Horn and Associates	Engineer's Project No.:	116780001
Contractor:		Contractor's Project No.:	
Project:	NC 11 North Natural Gas Main Extension		
Contract:			

Application No.: _____ Application Period: From _____ to _____ Application Date: _____

A	B	C	D E		F	G	H	I
Item No.	Description	Scheduled Value (\$)	Work Completed		Materials Currently Stored (not in D or E) (\$)	Work Completed and Materials Stored to Date (D + E + F) (\$)	% of Scheduled Value (G / C) (%)	Balance to Finish (C - G) (\$)
			(D + E) From Previous Application (\$)	This Period (\$)				
Change Orders								
						-		-
						-		-
						-		-
						-		-
						-		-
						-		-
						-		-
						-		-
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						-		-
						-		-
						-		-
						-		-
	Change Order Totals	\$ -	\$ -	\$ -	\$ -	\$ -		\$ -
Original Contract and Change Orders								
	Project Totals	\$ -	\$ -	\$ -	\$ -	\$ -		\$ -

Progress Estimate - Unit Price Work

Contractor's Application for Payment

Owner:	Greenville Utilities Commission	Owner's Project No.:	GCP-10124
Engineer:	Kimley-Horn and Associates	Engineer's Project No.:	116780001
Contractor:		Contractor's Project No.:	
Project:	NC 11 North Natural Gas Main Extension		
Contract:			

Application No.: _____ Application Period: From _____ to _____ Application Date: _____

A	B	C	D	E	F	G	H	I	J	K	L	
Bid Item No.	Description	Contract Information				Work Completed		Materials Currently Stored (not in G) (\$)	Work Completed and Materials Stored to Date (H + I) (\$)	% of Value of Item (J / F) (%)	Balance to Finish (F - J) (\$)	
		Item Quantity	Units	Unit Price (\$)	Value of Bid Item (C X E) (\$)	Estimated Quantity Incorporated in the Work	Value of Work Completed to Date (E X G) (\$)					
Original Contract												
					-		-		-		-	
					-		-		-		-	
					-		-		-		-	
					-		-		-		-	
					-		-		-		-	
					-		-		-		-	
					-		-		-		-	
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					-		-		-		-	
					-		-		-		-	
					-		-		-		-	
					-		-		-		-	
					-		-		-		-	
					-		-		-		-	
					-		-		-		-	
					-		-		-		-	
Original Contract Totals					\$	-	\$	-	\$	-	\$	-

Progress Estimate - Unit Price Work

Contractor's Application for Payment

Owner:	Greenville Utilities Commission	Owner's Project No.:	GCP-10124
Engineer:	Kimley-Horn and Associates	Engineer's Project No.:	116780001
Contractor:		Contractor's Project No.:	
Project:	NC 11 North Natural Gas Main Extension		
Contract:			

Application No.: _____ Application Period: From _____ to _____ Application Date: _____

A	B	C	D	E	F	G	H	I	J	K	L	
Bid Item No.	Description	Contract Information				Work Completed		Materials Currently Stored (not in G) (\$)	Work Completed and Materials Stored to Date (H + I) (\$)	% of Value of Item (J / F) (%)	Balance to Finish (F - J) (\$)	
		Item Quantity	Units	Unit Price (\$)	Value of Bid Item (C X E) (\$)	Estimated Quantity Incorporated in the Work	Value of Work Completed to Date (E X G) (\$)					
Change Orders												
					-		-		-		-	
					-		-		-		-	
					-		-		-		-	
					-		-		-		-	
					-		-		-		-	
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					-		-		-		-	
					-		-		-		-	
					-		-		-		-	
					-		-		-		-	
Change Order Totals					\$	-	\$	-	\$	-	\$	-
Original Contract and Change Orders												
Project Totals					\$	-	\$	-	\$	-	\$	-

Stored Materials Summary

Contractor's Application for Payment

Owner:	Greenville Utilities Commission	Owner's Project No.:	GCP-10124
Engineer:	Kimley-Horn and Associates	Engineer's Project No.:	116780001
Contractor:		Contractor's Project No.:	
Project:	NC 11 North Natural Gas Main Extension		
Contract:			

Application No.: _____ Application Period: From _____ to _____ Application Date: _____

A	B	C	D	E	F	Materials Stored			Incorporated in Work			M	
Item No. (Lump Sum Tab) or Bid Item No. (Unit Price Tab)	Supplier Invoice No.	Submittal No. (with Specification Section No.)	Description of Materials or Equipment Stored	Storage Location	Application No. When Materials Placed in Storage	Previous Amount Stored (\$)	Amount Stored this Period (\$)	Amount Stored to Date (G+H) (\$)	Amount Previously Incorporated in the Work (\$)	Amount Incorporated in the Work this Period (\$)	Total Amount Incorporated in the Work (J+K) (\$)	Materials Remaining in Storage (I-L) (\$)	
									-			-	
									-			-	
									-			-	
									-			-	
									-			-	
									-			-	
									-			-	
									-			-	
									-			-	
									-			-	
									-			-	
									-			-	
									-			-	
									-			-	
									-			-	
									-			-	
									-			-	
									-			-	
									-			-	
Totals						\$	-	\$	-	\$	-	\$	-

Section M

Certificate of Substantial Completion

CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner:	Greenville Utilities Commission	Owner's Project No.:	GCP-10124
Engineer:	Kimley-Horn and Associates	Engineer's Project No.:	116780001
Contractor:		Contractor's Project No.:	
Project:	NC 11 North Natural Gas Main Extension		
Contract Name:	GCP10124 - NC 11 North Natural Gas Main Extension		

This Preliminary Final Certificate of Substantial Completion applies to:
 All Work The following specified portions of the Work:

Date of Substantial Completion: _____

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

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

Amendments of contractual responsibilities recorded in this Certificate should be the product of mutual agreement of Owner and Contractor; see Paragraph 15.03.D of the General Conditions.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance, and warranties upon Owner's use or occupancy of the Work must be as provided in the Contract, except as amended as follows:

Amendments to Owner's Responsibilities: None
 As follows:

Amendments to Contractor's Responsibilities: None
 As follows:

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

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.

Engineer

By *(signature)*: _____

Name *(printed)*: _____

Title: _____

Section N

General Conditions

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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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 one (1) fully signed counterpart of the Agreement and one (1) 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.

Section O

Supplemental Conditions

SUPPLEMENTARY CONDITIONS

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

SC-1.01 Defined Terms

- A. Add to the list of definitions in Paragraph 1.01.A by inserting the following as numbered items in their proper alphabetical positions:

Geotechnical Data Report (GDR) — The factual report that collects and presents data regarding actual subsurface conditions at or adjacent to the Site, including Technical Data and other geotechnical data, prepared by or for Owner in support of the Geotechnical Baseline Report. The GDR's content may include logs of borings, trenches, and other site investigations, recorded measurements of subsurface water levels, the results of field and laboratory testing, and descriptions of the investigative and testing programs. The GDR does not include an interpretation of the data. If opinions, or interpretive or speculative non-factual comments or statements appear in a document that is labeled a GDR, such opinions, comments, or statements are not operative parts of the GDR and do not have contractual standing. Subject to that exception, the GDR is a Contract Document.

Operator Qualifications (OQ) – Each operator of a natural gas system must prepare a written Operator Qualification Plan in accordance with the criteria set forth in Title 49, CFR Part 192, Subpart N. The Greenville Utilities Commission Gas Department (Owner) requires contractors that perform covered tasks on its system that are identified in the Gas Department's Operator Qualification Plan to provide their own Operator Qualification Plan and qualification records of individuals that will perform covered tasks on the Work included under this Contract. The Owner will review the Contractor's OQ plan for compliance with the requirements of §192.805, and review the Contractor's OQ records for compliance with §192.807.

ARTICLE 2—PRELIMINARY MATTERS

SC-NONE

ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

SC-NONE

ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

SC-NONE

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

SC-5.01 Availability of Lands

- A. Add as Paragraph 5.01.D by inserting the following:

Owner's rights to install the NC 11 North Natural Gas Main Extension provided through Grants of Easement from the property owners and encroachment agreements with jurisdictional authorities.

Owner shall furnish the site for the pipeline to the Contractor along with such conditions and requirements for carrying out the Work on the site. The Contractor shall honor all conditions imposed on the Owner for use of site.

SC-5.03 Subsurface and Physical Conditions

- B. Delete Paragraphs 5.03 of the General Conditions in its entirety and replace with the following provisions:**

SC/GBR-5.03 Subsurface and Physical Conditions

C. Geotechnical Data Report:

1. This Contract contains a Geotechnical Data Report (GDR), identified as follows: *“Report of Subsurface Investigation and Geotechnical Engineering Services, GUC – RTE 11 Extensions, Geotechnical Investigation Report. Greenville, North Carolina, Terracon Project No. 72235062”*, Sept 11, 2023 prepared by Terracon Inc., Winterville, North Carolina.
2. The GDR is incorporated as a Contract Document. The GDR is to be used in conjunction with other Contract Documents, including the Drawings and Specifications.
3. The GDR describes certain select subsurface conditions that are anticipated to be encountered by Contractor during construction in specified locations. These may include ground, geological, groundwater, and other subsurface geotechnical conditions.
4. The GDR conditions shall be used to assist in the administration of the Contract’s differing site conditions clause at locations where subsurface conditions were determined in the GDR.
5. The GDR conditions shall not be used to make differing site conditions determinations at locations that have not been evaluated in the GDR.
6. The descriptions of subsurface conditions provided in the GDR are based on geotechnical investigations, laboratory tests, interpretation, interpolation, extrapolation, and analyses. Neither Owner, Engineer, nor any geotechnical or other consultant warrants or guarantees that actual subsurface conditions will be as described in the GDR, nor is the GDR intended to warrant or guarantee the use of specific means or methods of construction.
7. The behavior of the ground during construction depends substantially upon the Contractor’s selected means, methods, techniques, sequences, and procedures of construction.
8. The GBR shall not reduce or relieve Contractor of its responsibility for the planning, selection, and implementation of safety precautions and programs incident to Contractor’s means, methods, techniques, sequences, and procedures of construction, or to the Work.

SC-5.04 Differing Subsurface and Physical Conditions

- A. Delete Paragraphs 5.04 of the General Conditions in its entirety and replace with the following provisions:**

SC/GBR-5.04 Differing Subsurface or Physical Conditions

- A. Notice: If Contractor believes that any subsurface condition that is uncovered or revealed at the Site:**

1. differs materially from conditions shown or indicated in the GDR, to the extent the GDR is inapplicable; or
2. differs materially from conditions shown or indicated in Contract Documents other than the GDR, to the extent the GDR are inapplicable; or
3. to the extent the GDR are inapplicable, 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; or
4. to the extent the GDR is inapplicable, is of such a nature as to require a change in the Drawings or Specifications; or
5. to the extent the GDR is inapplicable, 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 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 the necessity of Owner's obtaining 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 SC/GBR 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption or continuation 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 or continuation 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. Possible Price and Times Adjustments:

1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, 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 SC/GBR 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 of the General Conditions; and,
 - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
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; or
 - 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 as required by Paragraph SC/GBR 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, or both, then any such adjustment shall 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, or both, 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.

SC-5.06 Hazardous Environmental Conditions

A. SC 5.06 Delete Paragraphs 5.06.A and 5.06.B in their entirety and insert the following:

- A. No reports or drawings related to Hazardous Environmental Conditions at the Site are known to Owner.
- B. Not Used.

ARTICLE 6—BONDS AND INSURANCE

SC-6.02 Insurance—General Provisions

A. SC-6.02 Add the following paragraph immediately after Paragraph 6.02.B:

1. Contractor may obtain worker's compensation insurance from an insurance company that has not been rated by A.M. Best, provided that such company (a) is domiciled in the state in which the Project is located, (b) is certified or authorized as a worker's compensation insurance provider by the appropriate state agency, and (c) has been accepted to provide worker's compensation insurance for similar projects by the state within the last 12 months.

SC-6.03 Contractor's Liability Insurance

A. **This is a mandatory Supplementary Condition**, because it is the location for specifying the limits of the coverages for the insurance required in Paragraph 6.03 of the General Conditions.

SC 6.03 Add the following new paragraph immediately after Paragraph 6.03.J:

K. **The limits of liability for the insurance required by Paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:**

1. **Workers’ Compensation, and related coverages under Paragraphs 6.03.A.1 and A.2 of the General Conditions:**

State:	<u>Statutory</u>
Federal, if applicable (e.g., Longshoreman’s):	<u>Statutory</u>
Employer’s Liability:	
Bodily injury, each accident	\$ <u>1,000,000</u>
Bodily injury by disease, each employee	\$ <u>1,000,000</u>
Bodily injury/disease aggregate	\$ <u>1,000,000</u>

2. **Contractor’s Commercial General Liability under Paragraphs 6.03.B and 6.03.C of the General Conditions:**

General Aggregate	\$ <u>1,000,000</u>
Products – Completed Operations Aggregate	\$ <u>1,000,000</u>
Personal and Advertising Injury	\$ <u>1,000,000</u>
Each Occurrence (Bodily Injury and Property Damage)	\$ <u>1,000,000</u>

3. **Automobile Liability under Paragraph 6.03.D. of the General Conditions:**

Bodily Injury:	
Each person	\$ <u>1,000,000</u>
Each accident	\$ <u>1,000,000</u>
Property Damage:	
Each accident	\$ <u>1,000,000</u>
[or]	
Combined Single Limit of	\$ <u>1,000,000</u>

4. **Excess or Umbrella Liability:**

Per Occurrence	\$ <u>1,000,000</u>
General Aggregate	\$ <u>1,000,000</u>

5. **Additional Insureds: In addition to Owner and Engineer, include as additional insureds the following: None**

SC-6.05 Property Insurance

A. **Builder’s Risk Deductible: *Not applicable.***

- B. Builder’s Risk – Supplemental Insureds: *Not applicable.*
- C. Builder’s Risk – Supplemental Requirements: *Not applicable.*

ARTICLE 7—CONTRACTOR’S RESPONSIBILITIES

SC-7.02 Labor; Working Hours

Paragraph 7.02.B of the General Conditions restricts Contractor to working during “regular hours” Monday through Friday, and no work is permitted on “legal holidays.”

A. SC-7.02.B. Add the following new subparagraphs immediately after Paragraph 7.02.B:

- 1. Regular working hours for work outside of the NCDOT right-of-way limits of the RTE 11 Highway will be 8:00 am to 5:00 pm.
- 2. Regular working hours for work inside of the NCDOT right-of-way limits of the RTE 11 Highway will be 9:00 am to 3:30 pm.
- 3. Owner's holidays are:
 - a. New Year’s Day – January 1, 2024
 - b. Martin Luther King’s Jr. Day – January 15, 2024
 - c. Good Friday – March 29, 2024
 - d. Memorial Day – May 31, 2024
 - e. Independence Day – July 4, 2024
 - f. Labor Day – September 2, 2024
 - g. Veteran’s Day – November 11, 2024
 - h. Thanksgiving – November 28 and 29, 2024
 - i. Christmas – December 24 and 25, 2024.

B. SC-7.02.B. Amend the first and second sentences of Paragraph 7.02.B to state “...all Work at the Site must be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday and Sunday, or any legal holiday.”

C. SC-7.02.C. Add the following new paragraph immediately after Paragraph 7.02.B:

Contractor shall be responsible for the cost of any overtime pay or other expense incurred by the Owner for Engineer’s services (including those of the Resident Project Representative, if any), Owner's representative, and construction observation services, occasioned by the performance of Work on Saturday, Sunday, any legal holiday, or as overtime on any regular work day. If Contractor is responsible but does not pay, or if the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.

D. SC-7.02.C. Add the following new subparagraph immediately after Paragraph SC-7.02.C:

- 1. For purposes of administering the foregoing requirement, additional overtime costs are defined as all time in excess of 40 hours per week or time worked on scheduled holidays or weekends that occur as a result of Contractor’s request and not the Owner’s request.

SC-7.09 Taxes

A. SC-7.09 Add a new paragraph immediately after Paragraph 7.09.A:

- A. Owner is exempt from payment of sales and compensating use taxes of the State of North Carolina and of cities and counties thereof on all materials to be incorporated into the Work.
 - 1. Owner will furnish the required certificates of tax exemption to Contractor for use in the purchase of supplies and materials to be incorporated into the Work.
 - 2. Owner's exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by Contractor, or to supplies or materials not incorporated into the Work.

ARTICLE 8—OTHER WORK AT THE SITE

SC-8.02 Coordination

- A. Paragraph 8.02 of the General Conditions requires that if in addition to retaining Contractor, Owner will arrange to have others perform work at the Site. Owner does not intend to have other's work on the Construction site unless they are Owner's crews performing routine maintenance functions.

ARTICLE 9—OWNER'S RESPONSIBILITIES

SC-9.13 Owner's Site Representative

- A. No modifications to this section of the General Conditions.

ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

SC-10.03 Project Representative

- A. **SC-10.03 Add the following new paragraphs immediately after Paragraph 10.03.A:**
 - B. The Resident Project Representative (RPR) will be Engineer's representative at the Site, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions.
 - 1. General: RPR's dealings in matters pertaining to the Work in general shall be with Engineer and Contractor. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner only with the knowledge of and under the direction of Engineer.
 - 2. Schedules: Review the progress schedule, schedule of Shop Drawing and Sample submittals, and Schedule of Values prepared by Contractor and consult with Engineer concerning acceptability.
 - 3. Conferences and Meetings: Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings, and prepare and circulate copies of minutes thereof.
 - 4. 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.
5. Interpretation of Contract Documents: Report to Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by Engineer.
6. Shop Drawings and Samples:
 - a. Record date of receipt of Samples and Contractor-approved Shop Drawings.
 - b. Receive Samples which are furnished at the Site by Contractor and notify Engineer of availability of Samples for examination.
 - c. Advise Engineer and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample submittal for which RPR believes that the submittal has not been approved by Engineer.
7. Modifications: Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report such suggestions, together with RPR's recommendations, if any, to Engineer. Transmit to Contractor in writing decisions as issued by Engineer.
8. Review of Work and Rejection of Defective Work
 - a. Conduct on-Site observations of Contractor's work in progress to assist Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.
 - b. Report to Engineer whenever RPR believes that any part of Contractor's work in progress is defective, will not produce a completed Project that conforms generally to the Contract Documents, or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise Engineer of that part of work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.
9. Inspections, Tests, and System Start-ups:
 - a. Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof.
 - b. Observe, record, and report to Engineer appropriate details relative to the test procedures and systems start-ups.
10. Records:
 - a. Prepare a daily report or keep a diary or log book, recording Contractor's hours on the Site, Subcontractors present at the Site, weather conditions, data relative to questions of Change Orders, Field Orders, Work Change Directives, or changed conditions, Site visitors, deliveries of equipment or materials, daily activities,

decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Engineer.

- b. Record names, addresses, fax numbers, e-mail addresses, web site locations, and telephone numbers of all Contractors, Subcontractors, and major Suppliers of materials and equipment.
- c. Maintain records for use in preparing Project documentation.

11. Reports:

- a. Furnish to Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the Progress Schedule and schedule of Shop Drawing and Sample submittals.
- b. Draft and recommend to Engineer proposed Change Orders, Work Change Directives, and Field Orders. Obtain backup material from Contractor.
- c. Immediately notify Engineer of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, force majeure or delay events, damage to property by fire or other causes, or the discovery of any Constituent of Concern or Hazardous Environmental Condition.

12. Payment Requests: Review applications for payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the Schedule of Values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.

13. Certificates, Operation and Maintenance Manuals: During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Contract Documents to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to Engineer for review and forwarding to Owner prior to payment for that part of the Work.

14. Completion:

- a. Participate in Engineer's visits to the Site to determine Substantial Completion, assist in the determination of Substantial Completion and the preparation of a punch list of items to be completed or corrected.
- b. Participate in Engineer's final visit to the Site to determine completion of the Work, in the company of Owner and Contractor, and prepare a final punch list of items to be completed and deficiencies to be remedied.
- c. Observe whether all items on the final list have been completed or corrected and make recommendations to Engineer concerning acceptance and issuance of the notice of acceptability of the work.

C. 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. Accept Shop Drawing or Sample submittals from anyone other than Contractor.
8. 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

SC-13.01 Cost of the Work

- A. Equipment rental charges, particularly with respect to Contractor-owned equipment, can sometimes lead to disagreements. To reduce the possibility of such disagreements, the following Supplementary Condition may be used. Note that it requires a published reference or method for determining the costs.

SC 13.01.B.5.c Delete Paragraph 13.01.B.5.c in its entirety and insert the following in its place:

- a. Construction Equipment and Machinery:
 - 1) Costs of construction equipment and machinery shall be included by the Contractor in the Unit Prices bid for the Work.

SC-13.03 Unit Price Work

- A. **SC 13.03.E Delete Paragraph 13.03.E in its entirety and insert the following in its place.**
- B. The unit price of an item of Unit Price Work shall be subject to reevaluation and adjustment under the following conditions:
 1. if the extended price of a particular item of Unit Price Work amounts to 5% percent or more over the Contract Price (based on estimated quantities at the time of Contract formation) and the variation in the quantity of that particular item of Unit Price Work actually furnished or performed by Contractor differs by more than 20% percent from the estimated quantity of such item indicated in the Agreement; and

2. if there is no corresponding adjustment with respect to any other item of Work; and
3. if Contractor believes that Contractor has incurred additional expense as a result thereof, Contractor may submit a Change Proposal, or if Owner believes that the quantity variation entitles Owner to an adjustment in the unit price, Owner may make a Claim, seeking an adjustment in the Contract Price.
 - a. Tests and Inspections; Correction, Removal, or Acceptance of Defective Work

No suggested Supplementary Conditions in this Article.

ARTICLE 14—PAYMENTS TO CONTRACTOR, SET-OFFS; COMPLETION; CORRECTION PERIOD

SC-15.03 Substantial Completion

- A.** Paragraph 15.03.A of the General Conditions requires Contractor to give notice that the Work is substantially complete; Paragraph 15.03.B requires an inspection of the Work to determine whether Engineer agrees that the Work is substantially complete. If the Work is not substantially complete, and must be inspected again at a later point, then the following Supplementary Condition, if included in the Contract, would allow Owner to recover the cost of the re-inspection.

SC-15.03.B Add the following new subparagraph to Paragraph 15.03.B:

1. If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, will be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under this Article 15.

ARTICLE 15—SUSPENSION OF WORK AND TERMINATION

No suggested Supplementary Conditions in this Article.

ARTICLE 16—FINAL RESOLUTIONS OF DISPUTES

SC-17.02 Add the following new paragraph immediately after Paragraph 17.01.

SC-17.02 Mediation/Binding Arbitration

- A.** *Mediation/Binding Arbitration:* In the event of a dispute between the Parties which the Parties are unable to resolve, the Parties shall submit their dispute to non-binding mediation before a mutually agreeable mediator prior to initiating litigation. If the Parties are unable to agree upon a mediator within thirty (30) days after failing to resolve the dispute, either Party may petition a Court of competent jurisdiction for the designation of a qualified mediator for these purposes. Each Party shall bear its own costs and expenses of participating in the mediation (including, without limitation, reasonable attorneys' fees), and each Party shall bear one-half (½) of the costs and expenses of the mediator. Unless otherwise agreed, the Parties will hold mediation in Greenville, North Carolina. The matters discussed or revealed in the mediation session shall not be revealed in any subsequent litigation.

- B. In the event the matter is not resolved in mediation, either Party may request arbitration. The Parties shall jointly select an Arbitrator, and shall be bound by the decision of the Arbitrator with respect to any dispute between the parties with respect to this Agreement. If the parties are unable to mutually agree upon an Arbitrator, the Parties shall each select an Arbitrator, and the two Arbitrators so selected shall select a third Arbitrator, and the decision of the majority of the Arbitrators shall be conclusive and binding upon the Parties. The Parties at all times agree to equally split the costs of any Arbitrator(s) selected in an effort to resolve the dispute between the Parties. Any party desiring to resolve a dispute under the terms of this Agreement shall notify the other Party in writing, and the Parties shall seek to agree upon a mutually agreed-upon Arbitrator within a period of ten (10) days from the date of such written demand. If the Parties are unable to agree within such ten (10) day period, the Parties shall each select an Arbitrator, and the two (2) Arbitrators so selected shall select a third Arbitrator within fifteen (15) days from the date of the written demand for arbitration, and a decision shall be rendered by the Arbitrator(s) so selected within five (5) days after such Arbitrator(s) is selected.
- C. Arbitration shall be conducted in accordance with the American Arbitration Association construction industry rules.

SC-17.03 Attorneys' Fees

- A. No Modifications to this Section of the General Conditions.

Section P

Work Change Directives

WORK CHANGE DIRECTIVE NO.: [Number of Work Change Directive]

Owner:	Greenville Utilities Commission	Owner's Project No.:	GCP-10124
Engineer:	Kimley-Horn and Associates	Engineer's Project No.:	116780001
Contractor:		Contractor's Project No.:	
Project:	NC 11 North Natural Gas Main Extension		
Contract Name:	GCP10124 - NC 11 North Natural Gas Main Extension		
Date Issued:		Effective Date of Work Change Directive:	

Contractor is directed to proceed promptly with the following change(s):

Description:

[Description of the change to the Work]

Attachments:

[List documents related to the change to the Work]

Purpose for the Work Change Directive:

[Describe the purpose for the change to the Work]

Directive to proceed promptly with the Work described herein, prior to agreeing to change in Contract Price and Contract Time, is issued due to:

Notes to User—Check one or both of the following

- Non-agreement on pricing of proposed change. Necessity to proceed for schedule or other reasons.

Estimated Change in Contract Price and Contract Times (non-binding, preliminary):

Contract Price:	\$ _____	[increase] [decrease] [not yet estimated].
Contract Time:	_____ days	[increase] [decrease] [not yet estimated].

Basis of estimated change in Contract Price:

- Lump Sum Unit Price Cost of the Work Other

Recommended by Engineer

Authorized by Owner

By: _____
 Title: _____
 Date: _____

Section Q

Change Orders

CHANGE ORDER NO.: [Number of Change Order]

Owner: Greenville Utilities Commission Owner's Project No.: GCP-10124
 Engineer: Kimley-Horn and Associates Engineer's Project No.: 116780001
 Contractor: Contractor's Project No.:
 Project: NC 11 North Natural Gas Main Extension
 Contract Name: GCP10124 - NC 11 North Natural Gas Main Extension
 Date Issued: Effective Date of Change Order:

The Contract is modified as follows upon execution of this Change Order:

Description:

[Description of the change]

Attachments:

[List documents related to the change]

Change in Contract Price	Change in Contract Times [State Contract Times as either a specific date or a number of days]
Original Contract Price: \$ _____	Original Contract Times: Substantial Completion: _____ Ready for final payment: _____
[Increase] [Decrease] from previously approved Change Orders No. 1 to No. [Number of previous Change Order] : \$ _____	[Increase] [Decrease] from previously approved Change Orders No.1 to No. [Number of previous Change Order] : Substantial Completion: _____ Ready for final payment: _____
Contract Price prior to this Change Order: \$ _____	Contract Times prior to this Change Order: Substantial Completion: _____ Ready for final payment: _____
[Increase] [Decrease] this Change Order: \$ _____	[Increase] [Decrease] this Change Order: Substantial Completion: _____ Ready for final payment: _____
Contract Price incorporating this Change Order: \$ _____	Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for final payment: _____

Recommended by Engineer (if required)

Accepted by Contractor

By: _____

Title: _____

Date: _____

Authorized by Owner

Approved by Funding Agency (if applicable)

By: _____

Title: _____

Date: _____

Section R

Field Orders

FIELD ORDER NO.: [Number of Field Order]

Owner: Greenville Utilities Commission Owner's Project No.: GCP-10124
Engineer: Kimley-Horn and Associates Engineer's Project No.: 116780001
Contractor: Contractor's Project No.:
Project: NC 11 North Natural Gas Main Extension
Contract Name: GCP10124 - NC 11 North Natural Gas Main Extension
Date Issued: Effective Date of Field Order:

Contractor is hereby directed to promptly perform the Work described in this Field Order, issued in accordance with Paragraph 11.04 of the General Conditions, for minor changes in the Work without changes in Contract Price or Contract Times. If Contractor considers that a change in Contract Price or Contract Times is required, submit a Change Proposal before proceeding with this Work.

Reference:

Specification Section(s):

Drawing(s) / Details (s):

Description:

[Description of the change to the Work]

Attachments:

[List documents supporting change]

Issued by Engineer

By: _____

Title: _____

Date: _____

Section S

Technical Specifications

TECHNICAL SPECIFICATIONS

FOR

NC 11 North Natural Gas Main Extension

GREENVILLE UTILITIES COMMISSION

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GREENVILLE UTILITIES COMMISSION
NATURAL GAS DEPARTMENTSPECIFICATIONS FOR
NC 11 NORTH NATURAL GAS MAIN EXTENSION**1 SECTION 1 - GENERAL****1.1 Scope of work**

The work included under this Contract shall include supplying all necessary materials not supplied by the Greenville Utilities Commission (GUC), labor and equipment to install natural gas distribution mains and all necessary appurtenances within the GUC's natural gas distribution system as specified herein and detailed on the Plans and/or as designated by the ENGINEER.

Natural gas main installations will include eight (8) inch main. The piping will be medium-density polyethylene and steel. The work involved will include installation of mains to be operated at 60 psig. All mains will be tested to at least 90 psig and no greater than 100 psig.

This Contract shall require the CONTRACTOR to work on live gas mains.

The types of work required under this Contract shall include: direct burial, directional drilling, and jack and bore installation of polyethylene and steel natural gas mains.

The GUC reserves the right to add to or delete from the work once the CONTRACTOR has mobilized. This work must be performed in the order directed by the ENGINEER. The GUC also reserves the right to extend the term of the Contract to allow for completion of any additional work added to this Contract.

Award of this Contract shall in no way restrict the GUC from using its own construction crews or from hiring additional CONTRACTORS to perform the same or similar type work.

1.2 Compliance

The CONTRACTOR shall comply with all provisions of the GUC's *Natural Gas Operations and Maintenance Plan*, dated October 18, 2023 and CFR Title 49, Part 192.

1.3 Bidder Qualifications

All bidders must be pre-qualified by the GUC prior to submission of the Bid Proposal. Contact the ENGINEER for qualification information.

1.4 **Operator Qualification (OQ)**

CONTRACTORS are required to provide a current copy of the Company's Operator Qualification (OQ) Plan for natural gas distribution work prior to award of the Contract. Copies of all employee OQ qualifications shall be provided to the ENGINEER prior to beginning the work. The OQ written plan and employee records shall be in accordance with Title 49 of the Code of Federal Regulations, Chapter I, Part 192 (49 CFR 192), Subtitle N, "Qualification of Pipeline Personnel."

The CONTRACTOR shall furnish the GUC with records of continuous employee qualification for all employees with each monthly progress payment application. Qualification documentation shall be provided for all new employees prior to performing work on the GUC's natural gas system.

The GUC may, at its discretion, accept the provisions of a CONTRACTOR's Plan. CONTRACTORS shall make available, upon request, written records of their employee's qualifications. At a minimum these records shall include:

- Identification of qualified individual(s)
- Identification of covered task(s) each individual is qualified to perform
- Date that current qualification was received
- Method of evaluation used to obtain qualification
- Name of individual or organization for each covered task
- Training program outlines and materials
- List of non-qualified individuals that will be performing tasks on behalf of the GUC while under the direction of a contract qualified individual.

1.5 **Drug and Alcohol Testing**

Any and all employees of the CONTRACTOR who will be involved with natural gas distribution construction and maintenance operations required by this contract shall be required to participate in an anti-drug/drug and alcohol testing program. This program shall be administered in accordance with Title 49 of the Code of Federal Regulations, Chapter I, Part 199 (49 CFR 199), "Drug and Alcohol Testing," and Subtitle A, Part 40, "Procedures for Transportation Workplace Drug and Alcohol Testing Programs." The program must have been in force for no less than 12 months and the CONTRACTOR must show proof of enforcement to the Owner.

The CONTRACTOR shall furnish the GUC with documentation of participation in a qualified drug-testing program. Prior to the performance of covered tasks and/or tie-in operations, a negative (no evidence of drug use) test must be documented for all employees who will be involved with these operations.

1.6 **Inspection**

The ENGINEER shall have access to the work at all times. The CONTRACTOR shall provide proper facilities for such access and for inspection. The ENGINEER shall be present for all special testing or approval of the work that is required by the Specifications, the ENGINEER's instructions, laws, ordinances, or any public authority.

The ENGINEER, in order to be present, shall be given sufficient notice prior to any required testing or approval. The CONTRACTOR shall have no claim against the GUC for time or monies when sufficient notice, as described above, is not given to the ENGINEER.

The ENGINEER may require re-examination of any of the work. If required, the CONTRACTOR shall provide all labor and equipment necessary to uncover the work. If the work is determined to be in accordance with the Specifications, the GUC will pay the costs of re-examination and replacement. If the work is not in accordance with the Specifications, the CONTRACTOR shall pay such costs.

Inspector(s) will be stationed at the work site to report to the ENGINEER as to the progress of the work, the manner in which it is being performed, and also to report whenever it appears that the materials furnished by either the GUC or the CONTRACTOR or the work performed by the CONTRACTOR fails to meet the requirements of the Plans or Specifications.

If a dispute arises between the Inspector and the CONTRACTOR as to the materials furnished or to the manner of performing the work, the Inspector shall have the authority to reject the questionable materials or suspend the work until the issue can be referred to and a decision can be made by the ENGINEER. Inspectors are not allowed to revoke, alter, enlarge, relax or release any requirements of these Specifications or to issue instructions contrary to the Contract Documents. Inspectors shall in no case act as foremen or perform duties for the CONTRACTOR or interfere with the management of the work by the CONTRACTOR.

The ENGINEER will make a final inspection of the work included in the Contract as soon as possible after notification from the CONTRACTOR that the work is substantially complete and ready for inspection. If any of the work is not acceptable at the time of the inspection, the ENGINEER will advise the CONTRACTOR, in writing, as to the particular item(s) to be completed or corrected before the work can be given final approval and final payment for the work is approved.

1.7 **Scheduling of work**

The CONTRACTOR shall typically have control of the scheduling of the proposed work, however, the GUC reserves the right to require sections of the work to be completed prior to or following other sections of the work.

The CONTRACTOR shall provide a schedule of the work to the ENGINEER, prior to beginning the work. The schedule shall include station-by-station progression, milestones (dates) for the proposed progress, crew introduction and exit information, and other relevant information deemed necessary by the ENGINEER.

1.8 **Superintendence**

The CONTRACTOR shall keep on the work at all times during its progress a competent resident Superintendent, having a minimum of three (3) years experience in the installation of natural gas distribution facilities. The Superintendent shall represent all work performed by all of the CONTRACTOR's crews and shall not function as the foreman for any individual crew when more than one crew is onsite performing work required by the Contract. The Superintendent shall not be replaced without written notice to the ENGINEER except under extraordinary circumstances, as determined by the ENGINEER. The Superintendent will be the CONTRACTOR's representative at the site and shall have authority to act on behalf of the CONTRACTOR. All communications to or from the Superintendent shall be binding as if given to or received from the CONTRACTOR.

1.9 **CONTRACTOR Crew Requirements**

The CONTRACTOR shall provide a sufficient number of crews to efficiently complete the work required by the Contract within the Contract Period. For the purpose of this Contract, the term crew shall be defined as a collective group of CONTRACTOR personnel consisting of a foreman and other necessary personnel knowledgeable and able to perform a specific task or tasks. The CONTRACTOR shall provide a minimum of one mainline crew for this project. The CONTRACTOR shall provide the ENGINEER with five (5) working days notice prior to introducing new crews to the Project. The GUC reserves the right to limit the number of crews or request additional crews to complete the work associated with this Project.

1.10 **Implied work**

All incidental work required through the Plans and/or the Specifications, or as otherwise directed by the ENGINEER, for which no payment is specifically provided, and any and all work or materials not specified herein which may fairly be implied as included in the Contract and necessary to complete the work, and which the GUC shall judge to be so included, shall be executed and/or furnished by the CONTRACTOR without extra compensation.

1.11 **Required work Not Covered by a Unit Cost**

For any required work that is not covered by a specific unit cost in the Bid Proposal, a price must be submitted to and approved by the ENGINEER prior to performing the work. Any work performed without prior, written approval from the ENGINEER will be performed at the sole expense of the CONTRACTOR.

End of Section 1

2 **SECTION 2 - GENERAL CONSTRUCTION MATERIALS**

The CONTRACTOR shall supply and pay for all labor and materials necessary for the completion of the work specified herein and on the Plans, except as otherwise expressly provided for in the Contract Documents. Unless otherwise specified, all materials shall be new.

2.1 **Stone - Riprap**

Stone for riprap shall be sound, durable, and free from seams, cracks, and other structural defects. Riprap and bedding shall be crushed stone, conforming to the requirements of NCDOT *Standard Specifications for Road and Structures*, latest edition.

2.2 **Crushed Aggregate Base Course (CABC)**

Crushed aggregate used for maintaining traffic, and repairing and constructing private access pavements shall be crushed from stone, slag or gravel and shall contain all of the sizes produced when the original aggregate is reduced through a series of crushers to the maximum size specified. It shall be free of all deleterious substances in accordance with the NCDOT *Standard Specifications for Road and Structures*, latest edition.

2.3 **Select Fill**

Material used for bedding or backfill material purposes shall consist of approved materials; typically clean topsoil or other borrow material capable of achieving necessary compaction required for protection of the pipe and pipe and trench stabilization, as approved by the ENGINEER.

2.4 **Sand**

Sand shall be naturally occurring sand or manufactured stone sand. Natural sand shall consist of grains of hard, sound material, predominantly quartz, occurring in natural deposits. Manufactured sand shall consist of sound crushed particles of minimum NCDOT Grade B stone, essentially free from flat or elongated pieces, with sharp edges and corners removed. All sand shall be clean and free from foreign matter such as loam, dirt, sticks, roots, leaves, silt, vegetable matter and oil or dyestuffs.

2.5 **Concrete**

Concrete shall be Class B (3000 psi minimum) for sidewalks, driveways, and curb and gutters and shall conform to the requirements of NCDOT *Standard Specifications for Road and Structures*, latest edition Sections 825, 846 and 848.

End of Section 2

3 **SECTION 3 - GENERAL CONSTRUCTION REQUIREMENTS**

3.1 **Standards**

The work covered by these Specifications consists of, and includes, the performance of all operations and the furnishing of all labor, equipment, supplies and other facilities and incidental materials, as required, necessary for the construction of natural gas distribution mains and other facilities complete. The work shall be complete, tested, accepted and connected to the existing gas distribution systems.

All work on the natural gas distribution system shall be performed in accordance with: Title 49 of the Code of Federal Regulations, Chapter I, Part 192 (49 CFR 192), "Transportation of Natural and other Gas by Pipeline: Minimum Federal Safety Standards," as amended; the GUC's *Operation and Maintenance Plan*, as amended; and any other applicable standards which are hereby incorporated into these Specifications by reference.

General construction operations applicable to natural gas facilities installation shall be performed in accordance with: Title 29 of the Code of Federal Regulations, Chapter I (29 CFR 1926), *Occupational Safety and Health Standards for the Construction Industry*; and any other applicable standards which are hereby incorporated into these Specifications by reference.

3.2 **Mobilization**

The CONTRACTOR shall furnish all equipment, materials and labor necessary for the performance of construction preparatory operations, including but not limited to: the movement of personnel, material and equipment to and from the project site; the establishment of the CONTRACTOR's offices and storage and equipment areas; the establishment of all markings, signs, traffic detours and controls; and all other facilities necessary to perform the work as specified herein.

Measurement and Payment

The cost of mobilization will be covered by a specific contract unit price. The Contractor may bill 50% of the amount with the first invoice and 50% on the second invoice. The cost of any and all bonds, licenses, equipment, materials, labor, etc., required for startup or mobilization operations shall be included in the unit price bid.

3.3 **Demobilization**

The CONTRACTOR shall furnish all equipment, materials and labor necessary for the performance of construction preparatory operations, including but not limited to: the movement of personnel, material and equipment to and from the project site; the establishment of the CONTRACTOR's offices and storage and equipment areas; the establishment of all markings, signs, traffic detours and controls; and all other facilities necessary to perform the work as specified herein.

Measurement and Payment

The cost of demobilization will be covered by a specific contract unit price. The cost of any and all bonds, licenses, equipment, materials, labor, etc., required for startup or mobilization operations shall be included in the unit price bid.

3.4 **Equipment, Tools, Labor and Materials**

3.4.1 Equipment, Tools, Labor and Materials To Be Furnished By OWNER

The GUC shall supply no equipment, tools, or labor necessary for the completion of the work as specified herein.

The GUC shall supply the CONTRACTOR with all pipe, tees, elbows, reducers, valves, valve boxes and tracer wire as listed in the Bill of Materials on the construction drawings. Material furnished by the GUC will be available to the CONTRACTOR at the GUC's storage facilities located at the Warehouse, 701 Utility Way, Greenville, North Carolina. The CONTRACTOR shall requisition materials on the form provided by the GUC and shall account for or return all materials so requisitioned. No separate payment will be made to the CONTRACTOR for time, labor and equipment necessary for the CONTRACTOR to receive and haul materials from the GUC's storage facilities to the work site(s); such costs are to be included in and absorbed by the unit prices bid in the CONTRACTOR's proposal.

3.4.2 Equipment, Tools, Labor and Materials To Be Furnished By CONTRACTOR

The CONTRACTOR shall supply and pay for all labor and materials necessary for the completion of the work specified herein. The CONTRACTOR shall supply any and all materials incidental to the installation of the gas pipe not supplied by the GUC as described in 3.4.1 Equipment, Tools, Labor and Materials To Be Furnished by OWNER, including but not limited to: select fill, sand and gravel; concrete; asphalt; testing equipment and fittings; erosion and sediment control materials; and protective rock shields. Unless otherwise specified, all materials shall be new.

The CONTRACTOR shall provide and pay for all equipment, tools and labor necessary for the proper completion of the work specified herein, including but not limited to: excavation and trenching equipment; pipe cutting, welding and fusing equipment and supplies; pipeline testing equipment; traffic control devices; and any and all applicable safety equipment which may be required.

Workmanship, tools, equipment and materials shall be of good quality meeting established industry standards. The CONTRACTOR shall, as required by the ENGINEER, furnish satisfactory evidence as to the kind and quality of materials that the CONTRACTOR provides.

Only equipment that will not damage the surfacing along any improved roadways shall be used. When crossing improved roadways with equipment that will damage it, wood boards, flat pads or other approved methods shall be used to prevent damage to the roadway. The CONTRACTOR shall repair any and all resulting damage at no cost to the GUC.

The CONTRACTOR shall, as required by the ENGINEER, furnish a complete list of equipment that will be employed on the job from the commencement of the work and until the ENGINEER accepts the job.

3.5 **Inspection By The Engineer**

Prior to installation of the gas distribution facilities, the ENGINEER shall inspect all pipe, fittings, valves, and other appurtenances in accordance with all provisions specified herein as well as all applicable manufacturers' standards and specifications. The CONTRACTOR shall remove from the work all materials which do not meet the provisions specified herein, as well as any and all manufacturer's standards and specifications, and replace such with acceptable materials.

The CONTRACTOR shall produce evidence, as required by the ENGINEER, that any and all items of the work have been installed in accordance with the project Plans and Specifications. The ENGINEER will conduct field inspections and witness field tests as specified herein.

3.6 **Submittals**

All submittals shall be identified as required by the ENGINEER, and shall be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and any and all other data which may be required by the ENGINEER to show that the materials and equipment the CONTRACTOR proposes to provide and use are in accordance with required Specifications.

3.6.1 **As-Built Documents**

The GUC and its inspector(s) will collect as-built information for this project. The CONTRACTOR shall allow the GUC access to the work during the installations and prior to backfill operations such that the necessary data collection can be completed.

No claims for time extensions or monetary considerations will be allowed by the GUC for the work required by the as-built data collection.

3.7 **Right-of-Way and Easements**

The CONTRACTOR shall confine construction operations to the immediate vicinity of the project location as shown on the Plans and in no case shall the CONTRACTOR encroach

beyond the limits of the City of Greenville or of the NCDOT rights-of-way. The CONTRACTOR shall further use due care in placing construction tools, equipment, excavated materials, and pipeline facility materials and supplies so as to cause the least possible damage to property and the least interference with traffic. The placing of such tools, equipment, and materials shall be subject to the approval of the ENGINEER. Any damage resulting from the placement of equipment and materials or construction operation occurring outside of the City of Greenville or NCDOT rights-of-way or designated work areas shall be the sole responsibility of the CONTRACTOR. The CONTRACTOR shall make satisfactory settlement for any damage directly with the property owner involved.

The CONTRACTOR shall conduct the construction in such a manner to cause the least inconvenience to the citizens of the area, thereby maintaining good public relations. The CONTRACTOR shall not unnecessarily interfere with the use of any public or private improvements, including landscaping; nor unnecessarily damage such improvements. The CONTRACTOR shall repair any damage to such improvements to pre-construction condition, or as otherwise directed by the ENGINEER.

3.7.1 Protection of Existing Property Irons and Monuments

The CONTRACTOR shall use care in protecting existing property irons and monuments adjacent to his working area. If a property iron or monument must be removed to install new facilities, the CONTRACTOR shall be responsible for locating the iron or monument in such a manner that a surveyor, registered by the North Carolina Board of Examiners for Professional Engineers and Surveyors, can accurately replace the iron or monument after construction of the new facilities. If a property iron or monument is destroyed because of neglect on the part of the CONTRACTOR, a surveyor registered by the North Carolina Board of Examiners for Professional Engineers and Surveyors shall immediately replace it at the CONTRACTOR's expense.

3.8 Cooperation Among CONTRACTORS

The CONTRACTOR shall not hinder the work being performed by other contractors within the limits of or adjacent to this Project. The CONTRACTOR shall cooperate with other contractors, utilities or entities working in the Project area or adjacent to the Project area. The ENGINEER shall provide assistance, when necessary, to assure that the Project is completed in a manner which is in the best interest of the GUC.

When contracts are awarded to or contracts are active by separate contractors for concurrent construction in or adjacent to the work area, the CONTRACTOR shall update the Project Schedule and submit this schedule to the ENGINEER for review. For separate contracts awarded by other entities, the ENGINEER shall review and compare the contractor schedules with the appropriate department(s). If necessary, revisions to the schedule will be provided to the CONTRACTOR. The CONTRACTOR shall be allowed to

requests modifications to the revised schedule which will not conflict with or hinder the work scheduled to be performed by others.

The CONTRACTOR shall assume all liability, financial or otherwise, in connection with the Contract and shall protect and save harmless the GUC from any and all damages and claims that may arise because of any inconvenience, delay, or loss he experiences as a result of the presence and operations of other contractors working in or near the work. The CONTRACTOR shall also assume all responsibility for any of the work not completed due to the presence or operation of other contractors.

Except for an extension of the Contract Length, the GUC will not be responsible for any inconvenience, delay, or loss experienced by the CONTRACTOR as a result of his failure to gain access to the work at the time contemplated. When the failure to gain access is not due to any fault or negligence of the CONTRACTOR, an extension of the Contract Length may be allowed on the basis of the amount of time delayed.

The GUC will not assume any responsibility for acts, failures, or omissions that delay the work, except as provided herein.

If the CONTRACTOR or any of their subcontractors or employees cause loss or damage to any other contractor, and if such other contractor makes a claim against the GUC, its employees or agents, due to any loss so sustained the GUC shall notify the CONTRACTOR, who shall defend, indemnify and save harmless the GUC, its employees and agents against any such claim, expense or judgment arising there from.

Upon the written request of the CONTRACTOR, the ENGINEER may relieve the CONTRACTOR of the requirement of maintaining and protecting certain portions of the work which have been completed in all respects in accordance with the requirements of the Specifications and other Contract Documents and to the satisfaction of the ENGINEER and of which the GUC has taken occupancy or use of, and thereafter except with the ENGINEER's consent, the CONTRACTOR will not be required to do further work thereon. In addition, such action by the ENGINEER will relieve the CONTRACTOR of responsibility for injury or damage to said completed portions of the work resulting from work performed by other contractors, utilities or entities. However, nothing in this section will be construed as relieving the CONTRACTOR of full responsibility for repairing, removing and replacing defective work or materials found at any time before the completion and acceptance of all work by the ENGINEER or within the Guarantee Period for the work.

3.9 **Maintenance of Traffic**

The CONTRACTOR shall be required to provide maintenance of traffic within the construction area for the duration of the construction period, including during any temporary suspension of work. Maintenance of traffic shall be performed conforming to the current edition of the "Manual on Uniform Traffic Control Devices" (MUTCD).

When requested by the ENGINEER, the CONTRACTOR shall provide a detailed Traffic Maintenance Plan for portions of the work prior to beginning work to be performed under this Contract. The submitted traffic plan shall be reviewed by the ENGINEER for completeness and compliance with the requirements of the City of Greenville and NCDOT. If revisions are required for the plan(s), the CONTRACTOR shall be provided with the revised plan or be required to submit a revised plan. The CONTRACTOR must have an approved traffic maintenance plan prior to commencing the work for the section(s) covered by the plan.

Where it becomes necessary to close roadways or sections of roadways, the amount of roadway closure shall be generally limited to the immediate work area and shall be in accordance with the above manual and specifications. In the event that an entire roadway or section of roadway is required to be closed, the CONTRACTOR will be required to notify and receive authorization from the ENGINEER prior to closing the road and upon reopening the road.

All materials, equipment and labor used for traffic control measures shall meet the requirements of the NCDOT. Traffic control measures shall be made available to the ENGINEER for inspection prior to commencement of the work.

Measurement and Payment

Maintenance of traffic will be covered by a specific contract unit price. The cost of any and all equipment and labor required for maintenance of traffic, as specified herein, shall be included in the unit prices bid..

3.9.1 Traffic Cones, Barrels, Barricades and Signs

The CONTRACTOR shall furnish, install and maintain sufficient traffic cones, barrels, barricades and signs to perform the work in accordance with the NCDOT requirements for traffic control. The traffic cones, barrels, barricades and signs shall be in accordance with the specifications provided for in the "Manual on Uniform Traffic Control Devices".

3.9.2 Flagging Operations

The CONTRACTOR shall furnish sufficient personnel and equipment to perform flagging operations as required by the work. The personnel shall be certified by the NCDOT to perform flagging operation. The equipment shall meet the guidelines and specifications of NCDOT and the MUTCD.

3.9.3 Maintenance of Ingress and Egress

The CONTRACTOR shall strive to maintain, at all times during the execution of the work, continuous ingress and egress to all affected properties and traveled ways. When ingress and egress to affected parcels must be blocked, due to the direct execution of the work, twenty-four (24) hours advance notice must be given to the affected property owner by the CONTRACTOR. In no case shall the blocking of ingress and egress be allowed for more than twenty-four (24) hours consecutively.

3.10 **Pavement Removal and Disposal**

The CONTRACTOR shall not cut any NCDOT maintained pavement unless a permit for cutting pavement at the specific location has been obtained from the North Carolina Department of Transportation. The CONTRACTOR shall be responsible for working with the ENGINEER to obtain the necessary permit.

Removal of pavement includes cutting of the pavement, breaking of the pavement surface and excavating the pavement using conventional trenching, hand and pneumatic equipment. Pavement removal includes removal of all layers of bituminous asphalt and concrete pavement necessary to properly install the pipe and/or appurtenances. Removal of pavement shall be limited to twenty-four (24) inches of width for mainline installations. The removal of pavement for test holes shall be in accordance with 3.14.2 Test Hole Excavations.

Maximum cutting dimensions for trenches and test holes shall be in accordance with 3.17 Pavement and Concrete Replacement. Cutting in excess of these dimensions, unless approved by the ENGINEER, shall not be measured for payment. Pavement cutting shall be required in all direct burial applications, as indicated on the construction Plans, as required by permit, or as directed by the ENGINEER.

Where pavement is cut and replaced, the CONTRACTOR shall cut the edges to a straight and even line before repairing the pavement. Non-uniform edges will not be permitted or accepted.

All pavements removed as part of the work shall be removed from the jobsite and disposed of in accordance with the requirements of Federal, State, County, City of Greenville, and all applicable environmental regulations.

Measurement and Payment

Removal and disposal of pavement along mainline trenches, as described above, will be measured for payment in units of square feet through the removed pavement section. Unit bid price shall also include cutbacks of surface pavement grades, and stepping of sub and base pavement grades.

Removal and disposal of pavement for excavation of test holes within previously unexcavated and restored asphalt sections, as described above, will be measured for payment in units of square feet of the removed pavement section. Unit bid price shall also

include cutbacks of surface pavement grades and stepping of sub and base pavement grades.

The cost of removal and disposal of test hole pavement within the limits of previously excavated and restored trench lines for this project shall be considered incidental and shall not be measured for payment a second time. The cost of any and all equipment and labor required for removal and disposal of asphalt for test holes, as specified herein, shall be included in the various pay items of the work.

The CONTRACTOR should be aware that the thickness and materials of the surface and subgrades may vary.

Payment for removal and disposal of pavement will be made at the unit price bid. The bid price shall include the cost of any and all equipment and labor required for removal and disposal of bituminous and concrete pavement. Pavement removed and disposed of in excess of what is allowable and reasonable for installation of main and appurtenances shall be performed at the expense of the CONTRACTOR and will not be measured for payment.

3.10.1 Sidewalk, Driveway, and Curb and Gutter Removal and Disposal

The CONTRACTOR shall not cut or remove any NCDOT maintained sidewalk or curb and gutter sections unless a permit for cutting/removal of the sections at the specific location has been obtained from the North Carolina Department of Transportation. The CONTRACTOR shall be responsible for working with the ENGINEER to obtain the necessary permit.

Removal of concrete sidewalks, driveways, and concrete curbing and gutters includes the cutting of or the breaking of the concrete structure using conventional excavating, hand and pneumatic equipment. Removal of concrete sidewalks, driveways, and concrete curbing and gutters shall correspond to existing jointing. Removal of partial sidewalk sections shall not be permitted.

Cutting of the concrete sections shall be performed using appropriate saw(s) and shall be in a neat and workmanlike manner. The CONTRACTOR shall only remove sections necessary for the proper installation of the natural gas mains or sections damaged as a result of the construction activity.

All sidewalk, driveway or curbing and gutter sections removed as part of the work shall be removed from the jobsite and disposed of in accordance with the requirements of Federal, State, County, City of Greenville, and all applicable environmental regulations.

Measurement and Payment

Removal and disposal of concrete sidewalk and driveway as described above will be measured for payment in units of square feet through the removed section. The cost of any and all equipment and labor required for removal and disposal of concrete sidewalk and driveway, as specified herein, shall be included in the unit prices bid for the various pay items of the work.

3.11 **Erosion & Sediment Control**

The CONTRACTOR shall be required to provide a means of protecting and minimizing the effects of erosion and sediment displacement to the construction area and all immediate surrounding areas that may be affected by the construction activity.

Erosion and sediment control measures, including but not limited to: temporary stone construction entrances; silt fences; stone check dams, storm drain inlet protectors; stone for erosion control; soil stabilization mats; topsoil; temporary seeding; and permanent seeding shall be installed and maintained as indicated on the Plans, or as otherwise directed by the ENGINEER, in accordance with the *North Carolina Erosion and Sediment Control Planning and Design Manual*, the *North Carolina Erosion and Sediment Control Field Manual*, latest editions.

Measurement and Payment:

Erosion control measures are expected to be installed along the entire length of the project and will be covered by a specific contract unit price. The cost of any and all equipment, materials, and labor required for erosion and sediment control, as specified herein, shall be included in the unit price bid.

3.12 **Pipe and Materials Handling**

The CONTRACTOR shall load, unload, haul, receive, sign for, store, and otherwise be responsible for all materials. All materials shall be handled and placed in a manner that prevents damage and does not interfere with public and private travel.

All pipes shall be lifted, rolled, or otherwise handled either manually or by mechanical means so as to not damage the pipe or coating. All damaged pipe or coating shall be repaired and acceptance of it shall be contingent upon approval by the ENGINEER.

Polyethylene pipe shall be protected from fire, excessive heat, harmful chemicals, and long-term exposure to direct sunlight. The CONTRACTOR shall exercise due care during handling to prevent gouges, scratches, cuts, kinks, flattening, or punctures in the pipe. All defects or damage which could impair the serviceability of the polyethylene pipe, in the opinion of the ENGINEER, including cuts, gouges or scratches which are deeper than ten (10) percent of the wall thickness of the pipe or pipe that has a non-conforming shape shall be removed from the pipe joint or the piping system. When loading, unloading, moving and placing

polyethylene pipe, the CONTRACTOR shall avoid dropping or dragging the pipe. Chains shall not be used for handling polyethylene pipe.

Polyethylene pipe shall be stored in the shade to minimize expansion of the pipe and adverse effects of ultraviolet light to the pipe.

The height of polyethylene pipe stacks shall not exceed four (4) feet. Pipe shall not be stored overnight on the job site unless it is stored in an area protected from vandals. Pipe and other materials shall not be placed directly on the ground but rather on wooden pallets or a similar clean, flat surface.

Fusion operations on polyethylene pipe shall be performed adjacent to the trench and the pipe lifted and lowered into the trench. Where absolutely necessary to fuse polyethylene pipe at another location than adjacent to the trench, as allowed and confirmed by the ENGINEER, the pipe shall be lifted and carried to the trench. Under no circumstances shall any length or portion of the polyethylene pipe be dragged, slid, pushed or pulled, on any surface to the trench.

In all cases, materials shall be handled and stored in a manner suitable to the ENGINEER; which will facilitate inspection.

3.13 Bending of Pipe

3.13.1 Polyethylene Pipe

Pipe bends shall be used, as required, in place of fabricated fittings to change the horizontal and/or vertical alignment of polyethylene pipe.

The bending radius for polyethylene pipe shall not be less than the minimum recommended by the manufacturer for the kind, type, grade, wall thickness, and diameter of the particular polyethylene used as listed in Table 3.12.1.

TABLE 3.12.1
MINIMUM BENDING RADIUS OF POLYETHYLENE PIPE

NOMINAL PIPE SIZE	OUTSIDE DIAMETER (D) (INCHES)	RADIUS OF CURVATURE R = D(25)
2"	2.375	5'-0"
4"	4.500	9'-5"
6"	6.625	13'-10"
8"	8.625	18'-0"

A manufactured elbow shall be used if a change in direction cannot be accomplished in accordance with Table 3.12.1. Care shall be taken to prevent kinking in the polyethylene pipe. If the polyethylene pipe becomes kinked, the kinked section shall be cut out and replaced.

All fittings including butt fused, saddle fused and/or electrofused valves, elbows, tees, and couplings shall be installed such that they are located on a straight section of pipe, a minimum of three (3) feet from any field bend.

Measurement and Payment

Pipe bending operations are considered incidental work and will not be measured for payment. The cost of any and all equipment, material and labor required for pipe bending operations shall be included in the unit prices bid for the various pay items of the work.

3.14 **Pipe Installation**

3.14.1 Location of Other Utilities

The location of existing utilities shown on the drawings was taken in part from records and in part from field surveys, and may not be complete or represent the exact location of the existing utilities. The GUC assumes no responsibility for the existence and/or location of any other utilities in the work area. It shall be the responsibility of the CONTRACTOR, to investigate and verify the existence and location of all utilities within the vicinity of the work.

The CONTRACTOR shall comply with all the provisions of the North Carolina Underground Utility Damage Prevention Act (Section 1, Chapter 87, North Carolina General Statutes, 1985, as amended) and hold the GUC harmless against any loss, damages or claims of any nature whatsoever arising out of the CONTRACTOR's failure to comply with the requirements of the aforesaid act.

At least seventy-two (72) hours prior to starting the work the CONTRACTOR shall verify the existence and location of all underground utilities, structures and associated appurtenances. The CONTRACTOR shall notify the NC-811 Call-Center (811 or 1-800-632-4949) to all participating underground utilities. The CONTRACTOR shall be responsible for identifying all utilities in the work area that are not participating members of the one-call system. These utility operators shall be provided with a minimum seventy-two (72) hours notice to have their facilities located prior to starting the work.

After 72 hours, the CONTRACTOR may commence excavation only if NC-811 is contacted to confirm that all utilities have either marked their underground line

locations or reported that no lines are present within the vicinity of the excavation or demolition site. Prior to commencing any excavation, the CONTRACTOR must inspect the site for clear evidence of unmarked facilities.

After the markings have been made, the CONTRACTOR is required to maintain a minimum clearance of two feet between a marked underground utility line and cutting edge of any power-operated excavating equipment. Care should be taken or excavation should be performed with hand tools if the excavation is within two feet of any marking.

If during the course of the excavation, a utility line has been exposed, before backfilling, the CONTRACTOR must inspect these facilities to ascertain if the facilities have been damaged. If damage of any kind is discovered or suspected, it is the CONTRACTOR's responsibility to notify the utility owner immediately.

The excavation of test holes may, upon the approval and/or direction of the ENGINEER, be required to ascertain the existence, location, size, type, and alignment of existing utilities or underground structures. The dimensions of these test holes shall be the minimum required to effectively locate the utilities and underground structures.

In the event that any gas lines, water lines, sewer lines, electric lines, cables, conduit, and/or any other existing utility, either underground or above ground, is damaged by the CONTRACTOR during the prosecution of the work, the owner of the damaged utility shall be notified immediately. Any fine, penalty or costs associated with the repair of the damaged utility are the sole responsibility of the CONTRACTOR.

The work shall be coordinated and performed in a manner so that all existing fire hydrants, without exception, shall be accessible at any time during the work.

The CONTRACTOR shall maintain the existing streams, ditches, drainage structures, culverts and flows at all times during the work. The CONTRACTOR shall pay for all personal injury and property damage that may occur as a result of failing to facilitate drainage.

The CONTRACTOR shall maintain sewage flow at all times by pumping and/or diversion, or other means acceptable to the ENGINEER. At no time shall the CONTRACTOR allow raw sewage to flow out of the sewer system to adjacent land or waterways. At no time shall the CONTRACTOR cause sewage to surcharge the sewage system such that sewage backs up into any service connection. In the event such backup occurs, the CONTRACTOR shall correct and pay for all damage caused.

Measurement and Payment

Utility locating operations is considered incidental work and will not be measured for payment. The cost of any and all equipment and labor required for utility locating operations shall be included in the unit prices bid for the various pay items of the work.

3.14.2 Test Hole Excavations

The excavation of test holes shall be utilized as a means to ascertain the existence, location, size, type, and vertical alignment of existing utilities or underground structures. Failure to take such precautions may result in the CONTRACTOR adjusting the work or having the existing utility relocated, at the CONTRACTORs expense. Unless otherwise approved by the ENGINEER, the dimensions of these test holes shall be a maximum of twelve-inches by twelve-inches (12"x12"). The CONTRACTOR shall excavate test holes to evaluate the locations of known utilities that will be crossed when boring or directional drilling installation methods are used.

Excavation of test holes shall include cutting, breaking and removal of the pavement surface and excavation of subsurface materials necessary to properly inspect the buried utilities or drainage structures. Excavation of subsurface materials shall be performed using conventional hand, vacuum and/or compressed air methods. Backhoes and other large equipment will not be permitted for the removal of pavement or excavation due to the dimensional limits of the test holes. All excavations and removals shall correspond to the limits as stated above.

All pavement and subsurface materials excavated as part of the work shall be removed from the jobsite and disposed of in accordance with the requirements of Federal, State, County, GUC, and all applicable environmental regulations.

Restoration of surfacing for test holes shall be in accordance with 3.17 Pavement and Concrete Replacement.

Measurement and Payment

The excavation and restoration of test holes, including asphalt and concrete restorations, are considered incidental and will not be measured for payment. The cost of any and all equipment and labor required for excavation and restoration of the test holes shall be included in the unit prices bid for the various pay items of the work.

3.14.3 Required Clearance

All gas mains shall be installed such that a minimum of twelve (12) inches, or as otherwise specified by the ENGINEER or detailed on the Plans, horizontal and vertical clearance is maintained from all other existing underground utilities and/or structures, thereby permitting proper routine maintenance and protection against damage which may result from proximity to the utilities and/or structures.

3.14.4 Alignment

All gas mains shall be installed true to the horizontal and vertical alignment indicated on the Plans and Contract Documents, or as otherwise directed by the ENGINEER. The CONTRACTOR shall make no deviations to the proposed horizontal and/or vertical alignment of the gas mains unless otherwise directed to do so by the ENGINEER.

In such cases where the proposed horizontal and/or vertical pipeline alignment will cause conflict with other utilities and/or structures, or result in less than the specified minimum clearance or cover, the ENGINEER shall be notified and the pipeline relocated as per his direction. Any and all costs associated with such changes will be paid for at the unit prices bid for the required equipment, incidental material and labor. No additional payments will be made for such work.

3.14.5 Required Cover

Typically, all gas mains shall be installed with a minimum cover of thirty-six (36) inches and a maximum cover of forty-eight (48) inches between the top of the main and the finished grade. The depth shall be continuous along the length of the mains.

The CONTRACTOR may, upon the approval of or at the direction of the ENGINEER, install the pipe with greater cover than the specified maximum, based on subsurface utility(s) locations and other field conditions.

3.14.6 Direct Burial

The CONTRACTOR shall, unless otherwise indicated on the Plans, specified herein or as directed by the ENGINEER, install all gas mains and associated facilities by direct burial.

Direct burial of the gas mains and associated facilities shall include, but not be limited to: clearing and grubbing, trench excavation (trenching), rock excavation (as required), trench stabilization (as required), lowering and laying pipe, and backfilling, as described herein.

Measurement and Payment

Direct burial installation of gas mains will be measured for payment based upon the linear footage of pipe installed. Pipe will be measured horizontally and through in-line fittings, valves and specials.

Direct buried pipe in-place will be paid for at the unit price bid. The bid price shall include the cost of any and all incidental materials, equipment and labor required for pipe laying operations, including: trench excavation; temporary trench stabilization; installation of the pipe, elbows, tees, reducers, transition fittings, sleeves, couplings, end caps, plugs, locating devices; pipe bedding; select fill; backfill; testing; purging; temporary pavement patches; seeding and mulching; and cleanup.

Payment for installed pipe may be requested only after backfilling and testing operations have been completed and cleanup is in progress.

3.14.6.1 Clearing, Grubbing and Tree Removal

The CONTRACTOR shall clear all brush and timbers located along the alignment of the proposed pipeline, and properly dispose of such, off-site, in a prompt manner prior to commencing trenching operations.

In all cases where cultivated shrubbery, trees or otherwise valuable timber exists along the proposed pipeline route or right-of-way, the ENGINEER shall reserve the right to require the CONTRACTOR to adjust the alignment of the pipe or use an approved alternative method of installation which will not damage said shrubbery, trees or timber.

Measurement and Payment

Clearing, grubbing and tree removal operations which can be reasonably and effectively accomplished with a bush hog or standard trenching equipment are considered incidental work and will not be measured for payment. The

cost of any and all equipment and labor required for such clearing, grubbing and tree removal, as specified herein, shall be included in the unit prices bid for the various pay items of the work.

Since the GUC does not anticipate any clearing operations which will required the removal of larger timber, the clearing and removal of large trees, stumps, etc., which may not be accomplished using a bush hog or standard equipment will be considered incidental work and will not be measured for payment. The cost of any and all equipment and labor required for such clearing, as specified herein, shall be included in the unit prices bid for the various pay items of the work.

3.14.6.2 Trenching

Trenching shall include all excavation necessary to prepare the ditch for the pipe to be installed regardless of what means or methods are necessary to produce such ditch. All trench excavation operations shall be performed in accordance with 29 CFR 1926, Subpart P - Excavations.

Prior to trenching, the CONTRACTOR shall verify the existence, location, elevation and orientation of all underground and aboveground facilities within the vicinity of the work, in accordance with 3.14.1 Location of Other Utilities. The CONTRACTOR shall exercise care in the vicinity of any and all such obstructions.

The trench shall be excavated to a depth that will provide the minimum required cover, as specified in 3.14.5 Required Cover.

The width of the trench shall conform to the dimensions as detailed on the Plans and shall be wide enough to permit backfill to be tamped around the pipe(s) so that voids between pipe and backfill do not occur. Special care must be exercised to be certain there are no longitudinal voids beneath the pipeline.

The trench shall be excavated in a manner that offers smooth, firm and continuous support along the entire length of the pipeline. All sharp objects and debris shall be removed from the trench or the pipe shall be bedded with sand or clean fill to protect the pipe. A minimum of six (6) inches of pipe bedding shall be required in such locations. Where pipe bedding is required, the trench shall be over-excavated to a depth that will provide the minimum required cover, as specified in 3.14.5 Required Cover.

Whenever wet or otherwise unsuitable material, which is incapable of properly supporting the pipe, as determined by the ENGINEER, is encountered

in the trench bottom, such material shall be over-excavated as directed by the ENGINEER to a depth necessary to allow for construction of stable pipe bedding. The over-excavated portion of the trench shall then be backfilled with select fill to proper grade to provide the minimum required cover, as specified in 3.14.5 Required Cover.

Unless determined unacceptable by the ENGINEER for backfilling operations, the CONTRACTOR shall store all excavated materials adjacent to the excavated trench for use in the backfilling operations.

No more than five hundred (500) continuous feet of trench may be open on any single project at any one time without approval from the ENGINEER.

Measurement and Payment

Trench excavation is considered incidental work and will not be measured for payment. The cost of any and all equipment and labor required for trench excavation, as specified herein, shall be included in the unit price bid for direct burial installation of the appropriate size/type pipe.

Select fill material required for adequate pipe support and where wet or otherwise unsuitable material is encountered will be measured for payment in cubic yards of material placed. Payment will not be based on delivered volumes or delivery tickets, unless specifically authorized by the ENGINEER. The ENGINEER shall verify the amount of select fill prior to payment. Select fill material placement will be paid for at the unit price bid and shall include the cost of any and all equipment, material and labor required for select fill placement as described above.

Where the CONTRACTOR is directed by the ENGINEER, the CONTRACTOR will provide extra depth trench excavation for direct burial of pipe. Compensation for extra depth shall only be made when the excavation required is in excess of sixty (60) inches and shoring equipment is utilized for the installation of the pipe.

Extra depth trench excavation will be measured and paid for in units of feet of depth per linear foot of pipe (FT/LF) for all of the excavation exceeding sixty (60) inches when shoring equipment is utilized. Extra depth trench excavation will be paid for at the unit price bid and shall include the cost of any and all equipment and labor required for extra depth trench excavation.

3.14.6.2.1 Blasting

Blasting will not be permitted for this project.

3.14.6.3 **Trench Stabilization**

Where the depth of the trench and/or the type and condition of the soil requires stabilization, the CONTRACTOR shall provide a method of trench stabilization as directed and approved by the ENGINEER.

All materials and installation methods required for shoring, sheeting, bracing and any other required means of trench stabilization shall conform to any and all requirements of 29 CFR 1926 and applicable appendices.

Trench stabilization system members shall be securely connected together and installed in a manner that prevents sliding, falling, kickouts or other predictable failures of the trench sides. Support systems shall be installed and removed in a manner that protects employees from all forms of trench failure or from being struck by members of the support system.

Cross braces installed above the pipe to support the sheeting shall be removed only after pipe embedment has been completed.

Where trench sheeting is required to be left in place, as directed by the ENGINEER, such sheeting shall be cut-off at a minimum of three (3) feet below finished grade and the cut-off portion removed from the trench. Sheeting left in place shall not be braced against the pipe, but shall be supported in a manner that will eliminate concentrated loads and horizontal thrusts on the pipe.

Measurement and Payment

Trench stabilization measures are considered incidental work and will not be measured for payment. The cost of any and all equipment, material and labor required for the installation and maintenance of any required temporary trench stabilization measures shall be included in the unit price bid for extra depth trench excavation.

3.14.6.4 **Lowering and Laying Pipe**

Belt slings and/or padded calipers, which are sized to the particular pipe being laid, shall be used to handle the pipe provided such slings or calipers are free of all characteristics which might damage the pipe.

Inspection of the trench shall be made by the CONTRACTOR prior to lowering the pipe to ensure that no rocks or other sharp objects that may damage the pipe are located within the trench.

When polyethylene pipe is laid in the trench, sufficient slack in the placed pipe should be provided to allow for the contraction of the placed pipe.

When piping is lowered into the trench, care shall be exercised to avoid over stressing or buckling the piping or imposing excessive stress on the joints.

Anchors and supports shall be provided as directed and where required for fastening work into place.

Where the work is suspended, at night or for any other reason, the open ends of the pipe shall be securely plugged or closed to prevent entrance of water and other foreign material.

Measurement and Payment

Pipe lowering and laying operations are considered incidental work and will not be measured for payment. The cost of any and all equipment and labor required for lowering and laying pipe shall be included in the unit prices bid for the various pay items of the work.

3.14.6.5 **Backfilling**

Backfilling operations shall include the furnishing of all labor, materials and equipment necessary for the backfilling and compaction of all trenches, test holes, and excavations over the entire length of the pipeline, as specified herein.

Trenches shall not be backfilled until the pipe has proper cover, bedding and smooth, firm and continuous support along the entire length of the pipe, as specified in 3.14.6.2 Trenching.

The trench shall be backfilled as soon as possible after the pipe has been properly placed.

Where the trench crosses driveways, roads, streets, or other places used for the travel of vehicles or pedestrians, proper care shall be taken so as not to impede the flow of traffic. All traveled ways, including driveways; walks, streets, or alleys crossed by the trench shall be compacted by mechanical means at +/- 20% of optimum moisture content to 95% of the theoretical maximum density as determined in accordance with the requirements of VTM-1. Where deemed necessary, the ENGINEER may elect to have density tests performed on the backfilled trench by an independent contractor or consultant at the GUC's expense.

Unsuitable material encountered during trench excavation shall not be used as backfill. Unsuitable material shall be removed to the limits established by the ENGINEER and replaced with select fill, as specified herein.

All backfill material shall be free from all objects that might damage the pipe. Wherever it is deemed necessary by the ENGINEER, hand labor shall be used in starting the backfill. The backfill placed from the bottom of the ditch to the top of the pipe shall be placed in the trench simultaneously on both sides of the pipe for the full width of the trench in layers not to exceed six (6) inches in depth. The backfill material shall be thoroughly compacted under and on each side of the pipe to provide solid backing against the external surface of the pipe and to remove all voids. The trench may be backfilled from one foot above the pipe to the top of the trench with mechanical equipment provided the machine is operated parallel to the trench, and the material is placed in the trench in layers not to exceed six inches for the full width.

The CONTRACTOR shall use materials removed during the excavation operation for the backfilling operation, unless these materials are unsuitable as determined by the ENGINEER.

All trenched construction shall be adequately compacted by means of rolling, tamping with mechanical rammers, or hand tamping such that no future settlement of the trench backfill will occur. If vibratory rollers are used for backfill compaction, vibratory motors shall not be activated until at least three (3) feet of backfill has been placed and compacted around the pipe. Flooding shall not be permitted as a means of backfill consolidation. Backfill compaction achieved by means of driving any type of construction equipment and/or vehicles, other than those specifically designed for trench compaction work, across any part of the trench shall not be permitted. The CONTRACTOR shall place additional fill soil and compact backfill areas where settlement occurs.

Measurement and Payment

Backfilling operations are considered incidental work and will not be measured for payment. The cost of any and all equipment, material and labor required for the completion of backfilling operations, shall be included in the unit prices bid for the various pay items of the work.

3.14.7 Directional Drilling

The CONTRACTOR may, upon the approval and/or direction of the ENGINEER, choose or otherwise be directed to utilize directional drilling as an alternative method of installing the polyethylene gas mains.

Prior to commencing directional drilling operations, the CONTRACTOR shall be required to provide proof to the ENGINEER that the personnel performing the drilling operations have a minimum of one year of experience performing directional drilling operations of this type.

All directionally drilled gas main shall be installed in accordance with 3.13 Bending of Pipe; 3.14.3 Required Clearance; 3.14.5 Required Cover; and all other applicable requirements specified herein.

The length of each continuous directionally drilled installation shall be limited by the size and type of drilling equipment utilized for the operation, or as otherwise determined by the ENGINEER.

At the discretion of the Engineer, test holes shall be excavated around the pipe to verify its location, depth and structural integrity. The sending and receiving pits for the directional drilling operation shall not be considered as test holes for the inspection of the pipe.

Tracer wire shall be installed along with all directionally drilled polyethylene pipes. Tracer wire installation shall be in accordance with 3.14.11 Pipe Locating Devices.
LOCATION OF OTHER UTILITIES

Engineer assumes no responsibility for the existence and/or location of any other utilities in the Work area. It shall be the responsibility of the Contractor, to investigate and verify the existence and location of all utilities within the vicinity of the Work.

The Contractor shall comply with all the provisions of the North Carolina Excavation Manual. At least seventy-two (72) hours prior to starting the Work the Contractor shall verify the existence and location of all underground utilities, structures and associated appurtenances. The Contractor shall notify the Owner and North Carolina One-Call (811) or (800-632-4949) or through their Website at nc811.org to locate all participating underground utilities. The Contractor shall be responsible for identifying all utilities in the Work area which are not participating members of the one-call system. These utility operators shall be provided with a minimum seventy-two (72) hour notice to have their facilities located prior to starting the WORK.

The excavation of test holes is be required by the Contractor to ascertain the existence, location, size, type, and alignment of existing utilities or underground structures to be crossed by the proposed HDD drill path. The dimensions of these test holes shall be the minimum required to effectively locate said utilities and

underground structures.

Positively locate and stake all existing lines, cables, or other underground facilities including exposing facilities that are located within 10 feet of the designed drilled path.

In the event that any gas lines, water lines, sewer lines, electric lines, cables, conduit, and/or any other existing utility, either underground or above ground, are damaged by the Contractor during the execution of the Work, the owner of the damaged utility shall be notified immediately. If approved and/or requested by the owner of the damaged utility, the Contractor shall immediately make the necessary repairs, to the satisfaction of the utility and Engineer.

The Contractor shall be responsible for locating all underground facilities regardless of the ENGINEER's previous efforts in this regard. The Contractor shall be responsible for all losses and repairs occasioned by damage to underground facilities resulting from drilling operations.

HANDLING PIPE

The Contractor shall at all times handle the pipe in a manner that does not overstress the pipe. Vertical and horizontal curves shall be limited so that wall stresses do not exceed 0.50 of the yield stresses. If the pipe is buckled or otherwise damaged as determined by the Engineer, the damaged section shall be removed and replaced by the Contractor at his expense.

REQUIRED CLEARANCE

Regardless of the method of installation, whether by open trench, HDD, or boring, all gas mains shall be installed such that a minimum of twenty-four (24) inches, or as otherwise specified by the Engineer, horizontal and vertical clearance is maintained from all other existing underground utilities and/or structures, thereby permitting proper routine maintenance and protection against damage which may result from proximity to the utilities and/or structures.

ALIGNMENT – DIRECTIONAL TOLERANCE

The pilot hole shall be drilled along the path shown on the construction drawings, or the Contractor's plan and profile approved by the Owner, to the following tolerances:

1. Elevation – Plus zero feet, minus five (5) feet. The vertical path shall not exceed high points shown in the Contract Documents.
2. Alignment – Plus two (2) feet, minus two (2) feet.
3. Entry Point Location – The pilot hole shall initially penetrate the ground surface

at the exact location intended. The angle of entry shall not exceed 75% of the allowable bending radius of the carrier pipe.

4. Exit Point Location – The pilot hole shall finally penetrate the ground surface within:
 - a. +/- 10 feet overall length tolerance and +/- 5 feet left/right alignment tolerance for directional drills of 1,000 linear feet, and +/- 40 feet of overall length and +/- 5 feet left/right alignment tolerance for directional drills greater than 1,000 linear feet.

OVERPULLING

After the pipe has been pulled into the reamed pilot hole, the pipe shall be pulled through so that a minimum of 6 feet of pipe is exposed at the end of the bore. The pipe shall be cleaned so that the exterior can be examined for damage.

HANDLING DRILLING MUD AND CUTTINGS

During the HDD operations, the Contractor shall make adequate provisions for handling any muddy water, drilling mud, or cuttings. These contaminants shall not be discharged into waterways. When the Contractor's provisions for storing muddy water, drilling mud, or cuttings onsite are exceeded, the contaminants must be hauled away to a suitable legal disposal site. After completion of the directional drilling WORK, the entry and exit pit location shall be restored to their original conditions.

The Contractor shall comply with all provisions of any permits.

To the extent practical, the Contractor shall maintain a closed-loop drilling fluid system and a drilling fluid cleaning system that will allow return fluid to be reused.

REAM AND PULL BACK

Pre-reaming

Pre-reaming operations shall be conducted at the discretion of the Contractor. All provisions of this Specification relating to simultaneous reaming and pulling back operations shall also pertain to pre-reaming operations.

Pulling Loads

A swivel shall be used to connect the pull section to the reaming assembly to minimize torsional stress imposed on the section.

A breakaway setting shall be utilized to ensure the pipe is not overstressed.

Contractor shall submit settings in advance of drilling operations.

The pull section shall be supported on rollers as it proceeds during pull back so that it moves freely, and the pipe are not damaged.

The pull section shall be installed in the reamed hole in such a manner that external pressures are minimized. Any damage to the pipe resulting from external pressure during installation shall be the responsibility of the Contractor.

DRILLING FLUIDS

No fluid will be utilized that does not comply with environmental regulations.

The Contractor is responsible for obtaining, transporting, and storing any water required for drilling fluids.

The Contractor shall maximize recirculation of drilling fluid surface returns. The Contractor shall provide solids control and fluid cleaning equipment of a configuration and capacity that can process surface returns and produce drilling fluid suitable for reuse.

Disposal of excess drilling fluids is the responsibility of the Contractor and shall be conducted in compliance with all environmental regulations, right-of-way and workspace agreements, and permit requirements. Drilling fluid disposal procedures proposed for use shall be submitted to the Engineer for approval.

The Contractor shall employ his best efforts to maintain full annular circulation of drilling fluids. Drilling fluid returns at locations other than the entry and exit points shall be minimized. In the event that annular circulation is lost, the Contractor shall take steps to restore circulation. If inadvertent surface returns of drilling fluids occur, they shall be immediately contained with hand placed barriers (i.e. hay bales, sandbags, silt fences, etc.) and collected using pumps as practical. If the amount of the surface return is not great enough to allow practical collection, the affected area shall be diluted with fresh water and the fluid will be allowed to dry and dissipate naturally. If the amount of the surface return exceeds that which can be contained with hand placed barriers, small collection sumps (less than 5 cubic yards) may be used. If the amount of the surface return exceeds that which can be contained and collected using small sumps, drilling operations shall be suspended until surface return volumes can be brought under control.

Directional drilling methods have not been given statewide approval for use on NCDOT right of way. Under no condition shall jetting alone or wet boring with water of utility pipelines be allowed. Directional boring using jetting with a Bentonite (or equivalent material) slurry is approved at a minimum depth of ten

(10) feet below the pavement surface [fifteen (15') feet below the surface of partial and/or full control of access roads] and two (2) feet below any ditch line.

Directional boring is not allowed in embankment material. Directional boring is allowed beneath embankment material in naturally occurring soil. Any parallel installation utilizing the directional boring method shall be made at a minimum depth of three (3') feet (cover) below the ground surface and outside the theoretical 1:1 slope from the existing edge of pavement except where the parallel installation crosses a paved roadway.

All directional bores shall maintain ten (10) feet minimum (clear) horizontal distance from the nearest part of any structure, including but not limited to bridges, footings, pipe culverts or box culverts. All directional bores shall maintain ten (10) feet minimum (clear) vertical distance from the nearest part of pipe culverts or box culverts. Directional bores are not allowed beneath bridge footings, culvert wing wall footings or retaining walls.

The tip of the drill string shall have a cutter head. Detection wire shall be installed with non-ferrous material. (Not applicable to this Project.)

Any changes shall be submitted to the District Engineer for approval prior to construction.

INSTALLATION

The Contractor, subject to the requirements of these specifications, will determine the exact method and techniques for completing the HDD crossings. Excavated mud pits constructed in the entry and exit areas will be limited to the pipe borehole area only.

The Contractor shall obtain water for construction.

Measurement and Payment

Directionally drilled mains will be measured for payment based upon the completed and owner accepted linear footage and diameter of pipe installed. Pipe will be measured horizontally and through all in-line fittings.

Directionally drilled pipe in-place will be paid for at the unit price bid for the appropriate diameter polyethylene pipe. The cost of any and all equipment, incidental materials and labor required for directional drilling operations, including: excavating and backfilling sending and receiving pits and inspection test holes; directionally drilling the mains and fittings; testing and purging; and restoration shall be included in the unit price bid.

The cost of any and all equipment, material and labor required for the removal, disposal, and restoration of test hole pavement shall be paid for at the unit prices bid for pavement removal and disposal, and for restoration.

3.14.7.1 Equipment

The directional drilling system/equipment used for pipe installation as specified herein shall be subject to the approval of the ENGINEER and shall incorporate the following features:

1. The system shall be remotely steerable permitting control of horizontal and vertical alignment within a window of \pm two (2) inches.
2. The system shall provide for electronic monitoring of horizontal and vertical alignment. The locating tool shall be calibrated daily to an accuracy of \pm two (2) inches.
3. The system shall be capable of turning 90° in a radius of 160 feet.
4. The system may utilize an inert and environmentally risk free drilling fluid. No toxic or otherwise hazardous chemical additive shall be added to the drilling fluid. A dry boring system is also acceptable.
5. Back reaming bits shall be of a diameter at least two (2) inches larger than the outside diameter of the pipe to be installed.

Drilling equipment shall be fitted with a permanent alarm system capable of detecting an electric current. The system shall have an audible alarm to warn the operator when the drill head nears electrified cables.

3.14.8 Procedure

The leading end of the pipe shall be capped prior to insertion through the boring hole or sleeve.

A "weak link" shall consist of a stainless steel breakaway connector, utilizing a single use connector pin system. The "weak link" shall be connected between the leading end of the pipe being pulled and the connection to the directional drill rods.

If the weak link breaks or is otherwise substantially damaged, as determined by the ENGINEER, during installation, the drilling operation shall be

abandoned and new undamaged piping reinstalled at the CONTRACTOR's expense. No payment will be granted for the abandoned section(s) of pipe.

The leading six (6) feet of the installed pipe shall be pulled through the receiving pit and inspected. If any abrasions, gouges or cuts are present which, in the opinion of the ENGINEER, may compromise the integrity of the pipe, the pipe shall be exposed back to the point where the damage originated. All damaged pipe that is determined by the ENGINEER to be unacceptable shall be removed and replaced at the CONTRACTOR's expense.

All fused joints contained within the polyethylene piping to be installed by directional drilling shall be allowed to cool down in accordance with the manufacturer's recommended fusion procedures prior to commencing the pulling operation.

All directional drilling fluid and/or mud shall be contained and removed at the CONTRACTOR'S expense. Containment methods are incidental to the work and are dependent on the site conditions and will be determined by the ENGINEER.

3.14.9 Plowing

When the integrity of the pipe will not be compromised, polyethylene gas pipe may be installed by plowing as an alternative means of installation. Plowing shall not be allowed in rocky soils, congested areas, or any other areas deemed inappropriate by the ENGINEER. The ENGINEER will make all determinations as to where the CONTRACTOR shall be allowed to plow-in pipe.

The CONTRACTOR shall be allowed to plow-in sections of pipe three hundred (300) feet or less in length at a time. At the discretion of the Engineer, the pipe shall be inspected at sufficient intervals, by means of test holes, and at all exit holes to determine the condition of the pipe. Stretched, gouged, scratched, kinked or cut pipe will not be accepted. If damage to the pipe is noted, the earth shall be excavated away from the pipe in both directions until the full extent of the damage is exposed to the satisfaction of the ENGINEER. The damaged pipe shall then be cut out and replaced at no additional cost to the GUC.

Polyethylene pipe shall be allowed to relax for a sufficient length of time, as determined by the ENGINEER, prior to joining sections of plowed-in pipe or making tie-ins to existing mains. Sections of plowed-in pipe to be joined or tied into existing mains shall be sufficiently overlapped in the tie-in hole to allow for shrinkage due to relaxation of the pipe. Fused joints shall be allowed to cool for a minimum of twenty (20) minutes prior to being installed by plowing.

Tracer wire shall be installed along with all plowed in polyethylene pipe. Tracer wire installation shall be in accordance with 3.14.11 Pipe Locating Devices.

Measurement and Payment

Installation of polyethylene gas mains by plowing will be measured for payment based upon the linear footage of appropriate diameter pipe being installed.

Plowed-in pipe in-place will be paid for at the unit price bid. The bid price shall include the cost of any and all equipment, incidental materials and labor required for plowing operations, including: excavating and backfilling exit holes and inspection test holes; plowing in the pipe and associated fittings; locating devices, testing, purging, seeding and mulching, and cleanup.

3.14.10 Boring

The CONTRACTOR may, upon the approval and/or direction of the ENGINEER, choose or otherwise be directed to bore the gas mains beneath certain traveled ways and/or watercourses.

All boring methods shall be subject to the approval of the ENGINEER, and may include: dry boring, boring and jacking, auguring, pushing, and piercing.

The boring methods and equipment utilized shall be industry proven and accepted, subjected to the approval of the ENGINEER. All employees of the CONTRACTOR utilized in boring operations shall be trained and experienced with the specific boring method and equipment chosen. The CONTRACTOR shall, as required, provide the ENGINEER with documentation of said training and experience.

All boring equipment utilized shall be properly sized to install the carrier pipe without removing any excess spoil. The diameter of the auger used in any boring operation shall not, in any case, be greater than four (4) inches larger than the outside diameter of the casing or carrier pipe to be installed.

Boring operations shall be performed in such a manner that settlement, displacement, distortion, or any other damage to the existing ground surface, utilities and or structures will not occur. Where a utility is damaged or severely displaced, the authority having jurisdiction over the utility or structure shall be contacted immediately. The CONTRACTOR shall be responsible for promptly repairing or having repaired any such damage, to the ENGINEER's and the affected utility owner's satisfaction, at no cost to the GUC.

Boring operations shall, at all times, be conducted in a manner that does not create a hazard or impede the flow of traffic.

Carrier pipe installation shall be performed immediately upon completion of the boring operation. Soil voids that remain around the pipe after installation shall be properly filled with hydraulic cement grout, as directed by the ENGINEER. The grout shall be placed under pressure in a manner approved by the ENGINEER.

The CONTRACTOR shall, as directed, repair or replace, at his own expense any pipe that is damaged during boring operations.

If the bored carrier pipe strikes an obstruction during the boring operation, the cost of removing the obstruction shall be borne by the CONTRACTOR. If the obstruction cannot be removed, the boring operation shall be: abandoned; the pipe filled with cement grout, plugged and abandoned in place; and the bore re-attempted at a different location, as directed by the ENGINEER. The CONTRACTOR shall be responsible for any and all costs associated with an abandoned bore. No payment will be allowed for the abandoned section(s) of pipe.

When, in the opinion of the ENGINEER, a completed bore results in a deficiency which renders the pipe unusable, including but not limited to: insufficient cover; insufficient clearance with existing underground utilities and/or structures; excessive curvature of the pipe; excessive damage to the pipe and/or coating; or failure to stay within the right-of-way, the bore shall be abandoned; the pipe filled with cement grout, plugged and abandoned in place; and a new bore completed at no additional cost to the GUC.

The lengths of all required bores shall be as shown on the Plans or as otherwise directed by the ENGINEER. The typical allowance of five (5) feet outside of the edge of pavement or travel area outside of the roadway being bored will be provided for installation of pipe by bore methods.

Tracer wire shall be installed along with all polyethylene carrier pipes bored without a casing pipe. Tracer wire installation shall be in accordance with 3.14.11 Pipe Locating Devices.

Measurement and Payment

Gas mains installed by boring the pipe in-place will be measured for payment based upon the specific contract unit price.

Boring will be paid for at the unit price bid. The cost of any and all equipment, incidental material and labor required for boring, including: excavating and backfilling sending and receiving pits; boring the main and fittings; testing and purging; and restoration, shall be included in the unit price bid.

Payment shall be made based upon the minimum required length of bore. Bored distances in excess of the minimum required length shall not be paid for as boring, but shall be paid for at the unit price bid for direct burial of the appropriate size/type pipe.

Payment for pavement replacement shall be in accordance with 3.17 Pavement and Concrete Replacement.

3.14.10.1 Casing Pipe Installation

The CONTRACTOR may be required to install the gas mains within a steel casing pipe by boring, as indicated on the Plans or as otherwise directed by the ENGINEER in accordance with 3.14.10 Boring.

The casing pipe shall be a minimum of two (2) nominal pipe sizes larger than the carrier pipe.

The CONTRACTOR may, upon the approval of the ENGINEER, install a larger diameter casing pipe than is specified or otherwise shown on the Plans. If a larger diameter casing pipe is installed, all minimum cover and clearance requirements, as specified herein, shall be met.

The casing pipe shall be installed true to line and grade; sloping to one end with an even bearing throughout its length. The casing pipe installation shall be made so as to allow free and unrestricted movement of the carrier pipe during installation.

Lengths of steel casing pipe shall be joined by welding the joints completely around the circumference of the pipe.

Casing pipe vent(s) shall be installed at the end(s) of the casing pipe as directed by the ENGINEER. The vents shall be painted above grade with a corrosion resistant primer paint as directed by the ENGINEER. The vent opening(s) shall be screened and turned downward. Approved gas warning signs shall be attached to the vent pipe(s) or placed immediately adjacent to the casing vent(s) at each end of the casing pipe.

Both ends of all casing pipe installations shall be sealed. Sealed casing shall have a minimum of one (1) two (2) inch vent welded on the casing before the carrier pipe is inserted.

Casing spacers shall be set within one (1) foot of each end of the casing and placed along the carrier pipe at a maximum spacing of ten (10) feet.

The casing pipe shall be prepared to the extent necessary to remove any sharp edges, projections, or abrasive material which could damage the polyethylene pipe during and after the insertion. Polyethylene pipe shall be inserted into the casing pipe in such a manner so as to protect the polyethylene pipe from damage. The leading end of the polyethylene pipe shall be capped prior to insertion.

LOCATION OF OTHER UTILITIES

Engineer assumes no responsibility for the existence and/or location of any other utilities in the Work area. It shall be the responsibility of the Contractor, to investigate and verify the existence and horizontal and vertical location of all utilities within the vicinity of the WORK.

The Contractor shall comply with all the provisions of the North Carolina Excavation Manual. At least seventy-two (72) hours prior to starting the Work the Contractor shall verify the existence and location of all underground utilities, structures and associated appurtenances. The Contractor shall notify the Owner and North Carolina One-Call (811) or (800-632-4949) or through their Website at nc811.org to locate all participating underground utilities. The Contractor shall be responsible for identifying all utilities in the Work area which are not participating members of the one-call system. These utility operators shall be provided with a minimum seventy-two (72) hour notice to have their facilities located prior to starting the Work.

The excavation of test holes is be required by the Contractor to ascertain the existence, location, size, type, and alignment of existing utilities or underground structures to be crossed by the proposed crossing path. The dimensions of these test holes shall be the minimum required to effectively locate said utilities and underground structures.

Positively locate and stake all existing lines, cables, or other underground facilities including exposing facilities that are located within five (5) feet of the designed bore path.

In the event that any gas lines, water lines, sewer lines, electric lines, cables, conduit, and/or any other existing utility, either underground or above ground, are damaged by the Contractor during the execution of the Work, the owner of the damaged utility shall be notified immediately along with GUC's dispatchers. If approved and/or requested by the owner of the damaged utility, the Contractor shall immediately make the necessary repairs, to the satisfaction of the utility and Engineer.

The Contractor shall be responsible for locating all underground facilities regardless of the Engineer's previous efforts in this regard. The Contractor shall be responsible for all losses and repairs occasioned by damage to underground facilities resulting from drilling operations.

HANDLING PIPE

The Contractor shall at all times handle the steel pipe in a manner that does not overstress the pipe. Vertical and horizontal curves shall be limited so that wall stresses do not exceed 0.50 of the yield stresses. If the pipe is buckled or otherwise damaged as determined by the Engineer, the damaged section shall be removed and replaced by the Contractor at his expense.

REQUIRED CLEARANCE

Regardless of the method of installation, whether by open trench, HDD, or jacking and boring, all gas mains shall be installed such that a minimum of twenty-four (24) inches, or as otherwise specified by the Engineer, horizontal and vertical clearance is maintained from all other existing underground utilities and/or structures, thereby permitting proper routine maintenance and protection against damage which may result from proximity to the utilities and/or structures.

ALIGNMENT – DIRECTIONAL TOLLERANCE

Vertical and horizontal alignment shall be as near to those depicted on the project Plans as the site conditions permit.

Horizontal alignment shall be as near perpendicular to the centerline of the road as possible.

The horizontal alignment shall be within two feet either direction of the alignment as shown on the Plans depending on conditions at the site at the time of the boring operations.

Vertical alignment shall be as near level as possible considering existing utility locations, bore and receiving pit conditions, and permitted depths of the crossing.

The vertical alignment shall not be less than as shown on the Plans and/or as approved by CSX encroachment agreement.

INSTALLATION

The Contractor, subject to the requirements of these Specifications, will determine the exact method and techniques for completing the jacked and bored crossings. Excavated entry and exit pits will be limited to those required for the jack and bore equipment and for receiving the bored pipe and making tie-ins to the pipeline.

The Contractor shall perform the jack and Bore operations as a "dry bore" without adding water.

Prior to commencing jack and bore operations, Contractor shall obtain surveyed elevations of road surface over the centerline of the proposed crossing.

Contractor shall obtain surveyed elevations of the road surface over the centerline of the crossing at the half-way complete point and after completion of the crossing to verify that unacceptable settlement has not occurred.

Should settlement of the surface be noticed during the boring operations, the operations shall be stopped immediately, and remedial actions shall be taken to stop the settlement.

As part of the Contractor's jack and bore plan, Contractor shall have a remedial plan to activate should road settlement occur during the jack and bore operations.

Contractor is responsible for any repair to roadway or railway base and surface required by NCDOT as a result of the jack and bore operations.

A short joint of pipe shall be welded to the nose end of leading joint of carrier pipe. This short joint shall be provided with mechanical arrangements or devices that prevent the auger from leading the crossing pipe during the jack and bore operations. This will help to ensure that the hole remains supported throughout the crossing operations.

All carrier pipe to be installed by the jacking and boring method shall have all weld joint ARO and FBE coating repaired according to the coating manufacturers' recommendations for field applied joint repair.

Contractor shall install crossing with minimum amount of weld joints.

CONSTRUCTION LAYOUT

The Contractor shall confine bore pits and equipment layout to within the obtained permanent and temporary easements as shown on the Project Plans.

Contractor shall honor all conditions of the easements as shown on the Project Plans.

Depending upon conditions, contractor should expect the need to dewater bore and receiver pits. Contractor shall provide all materials and equipment associated with dewatering construction excavations.

OVERJACKING AND COATING INSPECTION

After the steel pipe has been jacked into the hole, the pipe shall be extended beyond the exit hole into the exit pit area so that a minimum of four (4) feet of ARO steel carrier pipe is exposed. The pipe shall be cleaned so that the exterior coating can be examined for damage.

Any pipe coating damage shall be discussed with the Engineer to determine the acceptability of the crossing, or necessity for remedial measures.

HANDLING DRILLING MUD AND CUTTINGS

During the jack and bore operations, the Contractor shall make adequate provisions for handling any muddy water and cuttings. These contaminants shall not be discharged into waterways. When the Contractor's provisions for storing muddy water or cuttings onsite are exceeded, the contaminants must be hauled away to a suitable legal disposal site. After completion of the jack and bore, the entry and exit pit location shall be restored to their original conditions. Cuttings may be used as restoration material provided they meet the requirements for backfill.

The Contractor shall comply with all provisions of any permits.

Measurement and Payment

Casing pipe installation will be measured for payment based specific contract unit price of casing pipe and carrier pipe installed horizontally between the ends and includes casing vent pipes, carrier pipe spacers, and casing end seals.

Casing pipe installed by bore with carrier pipe inserted will be paid for at the unit price bid. The cost of any and all equipment, incidental materials and labor required for the installation of casing pipe by bore, including: excavation and backfilling of sending and receiving pits, boring the casing pipe; installation of vent pipes, installation of casing/carrier pipe spacers, installation of ends seals, insertion of carrier pipe, testing and purging, and restoration, shall be included in the unit price bid.

The cost of any and all equipment and labor required for the removal, disposal, and restoration of pavement shall be paid for at the unit price bid for pavement removal and disposal and for pavement restoration.

No additional payment will be made for the substitution of a larger diameter casing pipe.

3.14.11 Pipe Locating Devices

The CONTRACTOR shall install tracer wire with all uncased polyethylene pipes to facilitate location of the pipe with commercially available electronic pipe locators. Warning tape shall also be installed with all direct buried mains and shall be continuous over the length of the mains. Installation of tracer wire and warning tape shall be as included in Table 3.13.8

TABLE 3.13.8
INSTALLATION OF LOCATING DEVICES

Method of Construction	Tracer Wire Location	Warning Tape Location
Direct Bury	6" Min./12" Max. Above Pipe	Not Required
Directional Drill	Pull Through Bore Hole With Pipe	Not Required
Plowing	6" Min./12" Max. Above Pipe	Not Required
Bored	Pull Through Bore Hole With Pipe	Not Required

The tracer wire shall be installed a maximum of twelve (12) inches above the pipe and a minimum of six (6) inches above the pipe for direct bury and plow-in installations. The locating tape shall be installed approximately six (6) to twelve (12) inches below finished grade.

Measurement and Payment

Unless specifically outlined below, all work associated with the installation of pipe locating devices is considered incidental and will not be measured for payment. The cost of any and all equipment, incidental material and labor required for the installation of pipe locating devices shall be included in the unit prices bid for the various pay items.

3.14.11.1 Electrically Conductive Tracer Wire

The CONTRACTOR shall be required to install an electrically conductive tracer wire (tracer wire) as a means of facilitating the location of buried or inserted polyethylene pipe. The tracer wire insulation color shall be yellow for gas.

When polyethylene pipe is installed by boring without a casing pipe, the tracer wire or locating tape shall be attached to the bull-nose in order to facilitate installation.

The tracer wire shall be pulled into each locating station with sufficient slack to extend a minimum of twenty-four (24) inches above finished grade. The tracer wire shall not be cut, but should remain continuous.

In the event that the continuity of the tracer wire is broken during installation, the CONTRACTOR shall install, at no additional cost to the GUC, a replacement tracer wire by either open trenching or plowing, as directed by the ENGINEER. Prior to the completion of the project, the ENGINEER may perform a continuity test. If the test determines that there are disruptions to the continuity, the CONTRACTOR shall excavate and repair the damaged wire at no expense to the GUC.

Tracer wire shall not be mechanically fastened to the pipe.

Under no circumstances shall the tracer wire be wrapped around the polyethylene pipe.

Where new tracer wire is connected to existing tracer wire or where separate spools of tracer wire are connected, the tracer wire shall be spliced using an approved mechanical split bolt connector or an approved waterproof splicing kit. These connections shall be wrapped using splicing tape and/or plastic electrical tape in order to waterproof the splice. Tracer wire shall be spliced to locating tape using splice clamps as approved by the locating tape manufacturer, or an approved equal.

3.14.11.2 Locating Stations

Locating stations shall be installed at all locations indicated on the Plans, or as otherwise directed by the ENGINEER. When a locating station is installed at a lateral connection, the station shall be installed directly over the center of the tee or lateral branch connection. Locating stations shall be installed behind the curb and gutter or outside of the roadway at all locations other than lateral connections and intersections.

Locating station installations shall include valve boxes (top section only) and a lid. The valve box lid shall be marked "TEST" or "T".

Locating station installation shall include excavating, setting of the valve box sections(s), coiling the tracer wire into the box, properly setting the valve box lid, backfilling and compacting around the box, and restoration.

When locating stations are not installed over the main or fitting, the tracer wire shall be installed inside one-half (½) inch or one (1) inch polyethylene tubing and the tubing shall terminate at a point between twelve (12) inches and six (6) inches below the top of the valve box.

Measurement and Payment

Locating station installations will be measured for payment based upon the number installed.

The unit price bid shall include the cost of any and all equipment, incidental material and labor required for locating station installation, as described above.

3.14.12 Welding

3.14.12.1 Contractor Qualifications

The CONTRACTOR shall use only competent and skilled workmen for the performance of any and all work on the natural gas distribution system, as specified herein. The workmen shall not perform any heat fusion or welding operations on any pipe or associated fittings within the system until they have been qualified to perform such operations in accordance with the test requirements specified in section 3.13.12.1 Welding Qualifications.

Measurement and Payment

Qualification of the CONTRACTOR's personnel for heat fusion and welding operations is considered incidental and will not be considered for payment. All costs associated with qualifying the CONTRACTOR's personnel, including but not limited to testing and certification, as specified herein, shall be included in the unit prices bid for the various pay items of the work.

3.14.12.2 Welding Qualifications

Prior to performing welding of steel pipe on the Gas Department's natural gas system, personnel responsible for joining steel pipe by welding shall be qualified. All qualification tests shall be conducted under the supervision and direction of a qualified Gas Department welder or a qualified testing company as approved by the Gas Distribution Engineer.

The Gas Department may require contract welders or welding operators to qualify specifically for welding on the Gas Department's facilities. If so, all

testing and qualification requirements shall match the requirements of the certification process listed below:

Certification: Contract welders shall provide evidence of being qualified in accordance with the procedures listed in Section 6, Section 12, Appendix A or Appendix B of the API Standard 1104 or Section IX of the ASME Boiler and Pressure Vessel Code, "Welding and Brazing Qualifications". Welds made for the initial qualification shall satisfy destructive test requirements.

Testing:

- (1) The welder shall butt weld two sections of twelve (12) inch nominal pipe size placed in a fixed position at an incline of forty-five (45) degrees.
 - (a) The combination of pipe size and position qualifies the welder to perform butt and fillet welds in any position and all pipe diameters.
 - (b) The weld shall be destructively tested in accordance with the requirements of API 110 or Section IX of the ASME Boiler and Pressure Vessel Code. If a weld sample fails this test the welder is not qualified to perform welds on the Gas Department's natural gas system.
- (2) A separate qualification process shall be performed to ensure that the welder can successfully perform a fitting to in-service pipe.

Following the successful welder qualification of Gas Department Personnel and contract personnel, Form II.F-4.1 shall be completed and submitted to the Gas Distribution Engineer.

Requalification: After the initial test, a Gas Department welder or welding operator shall maintain qualification to perform welding operations by the following:

- (1) At intervals of each calendar year and not exceeding 15 months between qualifications/requalification, each Gas Department or welding operator shall requalify in accordance with the initial qualification requirements.
- (2) With intervals not to exceed 7 ½ months and at least twice each calendar year; each Gas Department welder or welding operator shall have a production weld cut out, tested, and found acceptable in accordance with the qualifying test.

3.14.12.3 Welding

All steel pipe and/or fitting connections and other fabrications within the gas distribution system shall be made by welds, unless otherwise directed by the ENGINEER.

Measurement and Payment

Welding operations are considered incidental work and will not be measured for payment. The cost of any and all equipment, material and labor required for welding operations and inspection thereof, including: welding rods, fluxes, filler metals, welding machines and wind guards, shall be included in the unit prices bid for the various pay items of the work.

3.14.12.3.1 **Procedure**

Welding shall be performed by a qualified welder or welding operator in accordance with welding procedures that are qualified under Section 5, Section 12, Appendix A or Appendix B of API Std 1104, or Section IX of the ASME Boiler and Pressure Vessel Code to produce welds meeting the requirements of this subpart. The quality of the test welds used to qualify welding procedures shall be determined by destructive testing in accordance with the applicable welding standard(s).

The Gas Department's welding procedure is as shown in Form II.F-4.2. The standard welding procedure specifications for shielded metal arc-welding (SMAW) or carbon steel pipes, valves, fittings, and flanges are as follows:

- (1) Process: Manual shielded metal arc-welding.
- (2) Base metal: The base material shall conform to the specifications of API Standard 5L pipe and applicable ASTM standards.
- (3) Filler metal: The filler metal shall conform to the ASW-ASTM Classifications listed in API 1104, Section 4.2.2.1. Shelf life shall not be exceeded. Heater boxes are recommended for low hydrogen electrodes.
- (4) Position: As specified by the qualified procedure.
- (5) Preparation of Base Material: All surfaces to be welded shall be clean and free of material that may be detrimental to the weld. The pipe ends at all welded joints shall be beveled. Bevels shall be made by machine or an appropriate oxygen cutting machine/guide.
- (6) Electrical Characteristics: Direct Current reverse polarity.
- (7) Welding Layers: The welding current and manner of depositing the weld metal shall be such that the layers of welding as deposited shall have a neat appearance. Each completed weld shall be free of overlaps, undercuts, excessive convexity and concavity, scale, oxides, pin holes, nonmetallic inclusions, air pockets or any other defect. The size of electrode for each pass on each size of pipe shall be as shown in the procedure. Each bead shall be applied completely around the pipe and shall be thoroughly cleaned of all

- scale, slag. Or other foreign material before the next bead is started. The stringer beads will be placed in the same fashion. Welding procedure specifications shall be followed for reinforcement heights and widths and bevel dimensions.
- (8) Cleaning: All slag or flux remaining on any bead of welding shall be removed before laying down the next successive bead. To increase weld quality, tacks, high spots, and starts and stops should be grounded.
 - (9) Defects: Any cracks or burn through that appear on the surface of any bead of welding shall be removed by grinding before depositing the next successive bead of welding to ensure a quality weld.
 - (10) Preheating: Preheating is not required above 32°F. If welding is done below 32°F, the pipe joint shall be heated to procedure specifications before welding is started. Moisture shall be removed from the pipe prior to performing welds. A torch with a heating tip may be used to remove frost and/or moisture.
 - (11) Post heating: Post heating is conducted if required by the procedure.
 - (12) Cooling: Cooling of welds by using any substance other than air shall not be permitted. The pipe shall not be moved until the weld is below 600°F.
 - (13) Alignment: Use external and/or internal lineup clamps when necessary. Lineup clamps may be removed after tacking or after fifty (50) percent of the root bead when there is danger of pipe movement or undue stress on the weld.
 - (14) Vertical Welding Technique: The second pass (hot pass) shall be supplied immediately after the root pass is complete. Stripper pass may be required at the 2 o'clock to 4 o'clock and 10 o'clock to 8 o'clock positions in the pipe just before applying the O.D. reinforcement pass. For downhill welding, all passes except the stripper passes will start at the 12 o'clock position and stop at the 6 o'clock position with overlap of the one-fourth (1/4) inch to one-half (1/2) inch back from the end of the previous weld. The stripper pass will start at the downhill point and move to the upper point.
 - (15) Transition Welds: Welds that transition between different grades of steel are to be made following the procedure for the higher-grade material.
 - (16) On pipe greater than twelve (12) inch, the technique of using more than one welder (one on each side) should be used.

The Gas Department will accept welding procedures provided by contractors contingent upon documentation that demonstrates proper qualification of the procedure. The procedure shall be included in the permanent project file that is maintained by Engineering.

Neither Gas Department nor contract welders or welding operators may weld with a particular welding process unless, within the preceding 6 calendar months, the welder or welding operator was engaged in welding with that process.

3.14.12.3.2 Inspection

Visual, nondestructive and/or destructive testing procedures shall be implemented, as required by the ENGINEER, to determine the quality of the welded joints.

The ENGINEER may, at his discretion, require nondestructive testing and inspection of any or all welded joints prior to the initiation of backfilling or insertion operations.

The ENGINEER shall make all determinations as to what constitutes an acceptable fused joint as well as the disposition of all defective joints. These determinations shall be made upon completion of a visual inspection. Defective joints shall be removed from the piping system at the ENGINEER's direction and at no cost to the GUC.

3.15 Abandonment of Existing Facilities

The CONTRACTOR shall, as indicated on the Plans or as otherwise directed by the ENGINEER, be required to remove from service certain sections of the existing gas distribution facilities, including but not limited to: mains, fittings, valves and valve boxes.

Abandonment of existing facilities shall be accomplished by either in-place abandonment or complete removal of these facilities, as indicated on the Plans or otherwise directed by the ENGINEER.

In-place abandonment shall consist of: restraint of existing facilities, disconnection of the facilities from the existing system; purging of natural gas from all gas mains; properly sealing the ends of all abandoned pipe; backfilling all exposed portions of abandoned pipe; removing top section of abandoned valve boxes and backfilling with sand and asphalt; and restoration of the affected area as directed by the ENGINEER.

Sealing of natural gas mains shall be accomplished using an appropriate welded or fused fitting to the open end(s) as directed by the ENGINEER. For abandonment of two (2) inch and smaller diameter mains, the CONTRACTOR shall use an internal rubber-based compression stopper.

Valves and valve boxes shall be abandoned in place, unless otherwise directed by the Plans or the ENGINEER. The abandonment shall not be performed until the abandonment of the main is complete. A one (1) foot square hole shall be cut around valve boxes located in the pavement or concrete and the CONTRACTOR shall render the valve inoperable by breaking off the top section of the valve box a minimum of six (6) inches below the surface of the surrounding pavement or grade and filling the valve box with the same material (asphalt, concrete, dirt, etc.) directly adjacent to the valve box. Compaction of the material used to fill the valve box shall be completed such that settlement will not result. Asphalt shall be compacted with an approved roller or vibratory plate.

Purging of gas mains shall be performed, as directed by the ENGINEER, with compressed air and shall continue until a reading of zero (0) percent gas is measured using an approved, calibrated combustible gas indicator (CGI). All purging operations shall be done under the direct supervision of the ENGINEER. A minimum of eight (8) hours advance notice shall be provided to the ENGINEER.

Detailed information concerning all abandoned facilities, including, but not limited to; size of pipe, length of pipe abandoned, fittings installed, etc. shall be collected and submitted to the ENGINEER by the CONTRACTOR for all projects.

The CONTRACTOR shall be required, as directed by the ENGINEER, to return various abandoned distribution facility components to the GUC in working condition.

Measurement and Payment

In-place abandonment of existing distribution facilities will be covered by a specific contract unit price. The cost of any and all equipment, incidental material and labor required for in-place abandonment operations shall be included in the unit price bid for the various pay items of the work.

3.15.1 Removal of Facilities

The work covered by this Contract shall require the CONTRACTOR to remove sections of abandoned piping, valves, and valve boxes.

After isolating and purging, the facilities shall be removed from the ditch and the ditch shall be backfilled and compacted. Compaction shall be equal to that of the surrounding soil or as otherwise specified on the project Plans or as required by the ENGINEER. Compaction within traveled ways, including driveways, sidewalks, streets or alleys shall meet the density requirements as specified in Section 3.14.6.5 Backfilling. Following backfilling and compaction, the surface shall be graded to match the existing grade and contour. Removed piping and materials shall be properly disposed of or otherwise handled as directed by the ENGINEER.

The CONTRACTOR shall be required to remove short sections of piping at tie-in locations, at the direction of the ENGINEER or as deemed necessary by the CONTRACTOR, to facilitate tie-in operations. Additionally, removal of pipe will only be required where indicated on Plans, or as directed by the ENGINEER.

Measurement and Payment

Abandonment of facilities by removal is considered incidental and will not be measured for payment. Seeding, mulching and tacking of the surface are considered incidental and shall not be measured for separate payment.

The cost of any and all equipment, material and labor required for the removal, disposal, and restoration (including seeding, mulching and tacking of the surface) shall be included in the unit prices bid for various pay items of the work. Pavement removal/disposal and replacement, where necessary, will be paid for at the respective unit prices bid for this work.

3.16 Clean Up

The CONTRACTOR shall keep the right-of-way reasonably clear of construction debris during the progress of the work. Cleanup shall consist of all work necessary to restore the affected area to pre-construction condition. This operation shall include, but not be limited to, the removal of excess excavated materials, equipment, rock and other materials that cannot be placed in the trench backfill. Cleanup shall also consist of the repairing or restoration of trenches, restoration to pre-construction topography, disposal of vegetative debris and re-seeding and mulching as directed by the ENGINEER, in accordance with the NCDOT Specifications.

The CONTRACTOR will keep all paved surfaces clear of soil (compacted or loose) and loose gravel or stone. When a mechanical sweeper is used, the sweeper attachment shall be covered to minimize dust and shall utilize a wet sweeper system.

Finish grading shall be performed as necessary to re-establish slopes. The grades shall be formed to easy contours sloping towards inlets and ditches. This grading shall eliminate low spots and pockets that do not drain. Ditches shall be excavated to the section and elevations shown and shall be excavated with smooth slopes to avoid low spots and pockets that do not drain.

Developed property including but not limited to walks, steps, fences, mailboxes, paper boxes, disturbed by the work shall be restored or replaced to their original or better condition, except as shown on the Plans or directed by the ENGINEER. Ditches shall be restored to their original shape and slope. All disturbed areas not covered by pavement or structures shall be fertilized, limed, seeded, and mulched. Any washing or erosion of the surface, and any areas where grass seed does not germinate, shall be repaired and reseeded until an adequate stand of grass is achieved.

The CONTRACTOR shall be required to dress-up all work areas daily. The daily dress-up shall include backfill and compaction, removal of rocks and large dirt clods, raking to a consistent grade, removal of construction materials and debris, providing and placing a straw covering as required, and providing and placing soil stabilization measures as required by the ENGINEER. Final cleanup and restoration shall be performed within five working days of completion of all work within individual properties or sections of properties as designated by the ENGINEER. The work required prior to final cleanup and restoration shall include the installation and activation of the distribution mains and the completion of all required abandonments. This cleanup shall continuously follow, as described above, to the ENGINEER's satisfaction. Untimely cleanup resulting from the pipeline construction activities may result in the suspension of new construction, as deemed necessary by the ENGINEER.

Measurement and Payment

Cleanup operations are considered incidental work and will not be measured for payment. The cost of any and all equipment and labor required for cleanup shall be included in the unit prices bid for the various pay items of the work.

3.17 **Pavement and Concrete Replacement**

Within ten (10) days of the completed installation of the mains, the CONTRACTOR shall be required to re-pave or otherwise restore, as directed by the ENGINEER, all surfaced roadways and driveways and all concrete structures damaged by the construction. All restoration work within the City of Greenville or NCDOT rights-of-way shall be performed as specified herein, as directed by the ENGINEER and to the satisfaction of NCDOT or the City of Greenville Department of Public works.

The CONTRACTOR shall replace roadway, driveway and walkway surfaces necessarily removed for the installation of the mains. It is the intent of these Specifications that the CONTRACTOR returns all paved surfaces affected by the work to as near pre-construction condition as possible in conformance with approved methods.

The CONTRACTOR assumes all responsibility for the restoration of pavement, and for safely maintaining the pavement cuts and normal traffic flow until final restoration is complete.

No asphalt paving shall be performed unless the atmospheric temperature is above 40° Fahrenheit. Where required, rolling shall be performed with an approved 10-ton roller. Hand operated vibratory plate equipment will not be allowed for finishing work on the surface course.

In all cases, the type of paving section used, as outlined below, shall be as directed by the ENGINEER prior to commencing paving operations.

Measurement and Payment

Replacement of asphalt pavement along standard mainline trench lines utilizing the standard paving section, as described below, will be measured for payment in units of square feet and paid for at the unit price bid for this pay item.

Replacement of asphalt pavement along standard test holes utilizing the standard paving section, as described below, will be measured for payment in units of square feet and paid for at the unit price bid for this pay item.

Payment for pavement section replacement shall be limited along the trench line to a width equal to the maximum trench widths allowed in 3.17 Pavement and Concrete Replacement. Paving of tie-in test holes, bore pits, push pits, etc. will be limited to the minimum pit size required to complete the work. The cost of any and all equipment, material and labor required for the complete restoration of the asphalt pavement, as specified herein, shall be included in the unit price bid.

No additional payment for pavement replacement will be granted for any work or quantities in excess of the trench and test hole limits as described in 3.10 Pavement Removal and Disposal without the approval of the ENGINEER.

Payment for pavement section replacement of test holes shall be in accordance with 3.14.2 Test Hole Excavations.

The stone subgrade will not be measured for payment and should be included in the cost of the asphalt replacement. Payment will not be granted to the CONTRACTOR for providing and placing excess stone.

Tack and prime coats will not be measured for payment. They are considered incidental to the pavement replacement work and their cost should be included in the CONTRACTOR's unit price bid for the replacement of asphalt restoration.

Only the amount of asphalt necessary to achieve pavement replacement conforming to the above requirements will be measured for payment. Payment will not be granted to the CONTRACTOR for providing and placing excess materials. Payment shall not be granted for surface repair that is in excess of what is reasonable to perform the installation of the pipe.

3.17.1 Standard Roadway Asphalt Pavement Replacement

Within NCDOT right-of-ways, City of Greenville right-of-ways, and where directed by the ENGINEER, roadway pavements shall be restored in conformance with the applicable sections of the NCDOT "Standard Specifications for Roads and Structures", latest edition.

For asphalt pavement replacement within City of Greenville rights-of-way, the pavement section shall consist of six (6) inches of NCDOT Type H intermediate course mixture and (2) two inches of NCDOT I-2 surface mixture over a compacted subgrade consisting of eight (8) inches of stone.

For asphalt pavement replacement within NCDOT rights-of-way, the pavement section shall consist of six (6) inches of NCDOT Type H-B base course mixture, six (6) inches of NCDOT Type H intermediate course mixture, and two (2) to three (3) inches of NCDOT Type I-2 surface course mixture over a compacted subgrade.

Proper tack coat placement shall be required for all pavement replacement to insure adequate bonding with the existing adjacent surface. Pavement replacement will not be permitted or accepted where the tack coat has not been properly applied.

Subgrade Preparation: The subgrade preparation shall conform to Section 500 of the NCDOT "Standard Specifications for Road and Structures" (latest edition).

Aggregate Base Course: Aggregate base course shall conform to Section 520 of the NCDOT "Standard Specifications for Road and Structures" (latest edition).

Bituminous Concrete Base Course: The bituminous base course shall conform to Section 630 of the NCDOT "Standard Specifications for Road and Structures", (latest edition), for Type H-B material.

Bituminous Concrete Intermediate Course: The binder course shall be placed on a prepared base course or existing pavement in accordance with Section 640 of the NCDOT "Standard Specifications for Road and Structures" (latest edition) for Type H material.

Tack Coat: The work shall be performed in accordance with Section 605 of the NCDOT "Standard Specifications for Road and Structures" (latest edition).

Bituminous Concrete Surface Course: The work shall be performed in accordance with Section 640 of the NCDOT "Standard Specifications for Road and Structures" (latest edition) for Type I-2 material.

Traffic Markings: The CONTRACTOR shall repair and restore any traffic markings that were damaged during the performance of the work. All repairs shall be in accordance with the requirements and specifications of NCDOT and the MUTCD Manual, (latest edition).

Existing Structures: All existing structures which fall under or near repaired or restores bituminous areas shall be adjusted to final grade prior to application of bituminous concrete.

3.17.2 Gravel and Other Surfacing

Gravel and dirt roadways and driveways shall be repaired and replaced to their original condition, or as otherwise directed by the ENGINEER.

Measurement and Payment

Gravel roadway and driveway restoration is considered incidental work and will not be measure for payment. The cost of any and all equipment, material and labor required for gravel roadway and driveway restoration operations shall be included in the unit prices bid.

Dirt road restoration is considered incidental work and will not be measured for payment. The cost of any and all equipment, material and labor required for dirt roadway and driveway restoration operations shall be included in the unit prices bid.

3.17.3 Sidewalk, Driveway, and Curb and Gutter Replacement

Sidewalks and driveways shall be repaired or replaced to the thickness of the adjacent, undisturbed sections or four (4) inches whichever is greater. Concrete curb and gutter sections shall be replaced to match adjacent curb and gutter sections. The finish shall be floated or broomed to match the existing. Joints shall be tooled to match the spacing of the existing sections.

Measurement and Payment

Concrete sidewalk and driveway restoration costs, directly resulting from the installation of gas facilities, will be measured for payment in units of square feet. The bid price shall include the cost of any and all equipment, material and labor required for concrete restoration, including: the replacement (including: reinforcement, finishing and jointing) of all classifications, thickness', and widths of concrete. Any unnecessary damage to concrete incidental to the work shall be repaired at the CONTRACTOR's expense.

3.17.4 Concrete Structures

Concrete structures, including but not limited to headwalls and drainage structures damaged during construction, shall be promptly and satisfactorily restored to pre-construction condition, as directed by the ENGINEER, in accordance with all North Carolina Department of Transportation.

Measurement and Payment

Concrete structure restoration costs, directly resulting from the installation of gas facilities, will be measured for payment in units of square feet. Concrete structure restoration will be paid for at the unit price bid. The bid price shall include the cost of any and all equipment, material and labor required for concrete structure restoration, including: the cutting, removal, disposal and replacement (including: reinforcement, finishing and jointing) of all classifications, thickness', and widths of concrete. Any damage to concrete structures incidental to the work shall be repaired at the CONTRACTOR's expense.

3.18 **Restoration of Pipeline Limits of Disturbance**

The CONTRACTOR shall be required to restore the project limits to pre-construction contours and restore vegetation as directed by the ENGINEER, in accordance with the North Carolina Erosion and Sediment Control Planning and Design Manual, the North Carolina Erosion and Sediment Control Field Manual, latest editions.

Restoration shall occur in sections that are complete within fourteen (14) days following the restoration of the surface to original contours, removal of construction equipment and debris, and cessation of work in that section of the project limits.

Restoration may not be delayed until after all construction has been completed.

As the remaining construction progresses, the CONTRACTOR shall revisit and inspect previously restored sections of the right-of-way and install remedial restoration measures as necessary.

Measurement and Payment:

The cost of any and all equipment, materials, and labor shall be included in the cost per acre to perform the specified work.

End of Section 3

4 **SECTION 4 - MATERIALS FOR GAS FACILITY INSTALLATION**

Material descriptions are included to provide the CONTRACTOR with information necessary for proper equipment selection and installation procedures. The GUC will provide materials as described in 3.4.1 Equipment, Tools, Labor and Materials To Be Furnished By OWNER

4.1 **Pipe**

4.1.1 Polyethylene Gas Pipe

All polyethylene gas pipe shall be PE 2406/2708, medium-density polyethylene. The polyethylene pipe shall be manufactured and tested in accordance with ASTM specification D2513. The minimum material cell classification, as determined in accordance with ASTM D3350 shall be 234363E. All polyethylene pipes shall be Iron Pipe Size (IPS), unless noted as copper tubing size (cts).

PE 2406 polyethylene pipe properties shall be as listed in Table 4.1.1.

TABLE 4.1.1
POLYETHYLENE PIPE PROPERTIES

SIZE (INCHES)	SDR	WEIGHT (LB./FT.)	COIL/STRAIGHT LENGTH (FT.)
3/4	11	0.12	Coil
1-3/4	10	0.34	Coil
2	11	0.63	Coil
4	11.5	2.17	40' (Straight Length)
6	11.0	4.90	40' (Straight Length)
8	11.0	8.31	40' (Straight Length)

4.2 **Pipe Fittings**

4.2.1 Polyethylene Pipe Fittings

Polyethylene pipe fittings shall be butt fusion; saddle fusion or electrofusion fittings manufactured by an approved manufacturer and shall be composed of the same material as the pipe, as specified in 4.1.1 Polyethylene Gas Pipe. All one-half (1/2) and one (1) inch fittings must be 0.090 wall thickness copper tubing size (CTS). All fittings larger than one (1) inch shall be SDR 11, iron pipe size (IPS).

4.2.1.1 **Fabricated Tees**

Polyethylene fabricated tees shall consist of line pipe and a branch saddle fitting. The line pipe shall be similar in length to a standard molded tee. The branch saddle fitting shall be fusion applied, the line pipe tapped through the branch saddle fitting with a full outlet opening, and a section of pipe with a minimum length of twelve (12) inches fused to the outlet of the branch saddle fitting in the manufacturer's facilities. The branch saddle and line pipe shall be composed of the same material as the pipe, as specified in 4.1.1 Polyethylene Gas Pipe.

4.2.2 Electrofusion Fittings

Electrofusion fittings shall be manufactured of polyethylene resins compatible with PE 2406/2708, high-density pipe. The fittings shall be engineered to be used with and meet or exceed the resistance properties of SDR 11, polyethylene pipe.

4.2.3 Transition Fittings

Steel to plastic transition fittings shall meet or exceed 49 CFR 192, ASTM D2513 and ASTM A53 specification. The steel portion of the fitting shall be coated with electrostatically applied epoxy and the end shall be beveled for welding and tapered to match the pipe bore. The plastic portion of the fitting shall be composed of the same material as the pipe. The longitudinal pull out strength of the transition from steel to plastic shall exceed the yield factor of plastic pipe.

4.3 **Valves**

All valves to be installed in the gas distribution system shall be wrench operated, low maintenance or no maintenance valves as indicated on the Plans.

4.3.1 Main Valves

4.3.1.1 **Polyethylene Valves**

All main valves shall be polyethylene, full opening, ball type and maintenance free, as manufactured by Nordstrom Valve, Inc. (Polyvalve) or Kerotest (Polytec). The valves shall be composed of the same material as the pipe, as specified in 4.1.1 Polyethylene Gas Pipe. Valve outlets shall be manufactured for butt fusion. The valves shall have factory applied PE 2406/2708 extensions, in conformance with 4.1.1 Polyethylene Gas Pipe above, on both ends. Extensions shall be joined by butt fusion.

4.4 **Locating Stations and Valve Boxes**

Locating station boxes shall be installed to facilitate the location of the mains. Valve boxes shall be installed to facilitate the operation of the valve.

4.4.1 **Main Line Valve Boxes and Locating Stations**

Locating and valve boxes, extension pieces, collars and covers shall be 2-piece screw type adjustable or 2-piece sliding type adjustable boxes as manufactured by Bingham and Taylor or ENGINEER approved equivalent. Valve box covers shall have the word "GAS" embossed on top. Locating station covers shall have the word "TEST" or "T" embossed on top.

4.5 **Other Materials**

Special material specifications may be listed on any supplemental Plans or drawings.

The CONTRACTOR shall provide special materials, as directed by the ENGINEER.

End of Section 4

5 **SECTION 5 - GAS DISTRIBUTION FACILITIES INSTALLATION**

5.1 **CONTRACTOR Qualifications**

The CONTRACTOR shall use only competent and skilled workmen for the performance of any and all work on the natural gas distribution system, as specified herein. The workmen shall not perform any heat fusion operations on any pipe or associated fittings within the system until they have been qualified to perform such operations in accordance with the test requirements specified in 5.1.1 Heat Fusion Qualifications.

The CONTRACTOR shall furnish evidence, as required by and to the satisfaction of the ENGINEER, that the specified testing requirements have been met for each employee prior to their utilization on the work.

Measurement and Payment

Qualification of the CONTRACTOR's personnel for heat fusion operations is considered incidental and will not be considered for payment. All costs associated with qualifying the CONTRACTOR's personnel, including but not limited to testing and certification, as specified herein, shall be included in the unit prices bid for the various pay items of the work.

5.1.1 Heat Fusion Qualifications

Operators of heat fusion equipment, including: butt fusion, saddle fusion and electrofusion, shall be tested and certified in accordance with the requirements of 49 CFR 192, Subpart F, Paragraph 285 along with any and all additional requirements of the specific pipe and/or fitting manufacturer.

In addition to and in accordance with the requirements above, all personnel performing heat fusion operations shall be certified by the GUC to join polyethylene pipe approved for use as included in Section 4.1.1 Polyethylene Gas Pipe, prior to commencing work, by the following procedures:

Certification: Each technician making joints in polyethylene pipe must provide evidence of current heat fusion certification from an approved pipe manufacturer, pipe vendor, or gas distribution company. Additionally, each technician must be qualified by the Gas Systems Supervisor, or designee, before making joints on polyethylene pipe that will be installed in the gas distribution system operated by the GUC.

Testing: Each technician must show proof of satisfactory training and practice in making heat fused joints on polyethylene pipe and fittings. A technician will be tested with the following procedure:

- 1) Make a specimen joint by joining material equal to the material being used which passes visual inspection during and after assembly and is found to have the same appearance as an acceptable joint or photograph of an acceptable joint.
- 2) Specimen is physically tested by cutting into at least three (3) longitudinal strips. Each strip shall:
 - Show no voids or discontinuities or any cut surface in the joint area.
 - Be deformed by bending, torque, or impact and if failure occurs, it must not be in the joint area.

Re-qualification must be completed if during any twelve (12) month period that person:

- (i) Does not make any fusion joints.
- (ii) During the course of the work, any employee of the CONTRACTOR that cumulatively performs three unsatisfactory fuses for incorporation in the natural gas distribution system that are subsequently determined to be unacceptable to the ENGINEER shall not be allowed to perform fusion operations until evidence of re-training from an acceptable source is provided to the ENGINEER.

If the technician performs unsatisfactorily in the fusion of the joints or fittings for which the technician is approved for as indicated on his fusion permit, the GUC reserves the right to revoke his/her permit to fuse polyethylene pipe on the GUC's gas system.

5.2 **Heat Fusion**

All polyethylene pipe and/or fitting connections and other fabrications within the gas distribution system shall be made by heat fusion, unless otherwise directed by the ENGINEER. Heat fusion shall include: butt fusion, saddle fusion and electrofusion.

Measurement and Payment

Heat fusion operations are considered incidental work and will not be measured for payment. The cost of any and all equipment, material and labor required for heat fusion operations and inspection thereof, including: heat fusion machines and wind guards, shall be included in the unit prices bid for the various pay items of the work.

5.2.1 Procedure

All heat fusion jointing procedures shall be performed in accordance with 49 CFR 192 and any and all recommended Specifications and procedures provided by the pipe and/or fitting manufacturer.

Heat fusion equipment shall, at all times, be protected from damage and kept in good working condition. Fusion equipment that shows signs of deterioration or damage shall be replaced. Heat fusion machines that, in the opinion of the ENGINEER, are in poor repair or are not of sufficient capacity to perform the work shall not be used in conjunction with work on GUC facilities.

Suitable windguards shall be provided to protect the work during periods of excessive wind or cold weather. When the ambient temperature is below 32°F care must be taken to maintain the proper heater plate temperature.

The CONTRACTOR shall, at the direction of the ENGINEER, temporarily suspend all heat fusion operations whenever conditions are not conducive to the performance of good work.

All fused joints and other connections shall be air-cooled. Accelerated cooling by any method shall not be permitted.

Fusion operations on polyethylene pipe shall be performed adjacent to the trench and the pipe lifted and lowered into the trench. Where absolutely necessary to fuse polyethylene pipe at another location than adjacent to the trench, as allowed and confirmed by the ENGINEER, the pipe shall be lifted and carried to the trench. Under no circumstances shall any length or portion of the polyethylene pipe be dragged, slid, pushed or pulled, on any surface to the trench.

5.2.2 Inspection

Visual, nondestructive and/or destructive testing procedures shall be implemented, as required by the ENGINEER, to determine the quality of the fused joints.

The ENGINEER may, at his discretion, require nondestructive testing and inspection of any or all fused joints prior to the initiation of backfilling or insertion operations.

The ENGINEER shall make all determinations as to what constitutes an acceptable fused joint as well as the disposition of all defective joints. These determinations shall be made upon completion of a visual inspection. Defective joints shall be removed from the piping system at the ENGINEER's direction and at no cost to the GUC.

5.3 Valves

Valves shall be installed at all locations indicated on the Plans, or as otherwise directed by the ENGINEER.

Valve installations shall include the valve, complete valve box assembly, any required blocking.

Prior to installation, all valves shall be fully opened and fully closed a sufficient number of times to ensure that all parts are in proper working order.

All polyethylene valves shall be installed below grade by butt fusion, unless otherwise directed by the ENGINEER. Butt fusion operations on polyethylene valves shall be in accordance with 5.2 Heat Fusion.

Valve boxes shall be installed so as not to hinder the operation of the valve.

Backfill shall be carefully tamped around each valve box to a distance of four (4) feet on all sides of the box, or to the undisturbed trench face if less than four (4) feet, such that the plumbness of the valve box is maintained.

A pre-manufactured concrete collar or a poured in place concrete collar shall be installed around the lid area of each valve box which is installed outside of paved roadways. Each poured in place concrete collar shall be eighteen (18) inches by eighteen (18) inches and shall be composed of concrete capable of reaching a compressive strength of 3000 psi.

All valves shall be in the open position during pressure testing, and shall remain as such upon completion of the tests. Under no circumstances shall the CONTRACTOR operate any valves within the existing gas distribution system, or otherwise interrupt or restore gas service to any customer. GUC personnel shall perform all valve operations and service restoration, as required.

Following the complete installation, backfill, testing and acceptance of the valve and valve box assembly, a section of two (2) inch polyethylene pipe shall be placed inside the valve box. The section of polyethylene pipe shall be sufficient in length to be retrieved and removed during the operation of the valve and such that it does not interfere with the normal placement of the lid.

Measurement and Payment

Valve installations will be measured for payment based upon the number installed.

The unit price bid shall include the cost of any and all equipment, incidental materials and labor required for valve installation, including blocking as describe above.

5.4 **Pressure and Leak Testing**

Each gas main installed within the GUC's distribution system shall be pressure and leak tested, as specified herein. The CONTRACTOR shall provide the necessary materials, labor and pumps required to pressurize the gas main in a satisfactory and efficient manner. All pressure and leak testing shall be done in the presence of the ENGINEER or assigned designee. Tests done

without supervision will not be accepted and the CONTRACTOR shall be required to retest at his expense.

When the length of any pipe section exceeds 1,000 feet, the ENGINEER reserves the right to require the pipe to be tested in sections determined by the ENGINEER.

All new gas mains shall be pressure tested using compressed air or nitrogen. Water shall not be used as a test medium for gas mains. The method and procedure for each pressure test shall be subject to the approval of the ENGINEER.

Natural gas shall not be admitted into any gas main prior to the ENGINEER's approval and the successful completion of all required pressure tests.

Measurement and Payment

Pressure and leak testing operations will be covered by a specific contract unit price. The cost of any and all equipment, material and labor required for pressure and leak-testing operations shall be included in the unit price for Pressure and Leak Testing.

5.4.1 Preparation

Prior to testing, each section of two (2) inch or larger nominal diameter main shall be thoroughly cleaned by forcing a pig type mechanical cleaner through the pipe a sufficient number of times to remove all foreign matter which may have been trapped inside the pipe during construction. A minimum of two pig runs shall be required. Mains that have a nominal diameter of less than two (2) inches shall be cleaned by swabbing or by forcing compressed air through the pipe at a sufficient rate such that all foreign matter is removed.

With the exception of certain test holes required for the installation and operation of testing equipment, each test segment shall be completely backfilled along its entire length prior to testing.

Twenty-four (24) hours prior to commencing any testing operations, the CONTRACTOR shall submit a test schedule to the ENGINEER for approval.

5.4.2 Procedure

After the pipe has been prepared in accordance with 5.4.1 Preparation, pressure and leak tests shall be performed as specified herein in accordance with 49 CFR 192, Subpart J.

Pressure testing procedures shall not be initiated until at least twenty minutes after the last fused joint has been completed.

All pressure tests shall be monitored by means of chart recording devices with an attached pressure gauge located, as directed by the ENGINEER, along the main(s) to be tested. The chart recording devices shall be capable of recording the sustained test pressure for the duration of the test. The gauge shall be liquid filled and capable of measuring pressures to a minimum of one hundred (100) psig. The CONTRACTOR shall provide evidence of recent and accurate calibration of all chart-recording instruments. The date and time of the commencement and completion of the pressure test shall be recorded on the pressure chart, which shall be signed by the CONTRACTOR's superintendent and the ENGINEER. The original test chart shall be submitted along with a Test Record form and submitted to the ENGINEER for verification.

The GUC reserves the right to utilize its own test recording apparatuses, on any job at the discretion of the ENGINEER.

All gas mains installed within the distribution system shall be tested at a minimum of 90 psig and a maximum of 100 psig or as directed by the ENGINEER for the minimum duration specified in Table 5.4.2.

TABLE 5.4.2
PRESSURE TEST DURATIONS

PIPE LENGTH (FEET)	DURATION OF TEST MAINS
0 – 250	15 Minutes
Over 250 – 500	30 Minutes
Over 500 – 1000	1 Hour
> 1,000	8 Hours

Any variations in the test durations specified in Table 5.4.2 shall be subject to the approval of the ENGINEER.

The hourly pressure along with the ambient temperature at the beginning and end of the test shall be recorded for the duration of the test on the GUC's standard form. The date and time of the commencement and completion of the pressure test shall be recorded on the form, which shall be signed by the CONTRACTOR's inspector and submitted to the ENGINEER for verification.

After correcting for temperature changes, the test shall show no loss of pressure over the duration of the test.

All tie-in fuses and fittings not included in the pressure test shall be leak tested with a foaming leak locating compound solution after the main line has been placed into service.

Any and all breaks, leaks or defects in the pipe, valves and fittings discovered during the pressure and/or foaming leak locating compound tests shall be located, repaired or replaced, and re-tested by the CONTRACTOR, at the CONTRACTOR's expense, as directed by the ENGINEER.

5.5 **Pigging, Purging, and Gassing-Up**

Upon the successful completion of the pressure and/or foaming leak locating compound test, and after the gas main or each section thereof has been cleaned and approved in every respect to the satisfaction of the ENGINEER, the GUC will be notified and, under their supervision, natural gas will be admitted into the completed mains in sufficient quantities such that all air is purged out of the line(s).

All purging operations will be done under the direct supervision of the ENGINEER. The CONTRACTOR shall provide a minimum of twenty-four (24) hours notice to the ENGINEER prior to commencing any purging operations.

Under no circumstances shall the CONTRACTOR operate any existing valves within the GUC distribution system.

When a reading of 100-percent gas is measured using an approved, calibrated CGI, all valves shall be closed and gas pressure continuously maintained on the line(s). The CGI shall be provided by the CONTRACTOR and operated by qualified personnel.

The GUC will provide all of the natural gas necessary for the initial purging operations. Any natural gas required for subsequent purging operations, if so required shall be provided at the CONTRACTOR's expense.

Measurement and Payment

Pigging, Purging, and Gassing-Up operations will be covered by a specific contract unit price. The cost of any and all equipment, material and labor required for pigging, purging, and gassing-up operations shall be included in the unit prices bid for the various pay items of the work.

5.6 **Tie-Ins to Existing System**

It is the responsibility of the CONTRACTOR to connect the work to existing or previously installed facilities as shown on the Plans or as directed by the ENGINEER.

The Plans describe generalized tie-in procedures and materials. The CONTRACTOR shall be aware that additional fittings or alignment changes may be necessary to properly and efficiently complete the tie-in operations. The CONTRACTOR, at no cost to the GUC, shall

furnish the necessary incidental materials and install the necessary materials required to complete the tie-in as shown on the Plans or as directed by the ENGINEER.

The CONTRACTOR shall have available the appropriate drilling, tapping and stopping equipment necessary for the various fittings shown on the Plans and trained and experienced personnel to operate this equipment. The tie-in operations shall be performed in a sequence as directed by the ENGINEER.

The CONTRACTOR shall have available the appropriate squeeze-off tools for plastic pipe. All points on the plastic pipe where the squeeze-off is applied shall have a full encirclement clamp or an electrofusion coupling installed to mark the location and to reinforce the pipe.

All tie-in operations, including but not limited to installation of the tie-in fitting and main blow-downs shall be performed under the direct supervision of the ENGINEER, or designee. The CONTRACTOR shall provide the ENGINEER with at least forty-eight (48) hours advance notice prior to initiating tie-in procedures.

The CONTRACTOR shall not commence any tie-in operations until the new mains have been cleaned and tested as specified in 5.4 Pressure and Leak Testing.

Under no circumstances shall the CONTRACTOR operate any valves within the existing gas distribution system, or otherwise interrupt or restore gas service to any customer. GUC personnel shall perform all valve operations and service restorations, as required.

Measurement and Payment

Squeeze off, fused, and coupled tie-in operations will be measured for payment based upon specific contract unit price. The unit bid price shall include the cost of any and all equipment, incidental material and labor required for these tie-in operations.

End of Section 5

Section T

Exhibits

Geotechnical Investigation Report
Exhibit T-1

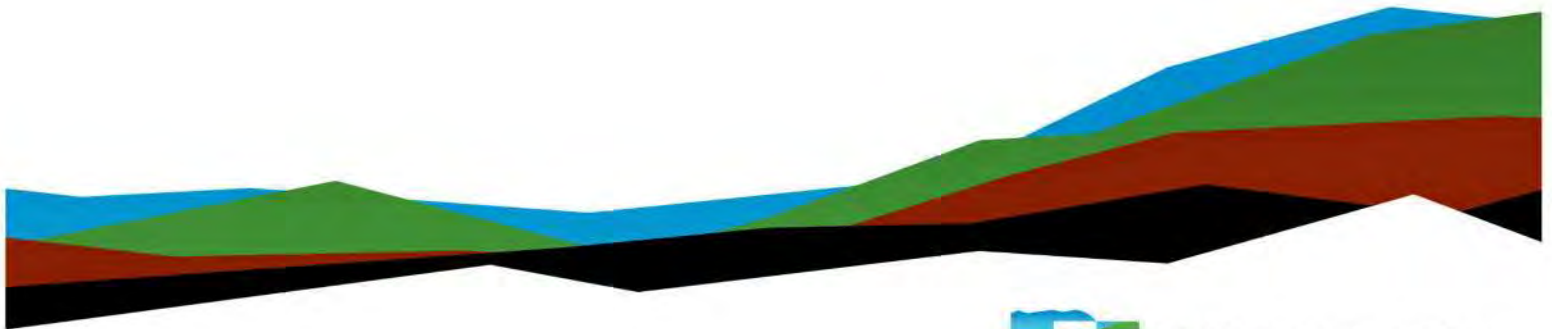
GUC – RTE 11 Extensions

Geotechnical Investigation Report

September 11, 2023 | Terracon Project No. 72235062
Kimley-Horn Project No. 116780001

Prepared for:

Kimley-Horn and Associates Inc.
4525 Main Street, Suite 1000
Virginia Beach, Virginia



Nationwide
[Terracon.com](https://www.terracon.com)

- Facilities
- Environmental
- Geotechnical
- Materials



314 Beacon Drive
Winterville, NC 28590
P (252) 353-1600
North Carolina Registered F-0869
Terracon.com

September 11, 2023

Kimley-Horn and Associates Inc.
4525 Main Street, Suite 1000
Virginia Beach, Virginia

Attn: Ryan Clark, PE – Vice President
P: 757-548-7353
E: Ryan.Clark@kimley-horn.com

Re: Geotechnical Investigation Report
GUC – RTE 11 Extensions
North Memorial Drive
Greenville, North Carolina
Terracon Project No. 72235062
Kimley-Horn Project No. 116780001

Dear Mr. Clark:

We have completed the scope of Geotechnical Investigation services for the above referenced project in general accordance with Terracon Proposal No. P72235062 dated June 22, 2023. This report presents the findings of the subsurface exploration for the proposed project.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,

Terracon

Seth A. Bowman

Staff Professional

Andrew J. Gliniak, PE

Project Engineer

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Groundwater	2
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Figures

GeoModel

Attachments


Exploration and Testing Procedures

Photography Log

Site Location and Exploration Plans

Exploration and Laboratory Results

Supporting Information

Note: This report was originally delivered in a web-based format. **Blue Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the  logo will bring you back to this page. For more interactive features, please view your project online at client.terracon.com.

Refer to each individual Attachment for a listing of contents.

Introduction

This report presents the results of our subsurface exploration and Geotechnical Investigation services performed for the proposed utility extension to be located along North Memorial Drive in Greenville, North Carolina. The purpose of these services was to provide information and geotechnical data relative to:

- Subsurface soil conditions
- Groundwater conditions

The geotechnical Scope of Services for this project included the advancement of test soundings, laboratory testing, and preparation of this report.

Drawings showing the site and sounding locations are shown on the [Site Location](#) and [Exploration Plan](#), respectively. The results of the laboratory testing performed on soil samples obtained from the site during our field exploration are included on the sounding logs in the [Exploration Results](#) section.

Project Description

Our initial understanding of the project was provided in our proposal and was discussed during project planning. A period of collaboration has transpired since the project was initiated, and our final understanding of the project conditions is as follows:

Item	Description
Information Provided	Project information was obtained via email from Kimley Horn on June 19, 2023. The email contained a brief summary of the project, requested sounding depths and a .kmz file showing proposed sounding locations.
Project Description	We understand the purpose of our exploration is to provide an investigation of the subsurface conditions at four utility line crossings. The utility lines will be installed utilizing jack and bore or horizontal directional drilling methods.

Site Conditions

The following description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

Item	Description
Site Information	The utility crossings are located at various intersections along North Memorial Drive and Staton Mill Road in Greenville, North Carolina. (See Site Location)
Existing Improvements	Asphalt paved roads with grassed medians.
Current Ground Cover	Grass and brush at requested test locations.
Existing Topography	Relatively level in elevation ranging from 39 feet to 42 feet MSL based on publicly available topography maps published by the USGS and Google Earth Pro™.

We also collected photographs at the time of our field exploration program. Representative photos are provided in our [Photography Log](#).

Geotechnical Characterization

We have developed a general characterization of the subsurface conditions based upon our review of the subsurface exploration, laboratory data, geologic setting, and our understanding of the project. Conditions observed at each exploration point are indicated on the individual logs. The individual logs can be found in the [Exploration Results](#) and the GeoModel can be found in the [Figures](#) attachment of this report.

As part of our analyses, we identified the following model layers within the subsurface profile. For a more detailed view of the model layer depths at each sounding location, refer to the GeoModel. Surficial materials are not included in the GeoModel and the CPT model layers do not delineate these materials.

Model Layer	Layer Name	General Description
1	Clay	Soft to very stiff clay
2	Looser Sand	Loose to medium dense sand
3	Denser Sand	Medium dense to dense sand

Fill material was not encountered within the CPT soundings or macrocore samples. However due to the close proximity of the existing roadway, there is a chance that fill material associated with the construction of the roadway and its easements may be encountered.

Groundwater

Groundwater was not encountered at the test locations. Based on measured cave in depths 5 feet to 7 feet at the test locations, CPT data, and the moisture condition of the soil samples, groundwater is anticipated a depth of approximately 5 feet to 7 feet beneath existing site grades.

Groundwater conditions may be different at the time of construction. Groundwater conditions may change because of seasonal variations in rainfall, runoff, and other conditions not apparent at the time of exploration. Long-term groundwater monitoring was outside the scope of services for this project.

General Comments

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. If variations appear, we can provide further evaluation. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials, or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly affect excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the

Geotechnical Investigation Report

GUC – RTE 11 Extensions | Greenville, North Carolina
September 11, 2023 | Terracon Project No. 72235062



specific level of detail necessary for costing. Site safety and cost estimating including excavation support and dewatering requirements/design are the responsibility of others. Construction and site development have the potential to affect adjacent properties. Such impacts can include damages due to vibration, modification of groundwater/surface water flow during construction, foundation movement due to undermining or subsidence from excavation, as well as noise or air quality concerns. Evaluation of these items on nearby properties are commonly associated with contractor means and methods and are not addressed in this report. The owner and contractor should consider a preconstruction/precondition survey of surrounding development. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

Geotechnical Investigation Report

GUC – RTE 11 Extensions | Greenville, North Carolina
September 11, 2023 | Terracon Project No. 72235062

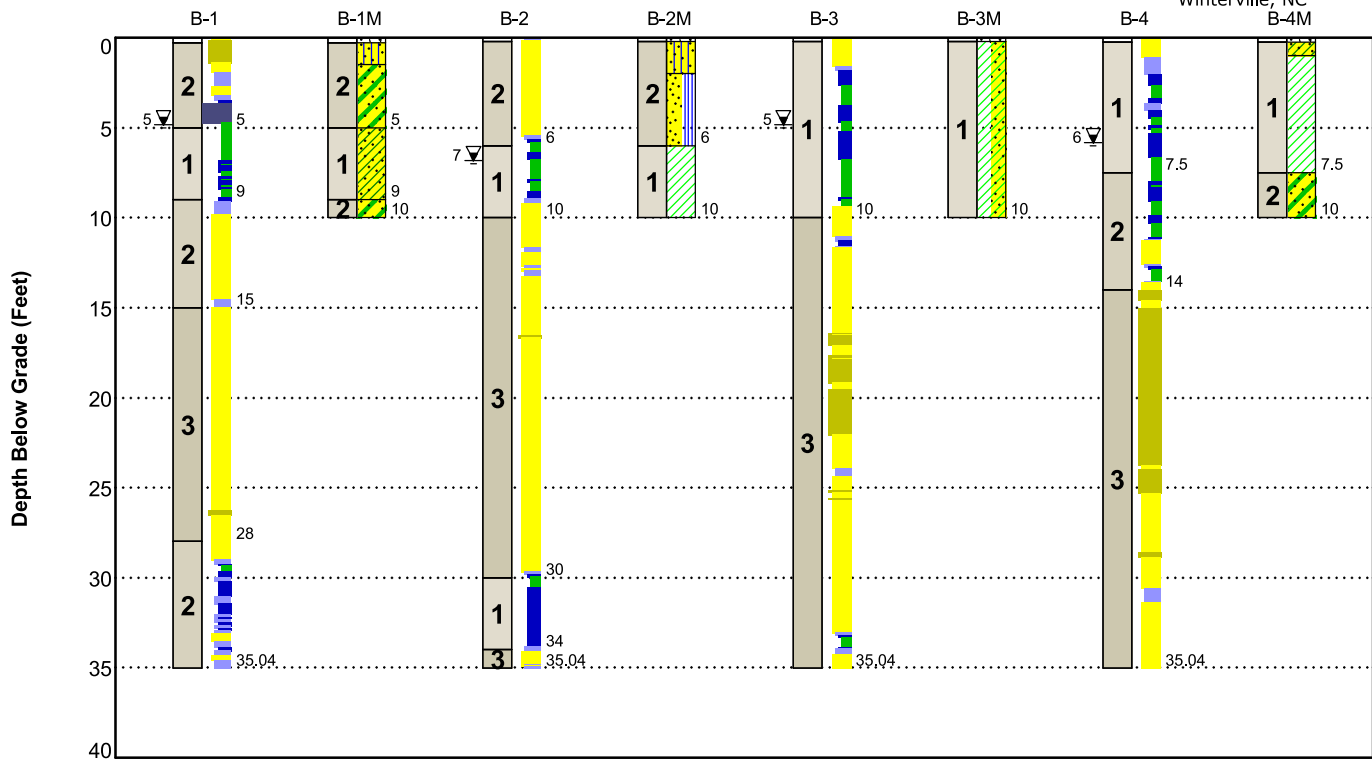


Figures

Contents:

GeoModel

GeoModel



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
1	Clay	Soft to very stiff clay
2	Looser Sand	Loose to medium dense sand
3	Denser Sand	Medium dense to dense sand

LEGEND

- Topsoil
- Sandy Lean Clay
- Lean Clay with Sand
- Silty Sand
- Poorly-graded Sand with Silt
- Clayey Sand
- Lean Clay

Soil Behavior Type (SBT)

- 1 Sensitive, fine grained
- 2 Organic soils - clay
- 3 Clay - silty clay to clay
- 4 Silt mixtures - clayey silt to silty clay
- 5 Sand mixtures - silty sand to sandy silt
- 6 Sands - clean sand to silty sand
- 7 Gravelly sand to dense sand
- 8 Very stiff sand to clayey sand
- 9 Very stiff fine grained

CPT Assumed Water Depth

The groundwater levels shown are representative of the date and time of our exploration. Significant changes are possible over time. Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

NOTES:

Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project. Numbers adjacent to soil column indicate depth below ground surface.

Geotechnical Investigation Report

GUC – RTE 11 Extensions | Greenville, North Carolina

September 11, 2023 | Terracon Project No. 72235062



Attachments

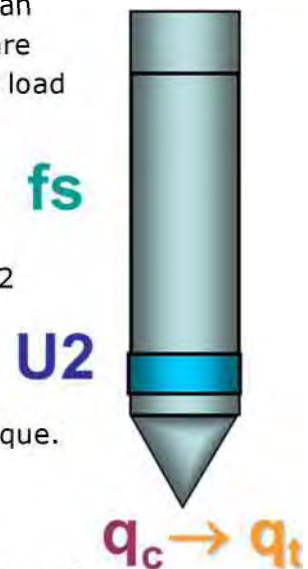
Exploration and Testing Procedures

Field Exploration

Number of Soundings	Approximate Sounding Depth (feet)	Location
4	35	Along planned extension

Sounding Layout and Elevations: Terracon personnel provided the sounding layout using handheld GPS equipment (estimated horizontal accuracy of about ± 15 feet) and referencing existing site features. Approximate ground surface elevations were estimated using Google Earth. If elevations and a more precise sounding layout are desired, we recommend soundings be surveyed.

Subsurface Exploration Procedures: The CPT hydraulically pushes an instrumented cone through the soil while nearly continuous readings are recorded to a portable computer. The cone is equipped with electronic load cells to measure tip resistance and sleeve resistance and a pressure transducer to measure the generated ambient pore pressure. The face of the cone has an apex angle of 60° and an area of 10 cm^2 . Digital data representing the tip resistance, friction resistance, pore water pressure, and probe inclination angle are recorded about every 2 centimeters while advancing through the ground at a rate between $1\frac{1}{2}$ and $2\frac{1}{2}$ centimeters per second. These measurements are correlated to various soil properties used for geotechnical design. No soil samples are gathered through this subsurface investigation technique.



CPT testing is conducted in general accordance with ASTM D5778 "Standard Test Method for Performing Electronic Friction Cone and Piezocone Penetration Testing of Soils." Upon completion, the data collected was downloaded and processed by the project engineer.

Additionally, select macrocore samples were obtained adjacent to select CPT sounding locations to obtain laboratory samples and visually classify near-surface soils. Samples were tagged for identification, sealed to reduce moisture loss, and taken to our laboratory for further examination, testing, and classification.

Laboratory Testing

The project engineer reviewed the field data and assigned laboratory tests. The laboratory testing program included the following types of tests:

Geotechnical Investigation Report

GUC – RTE 11 Extensions | Greenville, North Carolina
September 11, 2023 | Terracon Project No. 72235062



■ Moisture Content

The laboratory testing program often included examination of soil samples by an engineer. Based on the results of our field and laboratory programs, we described and classified the soil samples in accordance with the Unified Soil Classification System.

Photography Log

Photos taken August 15, 2023



Site conditions at sounding B-1



Site conditions at sounding B-2

Geotechnical Investigation Report

GUC - RTE 11 Extensions | Greenville, North Carolina
September 11, 2023 | Terracon Project No. 72235062



Site conditions at sounding B-3



Site conditions at sounding B-4

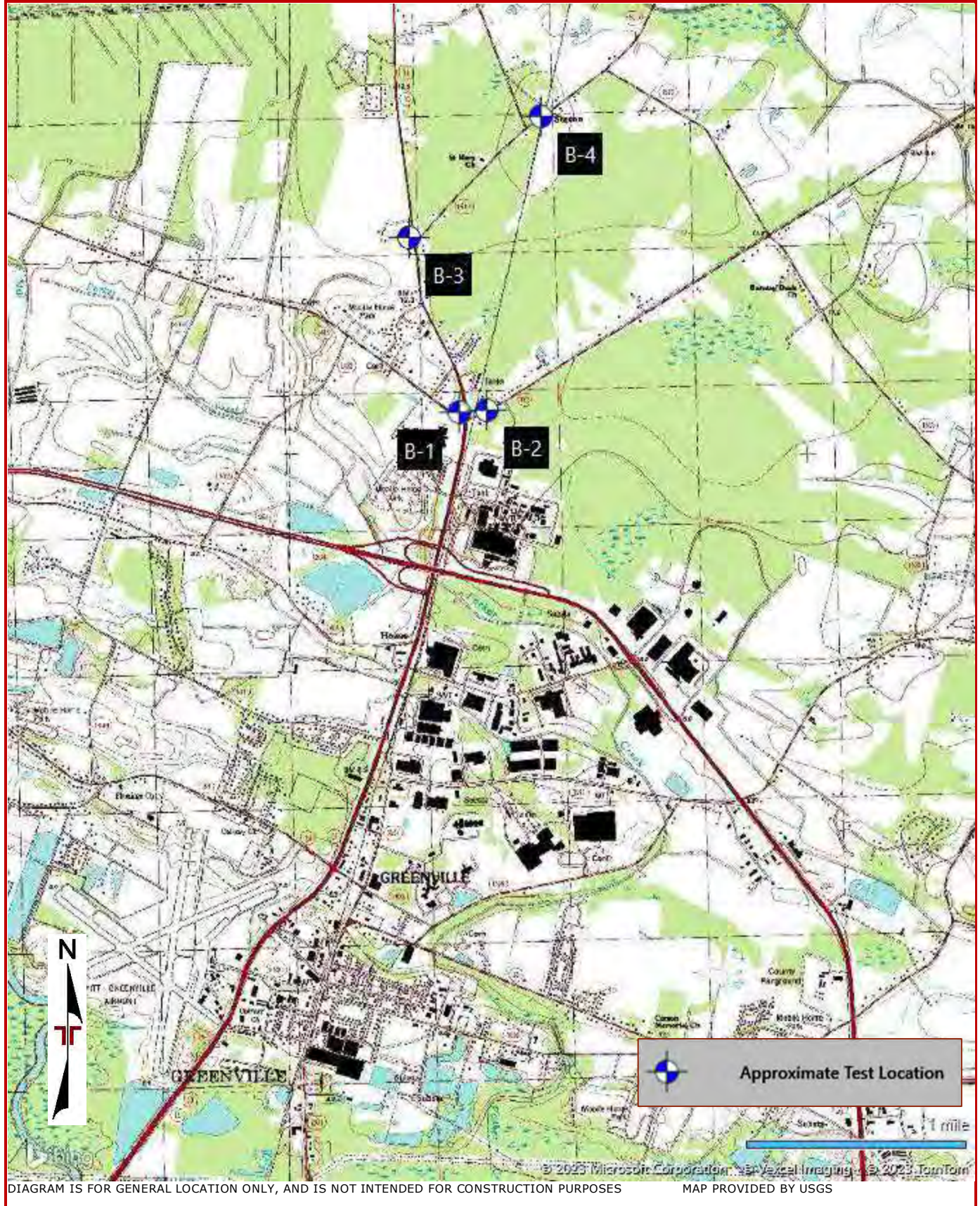
Site Location and Exploration Plans

Contents:

Site Location Plan
Exploration Plan

Note: All attachments are one page unless noted above.

Site Location



Exploration Plan

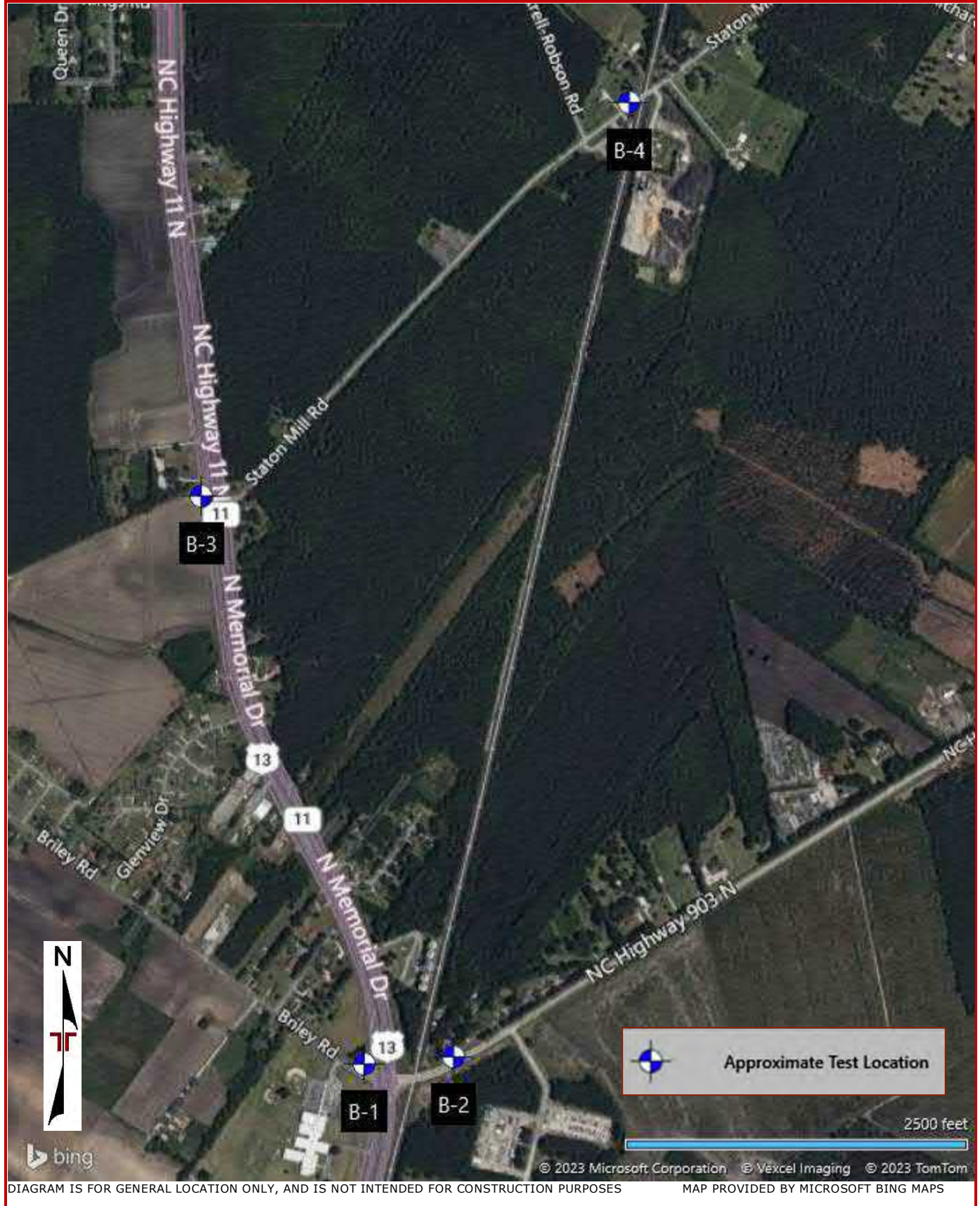


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

Exploration Results

Contents:

CPT and Macrocore Logs (B-1 through B-4)

Note: All attachments are one page unless noted above.

CPT Sounding ID B-1



314 Beacon Dr
 Winterville, NC

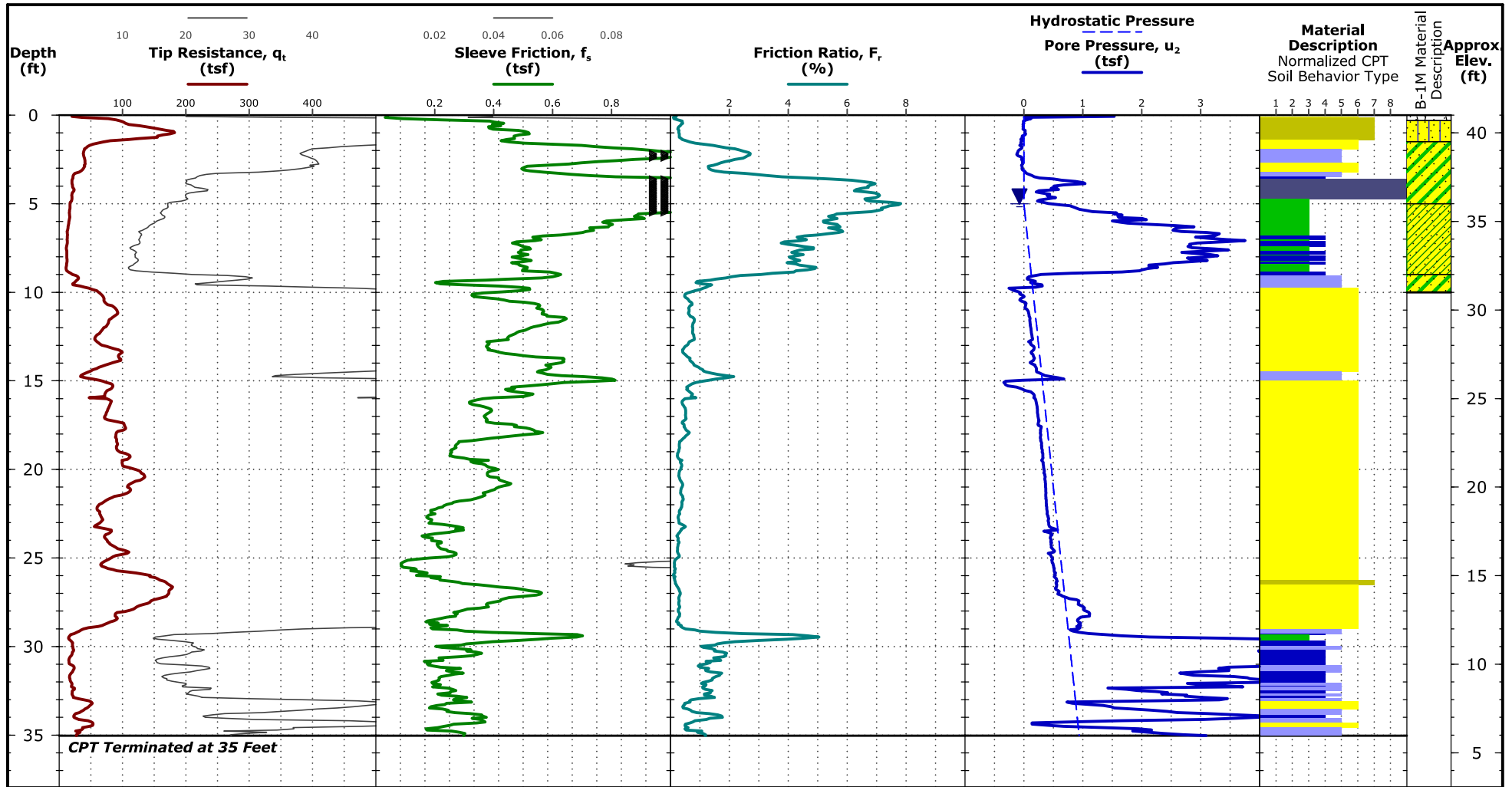
Latitude: 35.6694° Longitude: -77.3614°

Elevation: 41 (ft) +/-

Elevation Reference: Elevations were interpolated from Google Earth Pro.

CPT Started: 8/15/2023

CPT Completed: 8/15/2023



See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data, if any.
 See [Supporting Information](#) for explanation of symbols and abbreviations.

Notes

Test Location: See [Exploration Plan](#)
 See B-1M for the adjacent test's full details.
 Topsoil = 4 inches

CPT Equipment

CPT Rig: Geoprobe
 Operator: TW/ZB
 Auger anchors used as reaction force
 CPT sensor calibration reports available upon request
 Probe No. 5633 with net area ratio of .85
 u_2 pore pressure transducer location
 Manufactured by Nova- Calibrated 2/21/2022
 Tip and sleeve areas of 15 cm² and 225 cm²
 Ring friction reducer with O.D. of 2 in

Water Level Observation

▼ 5 ft estimated water depth
 (used in normalizations and correlations)

Normalized Soil Behavior Type (Robertson 1990)

- 1 Sensitive, fine grained
- 2 Organic soils - clay
- 3 Clay - silty clay to clay
- 4 Silt mixtures - clayey silt to silty clay
- 5 Sand mixtures - silty sand to sandy silt
- 6 Sands - clean sand to silty sand
- 7 Gravelly sand to dense sand
- 8 Very stiff sand to clayey sand
- 9 Very stiff fine grained

Boring Log No. B-1M

Model Layer	Graphic Log	Location: See Exploration Plan Latitude: 35.6694° Longitude: -77.3614° Depth (Ft.)	Elevation: 41 (Ft.) +/-	Depth (Ft.)	Water Level Observations	Sample Type	Water Content (%)
		TOPSOIL , 4 inches		40.7			
		SILTY SAND (SM) , grayish brown					
		CLAYEY SAND (SC) , grayish brown, light gray, and light brown		39.5			
2		SANDY LEAN CLAY (CL) , light gray and light brown		36			
1		CLAYEY SAND (SC) , light gray and light brown		32			
2		CLAYEY SAND (SC) , light gray and light brown		31			
		Boring Terminated at 10 Feet		10			

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).
 See [Supporting Information](#) for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations were interpolated from Google Earth Pro.

Water Level Observations
 No free water observed

Cave in depth

Advancement Method
 Direct push

Abandonment Method
 N/A

Drill Rig
 Geoprobe

Driller
 TW/ZB

Logged by
 SB

Boring Started
 08-15-2023

Boring Completed
 08-15-2023

CPT Sounding ID B-2



314 Beacon Dr
 Winterville, NC

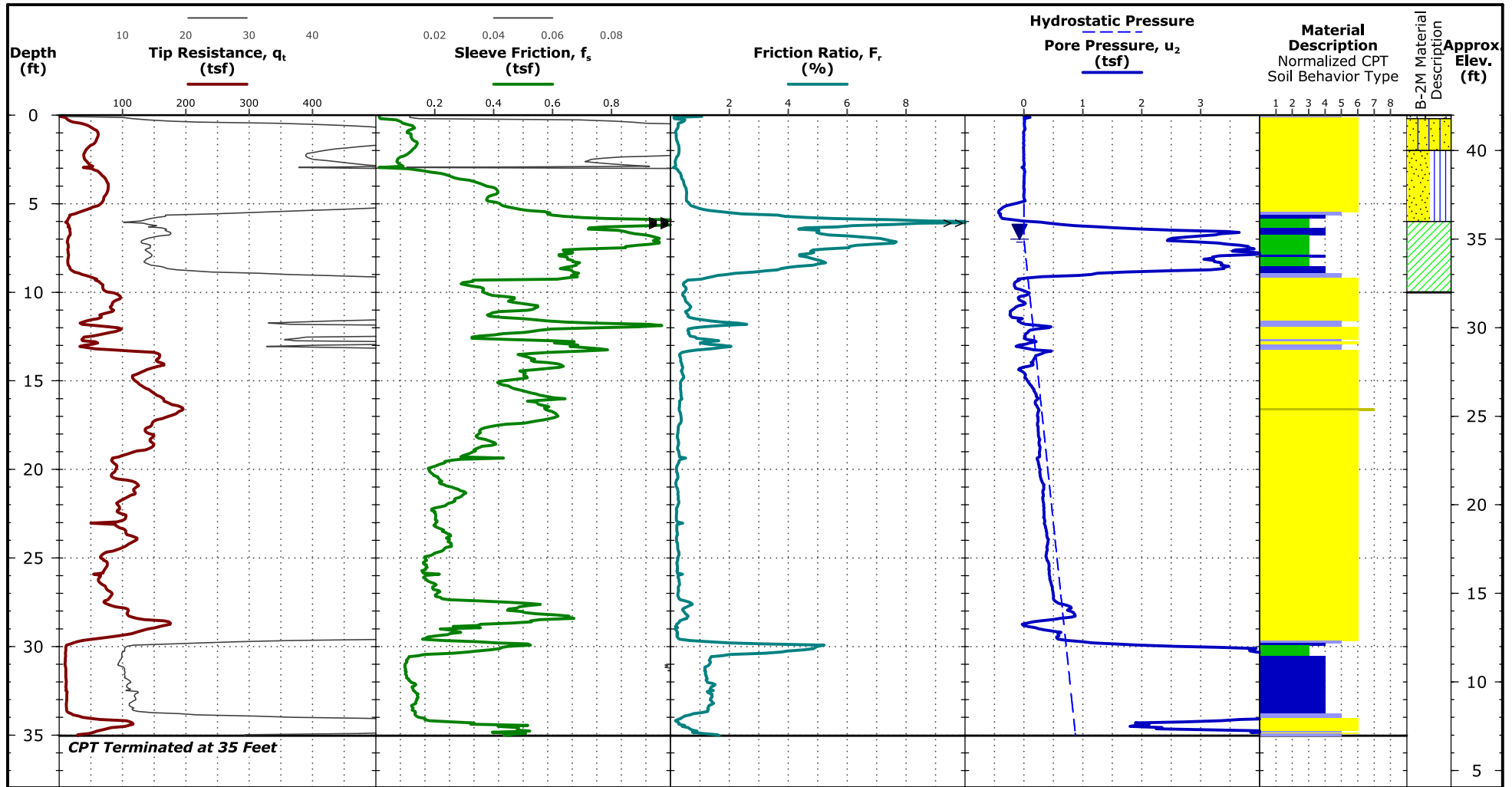
Latitude: 35.6695° Longitude: -77.3592°

Elevation: 42 (ft) +/-

Elevation Reference: Elevations were interpolated from Google Earth Pro.

CPT Started: 8/15/2023

CPT Completed: 8/15/2023



See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data, if any.
 See [Supporting Information](#) for explanation of symbols and abbreviations.

Notes

Test Location: See [Exploration Plan](#)
 See B-2M for the adjacent test's full details.
 Topsoil = 2 inches

CPT Equipment

CPT Rig: Geoprobe
 Operator: TW/ZB
 Auger anchors used as reaction force
 CPT sensor calibration reports available upon request
 Probe No. 5633 with net area ratio of .85
 U_2 pore pressure transducer location
 Manufactured by Nova- Calibrated 2/21/2022
 Tip and sleeve areas of 15 cm² and 225 cm²
 Ring friction reducer with O.D. of 2 in

Water Level Observation

▼ 7 ft estimated water depth
 (used in normalizations and correlations)

Normalized Soil Behavior Type (Robertson 1990)

- 1 Sensitive, fine grained
- 2 Organic soils - clay
- 3 Clay - silty clay to clay
- 4 Silt mixtures - clayey silt to silty clay
- 5 Sand mixtures - silty sand to sandy silt
- 6 Sands - clean sand to silty sand
- 7 Gravelly sand to dense sand
- 8 Very stiff sand to clayey sand
- 9 Very stiff fine grained

Boring Log No. B-2M

Model Layer	Graphic Log	Location: See Exploration Plan Latitude: 35.6695° Longitude: -77.3592°	Depth (Ft.)	Elevation: 42 (Ft.) +/-	Water Level Observations	Sample Type	Water Content (%)
		0.2 TOPSOIL , 2 inches	41.8				
		SILTY SAND (SM) , tan and orangish brown					
2		2.0 POORLY GRADED SAND WITH SILT (SP-SM) , tan, orangish brown, and light brown	40				
		6.0 LEAN CLAY (CL) , light brown, light gray, and red	36				
1		10.0 Boring Terminated at 10 Feet	32				

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).
 See [Supporting Information](#) for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevations were interpolated from Google Earth Pro.

Water Level Observations

No free water observed

Cave in depth

Advancement Method

Direct push

Abandonment Method

N/A

Drill Rig

Geoprobe

Driller

TW/ZB

Logged by

SB

Boring Started

08-15-2023

Boring Completed

08-15-2023

CPT Sounding ID B-3



314 Beacon Dr
 Winterville, NC

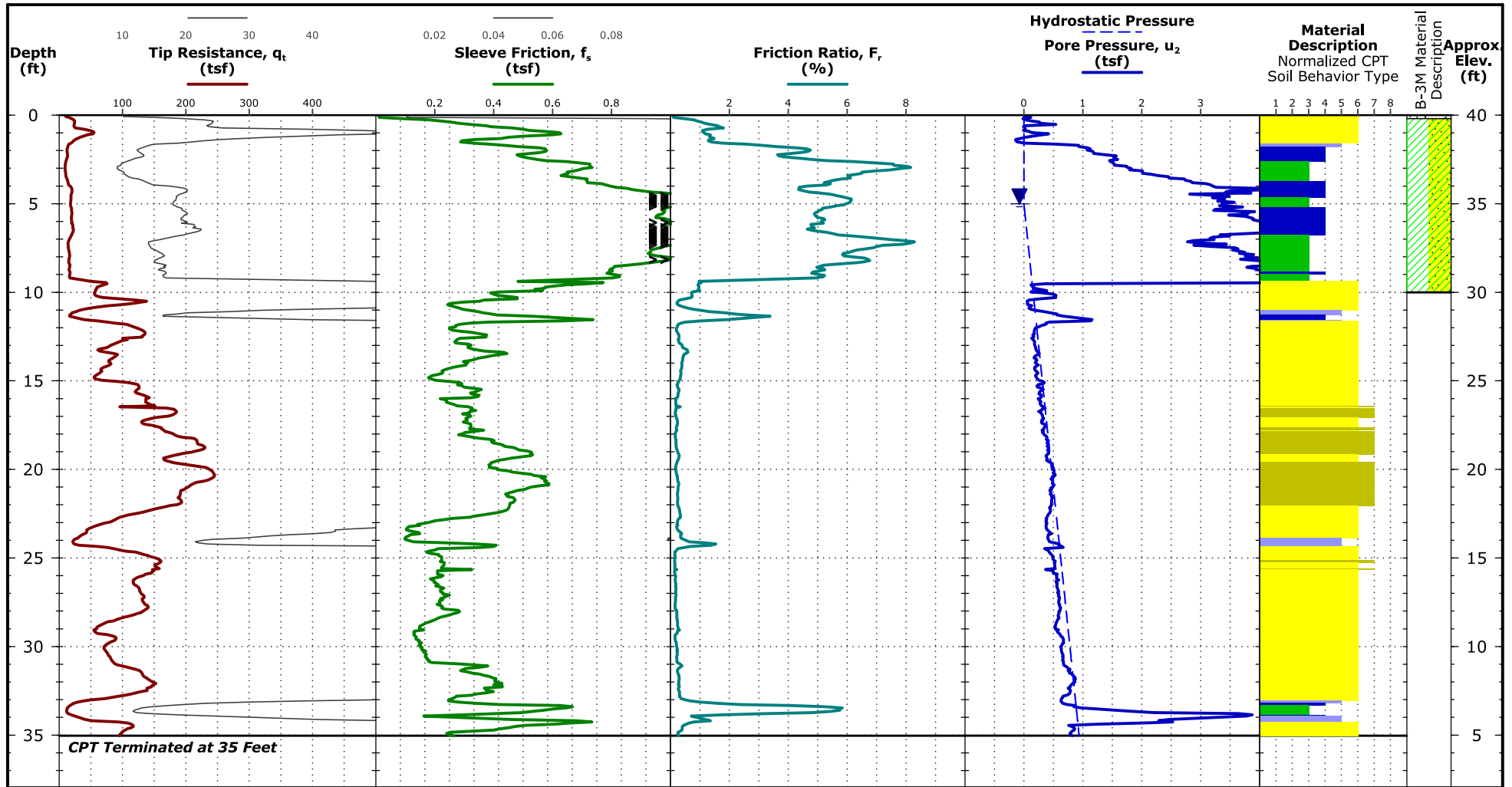
Latitude: 35.6808° Longitude: -77.3654°

Elevation: 40 (ft) +/-

Elevation Reference: Elevations were interpolated from Google Earth Pro.

CPT Started: 8/16/2023

CPT Completed: 8/16/2023



See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data, if any.
 See [Supporting Information](#) for explanation of symbols and abbreviations.

Notes

Test Location: See [Exploration Plan](#)
 See B-3M for the adjacent test's full details.
 Topsoil = 2 inches

CPT Equipment

CPT Rig: Geoprobe
 Operator: TW/ZB
 Auger anchors used as reaction force
 CPT sensor calibration reports available upon request
 Probe No. 5633 with net area ratio of .85
 u_2 pore pressure transducer location
 Manufactured by Nova- Calibrated 2/21/2022
 Tip and sleeve areas of 15 cm² and 225 cm²
 Ring friction reducer with O.D. of 2 in

Water Level Observation

▼ 5 ft estimated water depth
 (used in normalizations and correlations)

Normalized Soil Behavior Type (Robertson 1990)

- 1 Sensitive, fine grained
- 2 Organic soils - clay
- 3 Clay - silty clay to clay
- 4 Silt mixtures - clayey silt to silty clay
- 5 Sand mixtures - silty sand to sandy silt
- 6 Sands - clean sand to silty sand
- 7 Gravelly sand to dense sand
- 8 Very stiff sand to clayey sand
- 9 Very stiff fine grained

Boring Log No. B-3M

Model Layer	Graphic Log	Location: See Exploration Plan Latitude: 35.6808° Longitude: -77.3654°	Depth (Ft.)	Elevation: 40 (Ft.) +/-	Depth (Ft.)	Water Level Observations	Sample Type	Water Content (%)
		0.2 TOPSOIL , 2 inches	0.2	39.8				
1		LEAN CLAY WITH SAND (CL) , light gray, orangish brown, and red						
		10.0	10.0	30				
Boring Terminated at 10 Feet								

<p>See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).</p> <p>See Supporting Information for explanation of symbols and abbreviations.</p>	<p>Water Level Observations No free water observed</p>	<p>Drill Rig Geoprobe</p>
	<p>Notes Elevation Reference: Elevations were interpolated from Google Earth Pro.</p>	<p> Cave in depth</p> <p>Advancement Method Direct push</p> <p>Abandonment Method N/A</p>

CPT Sounding ID B-4



314 Beacon Dr
 Winterville, NC

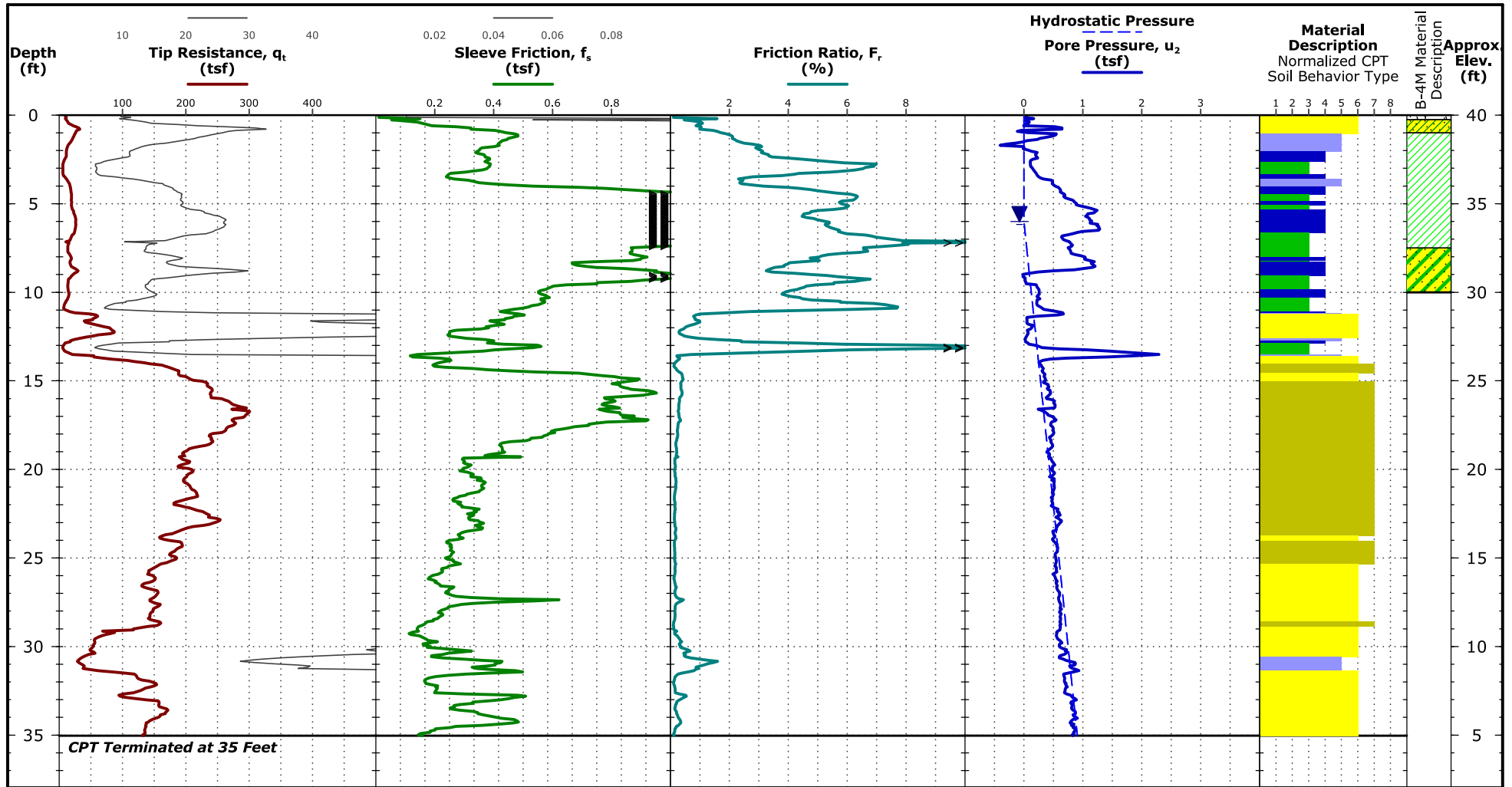
Latitude: 35.6887° Longitude: -77.3548°

Elevation: 40 (ft) +/-

Elevation Reference: Elevations were interpolated from Google Earth Pro.

CPT Started: 8/16/2023

CPT Completed: 8/16/2023



See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data, if any.
 See [Supporting Information](#) for explanation of symbols and abbreviations.

Notes

Test Location: See [Exploration Plan](#)
 See B-4M for the adjacent test's full details.
 Topsoil = 3 inches

CPT Equipment

CPT Rig: Geoprobe
 Operator: TW/ZB
 Auger anchors used as reaction force
 CPT sensor calibration reports available upon request
 Probe No. 5633 with net area ratio of .85
 u_2 pore pressure transducer location
 Manufactured by Nova- Calibrated 2/21/2022
 Tip and sleeve areas of 15 cm² and 225 cm²
 Ring friction reducer with O.D. of 2 in

Water Level Observation

▼ 6 ft estimated water depth
 (used in normalizations and correlations)

Normalized Soil Behavior Type (Robertson 1990)

- 1 Sensitive, fine grained
- 2 Organic soils - clay
- 3 Clay - silty clay to clay
- 4 Silt mixtures - clayey silt to silty clay
- 5 Sand mixtures - silty sand to sandy silt
- 6 Sands - clean sand to silty sand
- 7 Gravelly sand to dense sand
- 8 Very stiff sand to clayey sand
- 9 Very stiff fine grained

Boring Log No. B-4M

Model Layer	Graphic Log	Location: See Exploration Plan Latitude: 35.6887° Longitude: -77.3548° Depth (Ft.) Elevation: 40 (Ft.) +/-	Depth (Ft.)	Water Level Observations	Sample Type	Water Content (%)
		TOPSOIL , 3 inches	0.3			
1		SANDY LEAN CLAY (CL) , grayish brown	1.0			
		LEAN CLAY (CL) , gray, light brown, and red	7.5			
2		CLAYEY SAND (SC) , light gray and light brown	7.5			
		Boring Terminated at 10 Feet	10.0	10	22.8	15.8

<p>See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any). See Supporting Information for explanation of symbols and abbreviations.</p> <p>Notes Elevation Reference: Elevations were interpolated from Google Earth Pro.</p>	<p>Water Level Observations No free water observed</p> <p> Cave in depth</p> <p>Advancement Method Direct push</p> <p>Abandonment Method N/A</p>	<p>Drill Rig Geoprobe</p> <p>Driller TW/ZB</p> <p>Logged by SB</p> <p>Boring Started 08-16-2023</p> <p>Boring Completed 08-16-2023</p>
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
Supporting Information

Contents:

General Notes
Unified Soil Classification System
CPT General Notes

Note: All attachments are one page unless noted above.

General Notes

Sampling	Water Level	Field Tests
 <p>GeoProbe Macro Core or Large Bore</p>	<p> Water Initially Encountered</p> <p> Water Level After a Specified Period of Time</p> <p> Water Level After a Specified Period of Time</p> <p> Cave In Encountered</p> <p>Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.</p>	<p>N Standard Penetration Test Resistance (Blows/Ft.)</p> <p>(HP) Hand Penetrometer</p> <p>(T) Torvane</p> <p>(DCP) Dynamic Cone Penetrometer</p> <p>UC Unconfined Compressive Strength</p> <p>(PID) Photo-Ionization Detector</p> <p>(OVA) Organic Vapor Analyzer</p>

Descriptive Soil Classification

Soil classification as noted on the soil boring logs is based Unified Soil Classification System. Where sufficient laboratory data exist to classify the soils consistent with ASTM D2487 "Classification of Soils for Engineering Purposes" this procedure is used. ASTM D2488 "Description and Identification of Soils (Visual-Manual Procedure)" is also used to classify the soils, particularly where insufficient laboratory data exist to classify the soils in accordance with ASTM D2487. In addition to USCS classification, coarse grained soils are classified on the basis of their in-place relative density, and fine-grained soils are classified on the basis of their consistency. See "Strength Terms" table below for details. The ASTM standards noted above are for reference to methodology in general. In some cases, variations to methods are applied as a result of local practice or professional judgment.

Location And Elevation Notes

Exploration point locations as shown on the Exploration Plan and as noted on the soil boring logs in the form of Latitude and Longitude are approximate. See Exploration and Testing Procedures in the report for the methods used to locate the exploration points for this project. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

Strength Terms

Relative Density of Coarse-Grained Soils (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance		Consistency of Fine-Grained Soils (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance		
Relative Density	Standard Penetration or N-Value (Blows/Ft.)	Consistency	Unconfined Compressive Strength Qu (tsf)	Standard Penetration or N-Value (Blows/Ft.)
Very Loose	0 - 3	Very Soft	less than 0.25	0 - 1
Loose	4 - 9	Soft	0.25 to 0.50	2 - 4
Medium Dense	10 - 29	Medium Stiff	0.50 to 1.00	4 - 8
Dense	30 - 50	Stiff	1.00 to 2.00	8 - 15
Very Dense	> 50	Very Stiff	2.00 to 4.00	15 - 30
		Hard	> 4.00	> 30

Relevance of Exploration and Laboratory Test Results

Exploration/field results and/or laboratory test data contained within this document are intended for application to the project as described in this document. Use of such exploration/field results and/or laboratory test data should not be used independently of this document.

Unified Soil Classification System

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests ^A				Soil Classification		
				Group Symbol	Group Name ^B	
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	Gravels: More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels: Less than 5% fines ^C	$Cu \geq 4$ and $1 \leq Cc \leq 3$ ^E	GW	Well-graded gravel ^F	
		Gravels with Fines: More than 12% fines ^C	$Cu < 4$ and/or $[Cc < 1$ or $Cc > 3.0]$ ^E	GP	Poorly graded gravel ^F	
			Fines classify as ML or MH	GM	Silty gravel ^{F, G, H}	
		Sands: 50% or more of coarse fraction passes No. 4 sieve	Clean Sands: Less than 5% fines ^D	$Cu \geq 6$ and $1 \leq Cc \leq 3$ ^E	SW	Well-graded sand ^I
	Sands with Fines: More than 12% fines ^D		$Cu < 6$ and/or $[Cc < 1$ or $Cc > 3.0]$ ^E	SP	Poorly graded sand ^I	
		Fines classify as ML or MH	SM	Silty sand ^{G, H, I}		
	Fines classify as CL or CH	SC	Clayey sand ^{G, H, I}			
	Fine-Grained Soils: 50% or more passes the No. 200 sieve	Silts and Clays: Liquid limit less than 50	Inorganic:	$PI > 7$ and plots above "A" line ^J	CL	Lean clay ^{K, L, M}
				$PI < 4$ or plots below "A" line ^J	ML	Silt ^{K, L, M}
			Organic:	$\frac{LL \text{ oven dried}}{LL \text{ not dried}} < 0.75$	OL	Organic clay ^{K, L, M, N} Organic silt ^{K, L, M, O}
Silts and Clays: Liquid limit 50 or more				Inorganic:	PI plots on or above "A" line	CH
		PI plots below "A" line	MH		Elastic silt ^{K, L, M}	
		Organic:	$\frac{LL \text{ oven dried}}{LL \text{ not dried}} < 0.75$	OH	Organic clay ^{K, L, M, P} Organic silt ^{K, L, M, Q}	
			Highly organic soils:	Primarily organic matter, dark in color, and organic odor		PT

^A Based on the material passing the 3-inch (75-mm) sieve.

^B If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

^C Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

^D Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.

^E $Cu = \frac{D_{60}/D_{10}}{D_{30}^2}$
 $Cc = \frac{D_{30}^2}{D_{10} \times D_{60}}$

^F If soil contains $\geq 15\%$ sand, add "with sand" to group name.

^G If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

^H If fines are organic, add "with organic fines" to group name.

^I If soil contains $\geq 15\%$ gravel, add "with gravel" to group name.

^J If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

^K If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

^L If soil contains $\geq 30\%$ plus No. 200 predominantly sand, add "sandy" to group name.

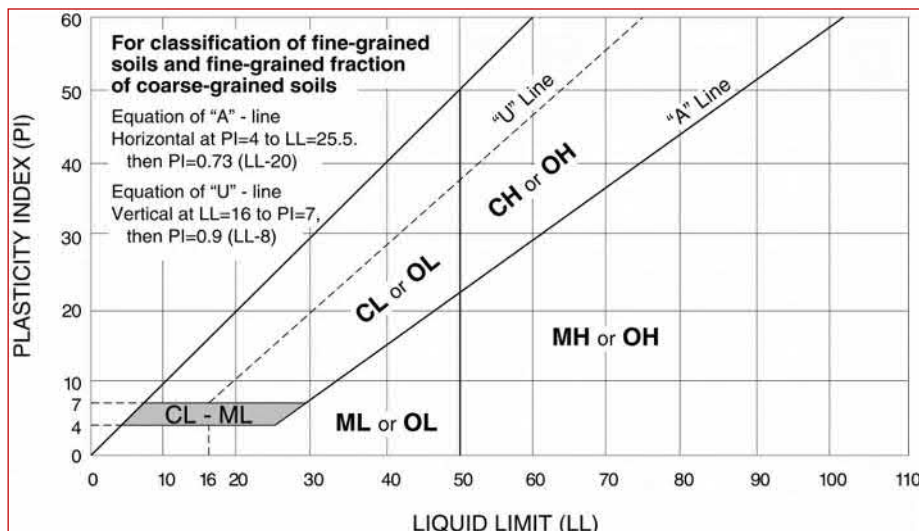
^M If soil contains $\geq 30\%$ plus No. 200, predominantly gravel, add "gravelly" to group name.

^N $PI \geq 4$ and plots on or above "A" line.

^O $PI < 4$ or plots below "A" line.

^P PI plots on or above "A" line.

^Q PI plots below "A" line.



CPT GENERAL NOTES

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

DESCRIPTION OF GEOTECHNICAL CORRELATIONS

DESCRIPTION OF MEASUREMENTS AND CALIBRATIONS

To be reported per ASTM D5778:

Uncorrected Tip Resistance, q_c
Measured force acting on the cone divided by the cone's projected area

Corrected Tip Resistance, q_t
Cone resistance corrected for porewater and net area ratio effects
 $q_t = q_c + u_2(1 - a)$

Where a is the net area ratio, a lab calibration of the cone typically between 0.70 and 0.85

Pore Pressure, u
Pore pressure measured during penetration
 u_1 - sensor on the face of the cone
 u_2 - sensor on the shoulder (more common)

Sleeve Friction, f_s
Frictional force acting on the sleeve divided by its surface area

Normalized Friction Ratio, F_r
The ratio as a percentage of f_s to q_t , accounting for overburden pressure

To be reported per ASTM D7400, if collected:

Shear Wave Velocity, V_s
Measured in a Seismic CPT and provides direct measure of soil stiffness

Normalized Tip Resistance, Q_{tn}
 $Q_{tn} = ((q_t - \sigma_{v0})/P_a)(P_a/\sigma'_{v0})^n$
 $n = 0.381(I_c) + 0.05(\sigma'_{v0}/P_a) - 0.15$

Over Consolidation Ratio, OCR
OCR (1) = $0.25(Q_{tn})^{0.25}$
OCR (2) = $0.33(Q_{tn})$

Undrained Shear Strength, S_u
 $S_u = Q_{tn} \times \sigma'_{v0}/N_{kt}$
 N_{kt} is a soil-specific factor (shown on S_u plot)

Sensitivity, S_t
 $S_t = (q_t - \sigma_{v0}/N_{kt}) \times (1/f_s)$

Effective Friction Angle, ϕ'
 $\phi' (1) = \tan^{-1}(0.373[\log(q_t/\sigma'_{v0}) + 0.29])$
 $\phi' (2) = 17.6 + 11[\log(Q_{tn})]$

Unit Weight, γ
 $\gamma = (0.27[\log(F_r)] + 0.36[\log(q_t/\text{atm})] + 1.236) \times \gamma_{\text{water}}$
 σ_{v0} is taken as the incremental sum of the unit weights

Small Strain Shear Modulus, G_0
 $G_0 (1) = \rho V_s^2$
 $G_0 (2) = 0.015 \times 10^{(0.55I_c + 1.68)}(q_t - \sigma_{v0})$

Soil Behavior Type Index, I_c
 $I_c = [(3.47 - \log(Q_{tn}))^2 + (\log(F_r) + 1.22)^2]^{0.5}$

SPT N_{60}
 $N_{60} = (q_t/\text{atm}) / 10^{(1.1268 - 0.2817I_c)}$

Elastic Modulus, E_s (assumes $q/q_{\text{ultimate}} \sim 0.3$, i.e. FS = 3)

$E_s (1) = 2.6\psi G_0$ where $\psi = 0.56 - 0.33\log Q_{tn, \text{clean sand}}$

$E_s (2) = G_0$

$E_s (3) = 0.015 \times 10^{(0.55I_c + 1.68)}(q_t - \sigma_{v0})$

$E_s (4) = 2.5q_t$

Constrained Modulus, M

$M = \alpha_M(q_t - \sigma_{v0})$

For $I_c > 2.2$ (fine-grained soils)

$\alpha_M = Q_{tn}$ with maximum of 14

For $I_c < 2.2$ (coarse-grained soils)

$\alpha_M = 0.0188 \times 10^{(0.55I_c + 1.68)}$

Hydraulic Conductivity, k

For $1.0 < I_c < 3.27$ $k = 10^{(0.952 - 3.04I_c)}$

For $3.27 < I_c < 4.0$ $k = 10^{(-4.52 - 1.37I_c)}$

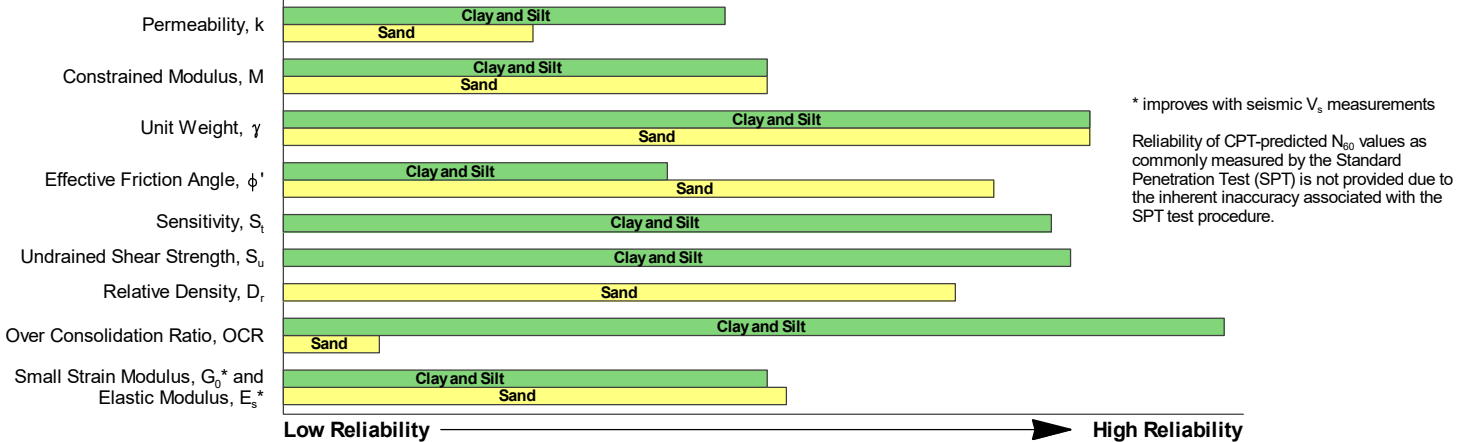
Relative Density, D_r

$D_r = (Q_{tn} / 350)^{0.5} \times 100$

REPORTED PARAMETERS

CPT logs as provided, at a minimum, report the data as required by ASTM D5778 and ASTM D7400 (if applicable). This minimum data include q_t , f_s , and u . Other correlated parameters may also be provided. These other correlated parameters are interpretations of the measured data based upon published and reliable references, but they do not necessarily represent the actual values that would be derived from direct testing to determine the various parameters. To this end, more than one correlation to a given parameter may be provided. The following chart illustrates estimates of reliability associated with correlated parameters based upon the literature referenced below.

RELATIVE RELIABILITY OF CPT CORRELATIONS



WATER LEVEL

The groundwater level at the CPT location is used to normalize the measurements for vertical overburden pressures and as a result influences the normalized soil behavior type classification and correlated soil parameters. The water level may either be "measured" or "estimated":

Measured - Depth to water directly measured in the field

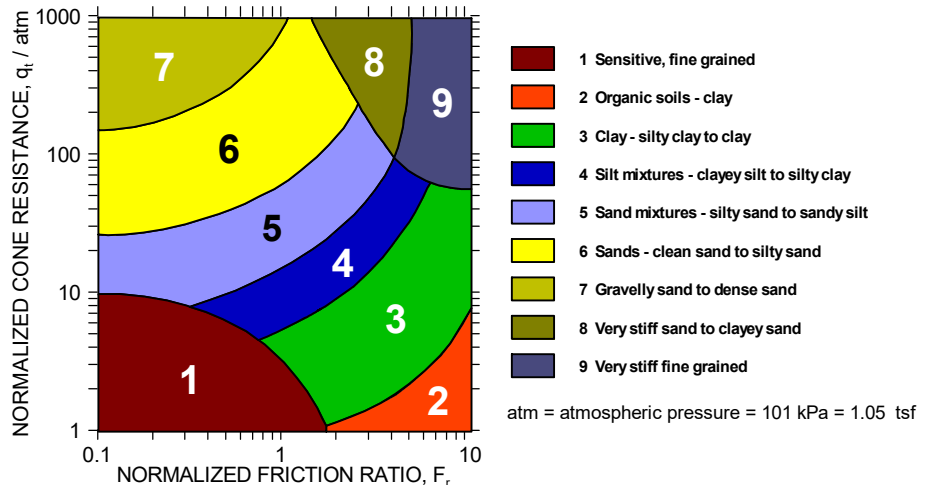
Estimated - Depth to water interpolated by the practitioner using pore pressure measurements in coarse grained soils and known site conditions

While groundwater levels displayed as "measured" more accurately represent site conditions at the time of testing than those "estimated," in either case the groundwater should be further defined prior to construction as groundwater level variations will occur over time.

CONE PENETRATION SOIL BEHAVIOR TYPE

The estimated stratigraphic profiles included in the CPT logs are based on relationships between corrected tip resistance (q_t), friction resistance (f_s), and porewater pressure (u_2). The normalized friction ratio (F_r) is used to classify the soil behavior type.

Typically, silts and clays have high F_r values and generate large excess penetration porewater pressures; sands have lower F_r 's and do not generate excess penetration porewater pressures. The adjacent graph (Robertson *et al.*) presents the soil behavior type correlation used for the logs. This normalized SBT chart, generally considered the most reliable, does not use pore pressure to determine SBT due to its lack of repeatability in onshore CPTs.



REFERENCES

- Kulhavy, F.H., Mayne, P.W., (1997). "Manual on Estimating Soil Properties for Foundation Design," Electric Power Research Institute, Palo Alto, CA.
- Mayne, P.W., (2013). "Geotechnical Site Exploration in the Year 2013," Georgia Institute of Technology, Atlanta, GA.
- Robertson, P.K., Cabal, K.L. (2012). "Guide to Cone Penetration Testing for Geotechnical Engineering," Signal Hill, CA.
- Schmertmann, J.H., (1970). "Static Cone to Compute Static Settlement over Sand," *Journal of the Soil Mechanics and Foundations Division*, 96(SM3), 1011-1043.

North Carolina Department of Transportation Encroachment Agreement
Exhibit T-2

DEPARTMENT OF TRANSPORTATION RIGHT OF WAY ENCROACHMENT AGREEMENT
-AND- PRIMARY AND SECONDARY HIGHWAYS

GREENVILLE UTILITIES COMMISSION
P.O. BOX 1847
GREENVILLE, N.C. 27834

E021-074-24-00173

THIS AGREEMENT, made and entered into this the 9th day of May 2024 by and between the Department of Transportation, party of the first part; and GREENVILLE UTILITIES COMMISSION 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) NC11, NC903, SR1514, SR1415, located in Pitt County along NC11 (North Memorial Dr), SR1514 (Staton Mill Rd), SR1415 (Briley Rd), and NC903. with the construction and/or erection of: approximately 13,000 LF of 8" MDPE gas main, 20 LF of 4" MDPE gas main, 205 LF of 2" MDPE gas main, 20 LF of 1-1/4" MDPE gas main, and 30 LF of 3/4" MDPE gas main

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

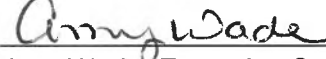
and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

- 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.

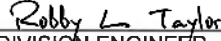
ATTEST OR WITNESS:


Amy Wade, Executive Secretary

GREENVILLE UTILITIES COMMISSION



DEPARTMENT OF TRANSPORTATION
District Engineer

BY: 
For: DIVISION ENGINEER
EE-187CE-3479F467..


Anthony C. Cannon, General Manager / CEO

GREENVILLE UTILITIES COMMISSION

Second Party

INSTRUCTIONS

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.

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 the following notices prior to construction activity within the NCDOT Right of Way:
 - a. Three (3) business days advance phone call at telephone (252) 623-5300 or email to D2D1notifications@ncdot.gov to the District Engineer's office
 - b. If the construction falls within the limits of an NCDOT managed construction project, five (5) business days advance phone call to the Division Utility Engineer, Mr. David Kramer at (252) 649-6500 or email to dpkramer@ncdot.gov.

Failure to provide 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.

3. 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.
4. 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.
5. The encroaching party shall notify the appropriate municipal office prior to beginning any work within the municipality's limits of jurisdiction.
6. Excavation within 1000 feet of a signalized intersection will require notification by the encroaching party to the Division Traffic Engineer at telephone number (252) 439-2829 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.
7. At the option of the District Engineer, a preconstruction meeting including representatives of NCDOT, the encroaching party, contractors and municipality, if applicable, shall be required. A pre-construction conference held between a municipality (or other facility owner) and a contractor without the presence of NCDOT personnel with subsequent construction commencing may be subject to NCDOT personnel ceasing any work on NCDOT right-of-way related to this encroachment until such meeting is held. Contact the District office to schedule.
8. At the discretion of the District Engineer, 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.

9. 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.

Legal & Right-of-Way Issues

10. 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 Division Engineer's office or their representative prior to construction or during construction if an issue arises during construction to warrant changes.
11. 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.
12. Encroaching party shall be responsible for obtaining all necessary permanent and/or temporary construction, drainage, utility and/or sight distance easements.
13. 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.
14. No commercial advertising shall be allowed within NCDOT Right of Way.
15. The encroaching party shall obtain proper approval from all affected pole owners prior to attachment to any pole.
16. This agreement does not authorize installations within nor encroachment onto railroad rights of way. Permits for installations within railroad right of way must be obtained from the railroad and are the responsibility of the encroaching party.

Work Zone Traffic

17. Traffic control shall be coordinated with the District Engineer at (252) 623-5300 and the Division Traffic Engineer at telephone (252) 439-2829, prior to construction.
18. 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.

19. 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.
20. If the Traffic Control Supervisor determines that portable concrete barrier (PCB) is required to shield a hazard within the clear zone, then PCB shall be designed and sealed by a licensed North Carolina Professional Engineer. PCB plans and design calculations shall be submitted to the District Engineer for review and approval prior to installation.
21. 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.
22. Traffic shall be maintained at all times. 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.
23. 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.
24. 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.

25. Work requiring lane or shoulder closures shall not be performed on both sides of the road simultaneously within the same area.
26. 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*.
27. At the discretion of the District Engineer, a traffic control plan shall be developed and submitted under the seal and signature of a Licensed North Carolina Professional Engineer prior to construction. The plan shall be specific to the site and adequately detailed. Issues such as the close proximity to intersections shall be addressed.
28. 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. Final pavement markings shall be thermoplastic unless otherwise directed by the Division Traffic Engineer or District Engineer.
29. Any pavement markings that are damaged or obliterated shall be restored by the encroaching party at no expense to NCDOT.
30. 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. 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=AOuYa5IW3dg&feature=youtu.be>

Roadside Environmental

31. 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) 439-2939.
32. 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.
33. 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. When required, 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.
34. 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 the recommendations of the Division Roadside Environmental Engineer. 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.

35. No trees within NCDOT right of way 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.
36. Prior to installation, the Encroaching Party shall contact the District Engineer 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.
37. 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.
38. The contractor shall not begin the construction until after the traffic control and erosion control devices have been installed to the satisfaction of the Division Engineer or their agent.
39. 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.

Bonds

40. A Performance and Indemnity Bond in the amount of \$~~x,xxx.xx~~ shall be posted with the District Engineer's Office by the Party of the Second Part prior to beginning any work within the NCDOT Right of Way. 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.
41. The release of the bond is subject to a final inspection by NCDOT. Contact the District office to schedule a Final Inspection and to request release of the bond.
42. When a Continuing Indemnity bond is on file with the central Raleigh office, the cashing of that bond may be used to fund any necessary repairs by NCDOT forces for unaddressed defects in workmanship by the encroaching party and/or by their contractor.

Control of Access

43. No access to the job site, parking or material storage shall be allowed along or from the **Control of Access Roadway**.
44. The installation within the Control of Access fence shall not adversely affect the design, construction, maintenance, stability, traffic safety or operation of the controlled access highway, and the utility must be serviced without access from the through-traffic roadways or ramps.
45. The resetting of the Control of Access fence shall be in accordance with the applicable NCDOT standard and as directed by the Division Engineer or their representative.

Contract Managed Interstates & Toll Routes

46. This installation is within the NCDOT Division 02 Interstate Corridor right of way. The encroaching party shall notify the following at least ten (10) business days prior to beginning construction:
NCDOT Division 02 Interstate Maintenance: Division Maintenance Engineer or by phone at (252) 775-6100.

STIP (or Division Managed) Projects

47. State Transportation Improvement Project (STIP) ~~X-XXXX~~ is scheduled for future construction. Any encroachment determined to be in conflict with the construction of this NCDOT project shall be removed and/or relocated at the encroaching party's expense.

Construction

General

48. An executed copy of the encroachment agreement, provisions and approved plans shall be present at the construction site at all times. 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.
49. 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.
50. Any REVISIONS marked in RED on the attached non-PE sealed plans shall be incorporated into and made part of the approved encroachment agreement.
51. All disturbed areas are to be fully restored to current NCDOT minimum roadway standards or as directed by the Division Engineer or their representative. Disturbed areas within NCDOT Right-of-Way include, but not limited to, any excavation areas, pavement removal, drainage or other features.
52. The encroaching party shall notify the Division 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 Division Engineer or their representative.

53. A minimum of 5 feet clearance is required for utility installations beneath or near drainage pipes, headwalls, and a minimum of two-foot clearance below the flowline of streams. If directional drilling, a minimum ten-foot clearance distance is required from drainage structures and a minimum of 5 feet below flowline of streams.
54. 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.
55. 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 Zone. Also, during non-working hours, no parking or material storage shall be allowed along the shoulders of any state-maintained roadway.
56. 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.
57. Any guardrail removed or damaged during construction shall be replaced or repaired to its original condition, meeting current NCDOT standards or as directed by the Division Engineer or their representative.
58. Right of Way monuments disturbed during construction shall be referenced by a registered Land Surveyor and reset after construction.
59. All Traffic signs moved during construction shall be reinstalled as soon as possible to the satisfaction of the Division Engineer or their representative.
60. 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.
61. All driveways disturbed during construction shall be returned to a state comparable with the condition of the driveways prior to construction.
62. 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.

Engineering

63. 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.**
64. Regulator stations, metering stations, cathodic test stations, and anode beds are not permitted within NCDOT right of way. Header wires are permitted.
65. Non-Utility Communication and Data Transmission installations (ground mounted type or Small Cell pole-mounted type) must adhere to guidelines in the Utilities Accommodations Manual and, when

located within municipal jurisdictions, are subject to review and approval by municipal ordinances and any additional municipal approval for proximity to historic districts and landmarks. All wiring and related telecommunications work shall conform to the latest regulations by the Federal Communications Commission.

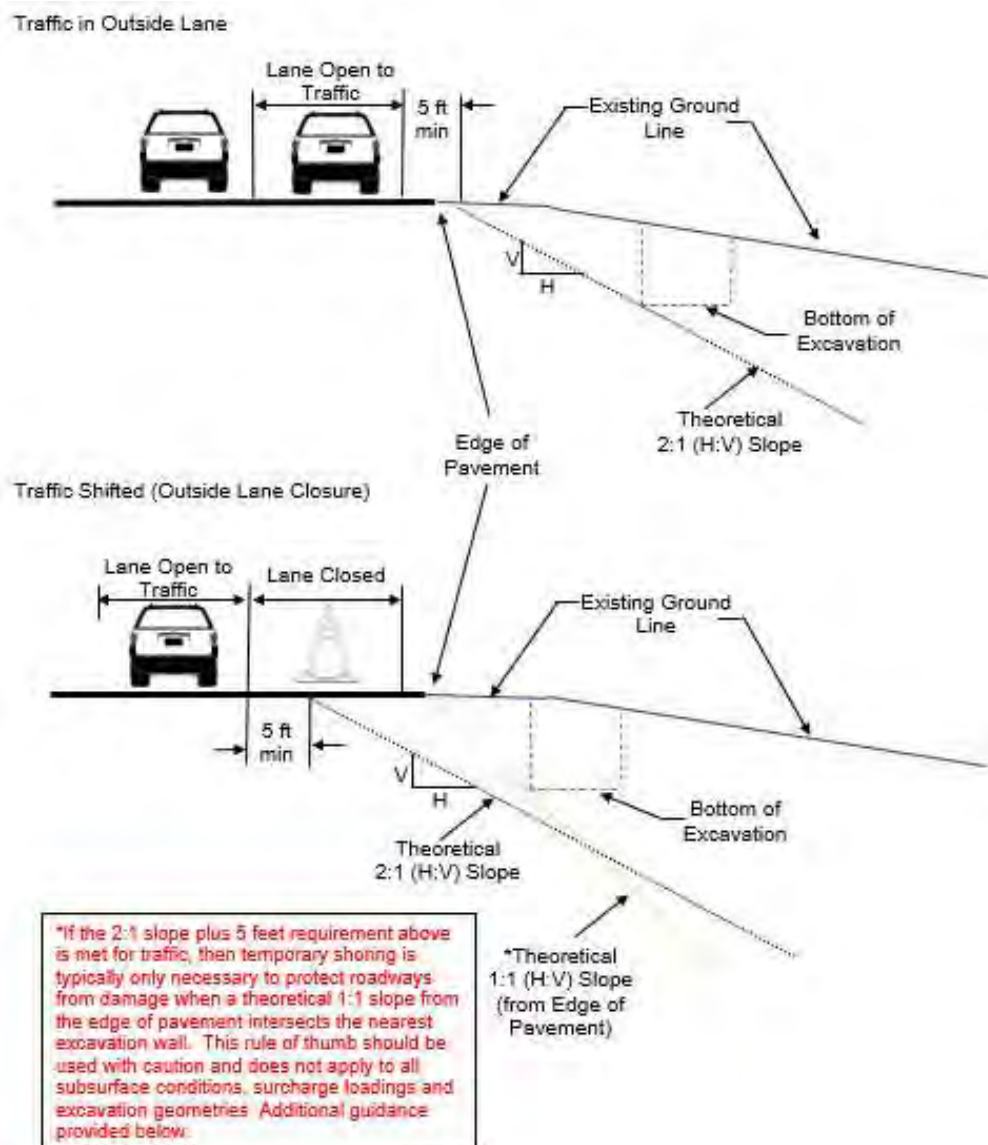
66. All wiring and related electrical work shall conform to the latest edition of the National Electrical Safety Code.
67. Prior approval for any blasting must be obtained from the Division Engineer or their representative.

Location within R/W

68. 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.
69. Any utility markers, cabinets, pedestals, meter bases and services for meter reading required shall be as close to the Right of Way line as possible. If it is not feasible to install at or near Right of Way line, then written approval shall be obtained from NCDOT prior to installation.
70. Fire Hydrants shall be of the breakaway type. Hydrants shall be placed near the right of way line. In curb and gutter sections with written approval from the District, the hydrants may be placed at 6' behind the back of the curb or minimum 2' back of sidewalk.
71. 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.
72. Sprinkler heads shall be located a minimum of 10 feet from the edge of pavement, edge of shoulder, or back of curb whichever is greater and shall be directed so that water does not spray or drain on the roadway surface, sidewalk, or passing vehicles at any time. Upon completion of the installation and prior to activation of the system, the Encroacher shall contact the District Engineer to schedule a test of the system to verify the spray pattern. Sprinkler systems shall not be operated during periods of high wind or freezing weather, or to the extent that the subgrade adjacent to the pavement structure becomes saturated. NCDOT reserves the right to require immediate termination and removal of any sprinkler system which in its judgement and opinion adversely affects safety, maintenance, or operation of the roadway.
73. Luminaire and/or utility poles and guy wires shall be set as close to the Right of Way line as practical and outside the Clear Zone in accordance with the latest version of the AASHTO Roadside Design Guide (See corresponding attachment) or made breakaway in accordance with the requirements of NCHRP Report 350. Any relocation of the utility poles from the original design due to Clear Zone requirements shall require a re-submittal for the utility design.
74. Luminaire and/or utility poles shall be set a minimum of 5'-6" behind face of any guardrail or otherwise sufficiently protected. However, standard placement may be reduced to 3'-6" behind face of guardrail when posts are spaced 3'-1 1/2", or where speed limit is less than 55 MPH.

Excavation

75. Excavation material shall not be placed on pavement.
76. 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.
77. The utility 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. 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.



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 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 Division Engineer for review and approval prior to construction. (See NCDOT *Utilities Accommodations Manual* for more information on requirements for shoring plans, design calculations, and subsurface investigation report.) **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 two-to-one slope plus 5 feet requirement, 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 Division 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.
78. All material to a depth of 8 inches below the finished surface of the subgrade shall be compacted to a density equal to at least 100% of that obtained by compacting a sample of the material in accordance with AASHTO T99 as modified by the Department. 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. If this option is exercised, then roadway ABC stone and asphalt repair as required will also be specified by the District Engineer.

Boring

79. 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.

80. When Horizontal Directional Drilling (HDD) is used, the following stipulations apply:

- a. Use drilling fluids as appropriate for the type soils but use of water alone is prohibited. Pump drilling fluids only while drilling or reaming. Directional boring using jetting with a Bentonite (or equivalent material) slurry is recommended. Monitor flow rates to match the amount leaving the bore hole and do not increase pressure or flow to free stuck drill heads, reamers or piping. Open cutting to retrieve stuck drill heads is not allowed without prior permission from the District Engineer.
- b. The minimum depth shall adhere to the table below for transverse (under non-controlled access, partial controlled access, or limited controlled access roadway) installations and refers to maximum diameter of hole drilled and not the dimension of the carrier or encasement pipe.

<u>Diameter of Drilled Hole (Backream)</u>	<u>Minimum Depth of Cover</u>
2" to 6"	5 feet
>6" to 15"	12 times hole diameter (e.g. 6-inch hole means 6 feet minimum depth)
>15" to 36"	15 feet or greater

- c. Under fully controlled access roadway installations, the minimum depth for transverse crossings shall be 15 feet under any pavement (ramps or thru lanes)
- d. An overbore (backream diameter) shall not be more than 1.5 times the outside diameter of the pipe or encasement under any highway for pipes 12 inches in diameter or less. For pipes with outer diameter larger than 12 inches, the overbore may be no larger than outer diameter of pipe plus 6 inches. An overbore exceeding 1.5 times greater than the outside diameter of the pipe or encasement may be considered if the encroachment agreement includes a statement signed and sealed by a licensed North Carolina Professional Engineer indicating that an overbore in excess of 1.5 times the outside diameter of the pipe or encasement will appropriately arch and no damage will be done to the pavement or sub-grade.
- e. Directional boring is allowed beneath embankment material in naturally occurring soil.
- f. Any parallel installation utilizing the directional boring method shall be made at a minimum depth of three (3') feet (cover) below the ground surface and outside the theoretical 1:1 slope from the existing edge of pavement except where the parallel installation crosses a paved roadway.
- g. All directional bores shall maintain ten (10) feet minimum (clear) distance from the nearest part of any structure, including but not limited to bridges, footings, pipe culverts or box culverts. Directional bores are not allowed beneath bridge footings, culvert wingwall footings, slope protection or retaining walls.
- h. The tip of the drill string shall have a cutter head.
- i. Detection wire shall be installed with non-ferrous material.
- j. HDPE pipe installed by directional boring shall not be connected to existing pipe or fittings for one (1) week from the time of installation to allow tensional stresses to relax.

Aerial clearances

81. Vertical clearance of overhead power and communication lines shall meet the National Electrical Safety Code requirements except the minimum vertical clearance shall be 18' for crossings over NCDOT roadways (24' over Fully Controlled Access roadways) and 16' for parallel installations.
82. When applicable for aerial installations, in relation to the bridge, the utility line shall be located with minimum clearances as indicated in Figure 3-3 in the Utilities Accommodations Manual for NCDOT **Required Clearances for Aerial Installations by Encroachment Near Bridge Structures.**

Pavement Detail and Repair

1. 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.
2. When paving beyond utility installation is involved, a Roadway certification report sealed by a Professional Engineer shall be submitted to the District Engineer's office indicating the following:
 - Pavement thickness by type
 - Pavement density, core and/or test locations
 - Base thickness
 - Base density
 - Subgrade density

Test frequency and method shall be in conformance with the NCDOT *Materials and Tests Manual*. Test must be performed by a Certified Technician including name and Certification number on report.

3. "Potholing" (or "daylighting") pavement cores to expose existing utilities shall be made with a circular minimum 6" to maximum 18" diameter "test" hole to a maximum depth of 12 inches. Pavement core locations shall not be placed in the wheel path whenever possible. Vacuum excavation shall be utilized to expose underground utilities below pavement subgrade. Displaced dirt and rock debris must be suctioned away from the excavation area through a large hose to a vacuum truck and disposed by the encroaching party. Avoid using mechanized equipment in the proximity of all exposed underground utility lines. Pavement cores shall be repaired within the same working day. The pavement core shall be retained and evaluated for reuse 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. If in good condition, 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 and the use

of NCDOT approved sealant applied to the cracks to fill the voids. All materials must be listed on the NCDOT Approved Products List (APL) found at: <https://apps.ncdot.gov/vendor/approvedproducts/>.

4. The minimum pavement design for pavement repair shall be according to the most recent version of NCDOT Standard Drawing 654.01 (<https://connect.ncdot.gov/resources/Specifications/Pages/default.aspx>). The version valid in 2024 through 2030 is located at <https://connect.ncdot.gov/resources/Specifications/2024StandardRdwyDrawings/Div%206%20Combi ned.pdf>. The pavement design shall include a mechanical overlay extent to be a minimum of 25 feet each side of the pavement repair area OR as directed by the District Engineer.
5. 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:
 - a. The pavement cut shall be filled to the surface with ABC stone or Flowable Fill per NCDOT's Standards and Specifications.
 - b. 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.
 - c. 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.
 - d. 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.
 - e. All pavement cuts must be sealed with NCDOT approved sealant to prevent future pavement separation or cracking.
6. 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

Close out/ Inspection

7. The Encroaching party shall notify the District Engineer's office 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, or other highway design features.
8. At the discretion of the District Engineer, a final inspection report may be provided to the encroaching party upon satisfactory completion of the work.
9. When a performance bond is required, a written acknowledgement of the completed work by the District Engineer's office begins the one-year warranty period associated with the performance bond.

10. 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.
11. The encroaching party shall provide the North Carolina Turnpike Authority (NCTA) with an electronic copy of coordinate correct as-built plans within two weeks of installation completion. Failure to provide the as-built plans may jeopardize future approvals within NCTA right of way.
12. A copy (in PDF format) of the completed ground water analysis shall be given to the District Engineer, including detailed drawings of the “as-built” wells showing location, depth and water level in well.

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.

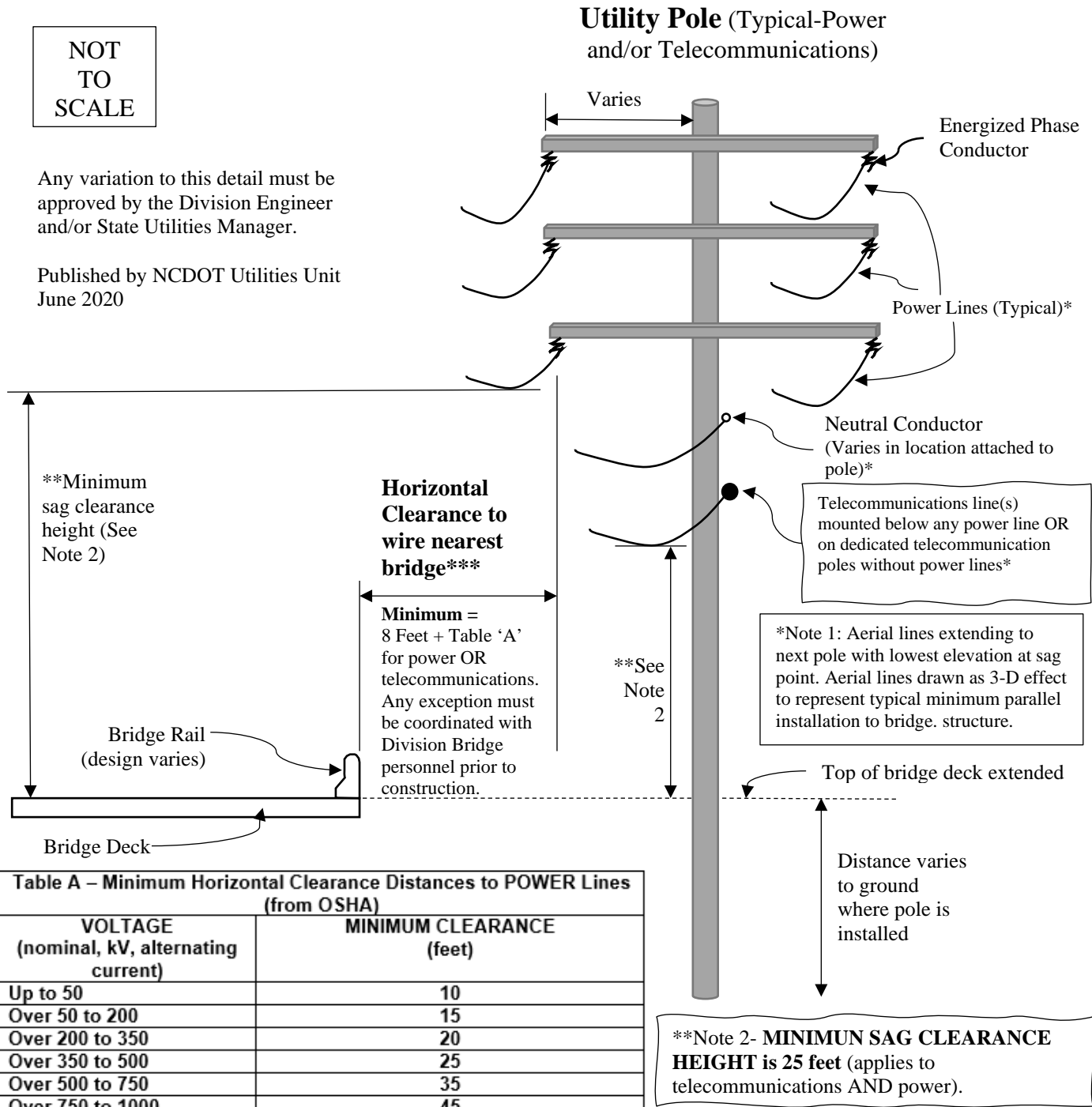
** Since recovery is less likely on the unshielded, traversable 1V:3H slopes, fixed objects should not be present in the vicinity of the toe of these slopes. Recovery of high-speed vehicles that encroach beyond the edge of the shoulder may be expected to occur beyond the toe of slope. Determination of 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.

NCDOT Required Clearances for Aerial Installations Near Bridge Structures

NOT
TO
SCALE

Any variation to this detail must be approved by the Division Engineer and/or State Utilities Manager.

Published by NCDOT Utilities Unit
June 2020



VOLTAGE (nominal, kV, alternating current)	MINIMUM CLEARANCE (feet)
Up to 50	10
Over 50 to 200	15
Over 200 to 350	20
Over 350 to 500	25
Over 500 to 750	35
Over 750 to 1000	45
Over 1000	As established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution

****Note 2- MINIMUM SAG CLEARANCE HEIGHT is 25 feet** (applies to telecommunications AND power).

*****Note 3: HORIZONTAL CLEARANCE EXCEPTION.** If vertical sag clearance height for power above bridge deck is ≥ 45 feet AND voltage is ≤ 350 kV, then Minimum Horizontal Clearance may be reduced to 3 feet. Any telecommunications attachment to power pole allowed in this exception must have a minimum 25 feet sag clearance height above bridge deck.

April 29, 2024 - 5:25pm By: Chris.Margentis



GAS DISTRIBUTION SYSTEM IMPROVEMENTS NC 11 NORTH NATURAL GAS MAIN EXTENSION

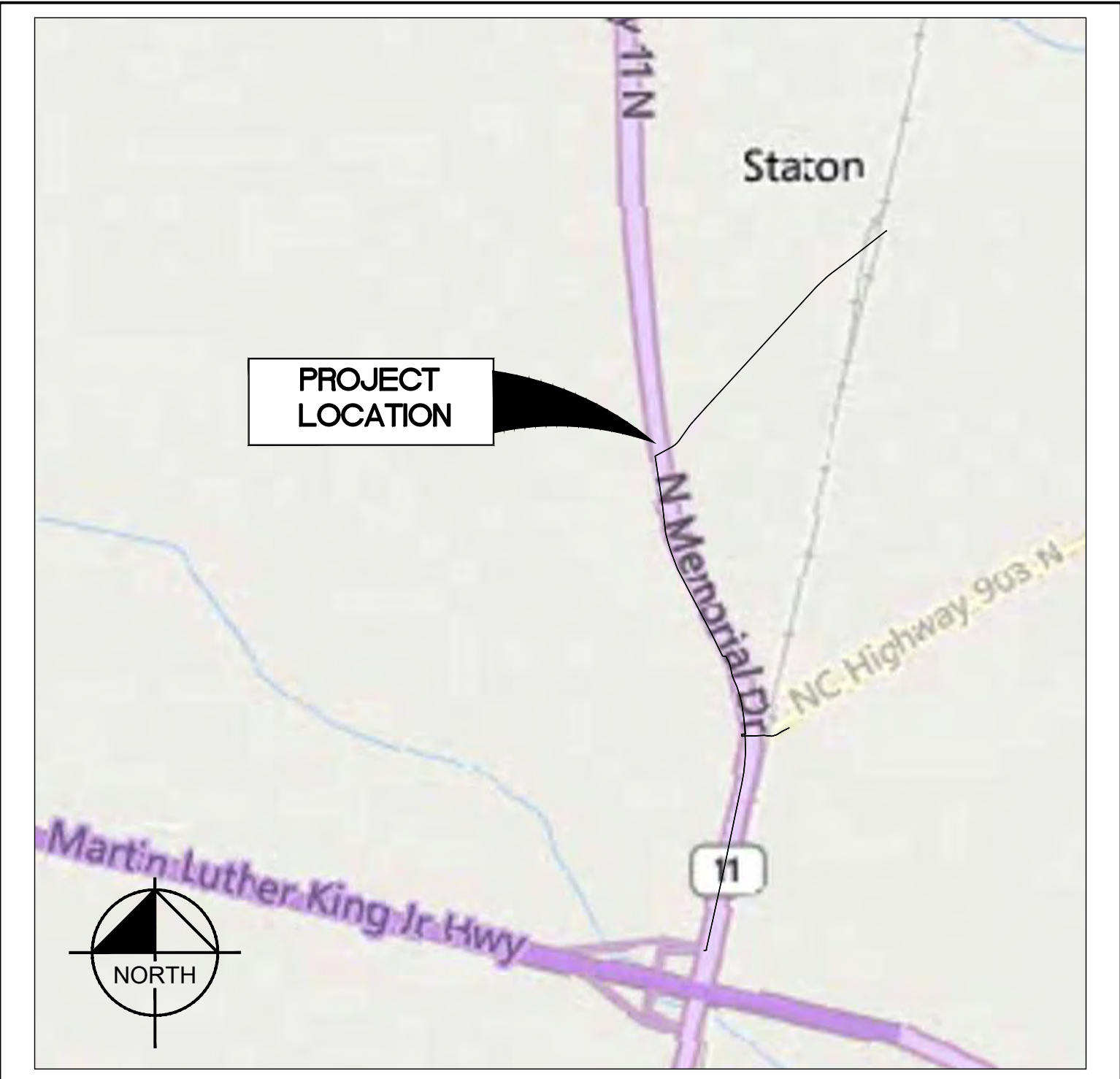
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Sheet List Table		
INDEX	Sheet Number	Sheet Title
1	000-000	COVER SHEET
2	000-001	NOTES
3	000-002	OVERALL SITE EXHIBIT
4	600-001	PLAN AND PROFILE
5	600-002	PLAN AND PROFILE
6	600-003	PLAN AND PROFILE
7	600-004	PLAN AND PROFILE
8	600-005	PLAN AND PROFILE
9	600-006	PLAN AND PROFILE
10	600-007	PLAN AND PROFILE
11	600-008	PLAN AND PROFILE
12	600-009	PLAN AND PROFILE
13	600-010	PLAN AND PROFILE
14	600-011	PLAN AND PROFILE
15	600-012	PLAN AND PROFILE
16	800-001	DETAILS
17	800-002	E&SC DETAILS
18	800-003	NCG01 GROUND STABILIZATION AND MATERIALS
19	800-004	NCG01 SELF-INSPECTION, RECORDKEEPING, AND REPORTING
20	800-005	JACK AND BORE DETAILS
21	900-001	WORK ZONE ADVANCE WARNING
22	900-002	TEMPORARY LANE CLOSURE
23	900-003	TRAFFIC CONTROL DESIGN LENGTHS
24	900-004	TRAFFIC CONTROL BUFFER & SIGHT DISTANCES
25	900-005	TRAFFIC CONTROL BARRIER FLARE RATES
26	900-006	TRAFFIC CONTROL DESIGN SPACING
27	900-007	NCDOT NOTES AND DETAILS

CONTACTS	
OWNER:	GREENVILLE UTILITIES COMMISSION 401 SOUTH GREENE STREET GREENVILLE, NC 27834 PHONE: (252) 551-1594 CONTACT: DILLON WADE, P.E.
CIVIL ENGINEER:	KIMLEY-HORN AND ASSOCIATES, INC. 4525 MAIN STREET, SUITE 1000 VIRGINIA BEACH, VA 23462 PHONE: (757) 548-7353 CONTACT: RYAN CLARK, P.E.
24-HOUR CONTACT:	GUC EMERGENCY HOTLINE PHONE: (855) 767-2482

SITE INFO

12,815' X 8" MDPE PIPE
MAOP = 60 PSIG



GRAPHIC SCALE IN FEET
0 1000 2000 4000
PROJECT LOCATION

PREPARED IN THE OFFICE OF:
Kimley»»Horn

4525 MAIN STREET, SUITE 1000, VIRGINIA BEACH, VA 23462
PHONE: (757) 213-8600

**ISSUED FOR CONSTRUCTION
BY _____ DATE _____**

REVISIONS		
NO.	DATE	BY

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<p>DRAWING:</p> <p>DATE: APRIL 29, 2024</p>	<p>JOB NUMBER: 116780001</p>

K:\VAB_CIVIL\116780001 - GUC - RTE 11 Extension\CADD\PlanSheets\000-000_Cover & Notes.dwg

SITE PLAN ABBREVIATIONS

Table of abbreviations for site plans, including categories like FABRICATE, MAINT, SOUTH/SLOPE, SANITARY, SURVEY BASELINE, SCHEDULE, STORM/SITE DRAIN, etc.

PROJECT NOTES:

GENERAL NOTES:

- 1. EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE INSTALLED ACCORDING TO THE CONTRACT DOCUMENTS AND AS DIRECTED BY THE OWNER... 2. ALL AREAS DISTURBED BY GRADING, EXCAVATION, AND GENERAL CONSTRUCTION SHALL BE SEEDED, MULCHED, AND RESTORED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

CONSTRUCTION SEQUENCE

- 1. OBTAIN APPROPRIATE CONSTRUCTION PERMITS
2. INSTALL EROSION AND SEDIMENTATION CONTROL MEASURES
3. CLEAR AND GRUB
4. RIGOROUS GRADE SITE

LEGEND

Legend section containing E&S SYMBOLS (inlet protection, culvert inlet protection) and SECTION AND DETAIL KEYING (drawing reference methods).

Revision table with columns for REV. #, REVISION, DATE, DRAWN BY, CHECKED BY.

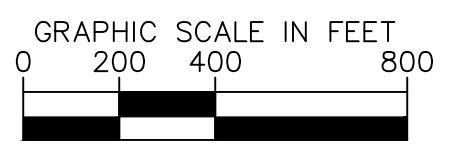
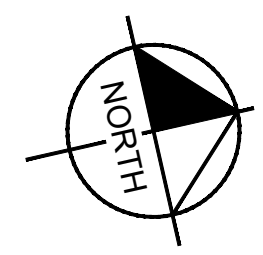
ENGINEER: KimleyHorn logo and contact information (4525 MAIN STREET, SUITE 1000, VIRGINIA BEACH, VA 23462).

CLIENT: Greenville Utilities logo.

PROJECT NAME: NC 11 N. NATURAL GAS MAIN EXTENSION, PITT COUNTY, NORTH CAROLINA. SHEET TITLE: NOTES.

DATE: 04/29/2024, SCALE: AS SHOWN, DRAWING NUMBER: 000-001, SHEET INDEX: 2 OF 27. Includes a professional seal for Ryan D. Clark.

Vertical text on the right edge of the page: May 06, 2024 11:03am by: Chris Margantis



REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley»Horn**
 4525 MAIN STREET
 SUITE 1000
 VIRGINIA BEACH, VA 23462
 TEL: (757) 213-8600

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PROJECT NAME:
NC 11 N. NATURAL GAS MAIN EXTENSION
 PITT COUNTY, NORTH CAROLINA

SHEET TITLE:
OVERALL SITE EXHIBIT

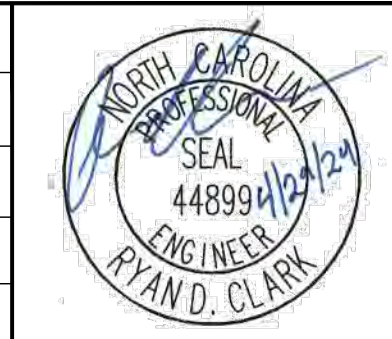
DATE:
 04/29/2024

SCALE (H,V):
 AS SHOWN

DRAWN BY:
 SMP

DESIGNED BY:
 RDC

CHECKED BY:
 RDC (PM)

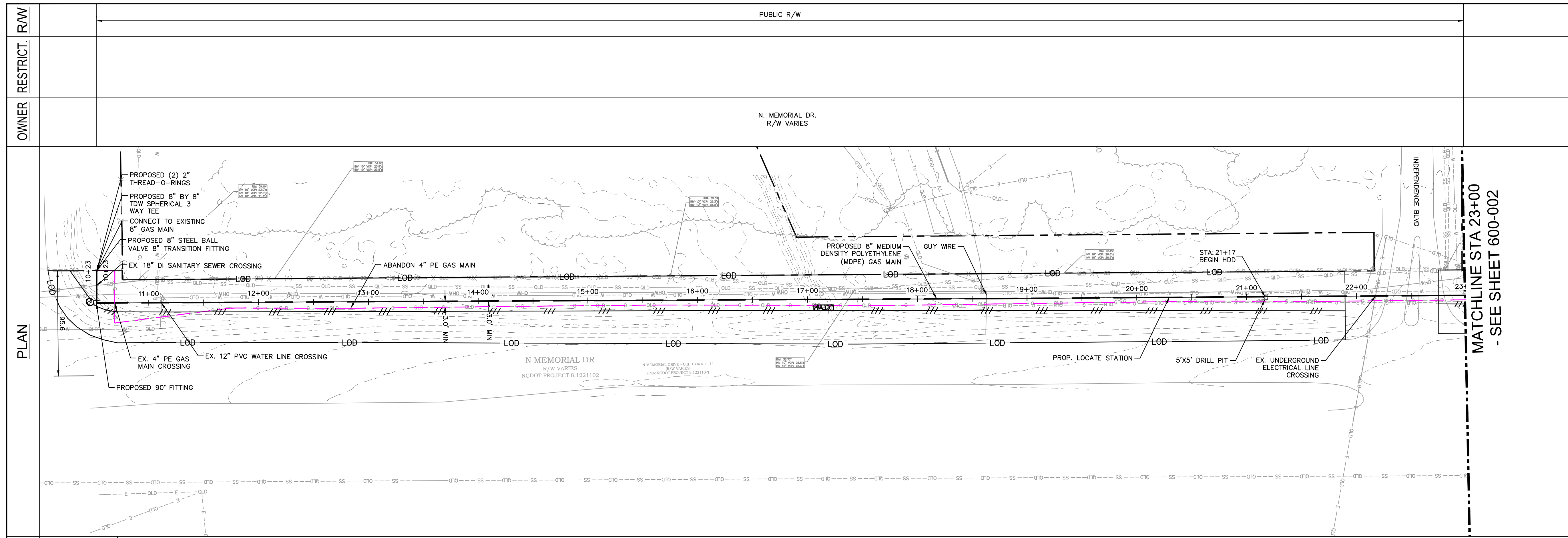


KHA PROJECT NUMBER:
 116780001

DRAWING NUMBER:
 000-002

SHEET INDEX:
 3 OF 27

April 29, 2024 - 6:26pm By: Chris.Margantis
 P:\08_016780001 - 600 - RE 11 Extension\CADD\PlanSheets\000-002 OVERALL SITE EXHIBIT.dwg



LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF-WAY
- PROPERTY LINE
- EDGE OF PAVEMENT
- DRIVEWAY EDGE
- BUILDING
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- FENCE LINE
- OHW
- SANITARY SEWER LINE
- TELECOMMUNICATIONS
- SUBSURFACE WATER
- SUBSURFACE GAS
- SUBSURFACE ELECTRIC
- PIPE STRINGOUT
- TREE LINE
- STREAM BUFFER
- PROPOSED GAS LINE
- ABANDONMENT
- SILT FENCE
- LIMITS OF DISTURBANCE
- WETLAND
- STREAM
- TEMPORARY CONSTRUCTION
- EASEMENT
- POND
- DRILL/JAB PIT
- FILTER RING
- CURB INLET FILTER
- TEST HOLE LOCATION
- INLET PROTECTION
- SILT FENCE OUTLET

NORTH

0 25 50 100
HORIZONTAL SCALE: 1"=50'

PIPE BAR

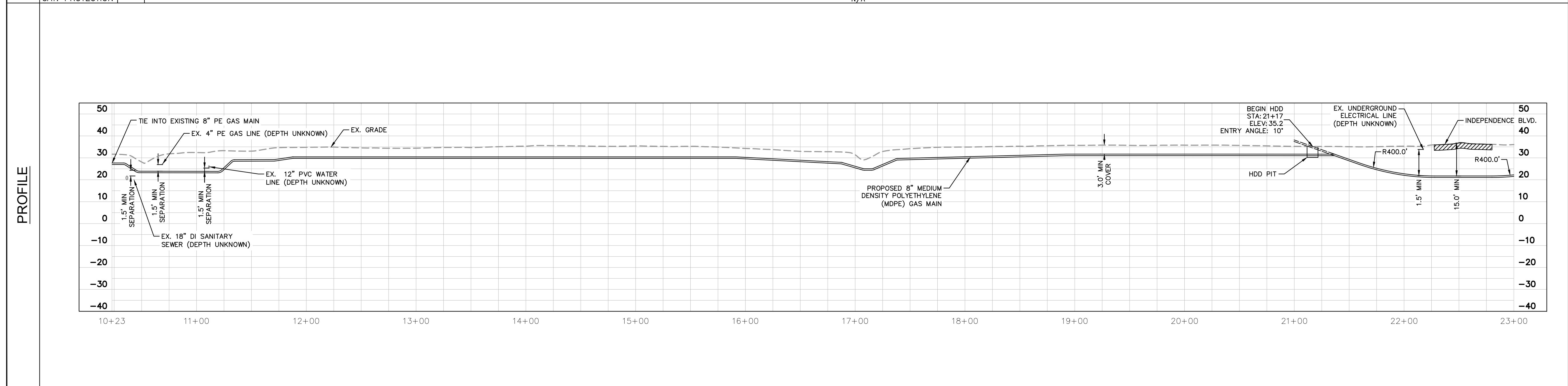
DETAIL	QUANTITY
PIPE	1
COATING	N/A
LENGTH (LF)	1300'
FITTINGS	7, 8, 9 1
CAT. PROTECTION	N/A

MATERIAL

PIPE
1 = 8" GRADE PE 2708 MDPE, SDR 11, W.T. 0.784 IN, ASTM D2513

CARRIER PIPE
A = 12" GRADE B CARBON STEEL, SCH. STD, W.T. 0.375 IN, API-5L

FITTINGS
1 = 90° 8" GRADE PE 2708 MDPE, SDR 11, W.T.
2 = 45° 8" GRADE PE 2708 MDPE, SDR 11, W.T.
3 = 8" PE END CAP
4 = 8" PE VALVE
5 = 8" PE TEE
6 = 8" 5" PUP
7 = 8" BY 8" TDW SPHERICAL 3 WAY TEE
8 = 8" STEEL BALL VALVE
9 = 8" TRANSITION FITTING
10 = 4" PE VALVE
11 = 8" BY 4" PE TEE
12 = 2" PE VALVE



0 25 50 100
HORIZONTAL SCALE: 1"=50'

0 2.5 5 10
VERTICAL SCALE: 1"=5'

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley»Horn**
4525 MAIN STREET
SUITE 1000
VIRGINIA BEACH, VA 23462
TEL: (757) 213-8600

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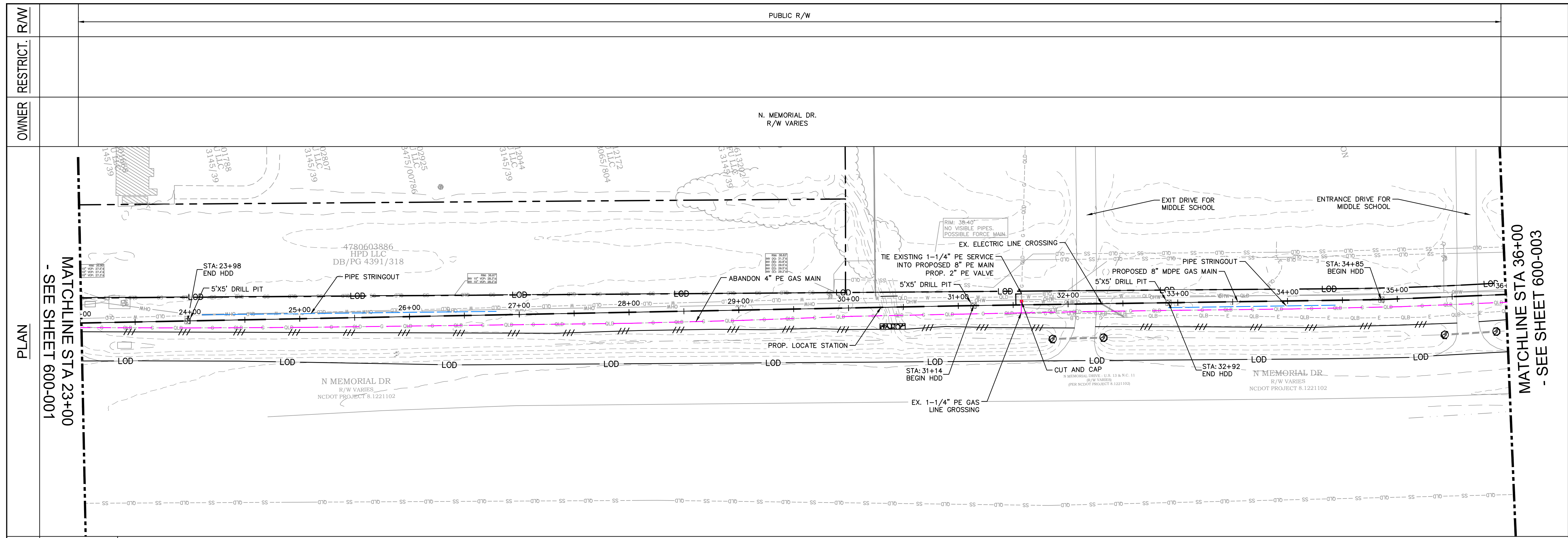
PROJECT NAME: **NC 11 N. NATURAL GAS MAIN EXTENSION**
PITT COUNTY, NORTH CAROLINA

SHEET TITLE: **PLAN & PROFILE**

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 600-001
SHEET INDEX: 4 OF 27

April 29, 2024 6:25pm By: Chris.Margittis



LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF-WAY
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- EDGE OF PAVEMENT
- DRIVEWAY EDGE
- BUILDING
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
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- INLET PROTECTION
- SILT FENCE OUTLET

NORTH

HORIZONTAL SCALE: 1"=50'

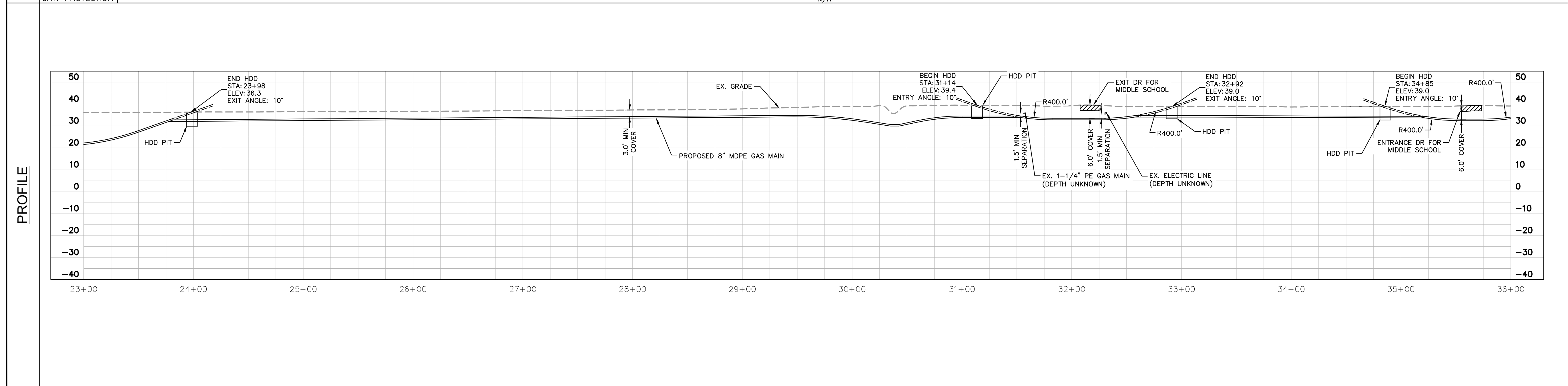
DETAIL	
PIPE	1
COATING	N/A
LENGTH (LF)	1300'
FITTINGS	N/A
CAT. PROTECTION	N/A

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HORIZONTAL SCALE: 1"=50'

VERTICAL SCALE: 1"=5'

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley»Horn**
4525 MAIN STREET
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PITT COUNTY, NORTH CAROLINA

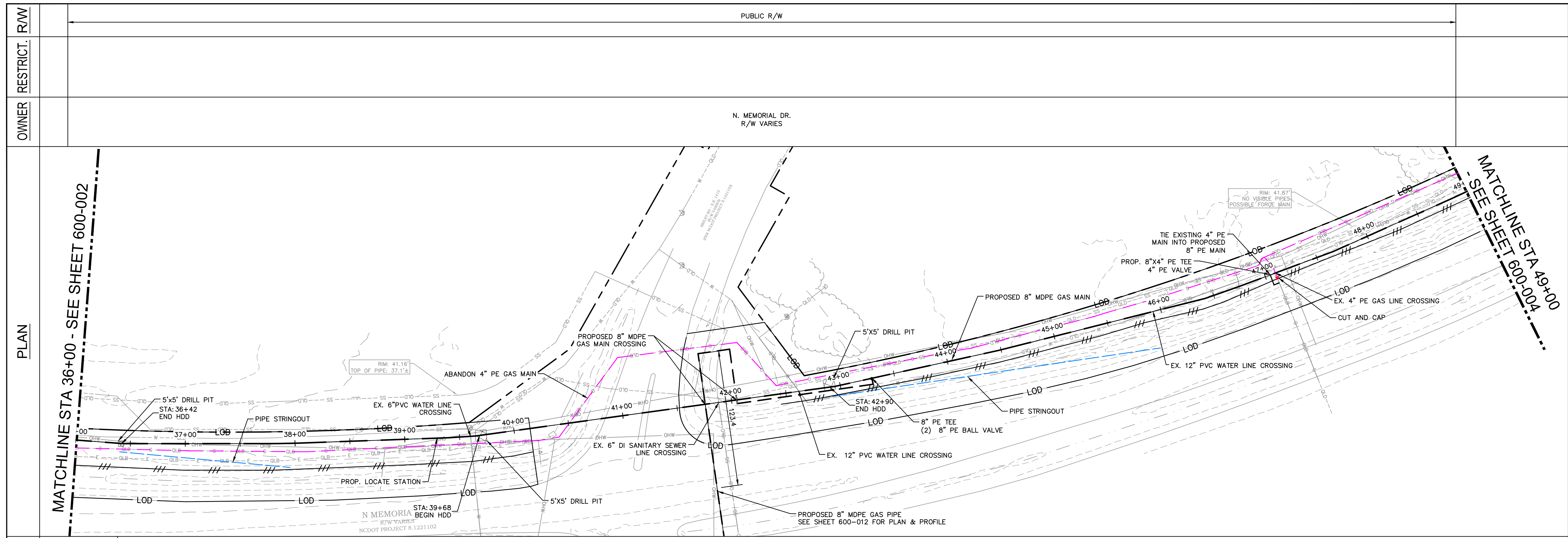
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DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 600-002
SHEET INDEX: 5 OF 27

April 29, 2024 6:26pm By: Chris.Margantis

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LEGEND

- EASEMENT BOUNDARY
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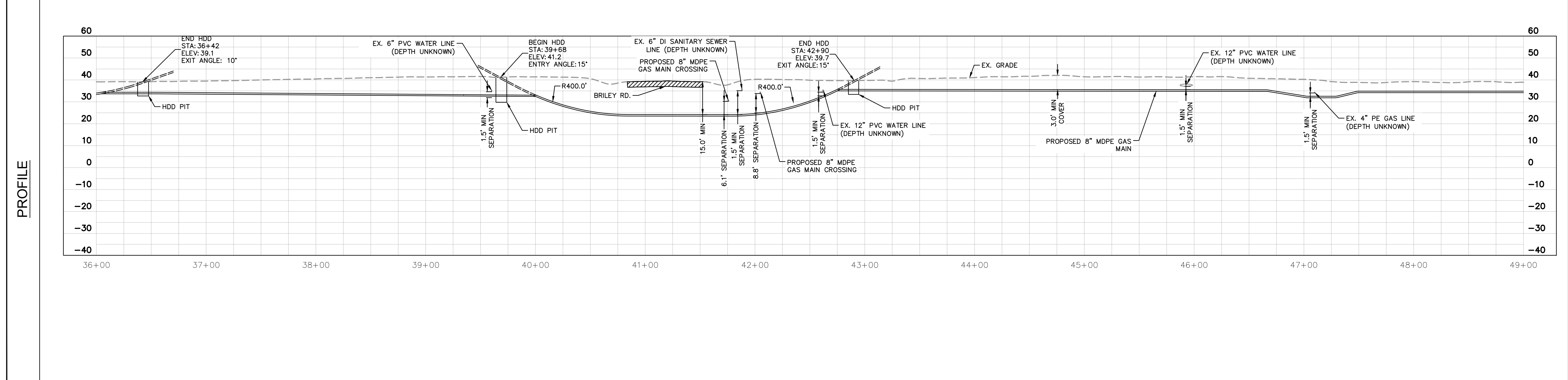
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- 10 = 4" PE VALVE
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- 12 = 2" PE VALVE

0 25 50 100
HORIZONTAL SCALE: 1"=50'

0 2.5 5 10
VERTICAL SCALE: 1"=5'

PIPE BAR

DETAIL	1	1
PIPE	N/A	N/A
COATING	N/A	N/A
LENGTH (LF)	730'	570'
FITTINGS		5 4 11 10
CAT. PROTECTION	N/A	N/A



REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley-Horn**
 4525 MAIN STREET
 SUITE 1000
 VIRGINIA BEACH, VA 23462
 TEL: (757) 213-8600

CLIENT: **Greenville Utilities**

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PROJECT NAME:
NC 11 N. NATURAL GAS MAIN EXTENSION
 PITT COUNTY, NORTH CAROLINA

SHEET TITLE:
PLAN & PROFILE

DATE: 04/29/2024
 SCALE (H,V): AS SHOWN
 DRAWN BY: SMP
 DESIGNED BY: RDC
 CHECKED BY: RDC (PM)

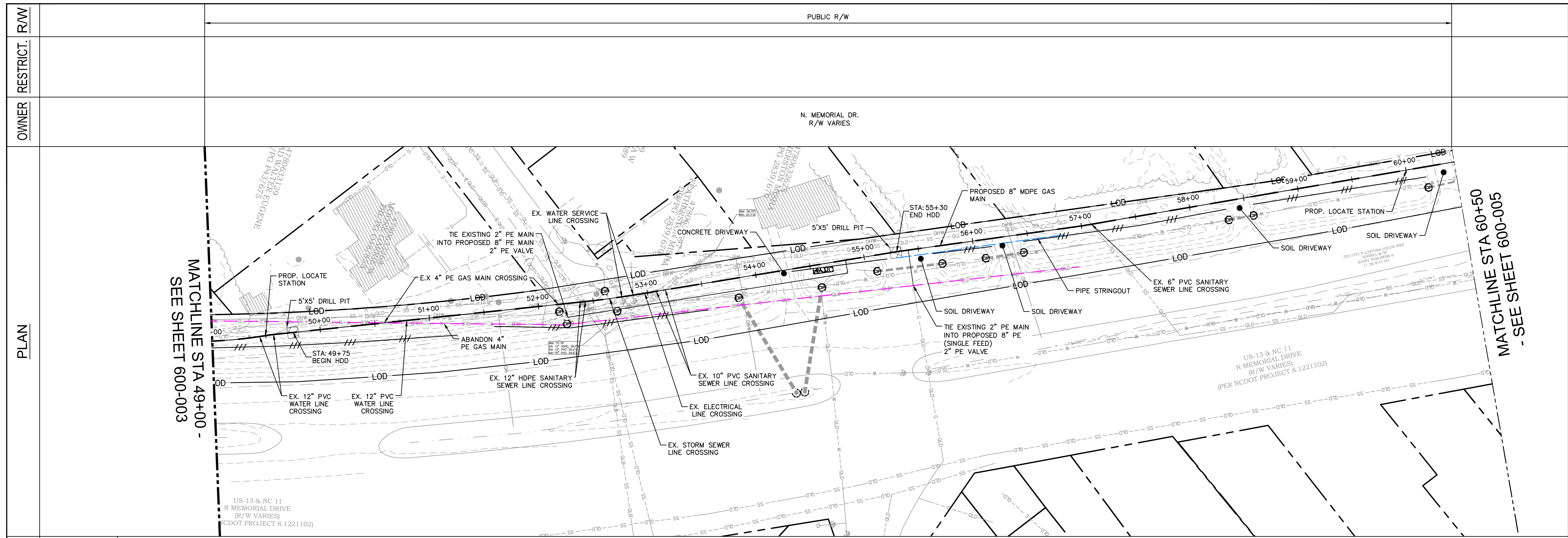
DATE: 04/29/2024
 SCALE (H,V): AS SHOWN
 DRAWN BY: SMP
 DESIGNED BY: RDC
 CHECKED BY: RDC (PM)

KHA PROJECT NUMBER:
116780001

DRAWING NUMBER:
600-003

SHEET INDEX:
6 OF 27

Professional Engineer Seal: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 448994 RYAN D. CLARK



LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF-WAY
- PROPERTY LINE
- EDGE OF PAVEMENT
- DRIVEWAY EDGE
- BUILDING
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- FENCE LINE
- OVERHEAD POWER LINE
- SANITARY SEWER LINE
- SUBSURFACE TELECOMMUNICATIONS
- SUBSURFACE WATER
- SUBSURFACE GAS
- SUBSURFACE ELECTRIC
- PIPE STRINGOUT
- TREELINE
- STREAM BUFFER
- PROPOSED GAS LINE
- ABANDONMENT
- SILT FENCE
- LIMITS OF DISTURBANCE
- WETLAND
- STREAM
- TEMPORARY CONSTRUCTION EASEMENT
- POND
- DRILL/JAB PIT
- FILTER RING
- CURB INLET FILTER
- TEST HOLE LOCATION
- INLET PROTECTION
- SILT FENCE OUTLET

DETAIL	
PIPE	1
COATING	N/A
LENGTH (LF)	1150'
FITTINGS	
CAT. PROTECTION	N/A

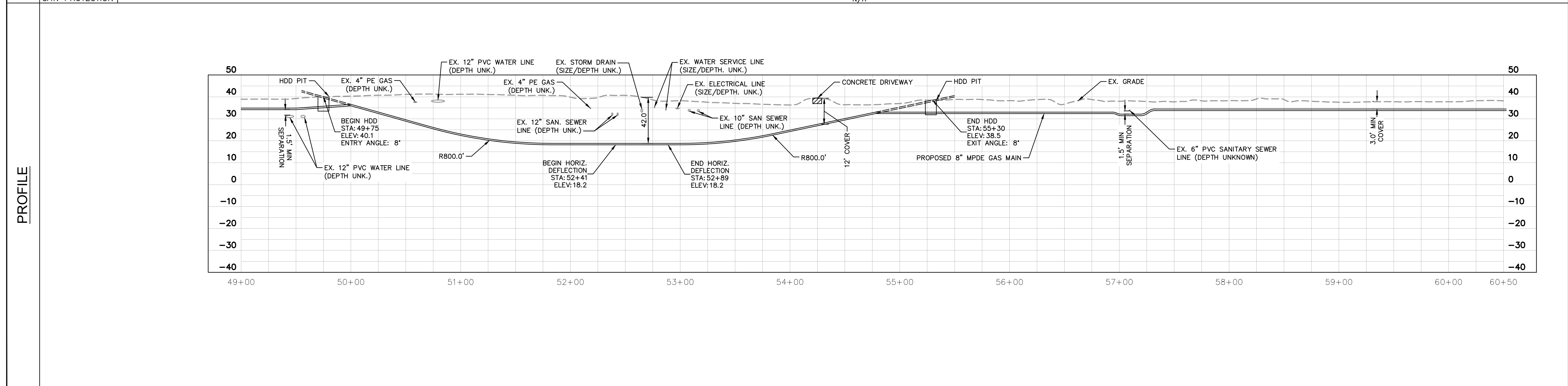
HORIZONTAL SCALE: 1"=50'

MATERIAL

PIPE
 1 = 8" GRADE PE 2708 MDPE, SDR 11, W.T. 0.784 IN, ASTM D2513

CARRIER PIPE
 A = 12" GRADE B CARBON STEEL, SCH. STD, W.T. 0.375 IN, API-5L

FITTINGS
 1 = 90° 8" GRADE PE 2708 MDPE, SDR 11, W.T.
 2 = 45° 8" GRADE PE 2708 MDPE, SDR 11, W.T.
 3 = 8" PE END CAP
 4 = 8" PE VALVE
 5 = 8" PE TEE
 6 = 8" 5" PUP
 7 = 8" BY 8" TDW SPHERICAL 3 WAY TEE
 8 = 8" STEEL BALL VALVE
 9 = 8" TRANSITION FITTING
 10 = 4" PE VALVE
 11 = 8" BY 4" PE TEE
 12 = 2" PE VALVE



HORIZONTAL SCALE: 1"=50'

VERTICAL SCALE: 1"=5'

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley»Horn**
 4525 MAIN STREET
 SUITE 1000
 VIRGINIA BEACH, VA 23462
 TEL: (757) 213-8600

CLIENT: **Greenville Utilities**

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PROJECT NAME:
NC 11 N. NATURAL GAS MAIN EXTENSION
 PITT COUNTY, NORTH CAROLINA

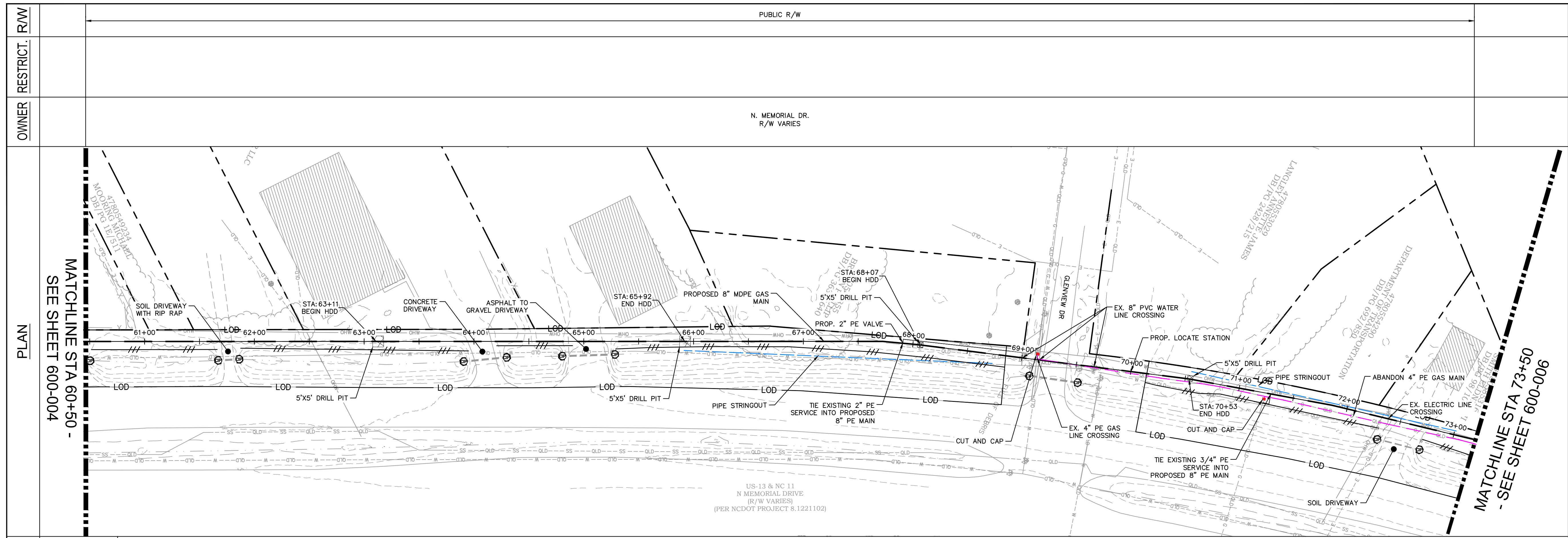
SHEET TITLE:
PLAN & PROFILE

DATE: 04/29/2024
 SCALE (H,V): AS SHOWN
 DRAWN BY: SMP
 DESIGNED BY: RDC
 CHECKED BY: RDC (PM)

KHA PROJECT NUMBER:
116780001

DRAWING NUMBER:
600-004

SHEET INDEX:
7 OF 27



LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF-WAY
- PROPERTY LINE
- EDGE OF PAVEMENT
- DRIVEWAY EDGE
- BUILDING
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- FENCE LINE
- OVERHEAD POWER LINE
- OVERHEAD TELECOMMUNICATIONS
- SANITARY SEWER LINE
- SUBSURFACE WATER
- SUBSURFACE GAS
- SUBSURFACE ELECTRIC
- PIPE STRINGOUT
- TREELINE
- STREAM BUFFER
- PROPOSED GAS LINE
- ABANDONMENT
- SILT FENCE
- LIMITS OF DISTURBANCE
- WETLAND
- STREAM
- TEMPORARY CONSTRUCTION EASEMENT
- POND
- DRILL/JAB PIT
- FILTER RING
- CURB INLET FILTER
- TEST HOLE LOCATION
- INLET PROTECTION
- SILT FENCE OUTLET

US-13 & NC 11 N MEMORIAL DRIVE (R/W VARIES) (PER NCDOT PROJECT 8.1221102)

0 25 50 100
HORIZONTAL SCALE: 1"=50'

MATERIAL

PIPE:
1 = 8" GRADE PE 2708 MDPE, SDR 11, W.T. 0.784 IN, ASTM D2513

CARRIER PIPE
A = 12" GRADE B CARBON STEEL, SCH. STD, W.T. 0.375 IN, API-5L

FITTINGS

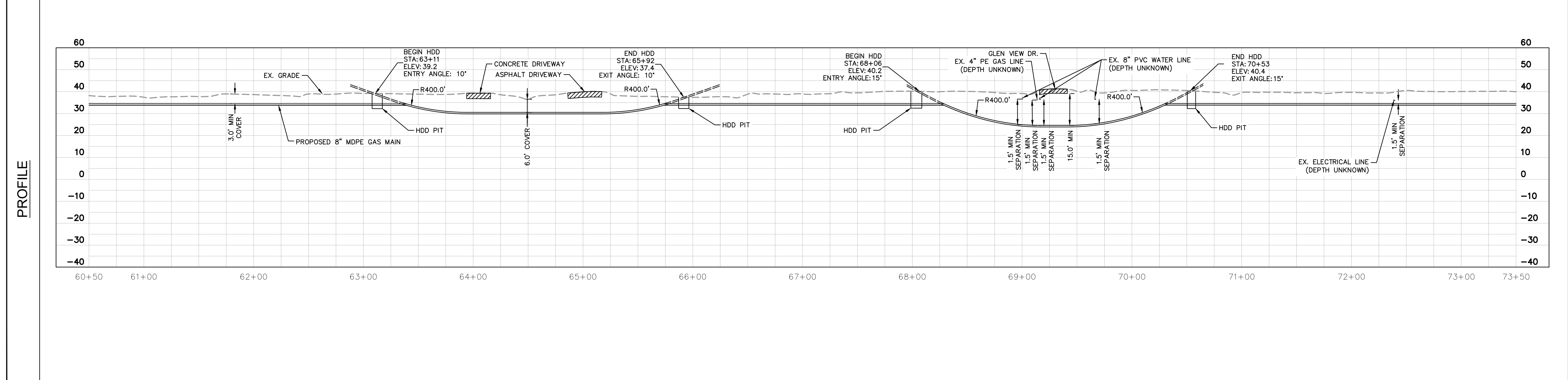
- 1 = 90° 8" GRADE PE 2708 MDPE, SDR 11, W.T.
- 2 = 45° 8" GRADE PE 2708 MDPE, SDR 11, W.T.
- 3 = 8" PE END CAP
- 4 = 8" PE VALVE
- 5 = 8" PE TEE
- 6 = 8" 5' PUP
- 7 = 8" BY 8" TDW SPHERICAL 3 WAY TEE
- 8 = 8" STEEL BALL VALVE
- 9 = 8" TRANSITION FITTING
- 10 = 4" PE VALVE
- 11 = 8" BY 4" PE TEE
- 12 = 2" PE VALVE

0 25 50 100
HORIZONTAL SCALE: 1"=50'

0 2.5 5 10
VERTICAL SCALE: 1"=5'

PIPE BAR

DETAIL			
PIPE	1		
COATING	N/A		
LENGTH (LF)	1300'		
FITTINGS	N/A	12	
CAT. PROTECTION	N/A		



REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley»Horn**
4525 MAIN STREET
SUITE 1000
VIRGINIA BEACH, VA 23462
TEL: (757) 213-8600

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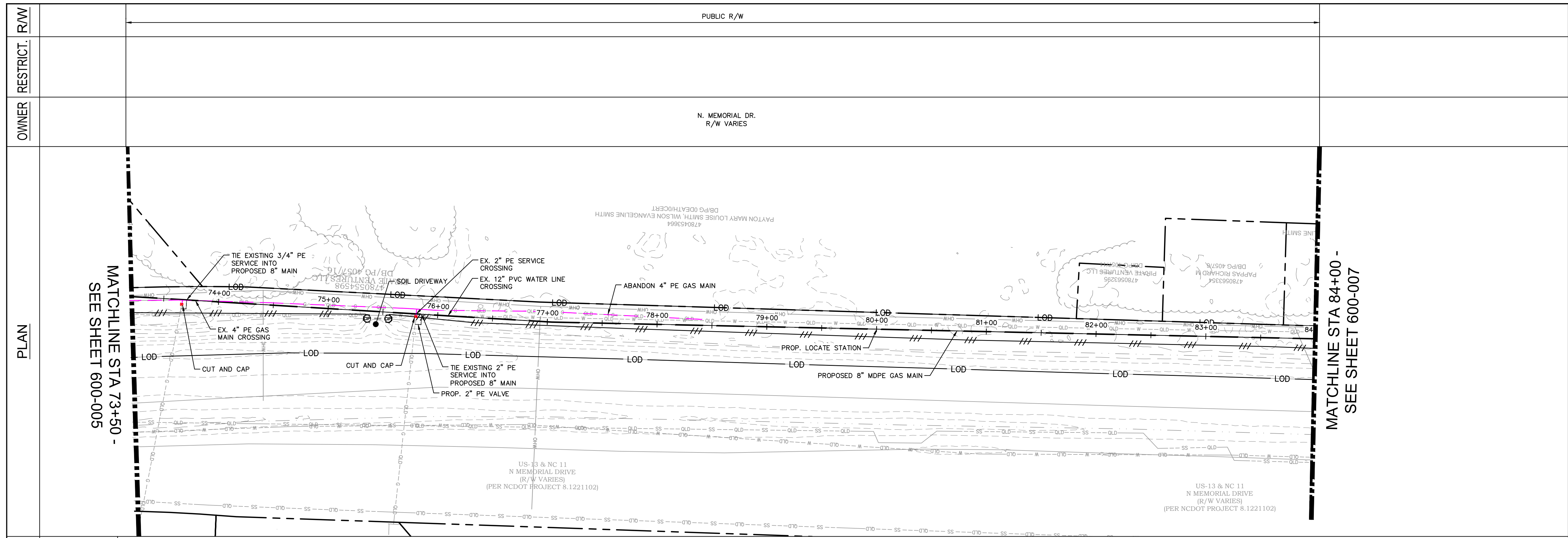
PROJECT NAME: **NC 11 N. NATURAL GAS MAIN EXTENSION**
PITT COUNTY, NORTH CAROLINA

SHEET TITLE: **PLAN & PROFILE**

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 600-005
SHEET INDEX: 8 OF 27

Professional Engineer Seal: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 448994 (2/2/24) RYAN D. CLARK



LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF-WAY
- PROPERTY LINE
- EDGE OF PAVEMENT
- DRIVEWAY EDGE
- BUILDING
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- FENCE LINE
- OHW
- SS-OLD
- T-QLB
- W-OLD
- C-OLD
- E-QLB
- SANITARY SEWER LINE
- TELECOMMUNICATIONS
- SUBSURFACE WATER
- SUBSURFACE GAS
- SUBSURFACE ELECTRIC
- PIPE STRINGOUT
- TREELINE
- STREAM BUFFER
- PROPOSED GAS LINE
- ABANDONMENT
- SILT FENCE
- LIMITS OF DISTURBANCE
- WETLAND
- STREAM
- TEMPORARY CONSTRUCTION EASEMENT
- POND
- DRILL/JAB PIT
- FILTER RING
- CURB INLET FILTER
- TEST HOLE LOCATION
- INLET PROTECTION
- SILT FENCE OUTLET

NORTH

0 25 50 100
HORIZONTAL SCALE: 1"=50'

PIPE BAR

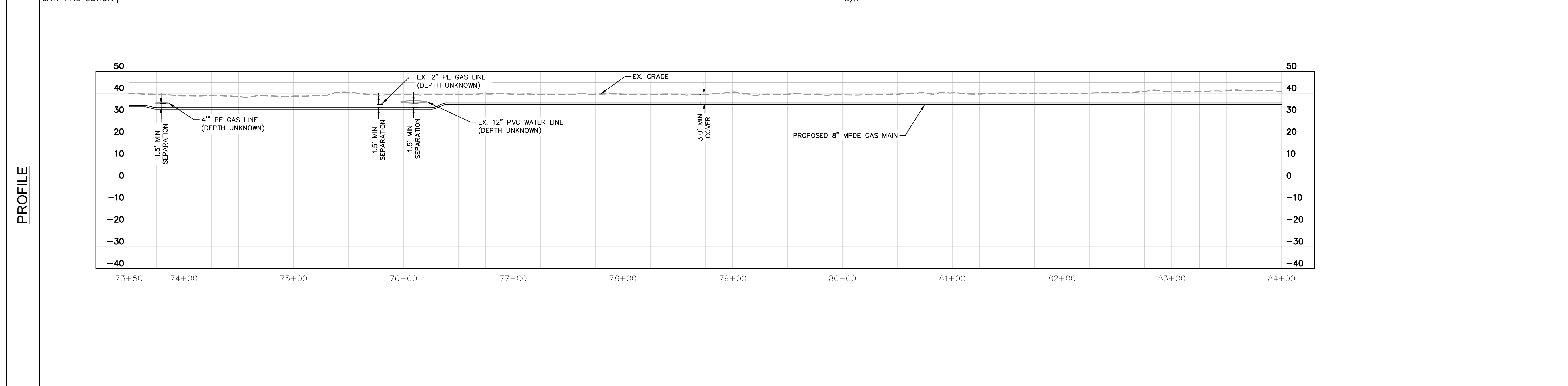
DETAIL	QUANTITY
PIPE	1
COATING	N/A
LENGTH (LF)	1150'
FITTINGS	12
CAT. PROTECTION	N/A

MATERIAL

PIPE
1 = 8" GRADE PE 2708 MDPE, SDR 11, W.T. 0.784 IN, ASTM D2513

CARRIER PIPE
A = 12" GRADE B CARBON STEEL, SCH. STD, W.T. 0.375 IN, API-5L

FITTINGS
1 = 90° 8" GRADE PE 2708 MDPE, SDR 11, W.T.
2 = 45° 8" GRADE PE 2708 MDPE, SDR 11, W.T.
3 = 8" PE END CAP
4 = 8" PE VALVE
5 = 8" PE TEE
6 = 8" 5" PUP
7 = 8" BY 8" TDW SPHERICAL 3 WAY TEE
8 = 8" STEEL BALL VALVE
9 = 8" TRANSITION FITTING
10 = 4" PE VALVE
11 = 8" BY 4" PE TEE
12 = 2" PE VALVE



0 25 50 100
HORIZONTAL SCALE: 1"=50'

0 2.5 5 10
VERTICAL SCALE: 1"=5'

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley-Horn**
4525 MAIN STREET
SUITE 1000
VIRGINIA BEACH, VA 23462
TEL: (757) 213-8600

CLIENT: **Greenville Utilities**

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PROJECT NAME:
NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA

SHEET TITLE:
PLAN & PROFILE

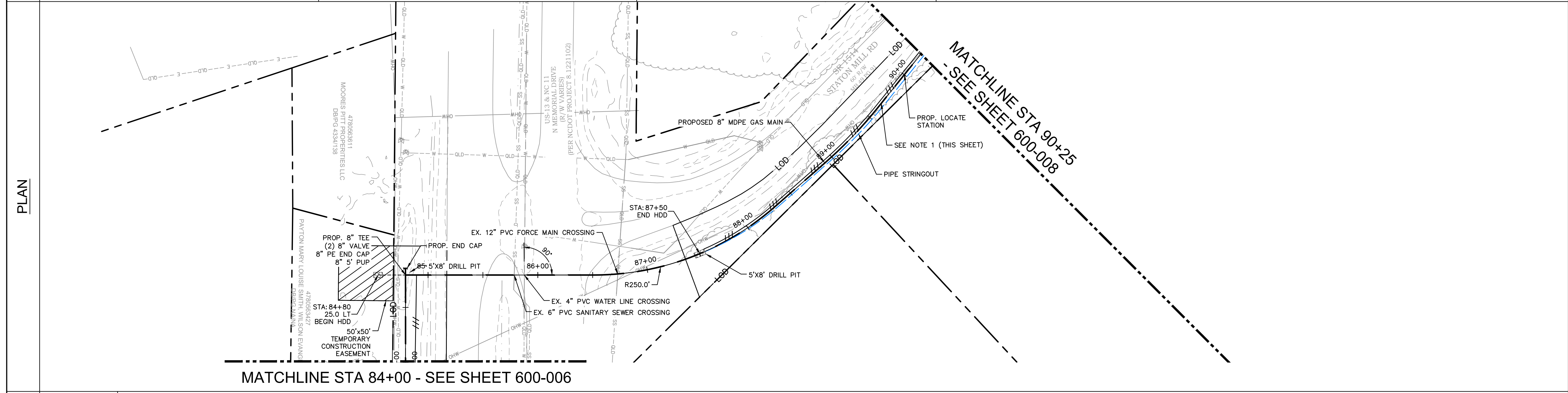
DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

KHA PROJECT NUMBER:
116780001

DRAWING NUMBER:
600-006

SHEET INDEX:
9 OF 27

OWNER	N. MEMORIAL DR. R/W VARIES	STATON MILL RD.. 60' R/W
RESTRICT.		
R/W		



LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF-WAY
- PROPERTY LINE
- EDGE OF PAVEMENT
- DRIVEWAY EDGE
- BUILDING
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- FENCE LINE
- OVERHEAD POWER LINE
- SS--OLD
- T--OLD
- W--OLD
- G--OLD
- E--QLB
- SANITARY SEWER LINE
- SUBSURFACE
- TELECOMMUNICATIONS
- SUBSURFACE WATER
- SUBSURFACE GAS
- SUBSURFACE ELECTRIC
- PIPE STRINGOUT
- TREELINE
- STREAM BUFFER
- PROPOSED GAS LINE
- ABANDONMENT
- SILT FENCE
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- STREAM
- TEMPORARY CONSTRUCTION
- EASEMENT
- POND
- DRILL/JAB PIT
- FILTER RING
- CURB INLET FILTER
- TEST HOLE LOCATION
- INLET PROTECTION
- SILT FENCE OUTLET

NORTH

0 25 50 100
HORIZONTAL SCALE: 1"=50'

PIPE BAR

DETAIL	1	1
PIPE	N/A	N/A
COATING	N/A	N/A
LENGTH (LF)	79'	546'
FITTINGS	1, 3, 4, 5, 6	N/A
CAT. PROTECTION	N/A	N/A

NOTE 1:
PROPOSED GAS MAIN SHALL BE INSTALLED 5' FROM EDGE OF RIGHT-OF-WAY UNLESS OTHERWISE STATED.

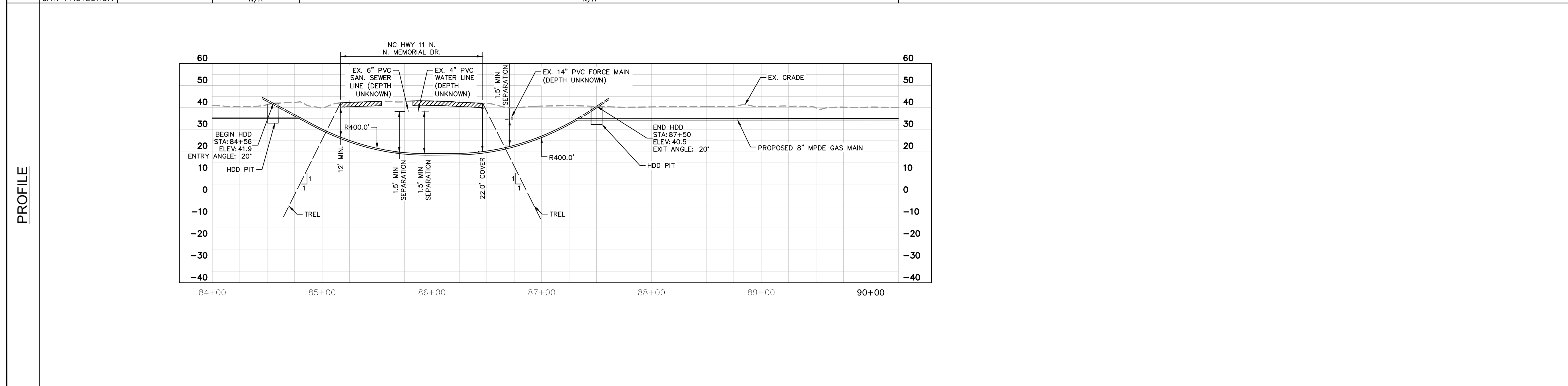
MATERIAL

PIPE
1 = 8" GRADE PE 2708 MDPE, SDR 11, W.T. 0.784 IN, ASTM D2513

CARRIER PIPE
A = 12" GRADE B CARBON STEEL, SCH. STD, W.T. 0.375 IN, API-5L

FITTINGS
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2 = 45° 8" GRADE PE 2708 MDPE, SDR 11, W.T.
3 = 8" PE END CAP
4 = 8" PE VALVE
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7 = 8" BY 8" TDW SPHERICAL 3 WAY TEE
8 = 8" STEEL BALL VALVE
9 = 8" TRANSITION FITTING
10 = 4" PE VALVE
11 = 8" BY 4" PE TEE
12 = 2" PE VALVE

0 25 50 100
HORIZONTAL SCALE: 1"=50'



0 25 50 100
HORIZONTAL SCALE: 1"=50'

0 2.5 5 10
VERTICAL SCALE: 1"=5'

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley»Horn**
4525 MAIN STREET
SUITE 1000
VIRGINIA BEACH, VA 23462
TEL: (757) 213-8600

CLIENT: **Greenville Utilities**

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PROJECT NAME:
NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA

SHEET TITLE:
PLAN & PROFILE

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

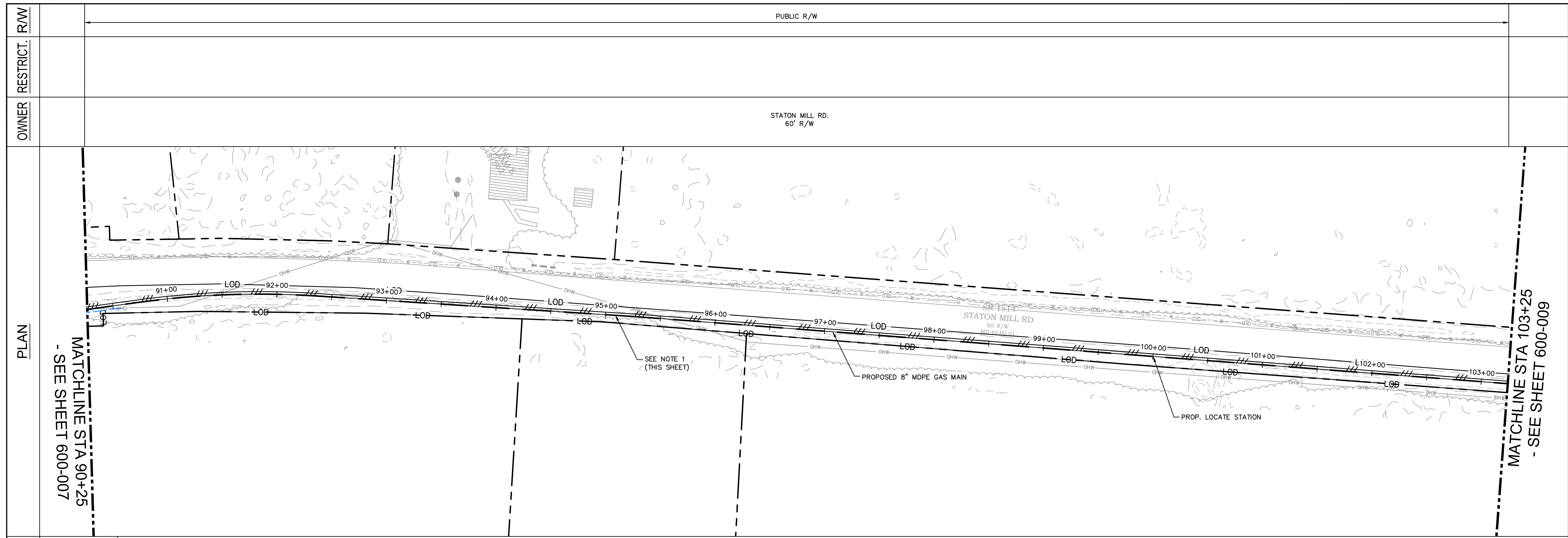
KHA PROJECT NUMBER:
116780001

DRAWING NUMBER:
600-007

SHEET INDEX:
10 OF 27

April 29, 2024 8:27pm By: Chris.Margittis

K:\Veg_Civil\116780001 - GUC - RE 11 Extension\CADD\PlanSheet\600-000 Plan & Profile.dwg



LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF-WAY
- PROPERTY LINE
- EDGE OF PAVEMENT
- DRIVEWAY EDGE
- BUILDING
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- FENCE LINE
- OHW
- SS-OLD
- T-OLD
- W-OLD
- C-OLD
- E-OLD
- SANITARY SEWER LINE
- TELECOMMUNICATIONS
- SUBSURFACE WATER
- SUBSURFACE GAS
- SUBSURFACE ELECTRIC
- PIPE STRINGOUT
- TREE LINE
- STREAM BUFFER
- PROPOSED GAS LINE
- ABANDONMENT
- SILT FENCE
- LIMITS OF DISTURBANCE
- WETLAND
- STREAM
- TEMPORARY CONSTRUCTION
- EASEMENT
- POND
- DRILL/JAB PIT
- CURB INLET FILTER
- INLET PROTECTION
- FILTER RING
- TEST HOLE LOCATION
- SILT FENCE OUTLET

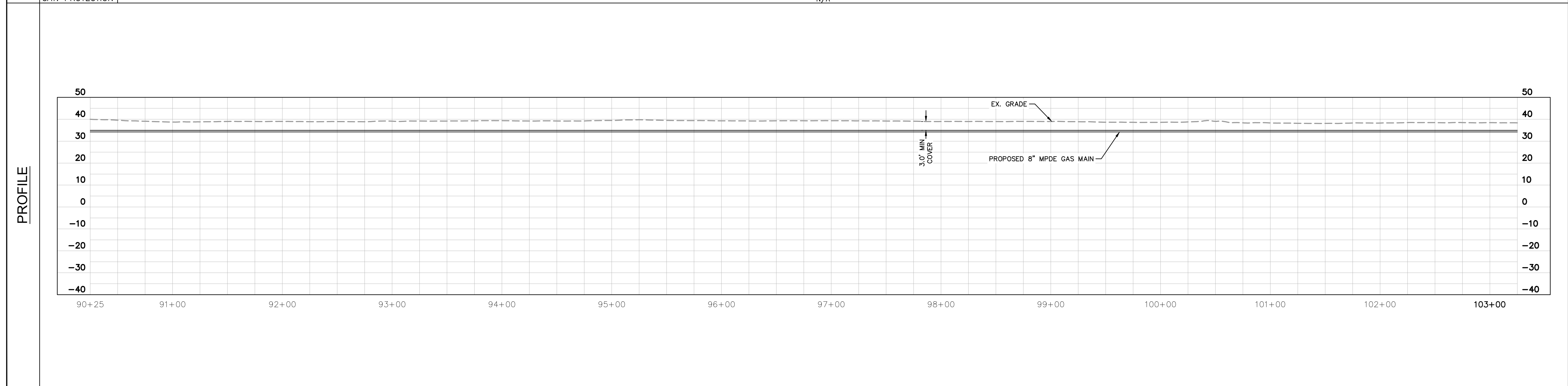
NORTH

0 25 50 100
HORIZONTAL SCALE: 1"=50'

DETAIL	QUANTITY
PIPE	1
COATING	N/A
LENGTH (LF)	1300'
FITTINGS	N/A
CAT. PROTECTION	N/A

NOTE 1:
PROPOSED GAS MAIN SHALL BE INSTALLED 5' FROM EDGE OF RIGHT-OF-WAY UNLESS OTHERWISE STATED.

- ### MATERIAL
- PIPE**
1 = 8" GRADE PE 2708 MDPE, SDR 11, W.T. 0.784 IN, ASTM D2513
- CARRIER PIPE**
A = 12" GRADE B CARBON STEEL, SCH. STD, W.T. 0.375 IN, API-5L
- FITTINGS**
1 = 90° 8" GRADE PE 2708 MDPE, SDR 11, W.T.
2 = 45° 8" GRADE PE 2708 MDPE, SDR 11, W.T.
3 = 8" PE END CAP
4 = 8" PE VALVE
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7 = 8" BY 8" TDW SPHERICAL 3 WAY TEE
8 = 8" STEEL BALL VALVE
9 = 8" TRANSITION FITTING
10 = 4" PE VALVE
11 = 8" BY 4" PE TEE
12 = 2" PE VALVE



0 25 50 100
HORIZONTAL SCALE: 1"=50'

0 2.5 5 10
VERTICAL SCALE: 1"=5'

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley-Horn**
4525 MAIN STREET
SUITE 1000
VIRGINIA BEACH, VA 23462
TEL: (757) 213-8600

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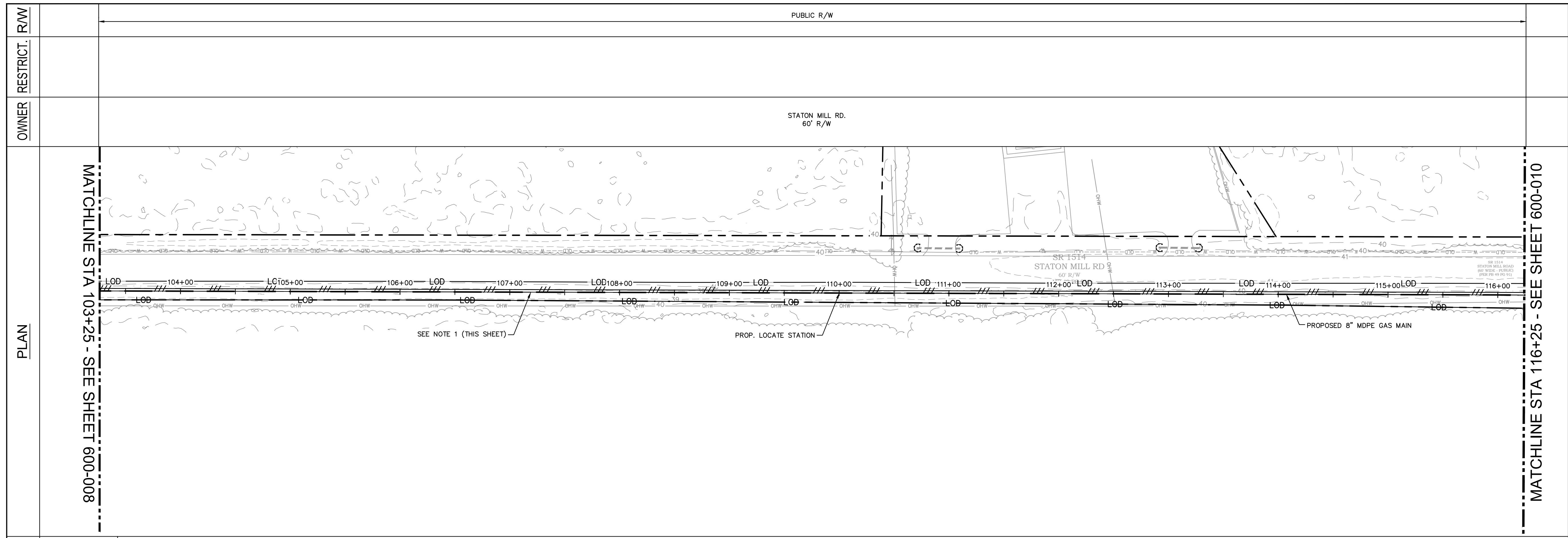
PROJECT NAME: **NC 11 N. NATURAL GAS MAIN EXTENSION**
PITT COUNTY, NORTH CAROLINA

SHEET TITLE: **PLAN & PROFILE**

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 600-008
SHEET INDEX: 11 OF 27

NORTH CAROLINA PROFESSIONAL SEAL
448994
RYAN D. CLARK
P.Y. AND C. CLARK



LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF-WAY
- PROPERTY LINE
- DRIVEWAY EDGE
- BUILDING
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- FENCE LINE
- OVERHEAD POWER LINE
- SANITARY SEWER LINE
- TELECOMMUNICATIONS
- SUBSURFACE WATER
- SUBSURFACE GAS
- SUBSURFACE ELECTRIC
- PIPE STRINGOUT
- TREE LINE
- STREAM BUFFER
- PROPOSED GAS LINE
- ABANDONMENT
- SILT FENCE
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- STREAM
- TEMPORARY CONSTRUCTION EASEMENT
- POND
- DRILL/JAB PIT
- FILTER RING
- CURB INLET FILTER
- TEST HOLE LOCATION
- INLET PROTECTION
- SILT FENCE OUTLET

NORTH

0 25 50 100
HORIZONTAL SCALE: 1"=50'

DETAIL	
PIPE	1
COATING	N/A
LENGTH (LF)	1300'
FITTINGS	N/A
CAT. PROTECTION	N/A

NOTE 1:
PROPOSED GAS MAIN SHALL BE INSTALLED 5' FROM EDGE OF RIGHT-OF-WAY UNLESS OTHERWISE STATED.

MATERIAL

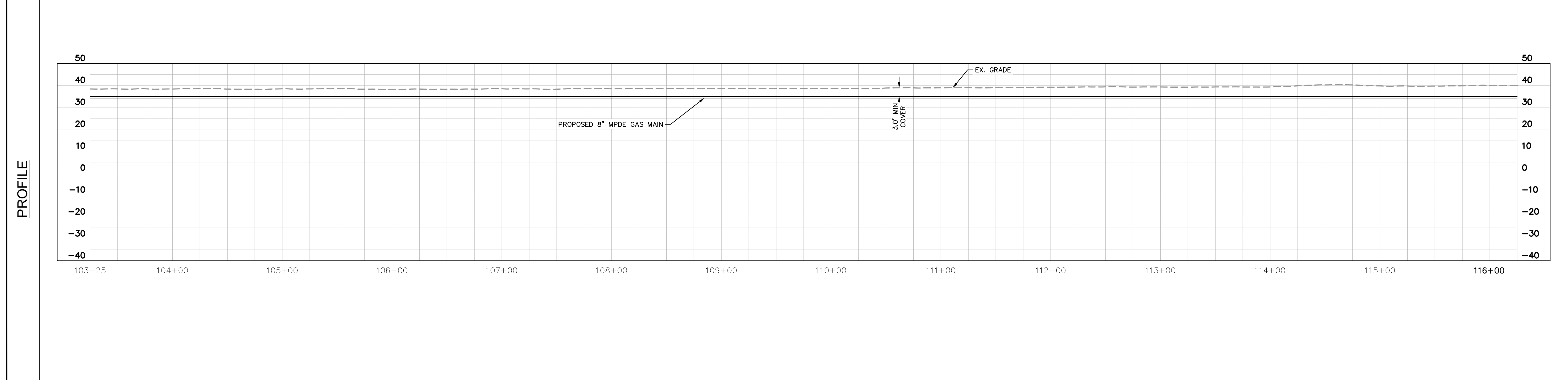
PIPE
1 = 8" GRADE PE 2708 MDPE, SDR 11, W.T. 0.784 IN, ASTM D2513

CARRIER PIPE
A = 12" GRADE B CARBON STEEL, SCH.STD, W.T. 0.375 IN, API-5L

FITTINGS
1 = 90° 8" GRADE PE 2708 MDPE, SDR 11, W.T.
2 = 45° 8" GRADE PE 2708 MDPE, SDR 11, W.T.
3 = 8" PE END CAP
4 = 8" PE VALVE
5 = 8" PE TEE
6 = 8" 5" PUP
7 = 8" BY 8" TDW SPHERICAL 3 WAY TEE
8 = 8" STEEL BALL VALVE
9 = 8" TRANSITION FITTING
10 = 4" PE VALVE
11 = 8" BY 4" PE TEE
12 = 2" PE VALVE

0 25 50 100
HORIZONTAL SCALE: 1"=50'

0 2.5 5 10
VERTICAL SCALE: 1"=5'



REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley-Horn**
4525 MAIN STREET
SUITE 1000
VIRGINIA BEACH, VA 23462
TEL: (757) 213-8600

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CLIENT: **Greenville Utilities**

PROJECT NAME:
NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA

SHEET TITLE:
PLAN & PROFILE

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

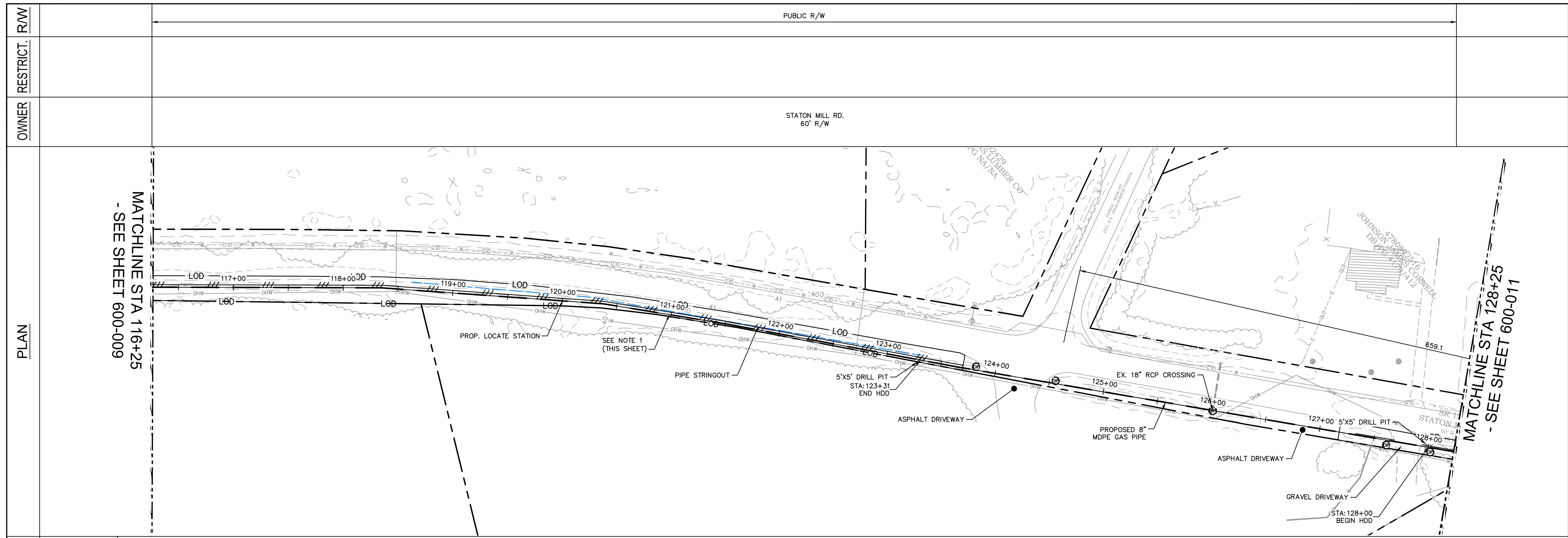
KHA PROJECT NUMBER:
116780001

DRAWING NUMBER:
600-009

SHEET INDEX:
12 OF 27

April 29, 2024 6:28pm By: Chris.Margittis

K:\Veg-Civil\116780001 - GUC - RE 11 Extension\CADD\PlanSheet\600-000 Plan & Profile.dwg



LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF-WAY
- PROPERTY LINE
- DRIVEWAY EDGE
- BUILDING
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- FENCE LINE
- OVERHEAD POWER LINE
- SANITARY SEWER LINE
- TELECOMMUNICATIONS
- SUBSURFACE WATER
- SUBSURFACE GAS
- SUBSURFACE ELECTRIC
- PIPE STRINGOUT
- TREELINE
- STREAM BUFFER
- PROPOSED GAS LINE
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- STREAM
- TEMPORARY CONSTRUCTION EASEMENT
- POND
- DRILL/JAB PIT
- FILTER RING
- CURB INLET FILTER
- TEST HOLE LOCATION
- INLET PROTECTION
- SILT FENCE OUTLET

NORTH

0 25 50 100
HORIZONTAL SCALE: 1"=50'

PIPE BAR

DETAIL	
PIPE	1
COATING	N/A
LENGTH (LF)	1200'
FITTINGS	N/A
CAT. PROTECTION	N/A

NOTE 1:
PROPOSED GAS MAIN SHALL BE INSTALLED 5' FROM EDGE OF RIGHT-OF-WAY UNLESS OTHERWISE STATED.

MATERIAL

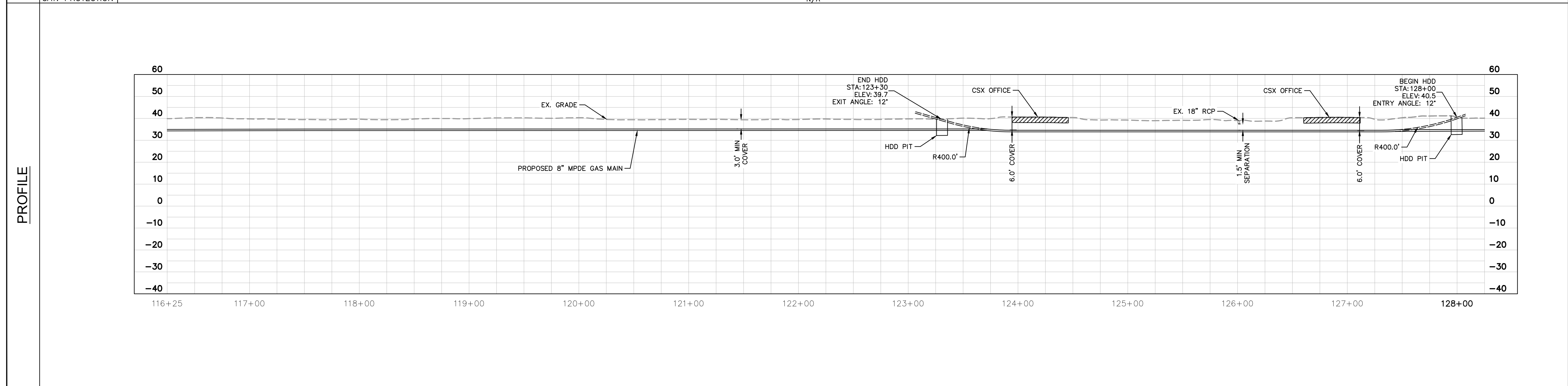
PIPE
1 = 8" GRADE PE 2708 MDPE, SDR 11, W.T. 0.784 IN, ASTM D2513

CARRIER PIPE
A = 12" GRADE B CARBON STEEL, SCH. STD, W.T. 0.375 IN, API-5L

FITTINGS
1 = 90° 8" GRADE PE 2708 MDPE, SDR 11, W.T.
2 = 45° 8" GRADE PE 2708 MDPE, SDR 11, W.T.
3 = 8" PE END CAP
4 = 8" PE VALVE
5 = 8" PE TEE
6 = 8" 5" PUP
7 = 8" BY 8" TDW SPHERICAL 3 WAY TEE
8 = 8" STEEL BALL VALVE
9 = 8" TRANSITION FITTING
10 = 4" PE VALVE
11 = 8" BY 4" PE TEE
12 = 2" PE VALVE

0 25 50 100
HORIZONTAL SCALE: 1"=50'

0 2.5 5 10
VERTICAL SCALE: 1"=5'



REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley»Horn**
4525 MAIN STREET
SUITE 1000
VIRGINIA BEACH, VA 23462
TEL: (757) 213-8600

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CLIENT: **Greenville Utilities**

PROJECT NAME: **NC 11 N. NATURAL GAS MAIN EXTENSION**
PITT COUNTY, NORTH CAROLINA

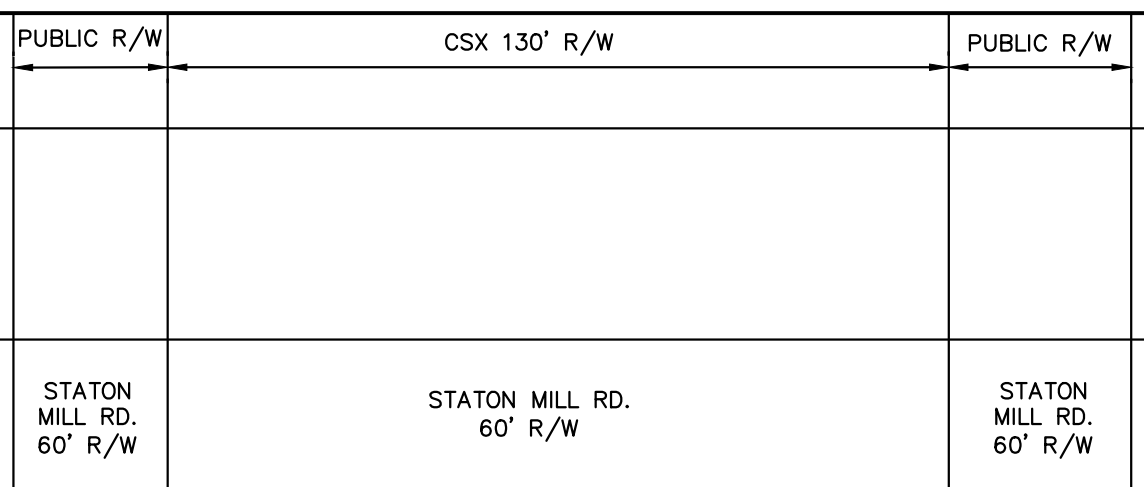
SHEET TITLE: **PLAN & PROFILE**

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

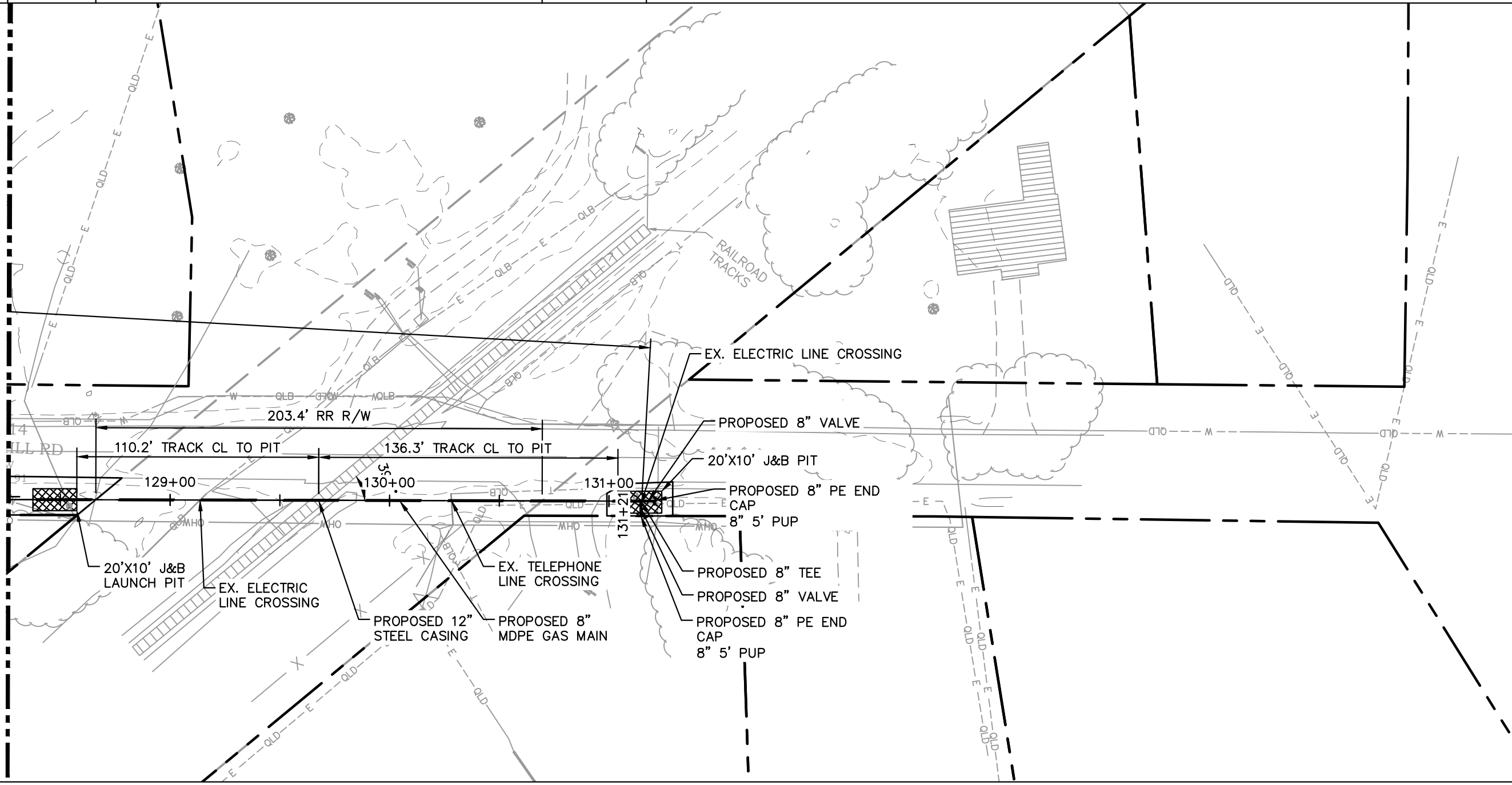
Professional Engineer Seal
RYLAND, CLARK
448994

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 600-010
SHEET INDEX: 13 OF 27

R/W
RESTRICT.
OWNER
PLAN
PIPE BAR
PROFILE



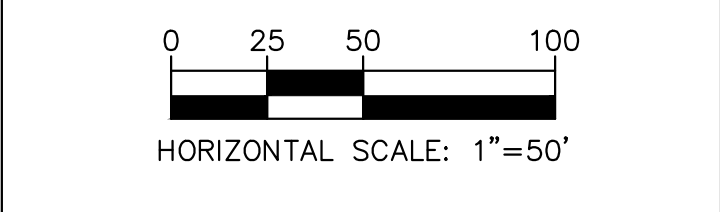
MATCHLINE STA 127+75 -
SEE SHEET 600-010



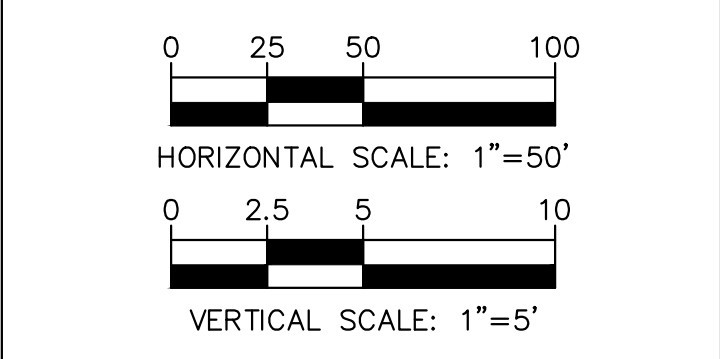
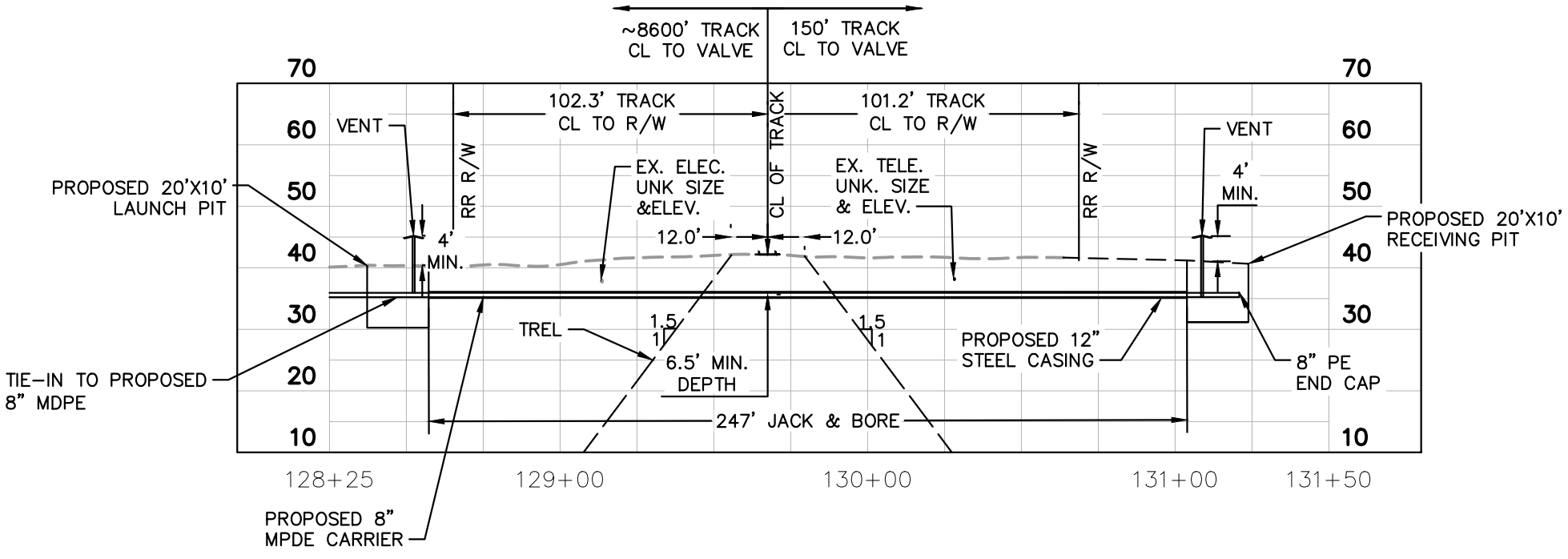
LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF-WAY
- PROPERTY LINE
- DRIVEWAY EDGE
- BUILDING
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- FENCE LINE
- OHW
- SS-OLD
- T-OLD
- W-OLD
- C-OLD
- E-OLD
- SANITARY SEWER LINE
- TELECOMMUNICATIONS
- SUBSURFACE WATER
- SUBSURFACE GAS
- SUBSURFACE ELECTRIC
- PIPE STRINGOUT
- TREELINE
- STREAM BUFFER
- PROPOSED GAS LINE
- ABANDONMENT
- SILT FENCE
- LIMITS OF DISTURBANCE
- WETLAND
- STREAM
- TEMPORARY CONSTRUCTION
- EASEMENT
- POND
- DRILL/J&B PIT
- CURB INLET FILTER
- INLET PROTECTION
- FILTER RING
- TEST HOLE LOCATION
- SILT FENCE OUTLET

DETAIL	1	A	1
PIPE			
COATING	N/A	N/A	N/A
LENGTH (LF)	32'	247'	17'
FITTINGS			5, 4, 3, 6
CAT. PROTECTION	N/A	N/A	N/A



- ### MATERIAL
- PIPE**
1 = 8" GRADE PE 2708 MDPE, SDR 11, W.T. 0.784 IN, ASTM D2513
- CARRIER PIPE**
A = 12" GRADE B CARBON STEEL, SCH.STD, W.T. 0.375 IN, API-5L
- FITTINGS**
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2 = 45° 8" GRADE PE 2708 MDPE, SDR 11, W.T.
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10 = 4" PE VALVE
11 = 8" BY 4" PE TEE
12 = 2" PE VALVE



REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley»Horn**
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VIRGINIA BEACH, VA 23462
TEL: (757) 213-8600

CLIENT: **Greenville Utilities**

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PROJECT NAME:
NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA

SHEET TITLE:
PLAN & PROFILE

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

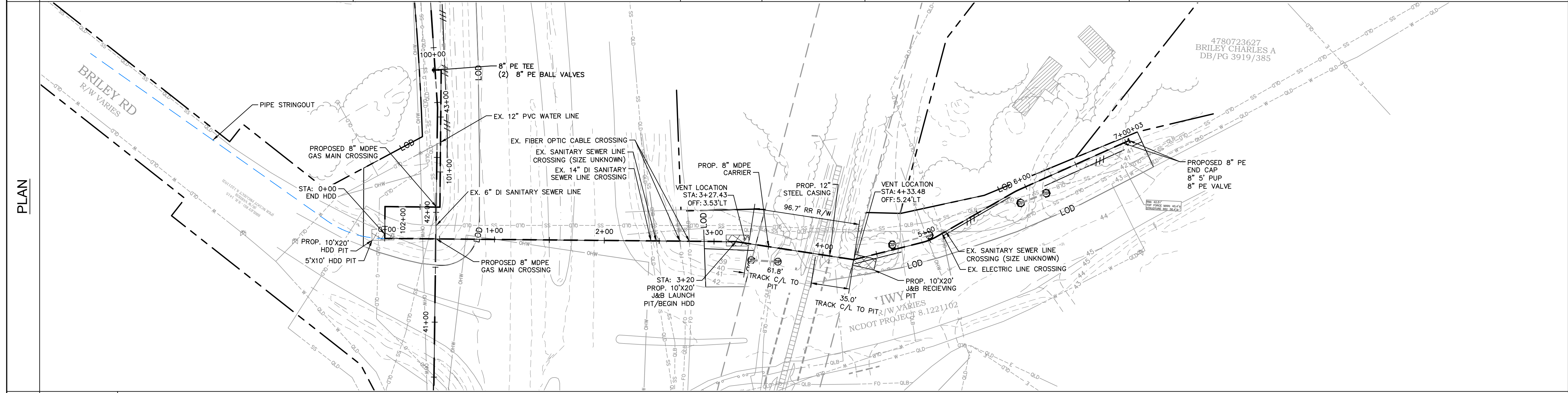
KHA PROJECT NUMBER:
116780001

DRAWING NUMBER:
600-011

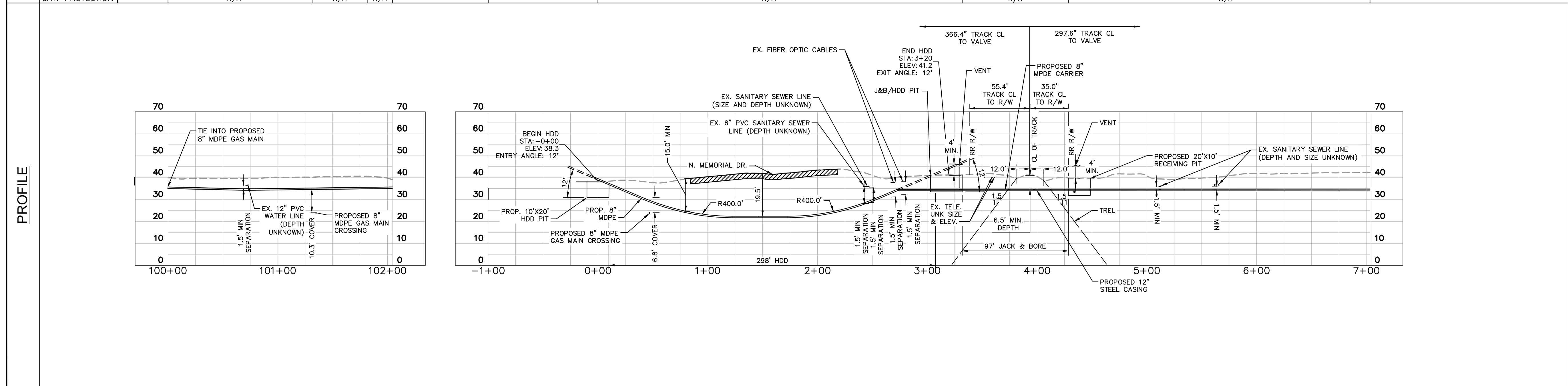
SHEET INDEX:
14 OF 27

April 29, 2024 6:28pm By: Chris Margittis

R/W		PUBLIC R/W	PUBLIC R/W	CSX 90' R/W	PUBLIC R/W
RESTRICT.					
OWNER		N. MEMORIAL DR. R/W VARIES	NC HIGHWAY 903 N R/W VARIES	NC HIGHWAY 903 N R/W VARIES	NC HIGHWAY 903 N R/W VARIES



PIPE BAR	DETAIL										
	PIPE	1	1	1							
	COATING	N/A	N/A	N/A							
	LENGTH (LF)	132'	50'	22'							
	FITTINGS	4, 5, 1	1	1							
	CAT. PROTECTION	N/A	N/A	N/A							



LEGEND

- EASEMENT BOUNDARY
- RIGHT-OF-WAY
- PROPERTY LINE
- EDGE OF PAVEMENT
- DRIVEWAY EDGE
- BUILDING
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- FENCE LINE
- OVERHEAD POWER LINE
- OHW
- SS-OLD
- SS-NEW
- TELECOMMUNICATIONS
- SUBSURFACE WATER
- SUBSURFACE GAS
- SUBSURFACE ELECTRIC
- PIPE STRINGOUT
- TREELINE
- STREAM BUFFER
- PROPOSED GAS LINE
- ABANDONMENT
- SILT FENCE
- LIMITS OF DISTURBANCE
- WETLAND
- STREAM
- TEMPORARY CONSTRUCTION EASEMENT
- POND
- DRILL/J&B PIT
- FILTER RING
- CURB INLET FILTER
- TEST HOLE LOCATION
- INLET PROTECTION
- SILT FENCE OUTLET

HORIZONTAL SCALE: 1"=50'

MATERIAL

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12 = 2" PE VALVE

HORIZONTAL SCALE: 1"=50'

VERTICAL SCALE: 1"=5'

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley»Horn**
4525 MAIN STREET
SUITE 1000
VIRGINIA BEACH, VA 23462
TEL: (757) 213-8600

CLIENT: **Greenville Utilities**

PROJECT NAME: **NC 11 N. NATURAL GAS MAIN EXTENSION**
PITT COUNTY, NORTH CAROLINA

SHEET TITLE: **PLAN & PROFILE**

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

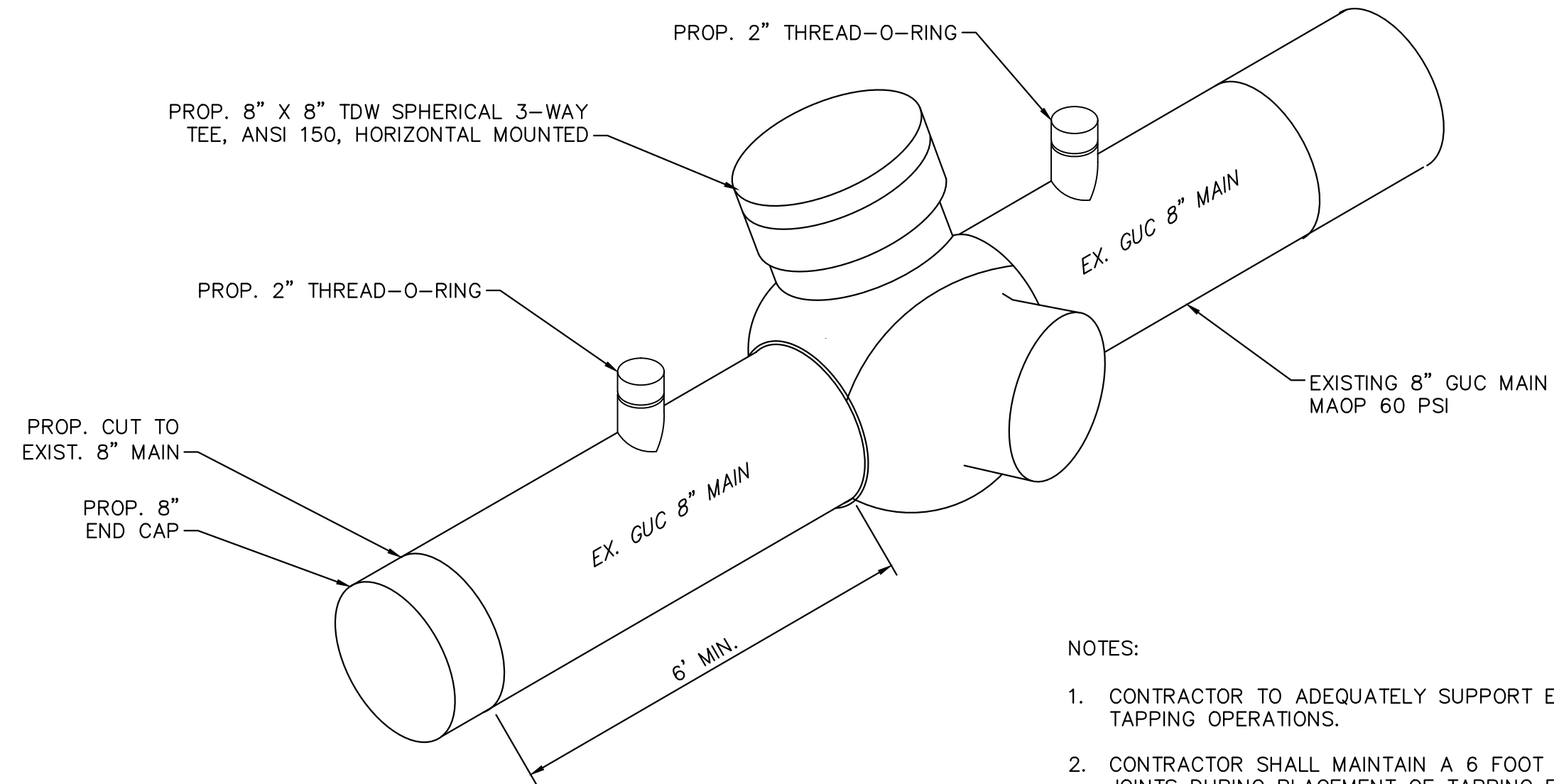
KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 600-012
SHEET INDEX: 15 OF 27

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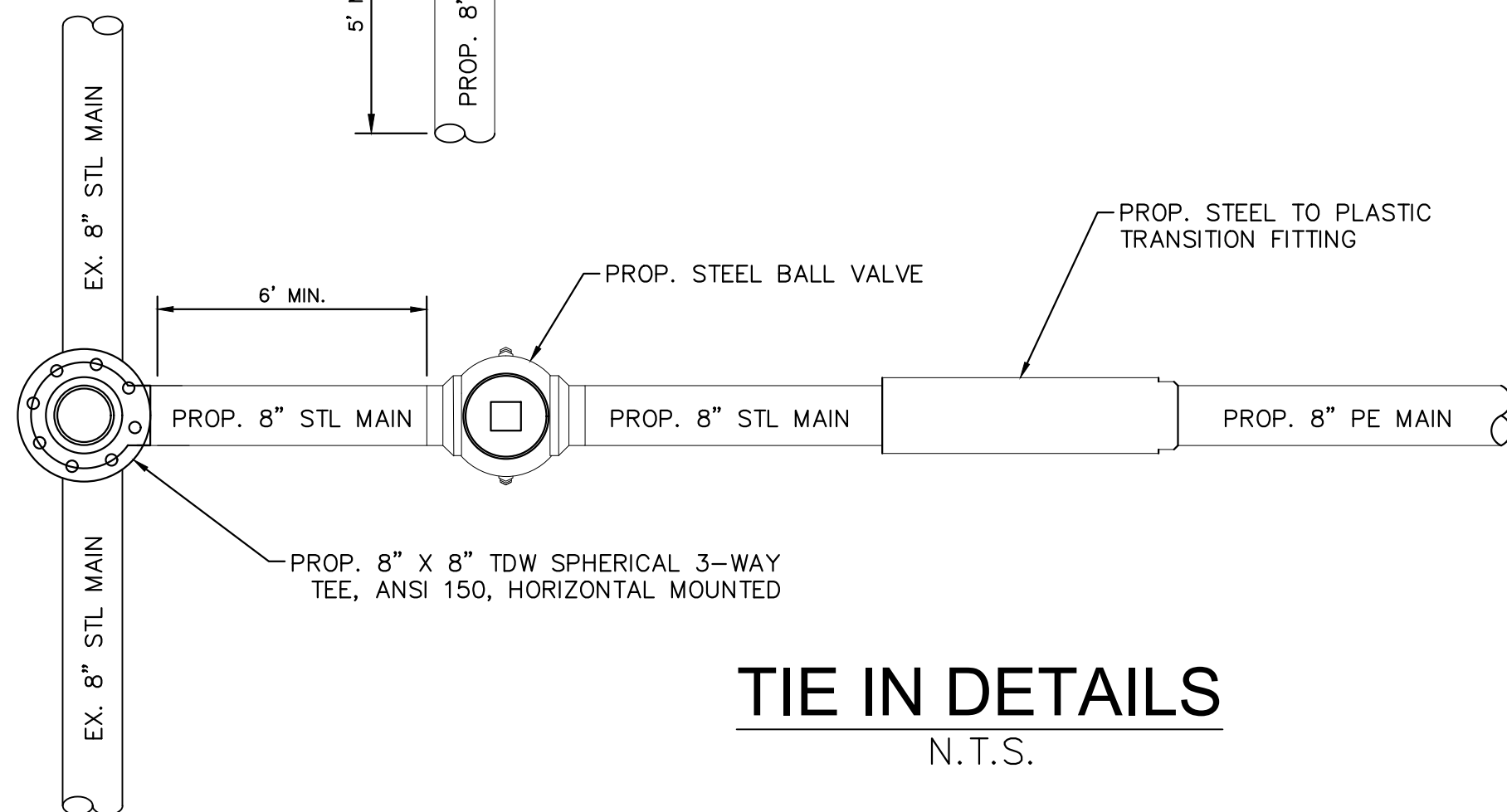
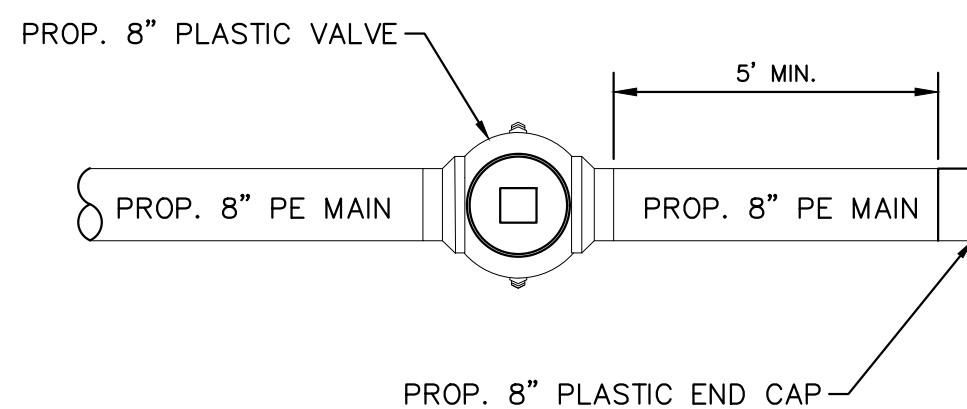
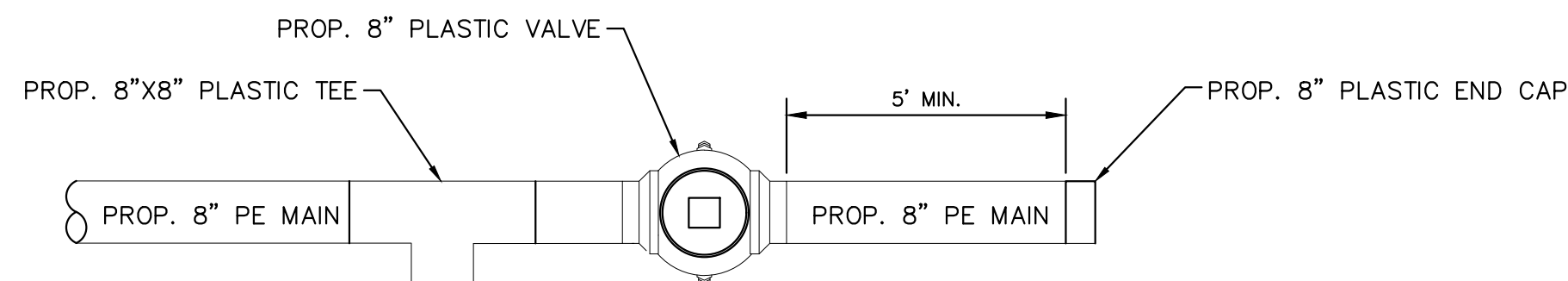
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April 29, 2024 11:52:29pm By: Chris.Margantis

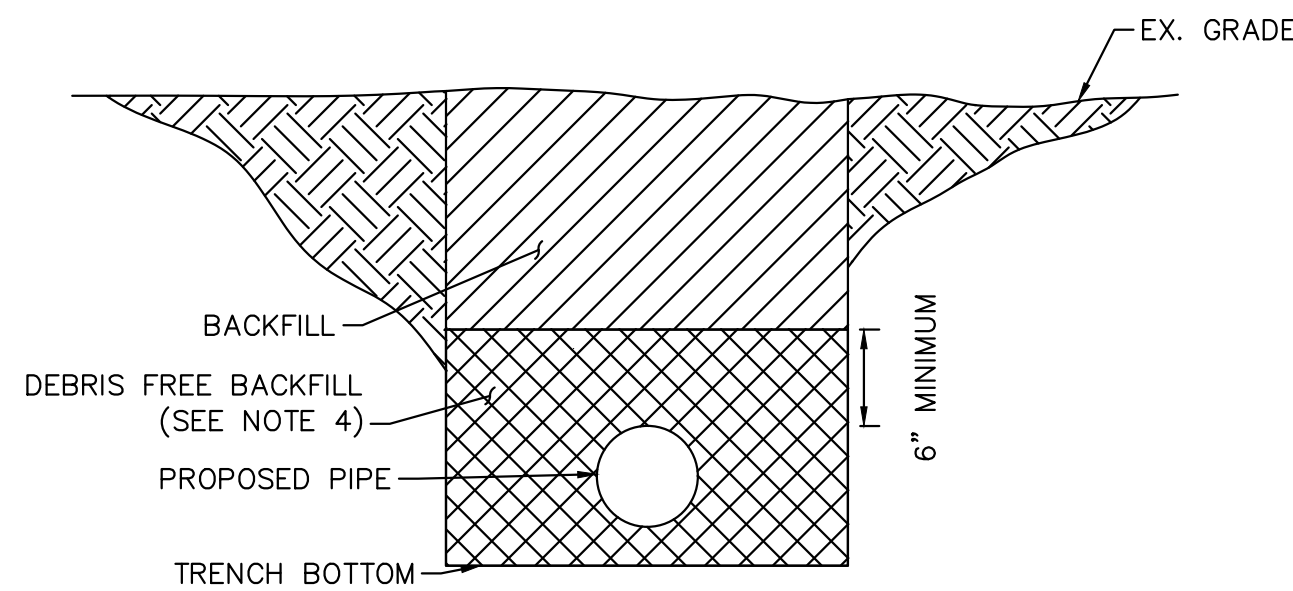


- NOTES:
- CONTRACTOR TO ADEQUATELY SUPPORT EXISTING 8" MAIN DURING TAPPING OPERATIONS.
 - CONTRACTOR SHALL MAINTAIN A 6 FOOT SEPARATION FROM EXISTING JOINTS DURING PLACEMENT OF TAPPING FITTING.

8" HOT TAP DETAIL
N.T.S.

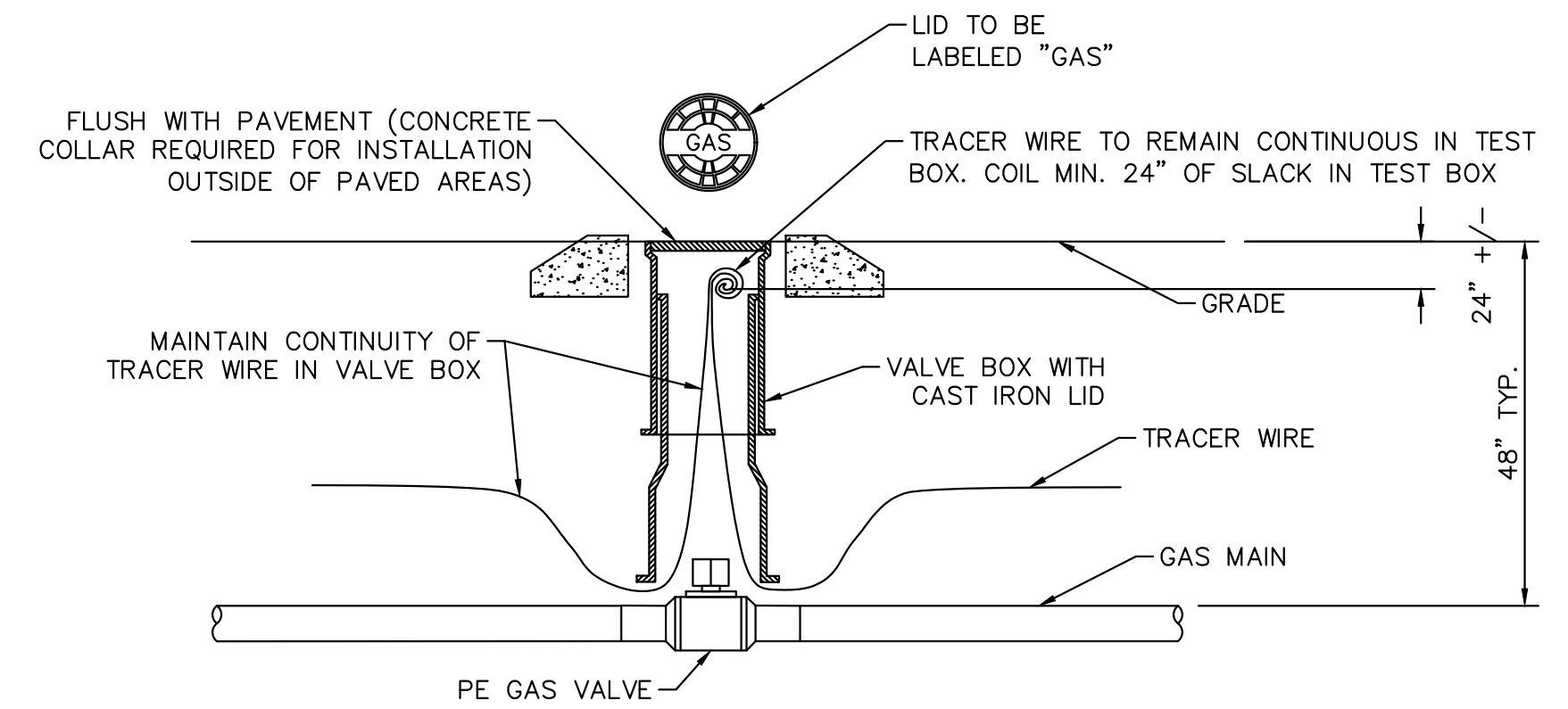


TIE IN DETAILS
N.T.S.

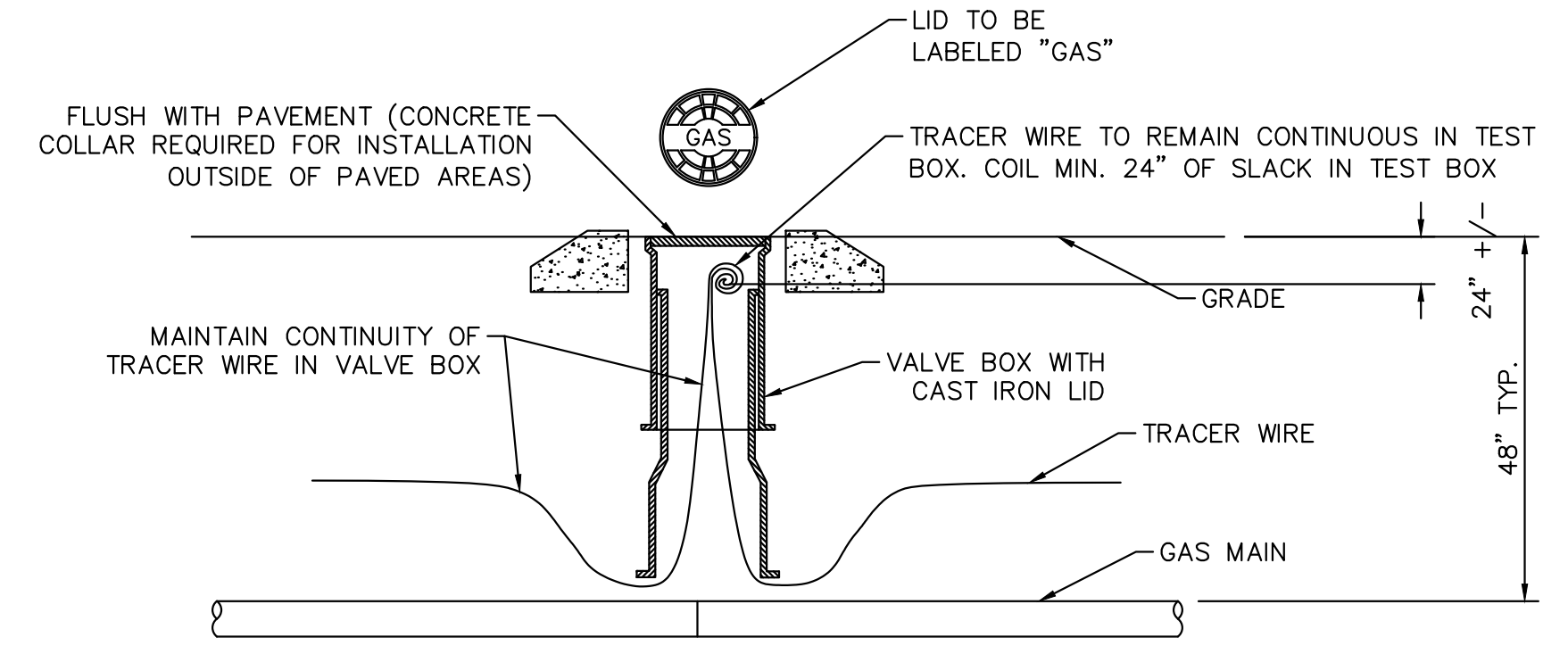


- NOTES:
- ENSURE TRENCH IS FREE OF ROCKS AND OTHER OBJECTS THAT COULD DAMAGE THE PIPE.
 - ENSURE TRENCH IS AT THE PROPER DEPTH TO ALLOW 3 FEET OF COVER FROM TOP OF PIPE TO FINISHED SURFACE.
 - PIPE SHALL BE ADEQUATELY SUPPORTED DURING LOWERING INTO DITCH. LIFT PIPE USING NYLON SLING OR OTHER APPROPRIATE DEVICES.
 - FIRST 6" OF BACKFILL SHOULD BE FREE OF ROCK AND OTHER MATERIALS THAT COULD DAMAGE THE PIPE OR PIPE COATING.
 - DO NOT USE EXCESSIVE FORCE TO TAMPER DIRECTLY OVER THE PIPE ON THE FIRST 6" OF BACKFILL.
 - ENSURE FINAL DITCH COVER IS FLUSH WITH SURROUNDING GROUND.

TRENCH DETAIL
N.T.S.



PLASTIC VALVE INSTALLATION DETAIL
N.T.S.



LOCATION BOX DETAIL
N.T.S.

D	X	W
12"	1'-4"	7'-4"
15"	1'-7"	7'-7"
18"	1'-10"	7'-10"
24"	2'-6"	8'-6"
30"	3'-1"	9'-1"
36"	3'-8"	9'-8"
42"	4'-5"	10'-5"
48"	5'-0"	11'-0"

PAVEMENT REPAIRS ON ROADS TO BE RESURFACED
(PIPE IS PLACED UNDER EXISTING PAVEMENT)

PAVEMENT REPAIRS ON ROADS NOT TO BE RESURFACED
(PIPE IS TO BE PLACED UNDER EXISTING PAVEMENT)

PAVEMENT REPAIR DETAIL
N.T.S.

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley»Horn**
 4525 MAIN STREET
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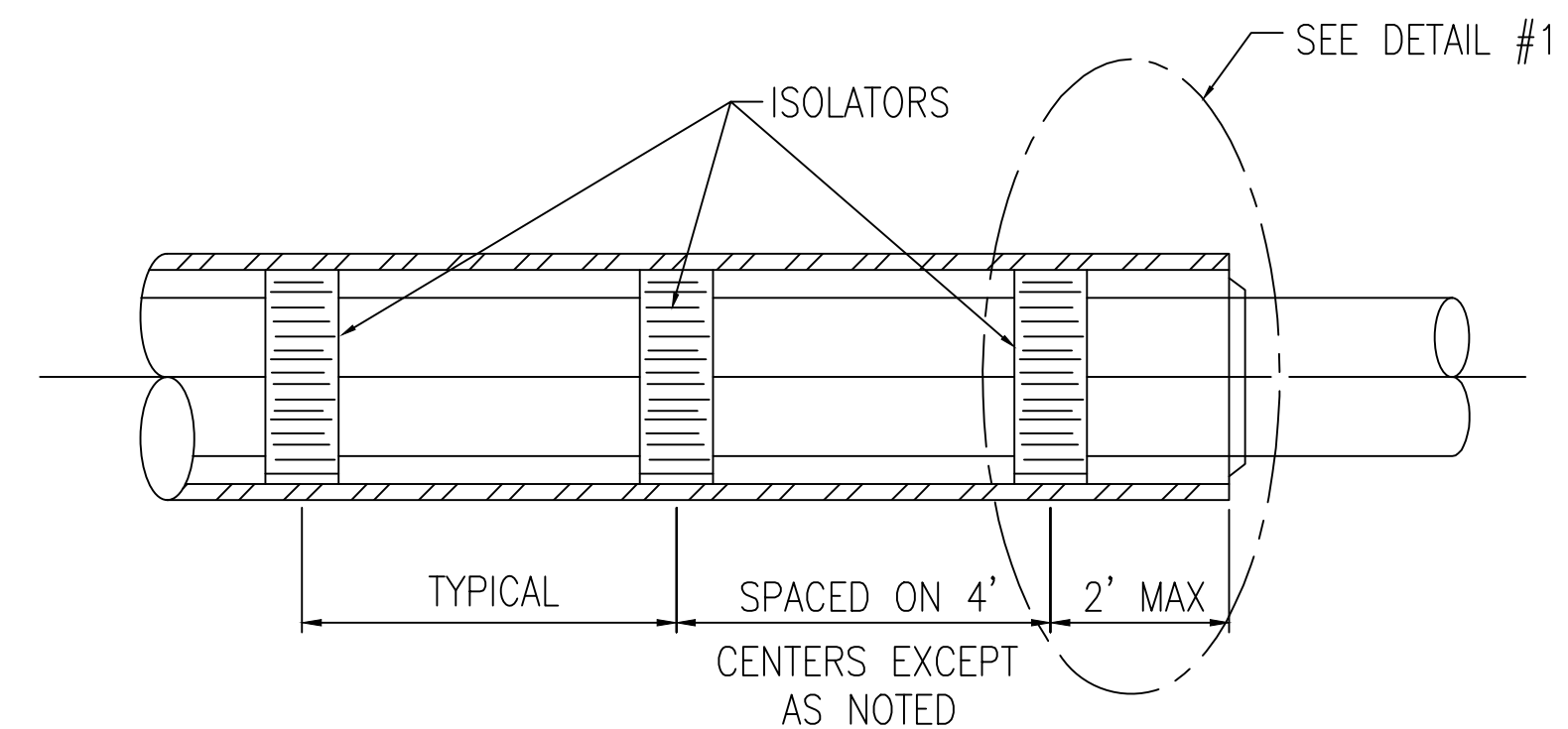
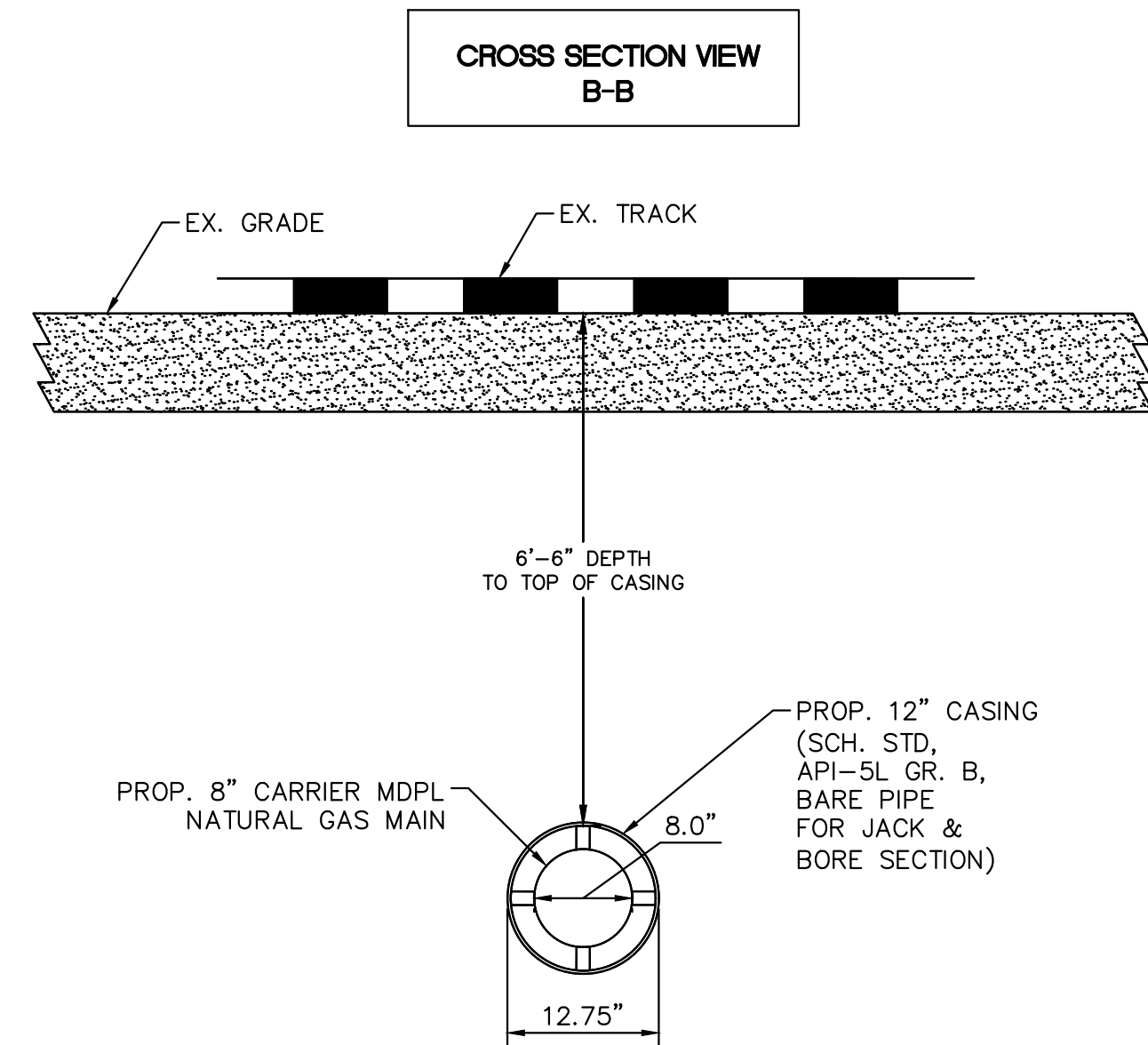
CLIENT: **Greenville Utilities**

PROJECT NAME: **NC 11 N. NATURAL GAS MAIN EXTENSION**
 PITT COUNTY, NORTH CAROLINA
 SHEET TITLE: **DETAILS**

DATE: 04/29/2024
 SCALE (H,V): AS SHOWN
 DRAWN BY: SMP
 DESIGNED BY: RDC
 CHECKED BY: RDC (PM)

PROFESSIONAL SEAL
 448994
 RYLAND CLARK
 ENGINEER

KHA PROJECT NUMBER: 116780001
 DRAWING NUMBER: 800-001
 SHEET INDEX: 16 OF 27

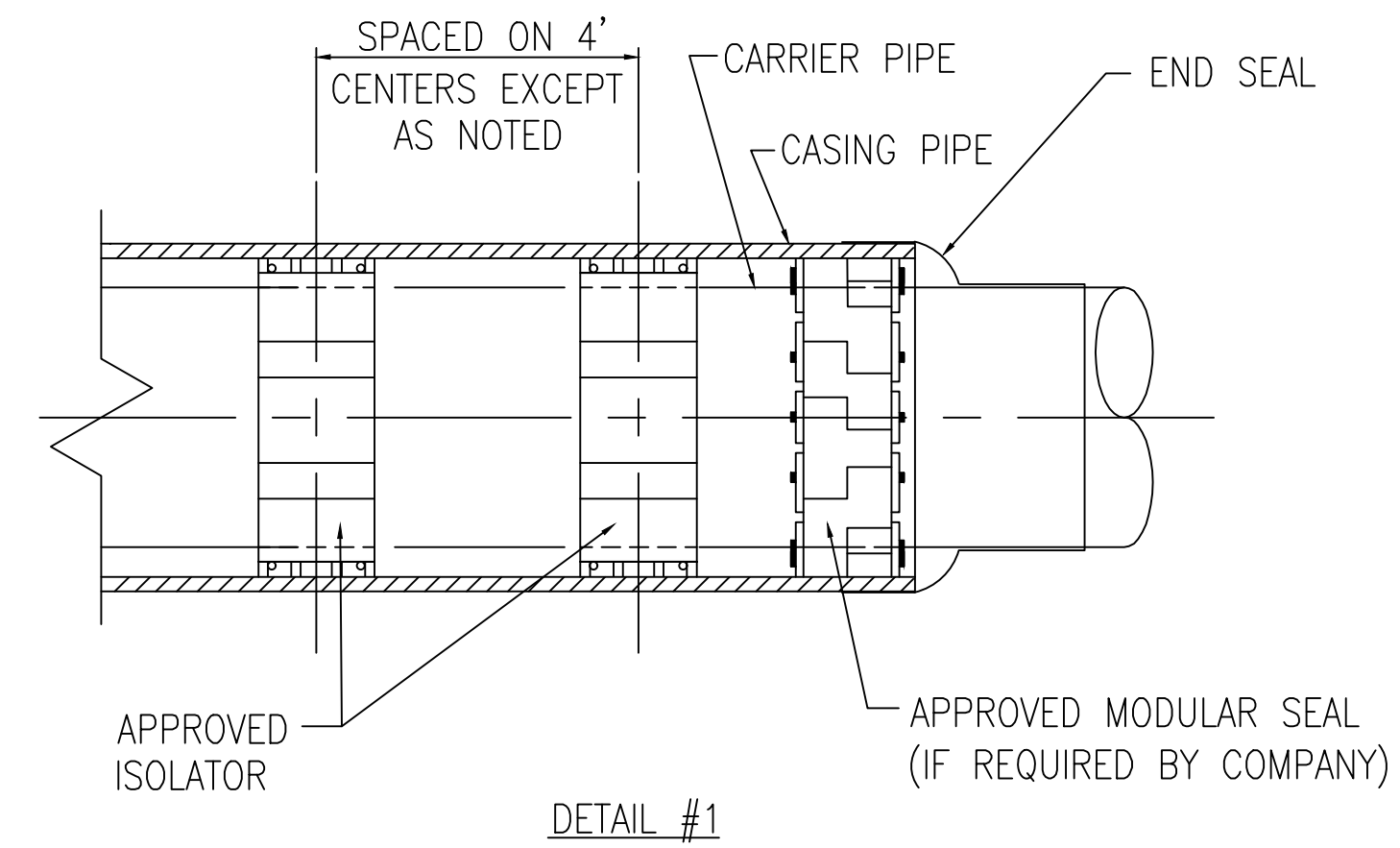


NOTE:
FOR 24" AND SMALLER CARRIER PIPE
USE 6' CENTERS.

DETAIL #1A
INTERMEDIATE ISOLATORS

PIPELINE CONTENT DETAILS		
Commodity Description:	Natural Gas (Methane, CH4)	
Maximum Operating Pressure:	60 psig	
Is Commodity Flammable:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
CARRIER/CASING PIPE DETAILS		
	Carrier Pipe	Casing Pipe
Pipe Material:	MDPE	Carbon Steel
Material Specifications & Grade:	ASTM D2513 Grade PE2708	API-5L Grade B
Specified Minimum Yield Strength:	2,000 psig	35,000 psig
Nominal Size Outside Diameter (Inches):	8.625	12.750
Wall Thickness (Inches):	0.784(SDR 11)	0.375(Sch. STD)
Type of Seam:	Seamless	Seamless or ERW
Type of Joints:	Butt-Fusion	Butt-Welded
Tunnel Liner Plates Required:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Cathodic Protection:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Type: N/A
Protective Coating:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Type: N/A
Temp. Track Support or Rip-Rap Req.:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Must Describe & Show on Dwg.

NOTE:
CONTRACTOR SHALL CONFIRM THE DEPTHS OF ALL EXISTING UTILITIES. CONTACT ENGINEER IN THE CASE OF A CONFLICT.



- NOTES:
- CASING ISOLATORS SHALL BE COATED STEEL OR STAINLESS STEEL WITH PVC LINER AND 2" WIDE GLASS REINFORCED POLYMER RUNNER AS MANUFACTURED BY PIPELINE SEAL INSULATOR, ADVANCED PRODUCTS AND SYSTEMS, OR APPROVED EQUAL.
 - END SEAL SHALL BE WRAP-AROUND TYPE, 1/8" THICK SYNTHETIC RUBBER.

TYPICAL CASING
ISOLATOR AND SEAL
INSTALLATION

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley-Horn**
4525 MAIN STREET
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VIRGINIA BEACH, VA 23462
TEL: (757) 213-8600

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CLIENT: **Greenville Utilities**

PROJECT NAME: **NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA**

SHEET TITLE: **JACK & BORE DETAILS**

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

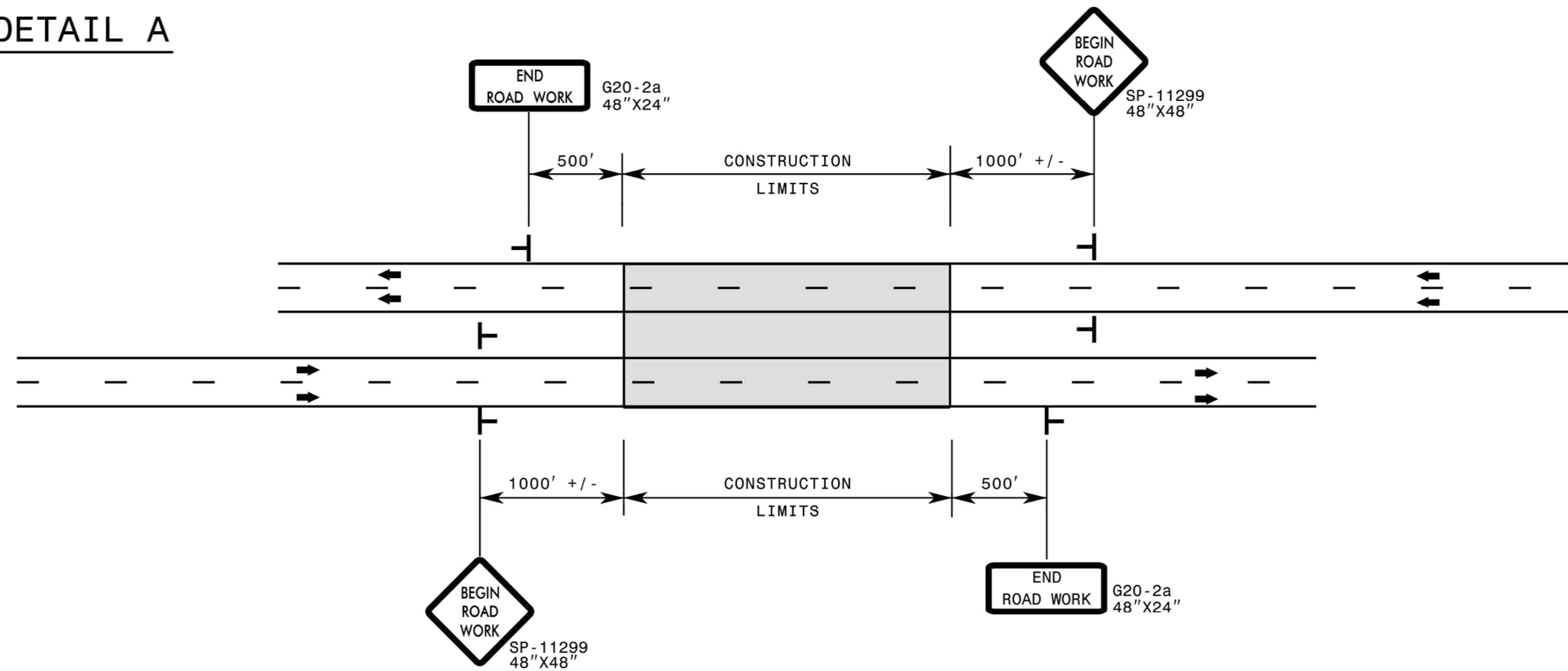
Professional Engineer Seal
RYAN D. CLARK
448994124

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 800-005
SHEET INDEX: 20 OF 27

April 29, 2024 - 6:29pm By: Chris.Margentis

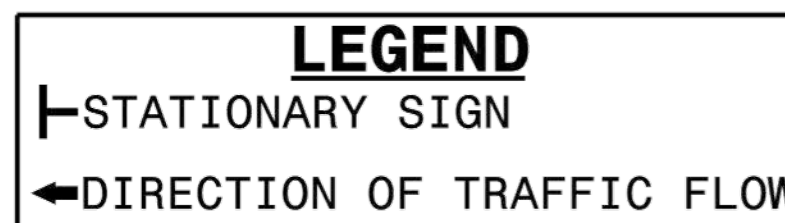
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DETAIL A

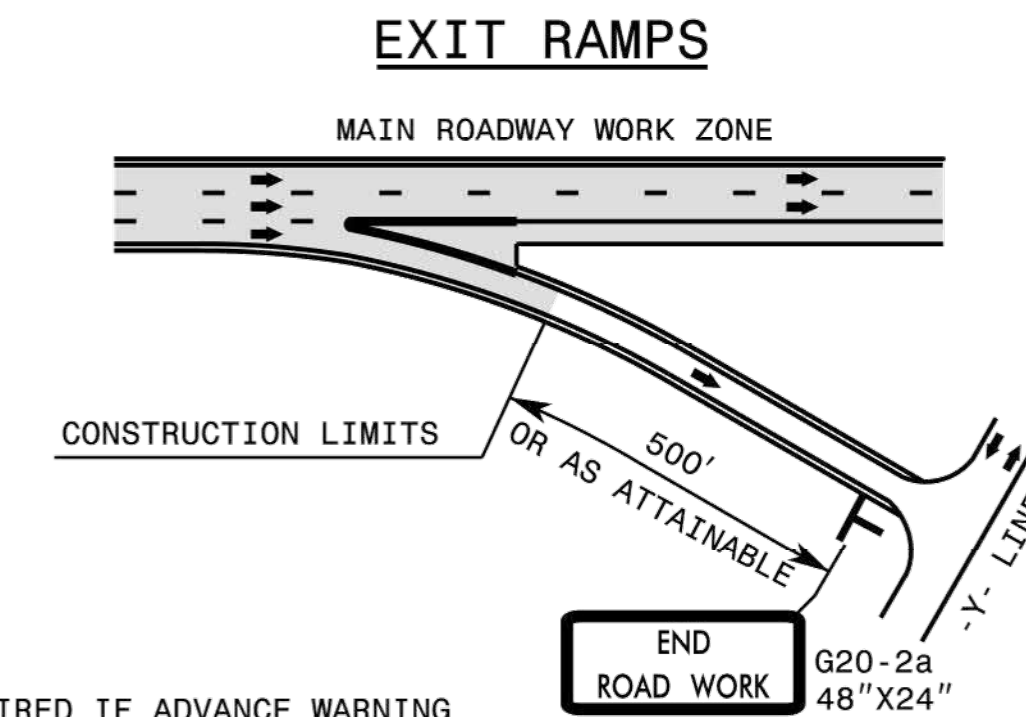


GENERAL NOTES

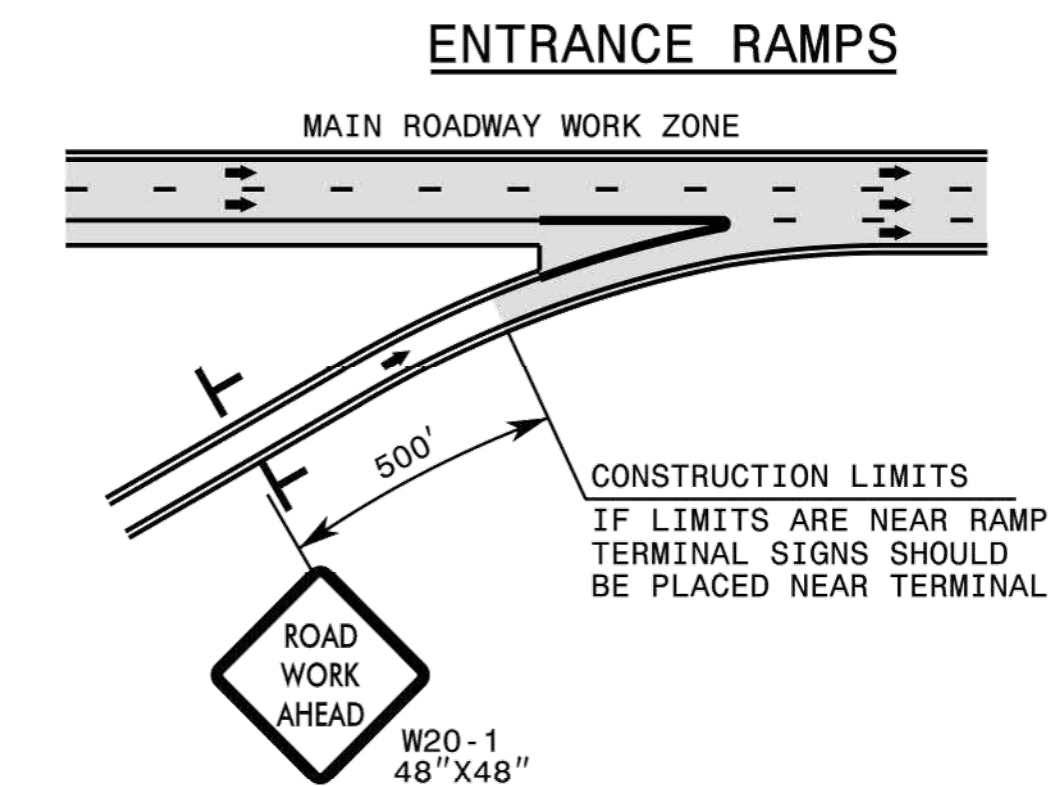
- 1- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK UNLESS COVERED.
- 2- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT LONGER THAN 3 CONSECUTIVE DAYS.
- 3- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- 4- ERECT SIGNS PER RSD. 1110.01. PAYMENT FOR WOOD POSTS, 3LB STEEL U-CHANNEL AND SQUARE STEEL TUBING POSTS WITH SIGNS WILL BE MADE ACCORDING TO STANDARD SPECIFICATIONS FOR WORK ZONE SIGNS.
- 5- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH RSD. 1110.01.
- 6- DO NOT BACK BRACE SIGN SUPPORTS.
- 7- TWO-WAY UNDIVIDED ADVANCE WARNING SIGN CONFIGURATION MAY BE USED ON URBAN MULTI-LANE FACILITIES WHERE CONDITIONS LIMIT THE USE OF DUAL MOUNTED SIGNS AS DETERMINED BY THE ENGINEER.



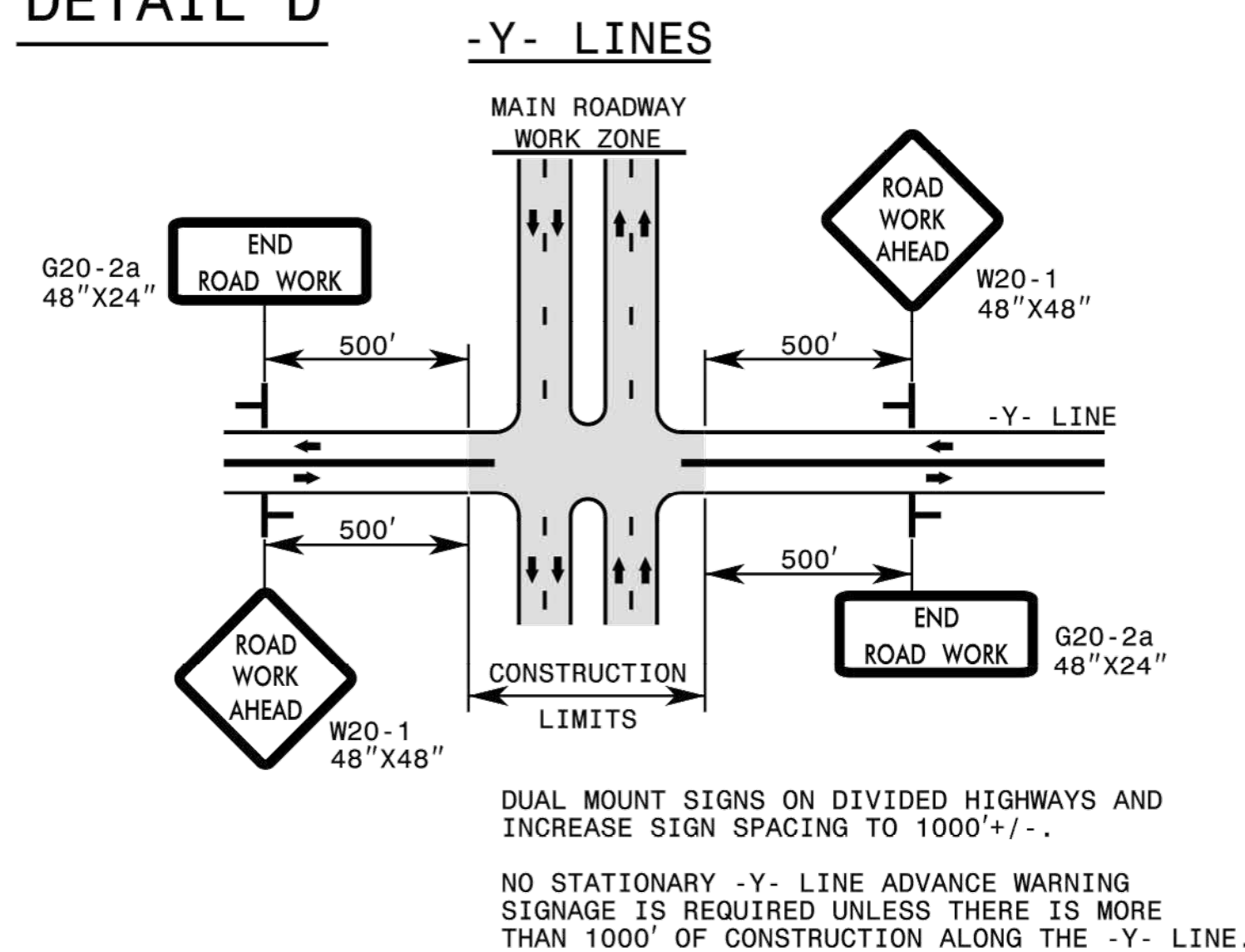
DETAIL B



DETAIL C



DETAIL D



STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
WORK ZONE ADVANCE WARNING SIGNS FOR FACILITIES ≤ 55 MPH

SHEET 2 OF 3
1101.01

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley»Horn**
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CLIENT: **Greenville Utilities**

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PROJECT NAME:
**NC 11 N. NATURAL GAS MAIN EXTENSION
 PITT COUNTY, NORTH CAROLINA**

SHEET TITLE:
WORK ZONE ADVANCE WARNING

DATE: 04/29/2024
 SCALE (H,V): AS SHOWN
 DRAWN BY: SMP
 DESIGNED BY: RDC
 CHECKED BY: RDC (PM)

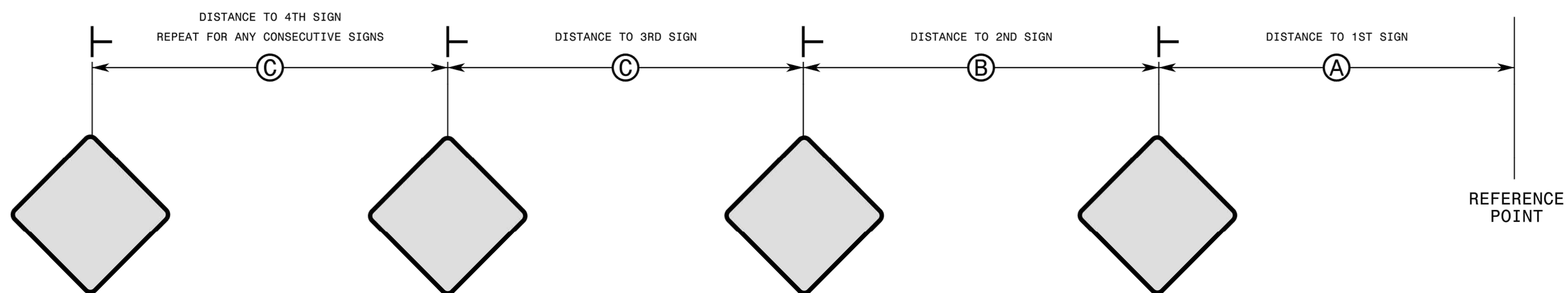
KHA PROJECT NUMBER:
116780001

DRAWING NUMBER:
900-001

SHEET INDEX:
21 OF 27

ADVANCE WARNING SIGN SPACING CHART			
POSTED SPEED LIMIT (MPH)	RECOMMENDED DISTANCE BETWEEN SIGNS (FEET) ±		
	(A)	(B)	(C)
≤ 35	200	200	200
40-50	350	350	350
55	500	500	500
CONTROLLED ACCESS ROADS (≥ 55)	1000	1500	2700

STATIONARY OR PORTABLE SIGNS



GENERAL NOTES

- 1- REFER TO 2009 MUTCD OR THE LATEST EDITION.
- 2- USE THIS STANDARD DRAWING IN CONJUNCTION WITH OTHER TRAFFIC CONTROL ROADWAY STANDARD DRAWINGS WHERE SIGN SPACING DISTANCES A, B, C, ARE SPECIFIED.
- 3- APPLY THE ADVANCE WARNING SIGN SPACING CHART WHERE A SERIES OF 2 OR MORE SIGNS ARE USED. ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE. FIELD ADJUST AS VARIOUS CONDITIONS OCCUR, SUCH AS LIMITED SIGHT DISTANCE, OBSTRUCTION INTERFERENCE, ETC.

ROADWAY STANDARD DRAWING FOR
TRAFFIC CONTROL DESIGN TABLES
 SPACING OF TEMPORARY SIGNS IN SERIES

1-18
 STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

SHEET 4 OF 4

1101.11

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley»Horn**
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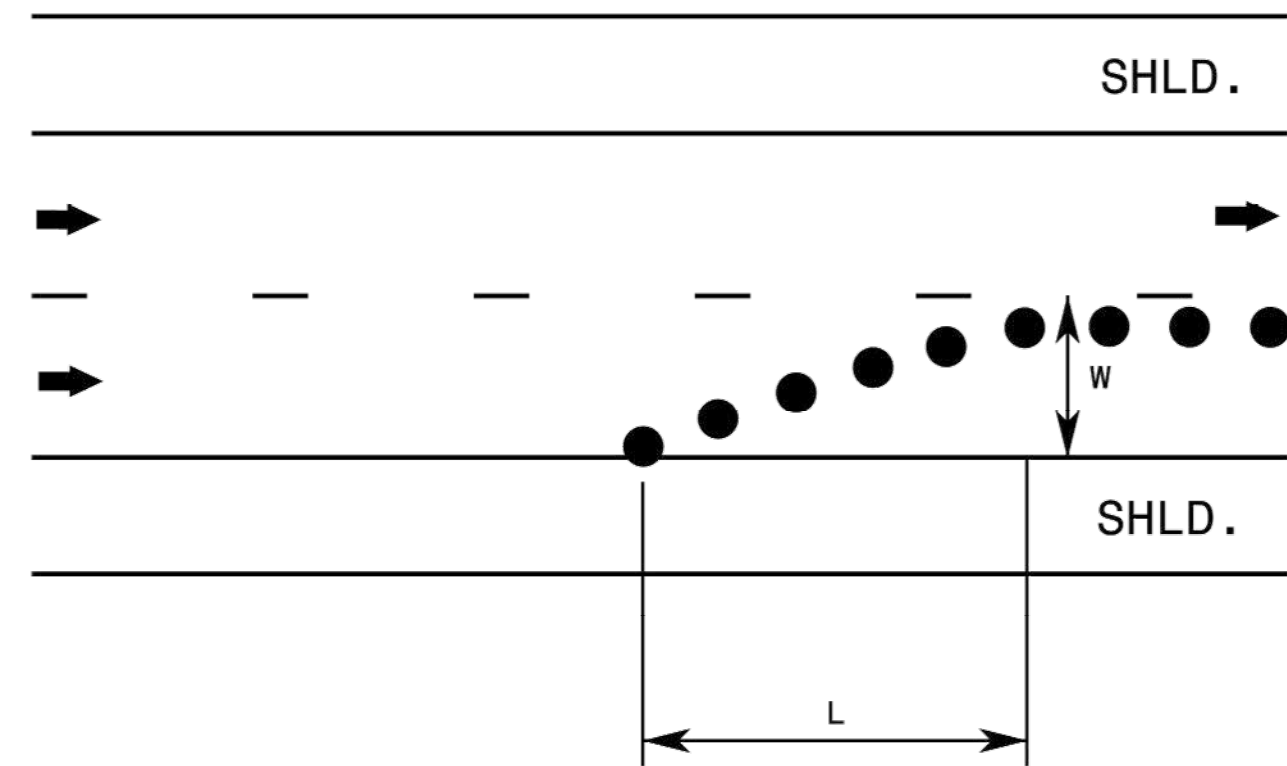
PROJECT NAME: **NC 11 N. NATURAL GAS MAIN EXTENSION
 PITT COUNTY, NORTH CAROLINA**
 SHEET TITLE: **TEMPORARY LANE CLOSURE**

DATE: 04/29/2024
 SCALE (H,V): AS SHOWN
 DRAWN BY: SMP
 DESIGNED BY: RDC
 CHECKED BY: RDC (PM)



KHA PROJECT NUMBER: 116780001
 DRAWING NUMBER: 900-002
 SHEET INDEX: 22 OF 27

EXAMPLE OF "L" & "W" DESIGNATIONS



TAPER LENGTH CRITERIA FOR CHANNELIZING DEVICES IN WORK ZONES

TYPES OF TAPERS

UPSTREAM TAPER

- MERGING TAPER..... L MINIMUM
- SHIFTING TAPER..... 1/2 L MINIMUM
- SHOULDER TAPER..... 1/8 L MINIMUM
- TWO-WAY TRAFFIC TAPER..... .50 - 100 FEET MAXIMUM

TAPER LENGTH

- DOWNSTREAM TAPER..... 100 FEET MAXIMUM

DO NOT INTRODUCE A MERGING OR SHIFTING TAPER WITHIN A CURVE OF THE ROADWAY

QUICK REFERENCE - "L" DISTANCE TABLE												
MINIMUM LONGITUDINAL DISTANCE "L" (FEET) (ROUNDED VALUES)												
POSTED SPEED "S" (MPH)	LATERAL WIDTH "W" (FEET)											
	1	2	3	4	5	6	7	8	9	10	11	12
20	10	15	20	30	35	40	50	55	60	70	75	80
25	15	25	35	45	55	65	75	85	95	105	115	125
30	15	30	45	60	75	90	105	120	135	150	165	180
35	25	45	65	85	105	125	145	165	185	205	225	245
40	30	55	80	110	135	160	190	215	240	270	295	320
45	45	90	135	180	225	270	315	360	405	450	495	540
50	50	100	150	200	250	300	350	400	450	500	550	600
55	55	110	165	220	275	330	385	440	495	550	605	660
60	60	120	180	240	300	360	420	480	540	600	660	720
65	65	130	195	260	325	390	455	520	585	650	715	780
70	70	140	210	280	350	420	490	560	630	700	770	840

GENERAL NOTES

1- TABLE FOR "L" DISTANCE IS BASED ON CHANNELIZATION TAPER FORMULA FROM THE MUTCD.
WHERE:

SPEED LIMIT	FORMULA
40 MPH OR LESS	$L_{MIN} = \frac{W \times S^2}{60}$
45 MPH OR GREATER	$L_{MIN} = W \times S$

L = MINIMUM TAPER LENGTH IN FEET (LONGITUDINAL DISTANCE)
W = WIDTH OF OFFSET IN FEET (LATERAL DISTANCE)
S = POSTED SPEED LIMIT, OR OFF-PEAK 85 PERCENTILE SPEED IN MPH PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED IN MPH

2- "L" DISTANCE IS FOR APPLICATION WITH CHANNELIZING DEVICE AND PAVEMENT MARKING TAPERS AND TRANSITIONS. CHANNELIZING DEVICES INCLUDE DRUMS, CONES, TUBULAR MARKERS, BARRICADES, RAISED ASPHALT ISLANDS, AND VERTICAL PANELS.

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
TRAFFIC CONTROL DESIGN TABLES
"L" DISTANCE AND CHANNELIZING
DEVICE TAPER CRITERIA

SHEET 1 OF 4
1101.11

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley-Horn**
4525 MAIN STREET
SUITE 1000
VIRGINIA BEACH, VA 23462
TEL: (757) 213-8600

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CLIENT: **Greenville Utilities**

PROJECT NAME:
**NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA**

SHEET TITLE:
TRAFFIC CONTROL DESIGN LENGTHS

DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)

KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 900-003
SHEET INDEX: 23 OF 27

DESIGN SPEED (MPH)	MINIMUM SIGHT DISTANCE		MINIMUM LONGITUDINAL BUFFER SPACE (FEET)
	STOPPING SIGHT DISTANCE (FEET)	PASSING SIGHT DISTANCE (FEET)	
30	200	1090	85
35	250	1280	120
40	305	1470	155
45	360	1625	195
50	425	1835	240
55	495	1985	290
60	570	2135	345
65	645	2285	405
70	730	2480	470
75	820	2580	540
80	910	2680	615

GENERAL NOTES

- 1- TABLES ARE BASED ON THE AASHTO GREEN BOOK "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS" AND THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". MINIMUM SIGHT DISTANCE VALUES ARE FOR PASSENGER CAR VEHICLES ON WET AND LEVEL ROADWAYS. CONSULT THE AASHTO GREEN BOOK TO MAKE FINAL DETERMINATION OF STOPPING SIGHT DISTANCE REQUIREMENTS.
- 2- BUFFER SPACE TABLE IS BASED ON THE BRAKING DISTANCE PORTION OF STOPPING SIGHT DISTANCE FOR WET AND LEVEL PAVEMENTS.
- 3- USE OF STOPPING SIGHT DISTANCE IN TRAFFIC CONTROL PLAN APPLICATIONS INCLUDES PROVIDING SIGHT DISTANCE FOR TRAFFIC APPROACHING A LANE CLOSURE. PROVIDE 2-LANE, 2-WAY ROADWAYS STOPPING SIGHT DISTANCE TO THE FLAGGER. FOR LANE CLOSURES ON MULTILANE ROADWAYS PROVIDE STOPPING SIGHT DISTANCE TO THE BEGINNING OF THE LANE CLOSURE MERGE TAPER, OR FLASHING ARROW BOARD. EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED.
- 4- USE OF MINIMUM PASSING SIGHT DISTANCE TABLE IN TRAFFIC CONTROL PLAN APPLICATIONS INCLUDES PROVIDING SIGHT DISTANCE REQUIREMENTS FOR PLACEMENT OF PAVEMENT MARKING PASSING/NO-PASSING ZONES FOR 2-LANE, 2-WAY ROADWAYS.

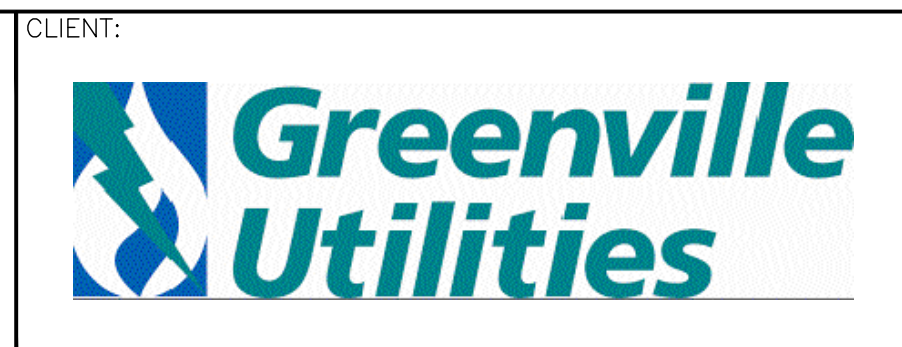
1-18
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
TRAFFIC CONTROL DESIGN TABLES
BUFFER SPACE & SIGHT DISTANCE

SHEET 2 OF 4
1101.11

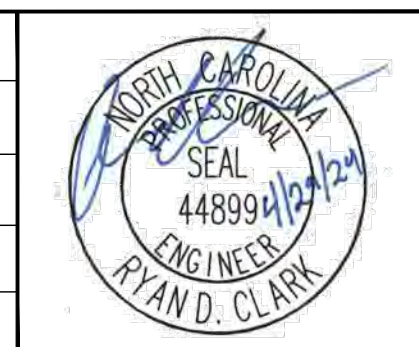
REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley»Horn**
4525 MAIN STREET
SUITE 1000
VIRGINIA BEACH, VA 23462
TEL: (757) 213-8600
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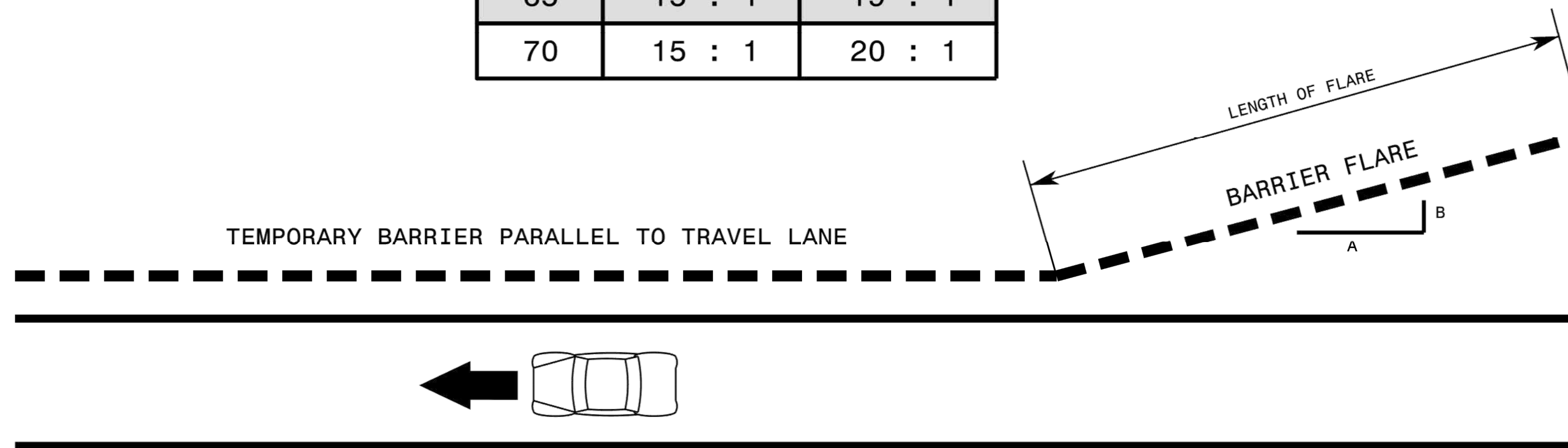
PROJECT NAME:
**NC 11 N. NATURAL GAS MAIN EXTENSION
PITT COUNTY, NORTH CAROLINA**
SHEET TITLE:
**TRAFFIC CONTROL BUFFER & SIGHT
DISTANCE**

DATE:
04/29/2024
SCALE (H.V):
AS SHOWN
DRAWN BY:
SMP
DESIGNED BY:
RDC
CHECKED BY:
RDC (PM)



KHA PROJECT NUMBER:
116780001
DRAWING NUMBER:
900-004
SHEET INDEX:
24 OF 27

TEMPORARY BARRIER FLARE RATES		
POSTED SPEED LIMIT (MPH)	UNANCHORED (A:B)	ANCHORED (A:B)
≤ 30	7 : 1	8 : 1
35	8 : 1	9 : 1
40	8 : 1	10 : 1
45	10 : 1	12 : 1
50	11 : 1	14 : 1
55	12 : 1	16 : 1
60	14 : 1	18 : 1
65	15 : 1	19 : 1
70	15 : 1	20 : 1



GENERAL NOTES

- 1- REFER TO THE 2011 ROADSIDE DESIGN GUIDE OR THE LATEST EDITION.
- 2- A BARRIER IS CONSIDERED FLARED WHEN IT IS NOT PARALLEL TO THE EDGE OF THE TRAVELWAY.

1-18 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR TRAFFIC CONTROL DESIGN TABLES TEMPORARY BARRIER FLARE RATES

SHEET 3 OF 4
1101.11

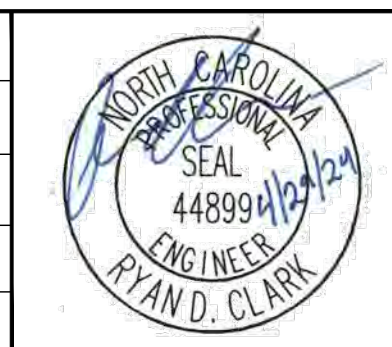
REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley-Horn**
4525 MAIN STREET
SUITE 1000
VIRGINIA BEACH, VA 23462
TEL: (757) 213-8600
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PROJECT NAME: **NC 11 N. NATURAL GAS MAIN EXTENSION**
PITT COUNTY, NORTH CAROLINA
SHEET TITLE: **TRAFFIC CONTROL BARRIER FLARE RATES**

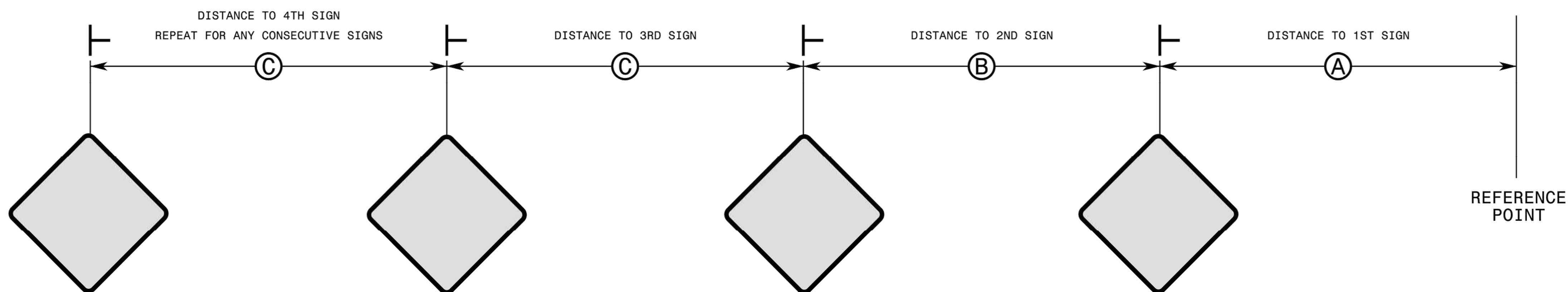
DATE: 04/29/2024
SCALE (H,V): AS SHOWN
DRAWN BY: SMP
DESIGNED BY: RDC
CHECKED BY: RDC (PM)



KHA PROJECT NUMBER: 116780001
DRAWING NUMBER: 900-005
SHEET INDEX: 25 OF 27

ADVANCE WARNING SIGN SPACING CHART			
POSTED SPEED LIMIT (MPH)	RECOMMENDED DISTANCE BETWEEN SIGNS (FEET) ±		
	(A)	(B)	(C)
≤ 35	200	200	200
40-50	350	350	350
55	500	500	500
CONTROLLED ACCESS ROADS (≥ 55)	1000	1500	2700

STATIONARY OR PORTABLE SIGNS



GENERAL NOTES

- 1- REFER TO 2009 MUTCD OR THE LATEST EDITION.
- 2- USE THIS STANDARD DRAWING IN CONJUNCTION WITH OTHER TRAFFIC CONTROL ROADWAY STANDARD DRAWINGS WHERE SIGN SPACING DISTANCES A, B, C, ARE SPECIFIED.
- 3- APPLY THE ADVANCE WARNING SIGN SPACING CHART WHERE A SERIES OF 2 OR MORE SIGNS ARE USED. ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE. FIELD ADJUST AS VARIOUS CONDITIONS OCCUR, SUCH AS LIMITED SIGHT DISTANCE, OBSTRUCTION INTERFERENCE, ETC.

ROADWAY STANDARD DRAWING FOR
TRAFFIC CONTROL DESIGN TABLES
 SPACING OF TEMPORARY SIGNS IN SERIES

1-18
 STATE OF
 NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

SHEET 4 OF 4

1101.11

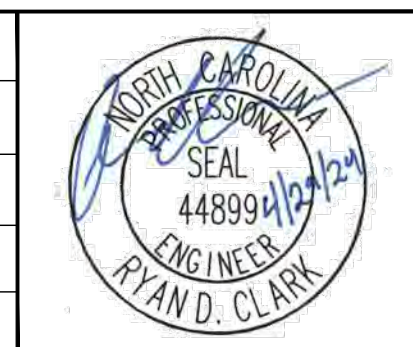
REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley»Horn**
 4525 MAIN STREET
 SUITE 1000
 VIRGINIA BEACH, VA 23462
 TEL: (757) 213-8600
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CLIENT: **Greenville Utilities**

PROJECT NAME:
NC 11 N. NATURAL GAS MAIN EXTENSION
 PITT COUNTY, NORTH CAROLINA
 SHEET TITLE:
TRAFFIC CONTROL SIGN SPACING

DATE: 04/29/2024
 SCALE (H,V): AS SHOWN
 DRAWN BY: SMP
 DESIGNED BY: RDC
 CHECKED BY: RDC (PM)



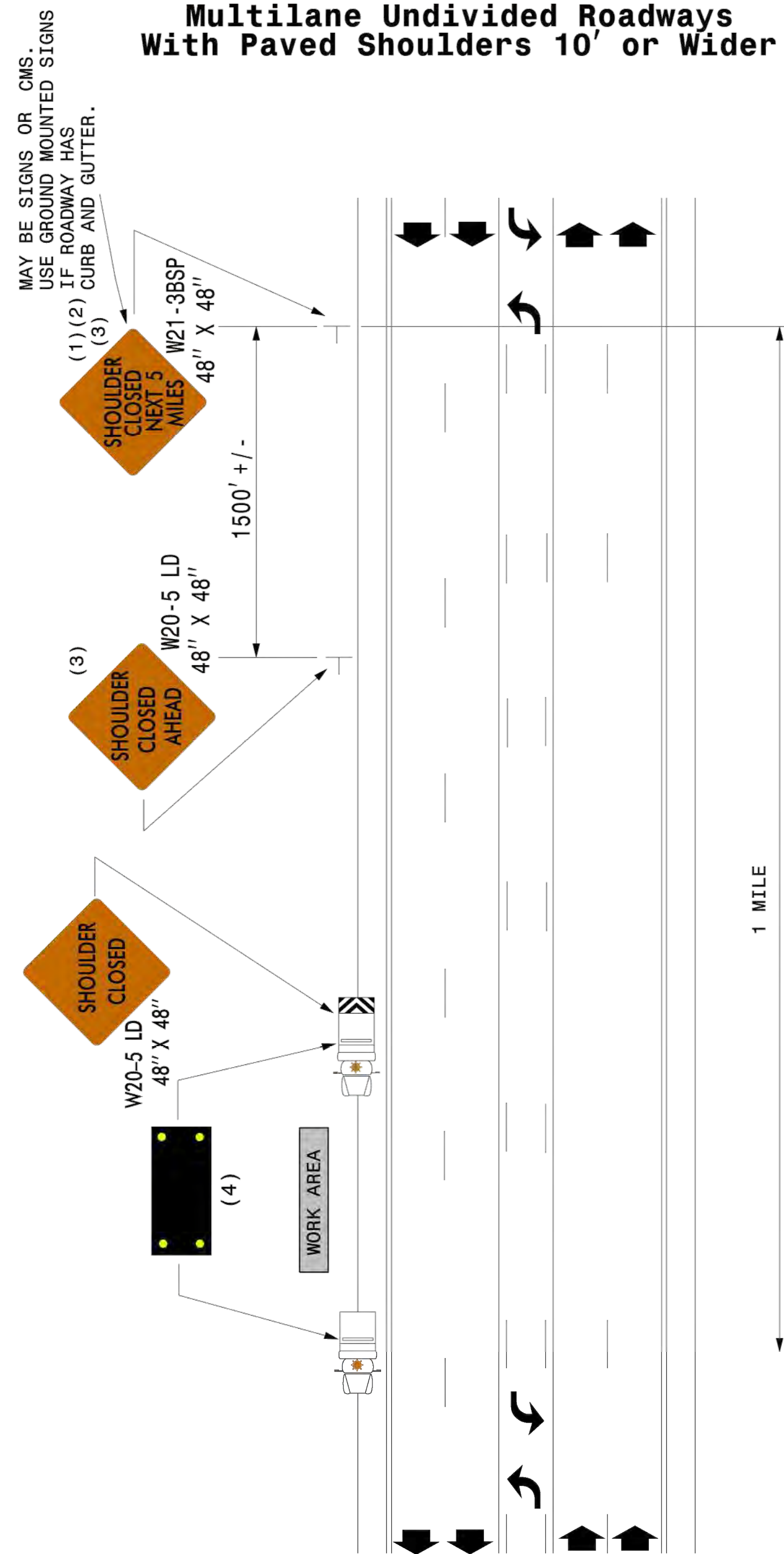
KHA PROJECT NUMBER:
 116780001
 DRAWING NUMBER:
 900-006
 SHEET INDEX:
 26 OF 27

Notes on Shoulder/Ditch Construction Operation on Multilane Undivided Roadways

- (1) The following options may be used as the first advance warning the motorists see:
 - a. Portable warning signs
 - b. Changeable message sign (CMS)
 - (2) Signs on vehicles should be mounted a minimum of one foot from the ground and should not block the motorist's sight of the flashing arrow board and/or warning lights.
 - (3) Sign W20-L should be placed on back of protection vehicle
 - (4) Use a type "B" flashing arrow board.
- | | |
|------------|-----------|
| Board Type | Min. Size |
| B | 60" x 30" |

Shoulder/Ditch Construction Operation

Multilane Undivided Roadways With Paved Shoulders 10' or Wider



LEGEND

DIRECTION OF TRAFFIC FLOW	PROTECTION VEHICLE WITH TRUCK MOUNTED ATTENUATOR (TMA) AND WARNING LIGHTS (SEE ROADWAY STANDARD NO. 1165.01)
APPLICATION VEHICLE WITH WARNING LIGHTS	FLASHING ARROW BOARD, TYPE "B" "CAUTION MODE"
PORTABLE SIGN	

144

145

REV. #:	REVISION:	DATE:	DRAWN BY:	CHECKED BY:

ENGINEER: **Kimley-Horn**
 4525 MAIN STREET
 SUITE 1000
 VIRGINIA BEACH, VA 23462
 TEL: (757) 213-8600

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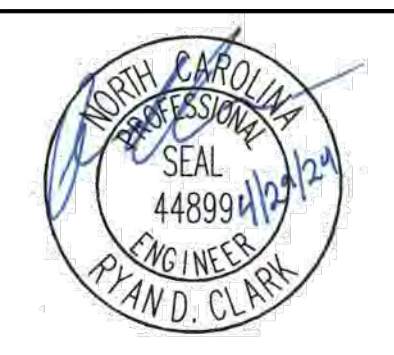
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CLIENT: **Greenville Utilities**

PROJECT NAME: **NC 11 N. NATURAL GAS MAIN EXTENSION**
 PITT COUNTY, NORTH CAROLINA

SHEET TITLE: **NCDOT NOTES AND DETAILS**

DATE: 04/29/2024
 SCALE (H.V): AS SHOWN
 DRAWN BY: SMP
 DESIGNED BY: RDC
 CHECKED BY: RDC (PM)



KHA PROJECT NUMBER: 116780001
 DRAWING NUMBER: 900-007
 SHEET INDEX: 27 OF 27

North Carolina Department of Environmental Quality Construction Permit
Exhibit T-3

FINANCIAL RESPONSIBILITY/OWNERSHIP FORM SEDIMENTATION POLLUTION CONTROL ACT

No person may initiate any land-disturbing activity on one or more acres as covered by the Act, including any activity under a common plan of development of this size as covered by the NCG01 permit, before this form and an acceptable erosion and sedimentation control plan have been completed and approved by the Land Quality Section, N.C. Department of Environmental Quality. Submit the completed form to the appropriate Regional Office. (Please type or print and, if the question is not applicable or the e-mail address or phone number is unavailable, place N/A in the blank.)

Part A.

1. Project Name: NC 11 North Natural Gas Main Extension

**If this project involves American Rescue Plan Act (ARPA) funds, list the Project Name below under which you applied for funding through the Division of Water Infrastructure (DWI).*

Is Project ARPA Funded	ARPA Project Name	ARPA Project #
No		

2. Location of land-disturbing activity: County: Pitt City or Township: Greenville

Highway/Street: NC 11 (N. Memorial Drive) Latitude: 35.660928 Longitude: -
77.363423

3. Approximate date land-disturbing activity will commence: 6/3/2024
4. Purpose of development (residential, commercial, industrial, institutional, etc.): Commercial
5. Total acreage disturbed or uncovered (including off-site borrow and waste areas): 11.92
6. The application fee of \$100.00 per acre (rounded up to the next acre) is assessed without a ceiling amount (Example: 8.10-acre application fee is \$900).
7. Has an erosion and sediment control plan been filed? Yes - Will be Mailed or Hand-Delivered
8. Person to contact should erosion and sediment control issues arise during land-disturbing activity:

Name: Greenville Utilities Commission E-mail Address: wadede@guc.com

Phone: Mobile:

9. Landowner(s) of Record:

Landowner(s) of Record							
Name				Email		Business Phone	Mobile Phone
NCDOT							
Physical Address				Mailing Address			
Street 1	City	State	Zip	Street 1	City	State	Zip
1501 Mail Service Center	Raleigh	NC	27699	1501 Mail Service Center	Raleigh	NC	27699

Part B.

1. Company(ies) who are financially responsible for the land-disturbing activity (Provide a comprehensive list of all responsible parties on accompanied page.) *If the company is a sole proprietorship or if the landowner(s) is an individual(s), the name(s) of the owner(s) may be listed as the financially responsible party(ies).*

Primary Financially Responsible Party								
Company Name				Email		Business Phone		Mobile Phone
Greenville Utilities Commission				wadede@guc.com				
Physical Address				Mailing Address				
Street 1	City	State	Zip	Street 1	City	State	Zip	
P.O. Box 1847	Greenville	NC	27835	P.O. Box 1847	Greenville	NC	27835	
Additional Financially Responsible Parties								

Note: If the Financially Responsible Party is not the owner of the land to be disturbed, include with this form the landowner's signed and dated written consent for the applicant to submit a draft erosion and sedimentation control plan and to conduct the anticipated land disturbing activity.

2. (a) If the Financially Responsible Party is a domestic company registered on the NC Secretary of State business registry, give name and street address of the Registered Agent:

Registered Agent Information								
Name				Email		Business Phone		Mobile Phone
Physical Address				Mailing Address				
Street 1	City	State	Zip	Street 1	City	State	Zip	

- (b) If the Financially Responsible Party is not a resident of North Carolina, give name and street address of the designated North Carolina agent who is registered on the NC Secretary of State business registry:

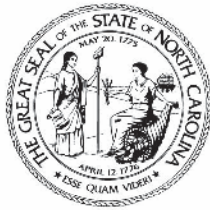
North Carolina Agent Information								
Name				Email		Business Phone		Mobile Phone
Physical Address				Mailing Address				
Street 1	City	State	Zip	Street 1	City	State	Zip	

Engineering/Consulting Firm Information								
Name				Email		Business Phone		Mobile Phone
Kimley-Horn				chris.margaritis@kimley-horn.com		757-213-8600		
Physical Address				Mailing Address				
Street 1	City	State	Zip	Street 1	City	State	Zip	
4525 Main St, Suite 1000	Virginia Beach	VA	23462	4525 Main St, Suite 1000	Virginia Beach	VA	23462	

Additional Details

1. Stream Classification: C: Aquatic Life, Secondary Contact Recreation, Fresh water; NSW: Nutrient Sensitive Waters
2. Was Express Review Requested: No

The above information is true and correct to the best of my knowledge and belief and was provided by me under oath. (This form must be signed by the Financially Responsible Person if an individual(s) or his attorney-in-fact, or if not an individual, by an officer, director, partner, or registered agent with the authority to execute instruments for the Financially Responsible Party). I agree to provide corrected information should there be any change in the information provided herein.



NORTH CAROLINA
Environmental Quality

ROY COOPER
Governor

ELIZABETH S. BISER
Secretary

WILLIAM E. TOBY VINSON, JR.
Interim Director

04-26-2024

LETTER OF APPROVAL

Greenville Utilities Commission
P.O. Box 1847
Click or tap here to enter text.

RE: Project Name: NC 11 North Natural Gas Main Extension
Project ID: PITT-2024-00113
Acres Approved: 11.92
County: Pitt
City: Greenville
Address: NC 11 (N. Memorial Drive)
River Basin: Tar-Pamlico
Stream Classification: C: Aquatic Life, Secondary Contact Recreation, Fresh water; NSW: Nutrient Sensitive Waters
Submitted By: Chris Margaritis
Plan Type: New Plan

Dear Greenville Utilities Commission,

This office has reviewed the subject erosion and sedimentation control plan. We hereby issue this Letter of Approval. Any modifications required for approval are listed in the body of the email that accompanied this attached letter. The enclosed Certificate of Approval must be posted at the job site. This plan approval shall expire three (3) years following the date of approval, if no land-disturbing activity has been undertaken, as is required by Title 15A NCAC 4B .0129.

As of April 1, 2019, all new construction activities not explicitly exempt are required to complete and submit an electronic Notice of Intent (eNOI) form requesting a Certificate of Coverage (COC) under the NCG010000 Construction General Permit. After the form is reviewed and found to be complete, you will receive a link with payment instructions for the annual permit fee. After the fee is processed, you will receive the COC. As the Financially Responsible Party shown on the FRO form submitted for this project, you MUST obtain the COC prior to commencement of any land disturbing activity. The eNOI form may be accessed at deq.nc.gov/NCG01.



North Carolina Department of Environmental Quality | Division of Energy, Mineral and Land Resources
512 North Salisbury Street | 1612 Mail Service Center | Raleigh, North Carolina 27699-1612
919.707.9200

Please direct questions about the eNOI form to the [Stormwater Program staff](#) in the Raleigh central office. If the owner/operator of this project changes in the future, the new responsible party must obtain a new COC.

Title 15A NCAC 4B .0118(a) and the NCG01 permit require that the following documentation be kept on file at the job site:

1. The approved E&SC plan as well as any approved deviation.
2. The NCG01 permit and the COC, once it is received.
3. Records of inspections made during the previous 12 months.

Also, this letter gives the notice required by G.S. 113A-61.1(a) of our right of periodic inspection to ensure compliance with the approved plan.

North Carolina's Sedimentation Pollution Control Act is performance-oriented, requiring protection of existing natural resources and adjoining properties. If, following the commencement of this project, the erosion and sedimentation control plan is inadequate to meet the requirements of the Sedimentation Pollution Control Act of 1973 (North Carolina General Statute 113A-51 through 66), this office may require revisions to the plan and implementation of the revisions to ensure compliance with the Act.

Acceptance and approval of this plan is conditioned upon your compliance with Federal and State water quality laws, regulations, and rules. In addition, local city or county ordinances or rules may also apply to this land-disturbing activity. This approval does not supersede any other permit or approval.

Please note that this approval is based in part on the accuracy of the information provided in the Financial Responsibility Form and on the plan, which you provided. You are requested to file an amended form if there is any change in the information included on the form.

Your cooperation is appreciated.

Sincerely,

Robert Pullinger

Land Quality Section

CERTIFICATE OF PLAN APPROVAL



The posting of this certificate certifies that an erosion and sedimentation control plan has been approved for this project by the North Carolina Department of Environmental Quality in accordance with North Carolina General Statute 113A – 57 (4) and 113A – 54 (d) (4) and North Carolina Administrative Code, Title 15A, Chapter 4B.0107 (c). This certificate must be posted at the primary entrance of the job site before construction begins and until establishment of permanent groundcover as required by North Carolina Administrative Code, Title 15A, Chapter 4B.0127 (b).

NC 11 North Natural Gas Main Extension

NC 11 (N. Memorial Drive) SR 1514 (Station Mill Rd) Greenville, NC 27834

4/26/2024

Date of Plan Approval



PITT-2024-00113

Project Identifier

Certificate of Coverage Number: _____

CSX Permit
Exhibit T-4

FACILITY ENCROACHMENT AGREEMENT

THIS AGREEMENT, made and effective as of January 30, 2024, by and between CSX TRANSPORTATION, INC., a Virginia corporation, whose mailing address is 500 Water Street, Jacksonville, Florida 32202, hereinafter called "Licensor," and GREENVILLE UTILITIES COMMISSION, a municipal corporation, political subdivision or state agency, under the laws of the State of North Carolina, whose mailing address is 401 South Greene Street, Greenville, North Carolina 27835, hereinafter called "Licensee," WITNESSETH:

WHEREAS, Licensee desires to construct (unless previously constructed and designated as existing herein), use and maintain the below described facility(ies), hereinafter called "Facilities," over, under or across property owned or controlled by Licensor, at the below described location(s):

1. One (1) eight inch (8") diameter sub-grade pipeline crossing, solely for the conveyance of natural gas, located at or near Greenville, Pitt County, North Carolina, Florence Division, Parmele Subdivision, Milepost AA-145.25, Latitude N35:40:8:.544, Longitude W77:21:36.:755;

hereinafter, called the "Encroachment," as shown on print(s) labeled Exhibit "A," attached hereto and made a part hereof;

NOW, THEREFORE, in consideration of the mutual covenants, conditions, terms and agreements herein contained, the parties hereto agree and covenant as follows:

1. LICENSE:

1.1 Subject to Article 17, Licensor, insofar as it has the legal right, power and authority to do so, and its present title permits, and subject to:

(A) Licensor's present and future right to occupy, possess and use its property within the area of the Encroachment for any and all purposes, including but not limited to Licensor's track(s) structure(s), power lines, communication, signal or other wires, train control system, cellular or data towers, or electrical or electronic apparatus, or any appurtenances thereto ("Licensor's Facilities") and any other facilities as now exist or which may in the future be located in, upon, over, under or across the property;

(B) All encumbrances, conditions, covenants, easements, and limitations applicable to Licensor's title to or rights in the subject property; and

(C) Compliance by Licensee and its agent or contractor ("Licensee's Contractor") with the terms and conditions herein contained;

does hereby license and permit Licensee to construct, maintain, repair, renew, operate, use, alter or change the Facilities at the Encroachment above for the term herein stated, and to remove same upon termination.

1.2 The term Facilities, as used herein, shall include only those structures and ancillary facilities devoted exclusively to the transmission usage above within the Encroachment, and as shown on attached Exhibit A.

1.3 No additional structures or other facilities shall be placed, allowed, or maintained by Licensee in, upon or on the Encroachment except upon prior separate written consent of Licensor.

2. ENCROACHMENT FEE; TERM:

2.1 Licensee shall pay Licensor a one-time nonrefundable Encroachment Fee of FIVE HUNDRED AND 00/100 U.S. DOLLARS (\$500.00) upon execution of this Agreement. Licensee agrees that the Encroachment Fee applies only to the original Licensee under this Agreement. In the event of a successor (by merger, consolidation, reorganization and/or assignment) or if the original Licensee changes its name, then Licensee shall be subject to payment of Licensor's current administrative and document preparation fees for the cost incurred by Licensor in preparing and maintaining this Agreement on a current basis.

2.2 However, Licensee assumes sole responsibility for, and shall pay directly (or reimburse Licensor), any additional annual taxes and/or periodic assessments levied against Licensor or Licensor's property solely on account of said Facilities or Encroachment.

2.3 This Agreement shall terminate as herein provided, but shall also terminate upon: (a) Licensee's cessation of use of the Facilities or Encroachment for the purpose(s) above; (b) removal of the Facilities; (c) subsequent mutual consent; and/or (d) failure of Licensee to complete installation within five (5) years from the effective date of this Agreement.

2.4 In further consideration for the license or right hereby granted, Licensee hereby agrees that Licensor shall not be charged or assessed, directly or indirectly, with any part of the cost of the installation of said Facilities and appurtenances, and/or maintenance thereof, or for any public works project of which said Facilities is a part. Licensee agrees it shall not assess Licensor any stormwater or drainage fee associated with such Facilities. Furthermore, Licensee shall be responsible for any stormwater or drainage fees assessed by any County or State agency managing such systems.

3. CONSTRUCTION, MAINTENANCE AND REPAIRS:

3.1 Licensee shall construct, maintain, relocate, repair, renew, alter, and/or remove the Facilities, in a prudent, workmanlike manner, using quality materials and complying with any applicable standard(s) or regulation(s) of Licensor (CSXT Specifications), or Licensee's particular industry, National Electrical Safety Code, or any governmental or regulatory body having jurisdiction over the Encroachment.

3.2 Location and construction of Facilities shall be made strictly in accordance with design(s) and specifications furnished to and approved by Licensor and of material(s) and size(s) appropriate for the purpose(s) above recited.

3.3 All of Licensee's work, and exercise of rights hereunder, shall be undertaken at time(s) satisfactory to Licensor, and so as to eliminate or minimize any impact on or interference with the safe use and operation of Licensor's property and appurtenances thereto.

3.4 In the installation, maintenance, repair and/or removal of said Facilities, Licensee shall not use explosives on or adjacent to Licensor's property of any type or perform or cause any blasting without the separate express written consent of Licensor. As a condition to such consent, a representative will be assigned by Licensor to monitor blasting, and Licensee shall reimburse Licensor for the entire cost and/or expense of furnishing said monitor.

3.5 Any repairs or maintenance to the Facilities, whether resulting from acts of Licensee, or natural or weather events, which are necessary to protect or facilitate Licensor's use of its property, shall be made by Licensee promptly, but in no event later than thirty (30) days after Licensee has notice as to the need for such repairs or maintenance.

3.6 Licensor, in order to protect or safeguard its property, rail operations, equipment and/or employees from damage or injury, may request immediate repair or renewal of the Facilities, and if the same is not performed, may make or contract to make such repairs or renewals, at the sole risk, cost and expense of Licensee.

3.7 Neither the failure of Licensor to object to any work done, material used, or method of construction or maintenance of said Encroachment, nor any approval given or supervision exercised by Licensor, shall be construed as an admission of liability or responsibility by Licensor, or as a waiver by Licensor of any of the obligations, liability and/or responsibility of Licensee under this Agreement.

3.8 All work on the Encroachment shall be conducted in accordance with Licensor's safety rules and regulations.

3.9 Licensee hereby agrees to reimburse Licensor any loss, cost or expense (including losses resulting from train delays and/or inability to meet train schedules) arising from any failure of Licensee to make repairs or conduct maintenance as required by Section 3.5 above or from improper or incomplete repairs or maintenance to the Facilities or Encroachment.

3.10 In the event it becomes necessary for the Licensee to deviate from the approved Exhibit, Licensee shall seek prior approval from Licensor, or when applicable, an official field representative of Licensor permitted to approve changes, authorizing the necessary field changes and Licensee shall provide Licensor with complete As-Built Drawings of the completed work. As-Built Drawings shall be submitted to Licensor in either electronic or hard copy form upon the substantial completion of the project and upon Licensor's request.

3.11 In the event of large scale maintenance/construction work to railroad bridges Licensee is required to protect power lines with insulated covers or comparable safety devices at their costs during construction/maintenance for safety of railroad employees.

4. PERMITS, LICENSES:

4.1 Before any work hereunder is performed, or before use of the Encroachment for the contracted purpose, Licensee, at its sole cost and expense, shall obtain all necessary permit(s) (including but not limited to zoning, building, construction, health, safety or environmental matters), letter(s) or certificate(s) of approval. Licensee expressly agrees and warrants that it shall conform and limit its activities to the terms of such permit(s), approval(s) and authorization(s), and shall comply with all applicable ordinances, rules, regulations, requirements and laws of any governmental authority (State, Federal or Local) having jurisdiction over Licensee's activities, including the location, contact, excavation and protection regulations of the Occupational Safety and Health Act (OSHA) (29 CFR 1926.651(b)), et al., and State "One Call" - "Call Before You Dig" requirements.

4.2 Licensee assumes sole responsibility for failure to obtain such permit(s) or approval(s), for any violations thereof, or for costs or expenses of compliance or remedy.

5. MARKING AND SUPPORT:

5.1 With respect to any subsurface installation or maintenance upon Licensor's property, Licensee, at its sole cost and expense, shall:

- (A) support track(s) and roadbed in a manner satisfactory to Licensor;
- (B) backfill with satisfactory material and thoroughly tamp all trenches to prevent settling of surface of land and roadbed of Licensor; and
- (C) either remove any surplus earth or material from Licensor's property or cause said surplus earth or material to be placed and distributed at location(s) and in such manner Licensor may approve.

5.2 After construction or maintenance of the Facilities, Licensee shall:

- (A) Restore any track(s), roadbed and other disturbed property; and
- (B) Erect, maintain and periodically verify the accuracy of aboveground markers, in a form approved by Licensor, indicating the location, depth and ownership of any underground Facilities or related facilities.

5.3 Licensee shall be solely responsible for any subsidence or failure of lateral or subjacent support in the Encroachment area for a period of three (3) years after completion of installation.

6. TRACK CHANGES:

6.1 In the event that rail operations and/or track maintenance result in changes in grade or alignment of, additions to, or relocation of track(s) or other facilities, or in the event

future use of Licensor's rail corridor or property necessitate any change of location, height or depth in the Facilities or Encroachment, Licensee, at its sole cost and expense and within thirty (30) days after notice in writing from Licensor, shall make changes in the Facilities or Encroachment to accommodate such track(s) or operations.

6.2 If Licensee fails to do so, Licensor may make or contract to make such changes at Licensee's cost.

7. FACILITY CHANGES:

7.1 Licensee shall periodically monitor and verify the depth or height of the Facilities or Encroachment in relation to the existing tracks and facilities, and shall relocate the Facilities or change the Encroachment, at Licensee's expense, should such relocation or change be necessary to comply with the minimum clearance requirements of Licensor.

7.2 If Licensee undertakes to revise, renew, relocate or change in any manner whatsoever all or any part of the Facilities (including any change in voltage or gauge of wire or any change in circumference, diameter or radius of pipe or change in materials transmitted in and through said pipe), or is required by any public agency or court order to do so, plans therefor shall be submitted to Licensor for approval before such change. After approval, the terms and conditions of this Agreement shall apply thereto.

8. INTERFERENCE WITH RAIL FACILITIES:

8.1 Although the Facilities/Encroachment herein permitted may not presently interfere with Licensor's Facilities, in the event that the operation, existence or maintenance of said Facilities, in the sole judgment of Licensor, causes: (a) interference (including, but not limited to, physical or interference from an electromagnetic induction, or interference from stray or other currents) with Licensor's power lines, communication, signal or other wires, train control system, or electrical or electronic apparatus; or (b) interference in any manner, with the operation, maintenance or use of Licensor's Facilities; then and in either event, Licensee, upon receipt of written notice from Licensor of any such interference, and at Licensee's sole risk, cost and expense, shall promptly make such changes in its Facilities or installation, as may be required in the reasonable judgment of the Licensor to eliminate all such interference. Upon Licensee's failure to remedy or change, Licensor may do so or contract to do so at Licensee's sole cost.

8.2 Without assuming any duty hereunder to inspect the Facilities, Licensor hereby reserves the right to inspect same and to require Licensee to undertake repairs, maintenance or adjustments to the Facilities, which Licensee hereby agrees to make promptly, at Licensee's sole cost and expense.

9. RISK, LIABILITY, INDEMNITY:

With respect to the relative risk and liabilities of the parties, it is hereby agreed that:

9.1 To the fullest extent permitted by State law (constitutional or statutory, as amended), Licensee hereby agrees to, defend, indemnify, and hold Licensor harmless from and against any and all liability, loss, claim, suit, damage, charge or expense which Licensor may suffer, sustain, incur or in any way be subjected to, on account of death of or injury to any person whomsoever (including officers, agents, employees or invitees of Licensor), and for damage to or loss of or destruction of any property whatsoever, arising out of, resulting from, or in any way connected with the construction, repair, maintenance, replacement, presence, existence, operations, use or removal of the Facilities or any structure in connection therewith, or restoration of premises of Licensor to good order or condition after removal, EXCEPT when proven to have been caused solely by the willful misconduct or gross negligence of Licensor. HOWEVER, to the fullest extent permitted by State law, during any period of actual construction, repair, maintenance, replacement or removal of the Facilities, wherein agents, equipment or personnel of Licensee are on the railroad rail corridor, Licensee's liability hereunder shall be absolute, irrespective of any joint, sole or contributory fault or negligence of Licensor.

9.2 Licensee's Contractor shall hereby agree to, defend, indemnify, and hold Licensor harmless from and against any and all liability, loss, claim, suit, damage, charge or expense which Licensor may suffer, sustain, incur or in any way be subjected to, on account of death of or injury to any person whomsoever (including officers, agents, employees or invitees of Licensor), and for damage to or loss of or destruction of any property whosoever, arising out of resulting from, or in any way connected with the construction, repair, maintenance, replacement, presence, existence, operations, use or removal of the Facilities or any structure in connection therewith, or restoration of premises of Licensor to good order or condition after removal, EXCEPT when proven to have been caused solely by the willful misconduct or gross negligence of Licensor. HOWEVER, to the fullest extent permitted by State law, during any period of actual construction, repair, maintenance, replacement or removal of the Facilities, wherein agents, equipment or personnel of Licensee are on the railroad rail corridor, Licensee's liability hereunder shall be absolute, irrespective of any joint, sole or contributory fault or negligence of Licensor.

9.3 Use of Licensor's rail corridor involves certain risks of loss or damage as a result of the rail operations. Notwithstanding Section 9.1, Licensee expressly assumes all risk of loss and damage to Licensee's Property or the Facilities in, on, over or under the Encroachment, including loss of or any interference with use or service thereof, regardless of cause, including electrical field creation, fire or derailment resulting from rail operations. For this Section, the term "Licensee's Property" shall include property of third parties situated or placed upon Licensor's rail corridor by Licensee or by such third parties at request of or for benefit of Licensee.

9.4 To the fullest extent permitted by State law, as above, Licensee assumes all responsibility for, and agrees to defend, indemnify and hold Licensor harmless from: (a) all claims, costs and expenses, including reasonable attorneys' fees, as a consequence of any sudden or nonsudden pollution of air, water, land and/or ground water on or off the Encroachment area, arising from or in connection with the use of this Encroachment or resulting from leaking, bursting, spilling, or any escape of the material transmitted in or through the Facilities; (b) any

claim or liability arising under federal or state law dealing with either such sudden or nonsudden pollution of air, water, land and/or ground water arising therefrom or the remedy thereof; (c) any subsidence or failure of lateral or subjacent support of the tracks arising from such Facilities leakage; and (d) all claims, costs and expenses, including reasonable attorneys' fees, as a consequence of any drainage or runoff on or off the Encroachment area as a result of the Facilities/Encroachment herein permitted.

9.5 Notwithstanding Section 9.1, Licensee also expressly assumes all risk of loss which in any way may result from Licensee's failure to maintain either required clearances for any overhead Facilities or the required depth and encasement for any underground Facilities, whether or not such loss(es) result(s) in whole or part from Licensor's contributory negligence or joint fault.

9.6 Obligations of Licensee hereunder to release, indemnify and hold Licensor harmless shall also extend to companies and other legal entities that control, are controlled by, subsidiaries of, or are affiliated with Licensor, as well as any railroad that operates over the rail corridor on which the Encroachment is located, and the officers, employees and agents of each.

9.7 If a claim is made or action is brought against Licensor, and/or its operating lessee, for which Licensee may be responsible hereunder, in whole or in part, Licensee shall be notified to assume the handling or defense of such claim or action; but Licensor may participate in such handling or defense.

9.8 Notwithstanding anything contained in this Agreement, the limitation of liability contained in the state statutes, as amended from time to time, shall not limit Licensor's ability to collect under the insurance policies required to be maintained under this Agreement.

10. INSURANCE:

10.1 Prior to commencement of surveys, installation or occupation of premises pursuant to this Agreement, Licensee shall procure and shall maintain during the continuance of this Agreement, at its sole cost and expense, a policy of

- (i) Statutory Worker's Compensation and Employers Liability Insurance with available limits of not less than ONE MILLION AND 00/100 U.S. DOLLARS (\$1,000,000.00).
- (ii) Commercial General Liability coverage (inclusive of contractual liability) with available limits of not less than FIVE MILLION AND 00/100 U.S. DOLLARS (\$5,000,000.00) in combined single limits for bodily injury and property damage and covering the contractual liabilities assumed under this Agreement and naming Licensor, and/or its designee, as additional insured. The evidence of insurance coverage shall be endorsed to provide for thirty (30) days' notice to Licensor, or its designee, prior to cancellation or modification of any policy. Mail CGL certificate, along with agreement, to CSX Transportation, Inc., Speed Code J180,

500 Water Street, Jacksonville, FL 32202. On each successive year, send certificate to RenewalCOI@csx.com.

- (iii) Business automobile liability insurance with available limits of not less than ONE MILLION AND 00/100 U.S. DOLLARS (\$1,000,000.00) combined single limit for bodily injury and/or property damage per occurrence naming Licensor, and/or its designee, as additional insured.
- (iv) The insurance policies must contain a waiver of subrogation against CSXT and its Affiliates, except where prohibited by law. All insurance companies must be A. M. Best rated A- and Class VII or better.
- (v) Such other insurance as Licensor may reasonably require.
- (vi) Licensee shall require its contractors to meet minimum insurance requirements above when performing work in relation to this agreement. Licensee will procure and review contractor's insurance certificates to confirm requirements are met. Licensor may request a copy of the insurance certificate.

10.2 If Licensee's Contractor's existing CGL policy(ies) do(es) not automatically cover Licensee's contractual liability during periods of survey, installation, maintenance and continued occupation, a specific endorsement adding such coverage shall be purchased by Licensee's Contractor. If said CGL policy is written on a "claims made" basis instead of a "per occurrence" basis, Licensee shall arrange for adequate time for reporting losses. Failure to do so shall be at Licensee's sole risk.

10.3 Licensor, or its designee, may at any time request evidence of insurance purchased by Licensee to comply with this Agreement. Failure of Licensee to comply with Licensor's request shall be considered a default by Licensee.

10.4 To the extent permitted by law and notwithstanding anything to the contrary in this Agreement, the insurance required and provided by Utility shall not be subject to the limitations of sovereign immunity.

10.5 (A) In the event Licensee finds it necessary to perform construction or demolition operations within fifty feet (50') of any operated railroad track(s) or affecting any railroad bridge, trestle, tunnel, track(s), roadbed, overpass or underpass, Licensee shall: (a) notify Licensor; and (b) require Licensee's Contractor(s) performing such operations to procure and maintain during the period of construction or demolition operations, at no cost to Licensor,

- i) Railroad Protective Liability (RPL) Insurance, naming Licensor, and/or its designee, as Named Insured, written on the current ISO/RIMA Form (ISO Form No. CG 00 35 04 13) with limits of FIVE MILLION AND 00/100 U.S. DOLLARS (\$5,000,000.00) per occurrence for bodily injury and property damage, with at least TEN MILLION AND 00/100 U.S. DOLLARS (\$10,000,000.00) aggregate limit per annual policy period. The original of such RPL policy shall be sent to and approved by Licensor prior to

commencement of such construction or demolition. Licensor reserves the right to demand higher limits.

OR

ii) The CGL policy shall include endorsement ISO CG 24 17 and the Auto Liability Policy shall include endorsement ISO CA 20 70 evidencing that coverage is provided for work within 50 feet of a railroad. If such endorsements are not included, RPL insurance must be provided.

(B) At Licensor's option, in lieu of purchasing RPL insurance or the 50 foot endorsements from an insurance company (but not CGL insurance), Licensee may pay Licensor, at Licensor's current rate at time of request, the cost of adding this Encroachment, or additional construction and/or demolition activities, to Licensor's Railroad Protective Liability (RPL) Policy for the period of actual construction. This coverage is offered at Licensor's discretion and may not be available under all circumstances.

10.6 Notwithstanding the provisions of Sections 10.1 and 10.2, Licensee, pursuant to State Statute(s), may self-insure or self-assume, in any amount(s), any contracted liability arising under this Agreement, under a funded program of self-insurance, which fund will respond to liability of Licensee imposed by and in accordance with the procedures established by law.

11. GRADE CROSSINGS; PROTECTION SERVICES:

11.1 Nothing herein contained shall be construed to permit Licensee or Licensee's contractor to move any vehicles or equipment over the track(s), except at public road crossing(s), without separate prior written approval of Licensor.

11.2 If Licensor deems it advisable, during any construction, maintenance, repair, renewal, alteration, change or removal of said Facilities, to place watchmen, flagmen, or field construction managers for protection of operations of Licensor or others on Licensor's rail corridor at the Encroachment, and to keep persons, equipment or materials away from the track(s), Licensor shall have the right to do so at the expense of Licensee, but Licensor shall not be liable for failure to do so.

11.3 Subject to consent of Licensor, in its sole discretion, and subject to Licensor's operating rules and labor agreements, Licensee may provide flagmen, in place of Licensor's provision, at Licensee's sole risk, cost and expense, and in such event, Licensor shall not be liable for the failure or neglect of such flagmen. Such flagmen shall be approved by Licensor and shall meet all Licensor's requirement for performing such work.

12. LICENSOR'S COSTS:

12.1 Any additional or alternative costs or expenses incurred by Licensor to accommodate Licensee's continued use of Licensor's property as a result of track changes or changes to Licensor's Facilities shall also be paid by Licensee.

12.2 Licensor's expense for wages ("force account" charges) and materials for any work performed at the expense of Licensee pursuant hereto shall be paid by Licensee within thirty (30) days after receipt of Licensor's bill therefor. Licensor may, at its discretion, request an advance deposit for estimated Licensor costs and expenses.

12.3 Such expense shall include, but not be limited to, cost of railroad labor and supervision under "force account" rules, plus current applicable overhead percentages, the actual cost of materials, and insurance, freight and handling charges on all material used. Equipment rentals shall be in accordance with Licensor's applicable fixed rate. Licensor may, at its discretion, require advance deposits for estimated costs of such expenses and costs.

13. DEFAULT, BREACH, WAIVER:

13.1 The proper and complete performance of each covenant of this Agreement shall be deemed of the essence thereof, and in the event Licensee fails or refuses to fully and completely perform any of said covenants or remedy any breach within thirty (30) days after receiving written notice from Licensor to do so (or within forty-eight (48) hours in the event of notice of a railroad emergency), Licensor shall have the option of immediately revoking this Agreement and the privileges and powers hereby conferred, regardless of encroachment fee(s) having been paid in advance for any annual or other period. Upon such revocation, Licensee shall make removal in accordance with Article 14.

13.2 No waiver by Licensor of its rights as to any breach of covenant or condition herein contained shall be construed as a permanent waiver of such covenant or condition, or any subsequent breach thereof, unless such covenant or condition is permanently waived in writing by Licensor.

13.3 Neither the failure of Licensor to object to any work done, material used, or method of construction or maintenance of said Encroachment, nor any approval given or supervision exercised by Licensor, shall be construed as an admission of liability or responsibility by Licensor, or as a waiver by Licensor of any of the obligations, liability and/or responsibility of Licensee under this Agreement.

14. TERMINATION, REMOVAL:

14.1 All rights which Licensee may have hereunder shall cease upon the date of (a) termination, (b) revocation, or (c) subsequent agreement, or (d) Licensee's removal of the Facility from the Encroachment. However, neither termination nor revocation of this Agreement shall affect any claims and liabilities which have arisen or accrued hereunder, and which at the time of termination or revocation have not been satisfied; neither party, however, waiving any third party defenses or actions.

14.2 Within thirty (30) days after revocation or termination, Licensee, at its sole risk and expense, shall (a) remove the Facilities from the rail corridor of Licensor, unless the parties hereto agree otherwise, (b) restore the rail corridor of Licensor in a manner satisfactory to

Licensor, and (c) reimburse Licensor any loss, cost or expense of Licensor resulting from such removal.

15. NOTICE:

15.1 Licensee shall give Licensor at least thirty (30) days written notice before doing any work on Licensor's rail corridor, except that in cases of emergency shorter notice may be given. Licensee shall provide proper notification as follows:

a. For non-emergencies, Licensee shall submit online via the CSX Property Portal from Licensor's web site, via web link:
https://propertyportal.csx.com/pub_ps_res/ps_res/jsf/public/index.faces

b. For emergencies, Licensee shall complete all of the steps outlined in Section 15.1 a. above, and shall also include detailed information of the emergency. Licensee shall also call and report details of the emergency to Licensor's Rail Operations Emergency Telephone Number: 1-800-232-0144. In the event Licensor needs to contact Licensee concerning an emergency involving Licensee's Facility(ies), the emergency phone number for Licensee is: 252-551-1594.

15.2 All other notices and communications concerning this Agreement shall be addressed to Licensee at the address above, and to Licensor at the address shown on Page 1, c/o CSXT Contract Management, J180; or at such other address as either party may designate in writing to the other.

15.3 Unless otherwise expressly stated herein, all such notices shall be in writing and sent via Certified or Registered Mail, Return Receipt Requested, or by courier, and shall be considered delivered upon: (a) actual receipt, or (b) date of refusal of such delivery.

16. ASSIGNMENT:

16.1 The rights herein conferred are the privileges of Licensee only, and Licensee shall obtain Licensor's prior written consent to any assignment of Licensee's interest herein; said consent shall not be unreasonably withheld.

16.2 Subject to Sections 2 and 16.1, this Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors or assigns.

16.3 Licensee shall give Licensor written notice of any legal succession (by merger, consolidation, reorganization, etc.) or other change of legal existence or status of Licensee, with a copy of all documents attesting to such change or legal succession, within thirty (30) days thereof.

16.4 Licensor expressly reserves the right to assign this Agreement, in whole or in part, to any grantee, lessee, or vendee of Licensor's underlying property interests in the Encroachment, upon written notice thereof to Licensee.

16.5 In the event of any unauthorized sale, transfer, assignment, sublicense or encumbrance of this Agreement, or any of the rights and privileges hereunder, Licensor, at its option, may revoke this Agreement by giving Licensee or any such assignee written notice of such revocation; and Licensee shall reimburse Licensor for any loss, cost or expense Licensor may incur as a result of Licensee's failure to obtain said consent.

17. TITLE:

17.1 Licensee understands that Licensor occupies, uses and possesses lands, rights-of-way and rail corridors under all forms and qualities of ownership rights or facts, from full fee simple absolute to bare occupation. Accordingly, nothing in this Agreement shall act as or be deemed to act as any warranty, guaranty or representation of the quality of Licensor's title for any particular Encroachment or segment of Rail Corridor occupied, used or enjoyed in any manner by Licensee under any rights created in this Agreement. It is expressly understood that Licensor does not warrant title to any Rail Corridor and Licensee will accept the grants and privileges contained herein, subject to all lawful outstanding existing liens, mortgages and superior rights in and to the Rail Corridor, and all leases, licenses and easements or other interests previously granted to others therein.

17.2 The term "license," as used herein, shall mean with regard to any portion of the Rail Corridor which is owned by Licensor in fee simple absolute, or where the applicable law of the State where the Encroachment is located otherwise permits Licensor to make such grants to Licensee, a "permission to use" the Rail Corridor, with dominion and control over such portion of the Rail Corridor remaining with Licensor, and no interest in or exclusive right to possess being otherwise granted to Licensee. With regard to any other portion of Rail Corridor occupied, used or controlled by Licensor under any other facts or rights, Licensor merely waives its exclusive right to occupy the Rail Corridor and grants no other rights whatsoever under this Agreement, such waiver continuing only so long as Licensor continues its own occupation, use or control. Licensor does not warrant or guarantee that the license granted hereunder provides Licensee with all of the rights necessary to occupy any portion of the Rail Corridor. Licensee further acknowledges that it does not have the right to occupy any portion of the Rail Corridor held by Licensor in less than fee simple absolute without also receiving the consent of the owner(s) of the fee simple absolute estate. Further, Licensee shall not obtain, exercise or claim any interest in the Rail Corridor that would impair Licensor's existing rights therein.

17.3 Licensee agrees it shall not have nor shall it make, and hereby completely and absolutely waives its right to, any claim against Licensor for damages on account of any deficiencies in title to the Rail Corridor in the event of failure or insufficiency of Licensor's title to any portion thereof arising from Licensee's use or occupancy thereof.

17.4 Licensee agrees to fully and completely indemnify and defend all claims or litigation for slander of title, overburden of easement, or similar claims arising out of or based upon the Facilities placement, or the presence of the Facilities in, on or along any Encroachment(s), including claims for punitive or special damages.

17.5 Licensee shall not at any time own or claim any right, title or interest in or to Licensor's property occupied by the Encroachments, nor shall the exercise of this Agreement for any length of time give rise to any right, title or interest in Licensee to said property other than the license herein created.

17.6 Nothing in this Agreement shall be deemed to give, and Licensor hereby expressly waives, any claim of ownership in and to any part of the Facilities.

17.7 Licensee shall not create or permit any mortgage, pledge, security, interest, lien or encumbrances, including without limitation, tax liens and liens or encumbrances with respect to work performed or equipment furnished in connection with the construction, installation, repair, maintenance or operation of the Facilities in or on any portion of the Encroachment (collectively, "Liens or Encumbrances"), to be established or remain against the Encroachment or any portion thereof or any other Licensor property.

17.8 In the event that any property of Licensor becomes subject to such Liens or Encumbrances, Licensee agrees to pay, discharge or remove the same promptly upon Licensee's receipt of notice that such Liens or Encumbrances have been filed or docketed against the Encroachment or any other property of Licensor; however, Licensee reserves the right to challenge, at its sole expense, the validity and/or enforceability of any such Liens or Encumbrances.

18. GENERAL PROVISIONS:

18.1 This Agreement, and the attached specifications, contains the entire understanding between the parties hereto.

18.2 Neither this Agreement, any provision hereof, nor any agreement or provision included herein by reference, shall operate or be construed as being for the benefit of any third person.

18.3 Except as otherwise provided herein, or in any Rider attached hereto, neither the form of this Agreement, nor any language herein, shall be interpreted or construed in favor of or against either party hereto as the sole drafter thereof.

18.4 This Agreement is executed under current interpretation of applicable Federal, State, County, Municipal or other local statute, ordinance or law(s). However, each separate division (paragraph, clause, item, term, condition, covenant or agreement) herein shall have independent and severable status for the determination of legality, so that if any separate division is determined to be void or unenforceable for any reason, such determination shall have no effect upon the validity or enforceability of each other separate division, or any combination thereof.

18.5 This Agreement shall be construed and governed by the laws of the state in which the Facilities and Encroachment are located.

18.6 If any amount due pursuant to the terms of this Agreement is not paid by the due date, it will be subject to Licensor's standard late charge and will also accrue interest at eighteen percent (18%) per annum, unless limited by local law, and then at the highest rate so permitted.

18.7 Licensee agrees to reimburse Licensor for all reasonable costs (including attorney's fees) incurred by Licensor for collecting any amount due under the Agreement.

18.8 The provisions of this License are considered confidential and may not be disclosed to a third party without the consent of the other party(s), except: (a) as required by statute, regulation or court order, (b) to a parent, affiliate or subsidiary company, (c) to an auditing firm or legal counsel that are agreeable to the confidentiality provisions, or (d) to Lessees of Licensor's land and/or track who are affected by the terms and conditions of this Agreement and will maintain the confidentiality of this Agreement.

18.9 Within thirty (30) days of an overpayment in a cumulative total amount of One Hundred Dollars (\$100.00) or more by Licensee to Licensor, Licensee shall notify Licensor in writing with documentation evidencing such overpayment. Licensor shall refund the actual amount of Licensee's overpayment within one hundred twenty (120) days of Licensor's verification of such overpayment.

18.10 This Agreement may be executed in any number of counterparts, and such counterparts may be exchanged by electronic transmission. Upon execution by the parties hereto, each counterpart shall be deemed an original and together shall constitute one and the same instrument. A fully executed copy of this Agreement by electronic transmission shall be deemed to have the same legal effect as delivery of an original executed copy of this Agreement for all purposes.

19. CONTRACTOR'S ACCEPTANCE:

19.1 Licensee shall observe and abide by, and shall require Licensee's Contractors to observe and abide by the terms, conditions and provisions set forth in this Agreement. Prior to any commencement of work under this Agreement by Licensee's Contractor, Licensee shall require Licensee's Contractor to execute and deliver to Licensor the Contractor Acceptance form attached hereto as Schedule A to acknowledge Licensee's Contractor's agreement to observe and abide by terms and conditions of the Agreement.

[signature page follows]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement in duplicate (each of which shall constitute an original) as of the effective date of this Agreement.

Witness for Licensor:

DocuSigned by:
Deanna Paxon
468371A729D04E4...

CSX TRANSPORTATION, INC.

DocuSigned by:
By: Eric Horton
119DE0C9ADEE4DA...

Print/Type Name: Eric Horton

Print/Type Title: Manager - Real Estate

Witness for Licensee:

Amy Wade

GREENVILLE UTILITIES COMMISSION

By: Anthony Cannon

Who, by the execution hereof, affirms that he/she has the authority to do so and to bind the Licensee to the terms and conditions of this Agreement.

Print/Type Name: Anthony C. Cannon

Print/Type Title: General Manager / CEO

Tax ID No.: 566000517

Authority under Ordinance or

Resolution No. _____,

Dated _____.

Schedule "A"

CONTRACTOR'S ACCEPTANCE

This Amendment is and shall be a part of Agreement No. CSX1009636, and is incorporated therein.

To and for the benefit of CSX TRANSPORTATION, Inc. (Licensor") and to induce Licensor to permit Contractor on or about Licensor's property for the purposed of performing work in accordance with the Agreement dated January 30, 2024, between Licensee and Licensor, Contractor hereby agrees to abide by and perform all applicable terms of the Agreement, including, but not limited to Sections 3, 9, 10 of the Agreement.

Witness for Licensor:

CSX TRANSPORTATION INC.

By: _____

Print/Type Name: _____

Print/Type Title: _____

Witness for Licensee's Contractor

LICENSEE'S CONTRACTOR

By: _____

Who, by the execution hereof, affirms that he/she has the authority to do so and to bind the Licensee has the authority to do so and to bind the Licensee to the terms and conditions of this Agreement

NAME: _____

TITLE: _____

DATE: _____

FACILITY ENCROACHMENT AGREEMENT

THIS AGREEMENT, made and effective as of January 30, 2024, by and between CSX TRANSPORTATION, INC., a Virginia corporation, whose mailing address is 500 Water Street, Jacksonville, Florida 32202, hereinafter called "Licensor," and GREENVILLE UTILITIES COMMISSION, a municipal corporation, political subdivision or state agency, under the laws of the State of North Carolina, whose mailing address is 401 South Greene Street, Greenville, North Carolina 27835, hereinafter called "Licensee," WITNESSETH:

WHEREAS, Licensee desires to construct (unless previously constructed and designated as existing herein), use and maintain the below described facility(ies), hereinafter called "Facilities," over, under or across property owned or controlled by Licensor, at the below described location(s):

1. One (1) eight inch (8") diameter sub-grade pipeline crossing, solely for the conveyance of natural gas, located at or near Greenville, Pitt County, North Carolina, Florence Division, Parmele Subdivision, Milepost AA-143.86, Latitude N35:41:20., Longitude W77:21:15.;

hereinafter, called the "Encroachment," as shown on print(s) labeled Exhibit "A," attached hereto and made a part hereof;

NOW, THEREFORE, in consideration of the mutual covenants, conditions, terms and agreements herein contained, the parties hereto agree and covenant as follows:

1. LICENSE:

1.1 Subject to Article 17, Licensor, insofar as it has the legal right, power and authority to do so, and its present title permits, and subject to:

(A) Licensor's present and future right to occupy, possess and use its property within the area of the Encroachment for any and all purposes, including but not limited to Licensor's track(s) structure(s), power lines, communication, signal or other wires, train control system, cellular or data towers, or electrical or electronic apparatus, or any appurtenances thereto ("Licensor's Facilities") and any other facilities as now exist or which may in the future be located in, upon, over, under or across the property;

(B) All encumbrances, conditions, covenants, easements, and limitations applicable to Licensor's title to or rights in the subject property; and

(C) Compliance by Licensee and its agent or contractor ("Licensee's Contractor") with the terms and conditions herein contained;

does hereby license and permit Licensee to construct, maintain, repair, renew, operate, use, alter or change the Facilities at the Encroachment above for the term herein stated, and to remove same upon termination.

1.2 The term Facilities, as used herein, shall include only those structures and ancillary facilities devoted exclusively to the transmission usage above within the Encroachment, and as shown on attached Exhibit A.

1.3 No additional structures or other facilities shall be placed, allowed, or maintained by Licensee in, upon or on the Encroachment except upon prior separate written consent of Licensor.

2. ENCROACHMENT FEE; TERM:

2.1 Licensee shall pay Licensor a one-time nonrefundable Encroachment Fee of FIVE HUNDRED AND 00/100 U.S. DOLLARS (\$500.00) upon execution of this Agreement. Licensee agrees that the Encroachment Fee applies only to the original Licensee under this Agreement. In the event of a successor (by merger, consolidation, reorganization and/or assignment) or if the original Licensee changes its name, then Licensee shall be subject to payment of Licensor's current administrative and document preparation fees for the cost incurred by Licensor in preparing and maintaining this Agreement on a current basis.

2.2 However, Licensee assumes sole responsibility for, and shall pay directly (or reimburse Licensor), any additional annual taxes and/or periodic assessments levied against Licensor or Licensor's property solely on account of said Facilities or Encroachment.

2.3 This Agreement shall terminate as herein provided, but shall also terminate upon: (a) Licensee's cessation of use of the Facilities or Encroachment for the purpose(s) above; (b) removal of the Facilities; (c) subsequent mutual consent; and/or (d) failure of Licensee to complete installation within five (5) years from the effective date of this Agreement.

2.4 In further consideration for the license or right hereby granted, Licensee hereby agrees that Licensor shall not be charged or assessed, directly or indirectly, with any part of the cost of the installation of said Facilities and appurtenances, and/or maintenance thereof, or for any public works project of which said Facilities is a part. Licensee agrees it shall not assess Licensor any stormwater or drainage fee associated with such Facilities. Furthermore, Licensee shall be responsible for any stormwater or drainage fees assessed by any County or State agency managing such systems.

3. CONSTRUCTION, MAINTENANCE AND REPAIRS:

3.1 Licensee shall construct, maintain, relocate, repair, renew, alter, and/or remove the Facilities, in a prudent, workmanlike manner, using quality materials and complying with any applicable standard(s) or regulation(s) of Licensor (CSXT Specifications), or Licensee's particular industry, National Electrical Safety Code, or any governmental or regulatory body having jurisdiction over the Encroachment.

3.2 Location and construction of Facilities shall be made strictly in accordance with design(s) and specifications furnished to and approved by Licensor and of material(s) and size(s) appropriate for the purpose(s) above recited.

3.3 All of Licensee's work, and exercise of rights hereunder, shall be undertaken at time(s) satisfactory to Licensor, and so as to eliminate or minimize any impact on or interference with the safe use and operation of Licensor's property and appurtenances thereto.

3.4 In the installation, maintenance, repair and/or removal of said Facilities, Licensee shall not use explosives on or adjacent to Licensor's property of any type or perform or cause any blasting without the separate express written consent of Licensor. As a condition to such consent, a representative will be assigned by Licensor to monitor blasting, and Licensee shall reimburse Licensor for the entire cost and/or expense of furnishing said monitor.

3.5 Any repairs or maintenance to the Facilities, whether resulting from acts of Licensee, or natural or weather events, which are necessary to protect or facilitate Licensor's use of its property, shall be made by Licensee promptly, but in no event later than thirty (30) days after Licensee has notice as to the need for such repairs or maintenance.

3.6 Licensor, in order to protect or safeguard its property, rail operations, equipment and/or employees from damage or injury, may request immediate repair or renewal of the Facilities, and if the same is not performed, may make or contract to make such repairs or renewals, at the sole risk, cost and expense of Licensee.

3.7 Neither the failure of Licensor to object to any work done, material used, or method of construction or maintenance of said Encroachment, nor any approval given or supervision exercised by Licensor, shall be construed as an admission of liability or responsibility by Licensor, or as a waiver by Licensor of any of the obligations, liability and/or responsibility of Licensee under this Agreement.

3.8 All work on the Encroachment shall be conducted in accordance with Licensor's safety rules and regulations.

3.9 Licensee hereby agrees to reimburse Licensor any loss, cost or expense (including losses resulting from train delays and/or inability to meet train schedules) arising from any failure of Licensee to make repairs or conduct maintenance as required by Section 3.5 above or from improper or incomplete repairs or maintenance to the Facilities or Encroachment.

3.10 In the event it becomes necessary for the Licensee to deviate from the approved Exhibit, Licensee shall seek prior approval from Licensor, or when applicable, an official field representative of Licensor permitted to approve changes, authorizing the necessary field changes and Licensee shall provide Licensor with complete As-Built Drawings of the completed work. As-Built Drawings shall be submitted to Licensor in either electronic or hard copy form upon the substantial completion of the project and upon Licensor's request.

3.11 In the event of large scale maintenance/construction work to railroad bridges Licensee is required to protect power lines with insulated covers or comparable safety devices at their costs during construction/maintenance for safety of railroad employees.

4. PERMITS, LICENSES:

4.1 Before any work hereunder is performed, or before use of the Encroachment for the contracted purpose, Licensee, at its sole cost and expense, shall obtain all necessary permit(s) (including but not limited to zoning, building, construction, health, safety or environmental matters), letter(s) or certificate(s) of approval. Licensee expressly agrees and warrants that it shall conform and limit its activities to the terms of such permit(s), approval(s) and authorization(s), and shall comply with all applicable ordinances, rules, regulations, requirements and laws of any governmental authority (State, Federal or Local) having jurisdiction over Licensee's activities, including the location, contact, excavation and protection regulations of the Occupational Safety and Health Act (OSHA) (29 CFR 1926.651(b)), et al., and State "One Call" - "Call Before You Dig" requirements.

4.2 Licensee assumes sole responsibility for failure to obtain such permit(s) or approval(s), for any violations thereof, or for costs or expenses of compliance or remedy.

5. MARKING AND SUPPORT:

5.1 With respect to any subsurface installation or maintenance upon Licensor's property, Licensee, at its sole cost and expense, shall:

- (A) support track(s) and roadbed in a manner satisfactory to Licensor;
- (B) backfill with satisfactory material and thoroughly tamp all trenches to prevent settling of surface of land and roadbed of Licensor; and
- (C) either remove any surplus earth or material from Licensor's property or cause said surplus earth or material to be placed and distributed at location(s) and in such manner Licensor may approve.

5.2 After construction or maintenance of the Facilities, Licensee shall:

- (A) Restore any track(s), roadbed and other disturbed property; and
- (B) Erect, maintain and periodically verify the accuracy of aboveground markers, in a form approved by Licensor, indicating the location, depth and ownership of any underground Facilities or related facilities.

5.3 Licensee shall be solely responsible for any subsidence or failure of lateral or subjacent support in the Encroachment area for a period of three (3) years after completion of installation.

6. TRACK CHANGES:

6.1 In the event that rail operations and/or track maintenance result in changes in grade or alignment of, additions to, or relocation of track(s) or other facilities, or in the event

future use of Licensor's rail corridor or property necessitate any change of location, height or depth in the Facilities or Encroachment, Licensee, at its sole cost and expense and within thirty (30) days after notice in writing from Licensor, shall make changes in the Facilities or Encroachment to accommodate such track(s) or operations.

6.2 If Licensee fails to do so, Licensor may make or contract to make such changes at Licensee's cost.

7. FACILITY CHANGES:

7.1 Licensee shall periodically monitor and verify the depth or height of the Facilities or Encroachment in relation to the existing tracks and facilities, and shall relocate the Facilities or change the Encroachment, at Licensee's expense, should such relocation or change be necessary to comply with the minimum clearance requirements of Licensor.

7.2 If Licensee undertakes to revise, renew, relocate or change in any manner whatsoever all or any part of the Facilities (including any change in voltage or gauge of wire or any change in circumference, diameter or radius of pipe or change in materials transmitted in and through said pipe), or is required by any public agency or court order to do so, plans therefor shall be submitted to Licensor for approval before such change. After approval, the terms and conditions of this Agreement shall apply thereto.

8. INTERFERENCE WITH RAIL FACILITIES:

8.1 Although the Facilities/Encroachment herein permitted may not presently interfere with Licensor's Facilities, in the event that the operation, existence or maintenance of said Facilities, in the sole judgment of Licensor, causes: (a) interference (including, but not limited to, physical or interference from an electromagnetic induction, or interference from stray or other currents) with Licensor's power lines, communication, signal or other wires, train control system, or electrical or electronic apparatus; or (b) interference in any manner, with the operation, maintenance or use of Licensor's Facilities; then and in either event, Licensee, upon receipt of written notice from Licensor of any such interference, and at Licensee's sole risk, cost and expense, shall promptly make such changes in its Facilities or installation, as may be required in the reasonable judgment of the Licensor to eliminate all such interference. Upon Licensee's failure to remedy or change, Licensor may do so or contract to do so at Licensee's sole cost.

8.2 Without assuming any duty hereunder to inspect the Facilities, Licensor hereby reserves the right to inspect same and to require Licensee to undertake repairs, maintenance or adjustments to the Facilities, which Licensee hereby agrees to make promptly, at Licensee's sole cost and expense.

9. RISK, LIABILITY, INDEMNITY:

With respect to the relative risk and liabilities of the parties, it is hereby agreed that:

9.1 To the fullest extent permitted by State law (constitutional or statutory, as amended), Licensee hereby agrees to, defend, indemnify, and hold Licensor harmless from and against any and all liability, loss, claim, suit, damage, charge or expense which Licensor may suffer, sustain, incur or in any way be subjected to, on account of death of or injury to any person whomsoever (including officers, agents, employees or invitees of Licensor), and for damage to or loss of or destruction of any property whatsoever, arising out of, resulting from, or in any way connected with the construction, repair, maintenance, replacement, presence, existence, operations, use or removal of the Facilities or any structure in connection therewith, or restoration of premises of Licensor to good order or condition after removal, EXCEPT when proven to have been caused solely by the willful misconduct or gross negligence of Licensor. HOWEVER, to the fullest extent permitted by State law, during any period of actual construction, repair, maintenance, replacement or removal of the Facilities, wherein agents, equipment or personnel of Licensee are on the railroad rail corridor, Licensee's liability hereunder shall be absolute, irrespective of any joint, sole or contributory fault or negligence of Licensor.

9.2 Licensee's Contractor shall hereby agree to, defend, indemnify, and hold Licensor harmless from and against any and all liability, loss, claim, suit, damage, charge or expense which Licensor may suffer, sustain, incur or in any way be subjected to, on account of death of or injury to any person whomsoever (including officers, agents, employees or invitees of Licensor), and for damage to or loss of or destruction of any property whosoever, arising out of resulting from, or in any way connected with the construction, repair, maintenance, replacement, presence, existence, operations, use or removal of the Facilities or any structure in connection therewith, or restoration of premises of Licensor to good order or condition after removal, EXCEPT when proven to have been caused solely by the willful misconduct or gross negligence of Licensor. HOWEVER, to the fullest extent permitted by State law, during any period of actual construction, repair, maintenance, replacement or removal of the Facilities, wherein agents, equipment or personnel of Licensee are on the railroad rail corridor, Licensee's liability hereunder shall be absolute, irrespective of any joint, sole or contributory fault or negligence of Licensor.

9.3 Use of Licensor's rail corridor involves certain risks of loss or damage as a result of the rail operations. Notwithstanding Section 9.1, Licensee expressly assumes all risk of loss and damage to Licensee's Property or the Facilities in, on, over or under the Encroachment, including loss of or any interference with use or service thereof, regardless of cause, including electrical field creation, fire or derailment resulting from rail operations. For this Section, the term "Licensee's Property" shall include property of third parties situated or placed upon Licensor's rail corridor by Licensee or by such third parties at request of or for benefit of Licensee.

9.4 To the fullest extent permitted by State law, as above, Licensee assumes all responsibility for, and agrees to defend, indemnify and hold Licensor harmless from: (a) all claims, costs and expenses, including reasonable attorneys' fees, as a consequence of any sudden or nonsudden pollution of air, water, land and/or ground water on or off the Encroachment area, arising from or in connection with the use of this Encroachment or resulting from leaking, bursting, spilling, or any escape of the material transmitted in or through the Facilities; (b) any

claim or liability arising under federal or state law dealing with either such sudden or nonsudden pollution of air, water, land and/or ground water arising therefrom or the remedy thereof; (c) any subsidence or failure of lateral or subjacent support of the tracks arising from such Facilities leakage; and (d) all claims, costs and expenses, including reasonable attorneys' fees, as a consequence of any drainage or runoff on or off the Encroachment area as a result of the Facilities/Encroachment herein permitted.

9.5 Notwithstanding Section 9.1, Licensee also expressly assumes all risk of loss which in any way may result from Licensee's failure to maintain either required clearances for any overhead Facilities or the required depth and encasement for any underground Facilities, whether or not such loss(es) result(s) in whole or part from Licensor's contributory negligence or joint fault.

9.6 Obligations of Licensee hereunder to release, indemnify and hold Licensor harmless shall also extend to companies and other legal entities that control, are controlled by, subsidiaries of, or are affiliated with Licensor, as well as any railroad that operates over the rail corridor on which the Encroachment is located, and the officers, employees and agents of each.

9.7 If a claim is made or action is brought against Licensor, and/or its operating lessee, for which Licensee may be responsible hereunder, in whole or in part, Licensee shall be notified to assume the handling or defense of such claim or action; but Licensor may participate in such handling or defense.

9.8 Notwithstanding anything contained in this Agreement, the limitation of liability contained in the state statutes, as amended from time to time, shall not limit Licensor's ability to collect under the insurance policies required to be maintained under this Agreement.

10. INSURANCE:

10.1 Prior to commencement of surveys, installation or occupation of premises pursuant to this Agreement, Licensee shall procure and shall maintain during the continuance of this Agreement, at its sole cost and expense, a policy of

- (i) Statutory Worker's Compensation and Employers Liability Insurance with available limits of not less than ONE MILLION AND 00/100 U.S. DOLLARS (\$1,000,000.00).
- (ii) Commercial General Liability coverage (inclusive of contractual liability) with available limits of not less than FIVE MILLION AND 00/100 U.S. DOLLARS (\$5,000,000.00) in combined single limits for bodily injury and property damage and covering the contractual liabilities assumed under this Agreement and naming Licensor, and/or its designee, as additional insured. The evidence of insurance coverage shall be endorsed to provide for thirty (30) days' notice to Licensor, or its designee, prior to cancellation or modification of any policy. Mail CGL certificate, along with agreement, to CSX Transportation, Inc., Speed Code J180,

500 Water Street, Jacksonville, FL 32202. On each successive year, send certificate to RenewalCOI@csx.com.

- (iii) Business automobile liability insurance with available limits of not less than ONE MILLION AND 00/100 U.S. DOLLARS (\$1,000,000.00) combined single limit for bodily injury and/or property damage per occurrence naming Licensor, and/or its designee, as additional insured.
- (iv) The insurance policies must contain a waiver of subrogation against CSXT and its Affiliates, except where prohibited by law. All insurance companies must be A. M. Best rated A- and Class VII or better.
- (v) Such other insurance as Licensor may reasonably require.
- (vi) Licensee shall require its contractors to meet minimum insurance requirements above when performing work in relation to this agreement. Licensee will procure and review contractor's insurance certificates to confirm requirements are met. Licensor may request a copy of the insurance certificate.

10.2 If Licensee's Contractor's existing CGL policy(ies) do(es) not automatically cover Licensee's contractual liability during periods of survey, installation, maintenance and continued occupation, a specific endorsement adding such coverage shall be purchased by Licensee's Contractor. If said CGL policy is written on a "claims made" basis instead of a "per occurrence" basis, Licensee shall arrange for adequate time for reporting losses. Failure to do so shall be at Licensee's sole risk.

10.3 Licensor, or its designee, may at any time request evidence of insurance purchased by Licensee to comply with this Agreement. Failure of Licensee to comply with Licensor's request shall be considered a default by Licensee.

10.4 To the extent permitted by law and notwithstanding anything to the contrary in this Agreement, the insurance required and provided by Utility shall not be subject to the limitations of sovereign immunity.

10.5 (A) In the event Licensee finds it necessary to perform construction or demolition operations within fifty feet (50') of any operated railroad track(s) or affecting any railroad bridge, trestle, tunnel, track(s), roadbed, overpass or underpass, Licensee shall: (a) notify Licensor; and (b) require Licensee's Contractor(s) performing such operations to procure and maintain during the period of construction or demolition operations, at no cost to Licensor,

- i) Railroad Protective Liability (RPL) Insurance, naming Licensor, and/or its designee, as Named Insured, written on the current ISO/RIMA Form (ISO Form No. CG 00 35 04 13) with limits of FIVE MILLION AND 00/100 U.S. DOLLARS (\$5,000,000.00) per occurrence for bodily injury and property damage, with at least TEN MILLION AND 00/100 U.S. DOLLARS (\$10,000,000.00) aggregate limit per annual policy period. The original of such RPL policy shall be sent to and approved by Licensor prior to

commencement of such construction or demolition. Licensor reserves the right to demand higher limits.

OR

ii) The CGL policy shall include endorsement ISO CG 24 17 and the Auto Liability Policy shall include endorsement ISO CA 20 70 evidencing that coverage is provided for work within 50 feet of a railroad. If such endorsements are not included, RPL insurance must be provided.

(B) At Licensor's option, in lieu of purchasing RPL insurance or the 50 foot endorsements from an insurance company (but not CGL insurance), Licensee may pay Licensor, at Licensor's current rate at time of request, the cost of adding this Encroachment, or additional construction and/or demolition activities, to Licensor's Railroad Protective Liability (RPL) Policy for the period of actual construction. This coverage is offered at Licensor's discretion and may not be available under all circumstances.

10.6 Notwithstanding the provisions of Sections 10.1 and 10.2, Licensee, pursuant to State Statute(s), may self-insure or self-assume, in any amount(s), any contracted liability arising under this Agreement, under a funded program of self-insurance, which fund will respond to liability of Licensee imposed by and in accordance with the procedures established by law.

11. GRADE CROSSINGS; PROTECTION SERVICES:

11.1 Nothing herein contained shall be construed to permit Licensee or Licensee's contractor to move any vehicles or equipment over the track(s), except at public road crossing(s), without separate prior written approval of Licensor.

11.2 If Licensor deems it advisable, during any construction, maintenance, repair, renewal, alteration, change or removal of said Facilities, to place watchmen, flagmen, or field construction managers for protection of operations of Licensor or others on Licensor's rail corridor at the Encroachment, and to keep persons, equipment or materials away from the track(s), Licensor shall have the right to do so at the expense of Licensee, but Licensor shall not be liable for failure to do so.

11.3 Subject to consent of Licensor, in its sole discretion, and subject to Licensor's operating rules and labor agreements, Licensee may provide flagmen, in place of Licensor's provision, at Licensee's sole risk, cost and expense, and in such event, Licensor shall not be liable for the failure or neglect of such flagmen. Such flagmen shall be approved by Licensor and shall meet all Licensor's requirement for performing such work.

12. LICENSOR'S COSTS:

12.1 Any additional or alternative costs or expenses incurred by Licensor to accommodate Licensee's continued use of Licensor's property as a result of track changes or changes to Licensor's Facilities shall also be paid by Licensee.

12.2 Licensor's expense for wages ("force account" charges) and materials for any work performed at the expense of Licensee pursuant hereto shall be paid by Licensee within thirty (30) days after receipt of Licensor's bill therefor. Licensor may, at its discretion, request an advance deposit for estimated Licensor costs and expenses.

12.3 Such expense shall include, but not be limited to, cost of railroad labor and supervision under "force account" rules, plus current applicable overhead percentages, the actual cost of materials, and insurance, freight and handling charges on all material used. Equipment rentals shall be in accordance with Licensor's applicable fixed rate. Licensor may, at its discretion, require advance deposits for estimated costs of such expenses and costs.

13. DEFAULT, BREACH, WAIVER:

13.1 The proper and complete performance of each covenant of this Agreement shall be deemed of the essence thereof, and in the event Licensee fails or refuses to fully and completely perform any of said covenants or remedy any breach within thirty (30) days after receiving written notice from Licensor to do so (or within forty-eight (48) hours in the event of notice of a railroad emergency), Licensor shall have the option of immediately revoking this Agreement and the privileges and powers hereby conferred, regardless of encroachment fee(s) having been paid in advance for any annual or other period. Upon such revocation, Licensee shall make removal in accordance with Article 14.

13.2 No waiver by Licensor of its rights as to any breach of covenant or condition herein contained shall be construed as a permanent waiver of such covenant or condition, or any subsequent breach thereof, unless such covenant or condition is permanently waived in writing by Licensor.

13.3 Neither the failure of Licensor to object to any work done, material used, or method of construction or maintenance of said Encroachment, nor any approval given or supervision exercised by Licensor, shall be construed as an admission of liability or responsibility by Licensor, or as a waiver by Licensor of any of the obligations, liability and/or responsibility of Licensee under this Agreement.

14. TERMINATION, REMOVAL:

14.1 All rights which Licensee may have hereunder shall cease upon the date of (a) termination, (b) revocation, or (c) subsequent agreement, or (d) Licensee's removal of the Facility from the Encroachment. However, neither termination nor revocation of this Agreement shall affect any claims and liabilities which have arisen or accrued hereunder, and which at the time of termination or revocation have not been satisfied; neither party, however, waiving any third party defenses or actions.

14.2 Within thirty (30) days after revocation or termination, Licensee, at its sole risk and expense, shall (a) remove the Facilities from the rail corridor of Licensor, unless the parties hereto agree otherwise, (b) restore the rail corridor of Licensor in a manner satisfactory to

Licensor, and (c) reimburse Licensor any loss, cost or expense of Licensor resulting from such removal.

15. NOTICE:

15.1 Licensee shall give Licensor at least thirty (30) days written notice before doing any work on Licensor's rail corridor, except that in cases of emergency shorter notice may be given. Licensee shall provide proper notification as follows:

a. For non-emergencies, Licensee shall submit online via the CSX Property Portal from Licensor's web site, via web link:
https://propertyportal.csx.com/pub_ps_res/ps_res/jsf/public/index.faces

b. For emergencies, Licensee shall complete all of the steps outlined in Section 15.1 a. above, and shall also include detailed information of the emergency. Licensee shall also call and report details of the emergency to Licensor's Rail Operations Emergency Telephone Number: 1-800-232-0144. In the event Licensor needs to contact Licensee concerning an emergency involving Licensee's Facility(ies), the emergency phone number for Licensee is: 252-551-1594.

15.2 All other notices and communications concerning this Agreement shall be addressed to Licensee at the address above, and to Licensor at the address shown on Page 1, c/o CSXT Contract Management, J180; or at such other address as either party may designate in writing to the other.

15.3 Unless otherwise expressly stated herein, all such notices shall be in writing and sent via Certified or Registered Mail, Return Receipt Requested, or by courier, and shall be considered delivered upon: (a) actual receipt, or (b) date of refusal of such delivery.

16. ASSIGNMENT:

16.1 The rights herein conferred are the privileges of Licensee only, and Licensee shall obtain Licensor's prior written consent to any assignment of Licensee's interest herein; said consent shall not be unreasonably withheld.

16.2 Subject to Sections 2 and 16.1, this Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors or assigns.

16.3 Licensee shall give Licensor written notice of any legal succession (by merger, consolidation, reorganization, etc.) or other change of legal existence or status of Licensee, with a copy of all documents attesting to such change or legal succession, within thirty (30) days thereof.

16.4 Licensor expressly reserves the right to assign this Agreement, in whole or in part, to any grantee, lessee, or vendee of Licensor's underlying property interests in the Encroachment, upon written notice thereof to Licensee.

16.5 In the event of any unauthorized sale, transfer, assignment, sublicense or encumbrance of this Agreement, or any of the rights and privileges hereunder, Licensor, at its option, may revoke this Agreement by giving Licensee or any such assignee written notice of such revocation; and Licensee shall reimburse Licensor for any loss, cost or expense Licensor may incur as a result of Licensee's failure to obtain said consent.

17. TITLE:

17.1 Licensee understands that Licensor occupies, uses and possesses lands, rights-of-way and rail corridors under all forms and qualities of ownership rights or facts, from full fee simple absolute to bare occupation. Accordingly, nothing in this Agreement shall act as or be deemed to act as any warranty, guaranty or representation of the quality of Licensor's title for any particular Encroachment or segment of Rail Corridor occupied, used or enjoyed in any manner by Licensee under any rights created in this Agreement. It is expressly understood that Licensor does not warrant title to any Rail Corridor and Licensee will accept the grants and privileges contained herein, subject to all lawful outstanding existing liens, mortgages and superior rights in and to the Rail Corridor, and all leases, licenses and easements or other interests previously granted to others therein.

17.2 The term "license," as used herein, shall mean with regard to any portion of the Rail Corridor which is owned by Licensor in fee simple absolute, or where the applicable law of the State where the Encroachment is located otherwise permits Licensor to make such grants to Licensee, a "permission to use" the Rail Corridor, with dominion and control over such portion of the Rail Corridor remaining with Licensor, and no interest in or exclusive right to possess being otherwise granted to Licensee. With regard to any other portion of Rail Corridor occupied, used or controlled by Licensor under any other facts or rights, Licensor merely waives its exclusive right to occupy the Rail Corridor and grants no other rights whatsoever under this Agreement, such waiver continuing only so long as Licensor continues its own occupation, use or control. Licensor does not warrant or guarantee that the license granted hereunder provides Licensee with all of the rights necessary to occupy any portion of the Rail Corridor. Licensee further acknowledges that it does not have the right to occupy any portion of the Rail Corridor held by Licensor in less than fee simple absolute without also receiving the consent of the owner(s) of the fee simple absolute estate. Further, Licensee shall not obtain, exercise or claim any interest in the Rail Corridor that would impair Licensor's existing rights therein.

17.3 Licensee agrees it shall not have nor shall it make, and hereby completely and absolutely waives its right to, any claim against Licensor for damages on account of any deficiencies in title to the Rail Corridor in the event of failure or insufficiency of Licensor's title to any portion thereof arising from Licensee's use or occupancy thereof.

17.4 Licensee agrees to fully and completely indemnify and defend all claims or litigation for slander of title, overburden of easement, or similar claims arising out of or based upon the Facilities placement, or the presence of the Facilities in, on or along any Encroachment(s), including claims for punitive or special damages.

17.5 Licensee shall not at any time own or claim any right, title or interest in or to Licensor's property occupied by the Encroachments, nor shall the exercise of this Agreement for any length of time give rise to any right, title or interest in Licensee to said property other than the license herein created.

17.6 Nothing in this Agreement shall be deemed to give, and Licensor hereby expressly waives, any claim of ownership in and to any part of the Facilities.

17.7 Licensee shall not create or permit any mortgage, pledge, security, interest, lien or encumbrances, including without limitation, tax liens and liens or encumbrances with respect to work performed or equipment furnished in connection with the construction, installation, repair, maintenance or operation of the Facilities in or on any portion of the Encroachment (collectively, "Liens or Encumbrances"), to be established or remain against the Encroachment or any portion thereof or any other Licensor property.

17.8 In the event that any property of Licensor becomes subject to such Liens or Encumbrances, Licensee agrees to pay, discharge or remove the same promptly upon Licensee's receipt of notice that such Liens or Encumbrances have been filed or docketed against the Encroachment or any other property of Licensor; however, Licensee reserves the right to challenge, at its sole expense, the validity and/or enforceability of any such Liens or Encumbrances.

18. GENERAL PROVISIONS:

18.1 This Agreement, and the attached specifications, contains the entire understanding between the parties hereto.

18.2 Neither this Agreement, any provision hereof, nor any agreement or provision included herein by reference, shall operate or be construed as being for the benefit of any third person.

18.3 Except as otherwise provided herein, or in any Rider attached hereto, neither the form of this Agreement, nor any language herein, shall be interpreted or construed in favor of or against either party hereto as the sole drafter thereof.

18.4 This Agreement is executed under current interpretation of applicable Federal, State, County, Municipal or other local statute, ordinance or law(s). However, each separate division (paragraph, clause, item, term, condition, covenant or agreement) herein shall have independent and severable status for the determination of legality, so that if any separate division is determined to be void or unenforceable for any reason, such determination shall have no effect upon the validity or enforceability of each other separate division, or any combination thereof.

18.5 This Agreement shall be construed and governed by the laws of the state in which the Facilities and Encroachment are located.

18.6 If any amount due pursuant to the terms of this Agreement is not paid by the due date, it will be subject to Licensor's standard late charge and will also accrue interest at eighteen percent (18%) per annum, unless limited by local law, and then at the highest rate so permitted.

18.7 Licensee agrees to reimburse Licensor for all reasonable costs (including attorney's fees) incurred by Licensor for collecting any amount due under the Agreement.

18.8 The provisions of this License are considered confidential and may not be disclosed to a third party without the consent of the other party(s), except: (a) as required by statute, regulation or court order, (b) to a parent, affiliate or subsidiary company, (c) to an auditing firm or legal counsel that are agreeable to the confidentiality provisions, or (d) to Lessees of Licensor's land and/or track who are affected by the terms and conditions of this Agreement and will maintain the confidentiality of this Agreement.

18.9 Within thirty (30) days of an overpayment in a cumulative total amount of One Hundred Dollars (\$100.00) or more by Licensee to Licensor, Licensee shall notify Licensor in writing with documentation evidencing such overpayment. Licensor shall refund the actual amount of Licensee's overpayment within one hundred twenty (120) days of Licensor's verification of such overpayment.

18.10 This Agreement may be executed in any number of counterparts, and such counterparts may be exchanged by electronic transmission. Upon execution by the parties hereto, each counterpart shall be deemed an original and together shall constitute one and the same instrument. A fully executed copy of this Agreement by electronic transmission shall be deemed to have the same legal effect as delivery of an original executed copy of this Agreement for all purposes.

19. CONTRACTOR'S ACCEPTANCE:

19.1 Licensee shall observe and abide by, and shall require Licensee's Contractors to observe and abide by the terms, conditions and provisions set forth in this Agreement. Prior to any commencement of work under this Agreement by Licensee's Contractor, Licensee shall require Licensee's Contractor to execute and deliver to Licensor the Contractor Acceptance form attached hereto as Schedule A to acknowledge Licensee's Contractor's agreement to observe and abide by terms and conditions of the Agreement.

[signature page follows]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement in duplicate (each of which shall constitute an original) as of the effective date of this Agreement.

Witness for Licensor:

DocuSigned by:
Deanna Paxon
468371A729D04E4...

CSX TRANSPORTATION, INC.

DocuSigned by:
By: Eric Horton
119DE0C9ADEE4DA...

Print/Type Name: Eric Horton

Print/Type Title: Manager - Real Estate

Witness for Licensee:

Amy Wade

GREENVILLE UTILITIES COMMISSION

By: Anthony Cannon

Who, by the execution hereof, affirms that he/she has the authority to do so and to bind the Licensee to the terms and conditions of this Agreement.

Print/Type Name: Anthony C. Cannon

Print/Type Title: General Manager / CEO

Tax ID No.: 566000517

Authority under Ordinance or

Resolution No. _____,

Dated _____.

Schedule "A"

CONTRACTOR'S ACCEPTANCE

This Amendment is and shall be a part of Agreement No. CSX1009547, and is incorporated therein. To and for the benefit of CSX TRANSPORTATION, Inc. (Licensor") and to induce Licensor to permit Contractor on or about Licensor's property for the purpose of performing work in accordance with the Agreement dated January 30, 2024, between Licensee and Licensor, Contractor hereby agrees to abide by and perform all applicable terms of the Agreement, including, but not limited to Sections 3, 9, 10 of the Agreement.

Witness for Licensor:

CSX TRANSPORTATION INC.

By: _____

Print/Type Name: _____

Print/Type Title: _____

Witness for Licensee's Contractor

LICENSEE'S CONTRACTOR

By: _____

Who, by the execution hereof, affirms that he/she has the authority to do so and to bind the Licensee has the authority to do so and to bind the Licensee to the terms and conditions of this Agreement

NAME: _____

TITLE: _____

DATE: _____

SMS & Safety Culture Commitment
Exhibit T-5

Safety Culture Commitment Statement:

At Greenville Utilities, we are committed to a culture of safety that prioritizes the well-being of our employees, contractors, and the communities we serve.

We believe that everyone deserves to work in a safe environment, and we are dedicated to fostering a culture where **safety is a core value, not just a priority.**

Here's what that means to us:

- **Employee and Contractor Safety:** We are committed to providing a safe work environment for all employees and contractors. We will invest in safety training, resources, and equipment to prevent accidents and injuries.
- **Open Communication:** We encourage open and honest communication about safety concerns. We believe everyone has a right and responsibility to speak up about unsafe work practices and potential hazards.
- **Continuous Improvement:** We are committed to continuous improvement in safety performance. We will learn from incidents and near misses, and we will actively seek ways to improve our safety processes and procedures.
- **Accountability:** We hold ourselves and our contractors accountable for safe work practices. This includes providing clear safety expectations, enforcing safety rules, and recognizing safe behavior.
- **Collaboration:** We believe in working collaboratively with employees, contractors, and regulatory agencies to achieve the highest level of safety.

Our commitment to safety extends beyond our employees. We work closely with our contractors to ensure they share our safety values. We expect them to implement robust safety programs, train their workers thoroughly, and adhere to all safety regulations.

We are confident that by working together, we can create a culture of safety where everyone goes home safe and healthy every day.

This commitment statement is a public declaration of our unwavering dedication to safety. We will continue to strive for zero incidents while promoting a positive safety culture that prioritizes the well-being of everyone involved in our utility operations.

Safety Management System Commitment Statement:

At Greenville Utilities, we are unwavering in our commitment to delivering safe and reliable utility service through a robust Safety Management System (SMS). This system forms the foundation of our safety culture, ensuring the well-being of our employees, contractors, and the communities we serve.

Our SMS commitment emphasizes:

- **Zero Incidents:** We believe all incidents are preventable. We strive for zero incidents by proactively managing risks and continuously improving our safety practices.
- **Empowered Workforce:** We foster a culture where safety is everyone's responsibility. This includes providing comprehensive safety training for both employees and contractors, empowering them to identify and report hazards.
- **Data-Driven Decisions:** We utilize data from inspections, incident investigations, and performance metrics to make informed decisions for risk mitigation and continuous improvement of our SMS.
- **Leadership Engagement:** Our leadership team actively demonstrates a commitment to safety by participating in safety reviews, audits, and promoting safety as a core value.
- **Contractor Collaboration:** We extend our safety commitment to our contractors. We require contractors working on our system to adhere to SMS principles, participate in safety briefings, and maintain strong safety programs within their own organizations.
- **Transparent Communication:** We believe in open communication about safety. We encourage employees and contractors to report concerns without fear of reprisal. We also maintain transparent communication with stakeholders about SMS performance.

This SMS commitment is a continuous journey, not a destination. We are dedicated to regularly reviewing and updating our system to reflect best practices and emerging technologies. Through continuous improvement and a commitment to a positive safety culture, we aim to remain an industry leader in safe and reliable utility service.

Pre-Bid Meeting Minutes
Exhibit T-6

PRE-BID MEETING MINUTES

RFB for NC 11 North Natural Gas Main Extension - GCP10124

Date and Time: May 14th, 2024 at 2:00 PM (EST) – 3:00 PM (EST)

Venue: Virtually through Microsoft Teams

Participants from Greenville Utilities Commission (Owner):

- Dillon Wade, wadede@guc.com, (252) 551-1594
- Branson Rogers, rogersbh@guc.com, (252) 558-5247

Participants from Kimley-Horn and Associates (Engineering):

- Ryan Clark (Project Manager), Ryan.Clark@Kimley-Horn.com, (757) 548-7353
- Chris Margaritis (Project Engineer), Chris.Magaritis@Kimley-Horn.com (757) 213-8639

Participants from Potential Bidders and Company:

- Parker Stockstill Construction, Inc.
 - David Pearce, david.pearce@parkerstockstill.com
 - Brandon Taylor*, brandon.taylor@parkerstockstill.com
 - Kevin Laughren*, kevin.laughren@parkerstockstill.com
 - Chuy Ventura*, chuy.ventura@parkerstockstill.com
- Ross and Sons Utility Contractor, Inc.
 - Tim Ross Jr., trossjr@rossandsonsva.com
 - Jesse Ross, jdross@rossandsonsva.com
- Mears
 - Dustin Dayvolt*, dustin.dayvolt@mears.net
 - Anthony Wachendorf, anthony.wachendorf@mears.net
 - Billy Ratliff, billy.ratliff@mears.net
 - Roy Pitts, roy.pitts@mears.net
- Southeast Connections, LLC
 - Brandon Moore, brandon@seconnections.com
 - Mike Smith*, mike.smith@seconnections.com
 - Scott Warren*, scott@seconnections.com
- Classic City Mechanical, Inc.
 - Trent Gibson, tgibson32@aol.com
 - Arlis Barber*, classiccity@aol.com

* Invited, but not in attendance on the call

1. INTRODUCTION:

Ryan Clark, project manager from Kimley-Horn (KHA), and Dillon Wade, project manager from Greenville Utilities Commission (GUC), welcomed and thanked all meeting participants. Ryan then briefed all bidders that the purpose of this meeting is to help bidders to fully understand the key requirements in the RFB. Bidders can raise questions during this pre-bid meeting. Minutes of this meeting, including bidder's question and answers, will be posted on the Greenville Utilities Commission's website so all bidders can download. In case bidders have questions after the pre-bid meeting, bidders should send all questions to Ryan Clark via email (ryan.clark@kimley-horn.com) and the answers will be posted on the Greenville Utilities Commission's website. Additionally, see



attached slides from the pre-bid meeting after the Questions & Answers section. Below are some key notes on preparing and submitting bid:

1.1. *Preparing the proposal:*

- Proposal validity: 60 days from submission date
- If the following forms are not filled out and submitted with your bid, the bid will not be considered:
 - E-Verify form in Section D in the Specification document (Page 42 in PDF)
 - Diverse Business Certifications in Section C-1 in the Specification documents (Page 23 in PDF)

1.2. *Bid Submission:*

- Submission Deadline: May 28th, 2024 by 2:00 PM (EST)
- Submission Location:
 - In person: Engineering & Operations Center at 3355 US Hwy 43 North, Greenville, North Carolina 27834
 - By Mail: 701 Utility Way, Greenville, North Carolina 27834
- Bids must be enclosed in a sealed envelope, addressed to the Greenville Utilities Commission and the outside of the envelope must be marked BID FOR GCP10124 – NC 11 NORTH NATURAL GAS MAIN. Oral or faxed Bids are invalid and will be rejected.

2. QUESTIONS & ANSWERS:

#	QUESTIONS	ANSWERS
1	Does Directional Drill Item on Pricing Form include pipe being installed?	The Directional Drill Item on the pricing form should include cost of installing the pipe. See Technical Specification subsection 3.14.7 in Section S for measurement and payment of Directional Drilling.
2	Are contractors providing the TDW spherical tee and 12" casing pipe?	Greenville Utilities Commission is providing the material identified in the Bill of Materials.
3	Is drilling mud factored in the Directional Drill Item in Pricing Form?	Drilling mud falls under item 4001 of the Bid Form the contractor would be responsible for providing this material. See Technical Specification subsection 3.14.7 in Section S for measurement and payment of Directional Drilling.
4	Since traffic control item is for the entire duration of the project, would eligibility only be upon completion?	Correct. See Technical Specification subsection 3.9 in Section S for measure and payment of Maintenance of Traffic (MOT).
5	Are all proposed Jack and Bores under Railroads? And are flagging operations and inspectors required?	Yes. As included in RR permit package and in accordance with the specifications. Contractor will be responsible for scheduling flaggers. See subsection 3.14.10.1 for details. The CSX Railroad Permits are included in Exhibit T-4 in Section T.

6	Is there a schedule or timeframe for this project?	That info will be discussed more in depth upon award. However, the ultimate goal will be for the project to be complete as soon as possible as this project is specifically for a customer.
7	Is this project a sole award?	Only one contractor will be awarded.
8	Are geotechnical bores provided?	GUC has provided a Geotechnical Investigation Report which you can find in Section T Exhibit T-1
9	Do we bill bid item 4003 footage for the 2 Jack and Bores?	Item 4003 only covers footage for pipe installed via open cut. Plastic carrier pipe as well and steel casing pipe installation should be considered for Item 4002. See measurement and payment in the Technical Specifications subsection 3.14.10.1 in Section S for casing pipe installation.
10	Would we bill 4003 footage for the 2 Jack and Bores? Or would invoicing those be based solely on Item 4002?	See answer to question #9 above.
11	What is the length for each stick of casing pipe?	Double random length (~40').
12	Are we able to convenience bore portions of the project called out as open cut?	Will be considered to awarded contractor with discussion and approval by GUC. Contractor to submit bid quantities based on bid form provided (Reference Section D).
13	If we are able to convenience bore, will unit pricing for restoration and environmental controls units be paid per actual quantities installed?	Will be considered to awarded contractor with discussion and approval by GUC. See technical specifications subsection 3.18 of section S regarding restoration of pipeline limits of disturbance measurement and payment.
14	Is the HDD unit 4001 a stand-alone unit, or will it be paid in conjunction with the open cut unit 4003?	See answer to question #1 above.
15	Can the Auger Bores under the railroad be substituted for HDDs is the CSX specifications of 15' deep is attained?	No. See CSX railroad permit (Exhibit T-4 in specification section T).

- Meeting Minutes Provided by Chris Margaritis



Presentation for:

NC 11 North Natural Gas Main Extension

Bid Due Date: May 28, 2024

Presented by:
Kimley»Horn
Expect More. Experience Better.

Agenda

- Safety Moment
- Project Overview
- Preparing the Proposal
- Bid Forms
- Bid Submission
- Bid Addenda
- Pricing Form
- Questions

Safety Moment



Wear appropriate high visibility personal protective equipment



Never approach equipment or vehicles without a clear signal from the operator



Stay alert for the sound of reversing alarms



Know the blind spots of vehicles and equipment you work near



Avoid areas where vehicles and equipment travel



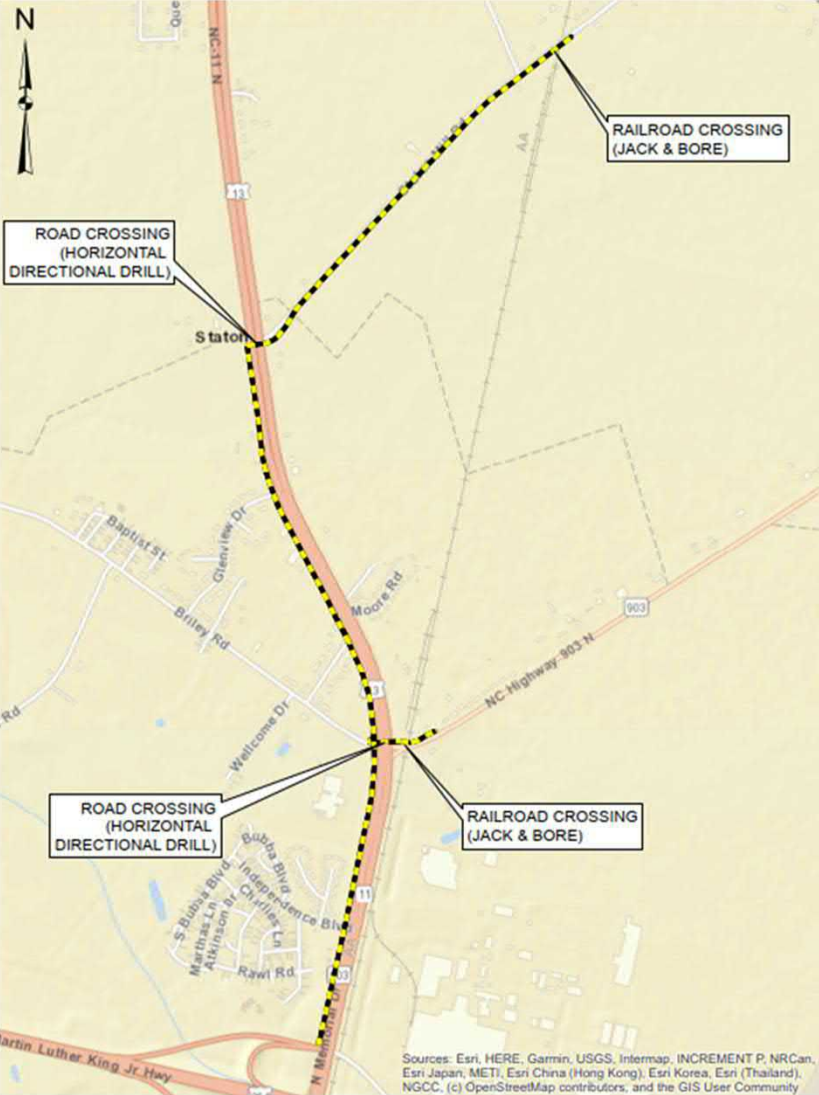
Avoid complacency – always be aware of your surroundings



PROJECT OVERVIEW

- Approximately 2.8 Miles of 8" MDPE SDR 11, 0.784" Wall
- MAOP 60 PSI
- Ten (10) Directional Drills
- 2 Crossing NCDOT HWY 11
- Two (2) Jack and Bores below Railroad
- Existing System Tie Overs
- Service Tie Overs
- 4" Main Abandonment

ROUTE OVERVIEW



PREPARING THE PROPOSAL

- **Proposal validity: 60 days from submission date**
- **If the following forms are not filled out and submitted with your bid, the bid will not be considered:**
 - Diverse Business Certifications in Section C-1 (Page 23 in PDF)
 - E-Verify form in Section D (Page 42 in PDF)

BID FORMS

- **Intent to bid should already have been submitted**
- **Read Section C for Instructions**
- **Special Instructions in Section C-1**
- **Construction DBE Goal 7% WBE Goal 4%**
- **Submit all Affidavits with Bid**

BID SUBMISSION

- Submission Deadline: **May 28, 2024 – by 2:00 PM (EST)**
 - **Must be received by 2pm**
- In Person Submission Location:
Engineering & Operations Center
3355 NC 43 North
Greenville, North Carolina 27834
- If mailing the bid, please send to:
701 Utility Way
Greenville, North Carolina 27834
- Bids must be enclosed in a sealed envelope, addressed to the Greenville Utilities Commission and the outside of the envelope must be marked **BID FOR GCP10124 – NC 11 North Natural Gas Main Extension**. Oral or faxed Bids are invalid and will be rejected.

BID ADDENDA

- Bid Address Submission Location Updated:
 - Section D Page 36 of PDF Updated Form:
 - BID Submitted to:
Dillon E. Wade, P.E.
Greenville Utilities Commission
701 Utility Way
Greenville, North Carolina 27834
- Added NCDOT Permit
- Added Safety Culture Commitment Statement
- Plan Corrections:
 - Corrected BOM on sheet 2 Plans for TDW Fitting
 - ANSI 600 changed to ANSI 150 Spherical 3-Way Tee
 - Casing Pipe 12" 0.375 Wall Grade B

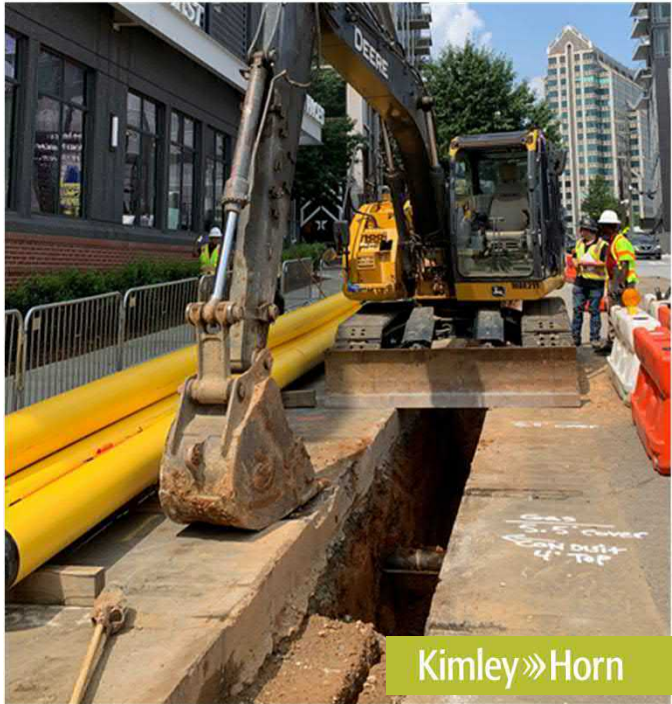
PRICING FORM

3.01 Unit Price Bids

A. Bidder will perform the following Work at the indicated unit prices:

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Amount
3001	Mobilization	LS	1	\$	\$
3002	Demobilization	LS	1	\$	\$
3003	Install, Maintain & Remove Silt Fence	LF	10,700	\$	\$
3004	Furnish, Install & Remove Stone Check Dam	EA	10	\$	\$
3005	Restoration of LOD to Preconstruction Conditions (seeded, mulched, tacked, restore trees, cleaned, graded, stabilized)	ACRE	11.91	\$	\$
3006	Traffic Control – Provide, Install, Maintain, & Remove	LS	1	\$	\$
3007	Furnish, Install & Remove One (1) #57 Stone Construction Entrance	EA	6	\$	\$
3008	Sawcut & Remove Existing Asphalt Driveway	SF	44	\$	\$
3009	Furnish & Install New Asphalt Driveway	SF	44	\$	\$
4000	Complete Survey Staking for the initial and refreshing as needed for the duration of construction	LS	1	\$	\$
4001	Fully Completed and Successful Horizontal Directional Drill	LF	3105	\$	\$
4002	Fully Completed and Successful Jack and Bore with casing vents	EA	2	\$	\$
4003	Install 8" Grade PE 2708 MDPE, SDR 11, W.T. 0.784 IN, ASTM D2513 by Conventional Trenching	LF	10,816	\$	\$
4004	Install one (1) 8" TDW Hot tap with Bypass	EA	1	\$	\$
4005	Cut, Cap & Abandon-in-Place Existing Pipeline at Tie-In Locations per Plans	LS	1	\$	\$
4006	Install Main Line Valve Assemblies	EA	8	\$	\$
4007	Install Locate Station	EA	11	\$	\$
5001	Pressure and Leak Testing	LS	1	\$	\$
5002	Pigging, Purging, and Gassing Up	LS	1	\$	\$
5003	Tie over of Existing Services and Mains as shown on plans	LS	1	\$	\$
Total of All Unit Price Bid Items					\$

QUESTIONS



THANK YOU

We Look Forward to Working with You!