



**City of Greenville**

**Arlington Boulevard Improvements  
Hooker Road to Greenville Boulevard**

**Project Number: PWD – 2019- 005**

**200 W. Fifth St.  
Greenville, NC 27858**

**PROJECT MANUAL**

**TEG PROJECT NO. 20180161**

**ISSUE FOR Bid  
March 15, 2019**



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Greenville, NC 27858  
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**NC Engineering License No. C-0206**





**CITY OF GREENVILLE  
ARLINGTON BOULEVARD IMPROVEMENTS  
HOOKER ROAD TO GREENVILLE BOULEVARD**

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**Advertisement for Bids**

Sealed proposals will be received by The City of Greenville up until April 9, 2019 at 2:00 PM, in the conference room of The City of Greenville Public Works Facility, 1500 Beatty Street, Greenville, NC 27834 for furnishing all labor, materials and equipment entering into the construction of

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in accordance with the documents prepared by The East Group, PA. The City of Greenville will follow "Formal Bidding Procedures" for this project. Proposals will be publicly opened, and a certified tabulation of the proposals will be made available after contract has been awarded.

**A Pre-Bid Conference** will be held at 10:00 AM March 27, 2019 in the third floor conference room at The City of Greenville Public Works Facility, 1500 Beatty Street, Greenville, NC. A site visit will be held after the Pre-Bid Conference. The Pre-Bid Conference is not mandatory but attendance is strongly encouraged.

Pre-bid and site visits are Eastern Daylight Savings Time.

Unit Price Bids will be received for the following:

- Single Prime Bids will also be received for all Contract work

Complete Plans, Specifications and Contract Documents will be available free from the City of Greenville's Website, Full set of printed copies will also be available from DPI, Digital Printing and Imaging, in Greenville NC **at cost of printing**, contact

**Digital Print & Imaging, Inc**  
115-a Red Banks Rd.  
Greenville, NC 27858  
**252-321-3800**  
greenville@dpiinc.net

All questions regarding plans are to be referred to the engineer of record, Todd Tripp, PE of The East Group, via **email** at [todd.tripp@eastgroup.com](mailto:todd.tripp@eastgroup.com).

The Owner reserves the right to reject any and/or all bids and to waive any and all defects and informalities in the submission of any bid.

**Abbreviated Written Summary:** Briefly and without force and effect upon the contract documents, the work of the Prime Contracts can be summarized as follows:

The project includes roadway improvements and drainage improvements. The scope of work includes the following general items:

- Provide general excavation and demolition work to replace the existing pavements on Arlington Boulevard from Hooker Road to Greenville Boulevard including approximately 6,500 LF of roadway.
- Remove and replace approximately 45,018 square yards of existing pavement and stone subgrade.

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- Provide 8-inch or 9-inch (depending upon location) Aggregate Base Course to support the new pavements including approximately 21,520 tons of stone.
- Provide approximately 4,681 tons of 4-inch binder course.
- Provide 2 or 3 inch (depending upon location) surface course to replace the existing pavements including approximately 2,957 tons of surface course.
- Provide various curb and gutter and valley gutter replacements as shown on the plans including the required ABC subgrade support as shown on the details.

In addition, the project includes drainage pipe upgrades and replacements including approximately:

- 68 LF of 60-inch RCP
  - 150 LF 54-inch RCP
  - 188 LF of 48-inch RCP
  - 576LF of 42-inch RCP
  - 484 LF of 24-inch RCP
  - 622 LF of 18-inch RCP
  - 368 LF of 15-inch RCP
  - 21 new junction boxes, grate inlets and catch basins.
- The contract will also include such traffic detour, traffic control, striping and signage, and temporary drainage and erosion control as required to complete the project in accordance with the Contract Documents.

All contractors must be properly licensed under the State Laws governing their respective trades.

All contractors are advised that the Owner has a minority and women participation policy for construction projects. Refer to the specifications for a detailed description of this policy.

The Owner reserves the right to reject any and/or all bids and to waive any and all defects and informalities in the submission of any bid.

Each proposal shall be accompanied by a cash deposit or a certified check drawn on some bank or trust company insured by the Federal Deposit Insurance Corporation, of an amount equal to not less than 5 percent of the proposal. In lieu thereof a bidder may offer a bid bond of 5 percent of the bid executed by a surety company licensed under the Laws of North Carolina to execute such bond conditioned that the surety will upon demand forthwith make payment to the obligee upon said bond if the bidder fails to execute the contract in accordance with the bid bond, and upon failure to forthwith make payment, the surety shall pay to the obligee an amount equal to double the amount of said bond. Said deposits shall be retained by the Owner as liquidated damages in event of failure of the successful bidder to execute the contract within ten days after the award or to give satisfactory surety as required by law.

Performance and Payment Bond will be required for one hundred percent (100%) of the contract price.

Payment will be made on the basis of ninety percent (90%) of monthly estimates and final payment made upon completion and acceptance of work.

A contractor Reference Form, listing 3 client references of similar work is required.

No bid may be withdrawn after the scheduled closing time for the receipt of bids for a period of 90 days.

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The Owner encourages the participation of MBE and WBE firms. Refer to the project manual for specific requirements.

Signed: Denisha Harris,  
Purchasing Manager  
City of Greenville

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## INSTRUCTION TO BIDDERS

### 1. Defined Terms

Terms used in these Instructions to Bidders that are defined in the Standard General Conditions of the Construction Contract (2013 Edition) have the meanings assigned to them in the General Conditions.

**Certain additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof.**

- 1.1.1 Bidder – one who submits a Bid directly to Owner as distinct from a sub-bidder, who submits a bid to a Bidder.
- 1.1.2 Issuing Office – the office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.
- 1.1.3 Successful Bidder – the lowest, responsible and responsive Bidder to whom Owner (on basis of Owner’s evaluation as hereinafter provided) makes an award.
- 1.1.4 Owner – the City of Greenville, NC.
- 1.1.5 Engineer – The Public Works Department, Engineering Division, of the City of Greenville.

### 2. Copies of Bidding Documents

- 2.1 Complete sets of the Bidding Documents in the number and for the sum, if any, stated in the Advertisement or Invitation to Bid may be obtained from the Issuing Office.
- 2.2 Complete sets of Bidding Documents must be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.3 Owner and Engineer in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids for the Work and do not confer a license or grant for any other use.

### 3. Qualifications of Bidders

- 3.1 To demonstrate Bidder’s qualifications to perform the Work prior to award, within five days of Owner’s request, Bidder shall submit written evidence which shall include, but not be limited to, the following:
  - 3.1.1 Official name of Bidder and length of time the organization has been in business under present name.
  - 3.1.2 Address and phone numbers of company office that will manage the Project if different than that provided in the Bid.

- 3.1.3 Officers of the company. Name and resume of designated project manager and field superintendent. Number of regular employees of the organization.
- 3.1.4 Financial statements of the Bidder's company for the last three years including assets, liabilities, and other information requested by Owner to establish the Bidder's financial capability to complete the Project. The Bidder must also provide the names, addresses, and telephone numbers for at least two (2) major equipment suppliers, two (2) major material suppliers, and two (2) major subcontractors that the Owner may contact as financial references of the Bidder. Record of failure to honor contractual commitments, consistent non-payment or payment not completed in a timely manner, and/or unfavorable references will be grounds for the Owner to disqualify the Bidder.
- 3.1.5 Name and home office address of the Surety proposed and the name and address of the responsible local claim agent.
- 3.1.6 Past experience on similar type and size projects within the past five (5) years, in the state for which this Project is to be constructed. Information shall include the names of the projects with brief descriptions, contact names and phone numbers of owners and engineers familiar with the listed projects, schedule contract time and actual completion time, original and final contract price (include brief explanation of cost overruns and change orders), and subcontractors used on the projects. Evidence of the lack of experience on similar type and size projects, consistently unfavorable interviews with owners and engineers for the projects, a consistent record of not completing the work on schedule, a record of substantial claims for change orders (all evaluations based upon interviews with the listed contact names), will be grounds for the Owner to disqualify the Bidder.
- 3.1.7 A list of all projects the Bidder will have under construction and/or commitment to at the time of the anticipated Notice to Proceed (assume 90 days from the Bid date). This list shall include a complete description of each project including the type, size, structures, major equipment items, and contract amount. This list shall identify the office(s) from which these projects are being coordinated, managed, and staffed. The list shall also identify the number of personnel staffed for each project, along with the total number of personnel for the Bidder's corporation. Evidence that the Bidder is or will be "over-extended" during the Contract Time for this Project will be considered grounds for the Owner to disqualify the Bidder.
- 3.1.8 A list of all subcontractors and suppliers expected to be utilized on this Project. The list shall include past project experience of the subcontractors and suppliers for similar type and size projects. Include contact names and telephone numbers of the subcontractors and suppliers listed for the Project.  
  
A record of poor financial history with the listed subcontractors and suppliers, failure of the Bidder to provide the proper Contract Documents to the subcontractors and/or suppliers for their bidding purposes, and/or lack of experience on similar type and size projects will be considered grounds for the Owner to disqualify the Bidder.
- 3.1.9 Statement that bidder is capable of completing the project within the stated time.
- 3.1.10 The Bidder shall list any and all construction related claims or legal actions by the Contractor against Owners or Engineers in the last five years. Provide a list of any and all construction related claims or legal actions by the Owners, Engineers, or Subcontractors in the last five years.

Evidence of a pattern of claims and/or legal action either by the Bidder or against the Bidder will be considered grounds for the Owner to disqualify the Bidder.

- 3.1.11 The above listed items shall be accompanied by the Contractor's Qualification Statement included in the next section. The Statement must be dated, executed, and notarized to be considered as complete.

Failure to include the Contractor's Qualification Statement will be considered as grounds for the Owner to disqualify the Bidder.

#### **4. Examination of Contract Documents and Site.**

- 4.1 It is the responsibility of each Bidder before submitting a Bid:

- 4.1.1. To examine thoroughly the Contract Documents and other related data identified in the Bidding Documents (including "technical data" referred to below):

- 4.1.2. To visit the site to become familiar with and satisfy Bidder as to the general, local and site conditions that may affect cost, progress, performance or furnishing of the Work;

- 4.1.3. To consider federal, state and local Laws and Regulations that may affect cost, progress, performance or furnishing of the Work;

- 4.1.4. To study and carefully correlate Bidder's knowledge and observations with the Contract Documents and such other related data; and

- 4.1.5 To promptly notify Engineer of all conflicts, errors, ambiguities or discrepancies that Bidder has discovered in or between the Contract Documents and such other related documents.

#### **4.2 Reference is made to the Supplementary Conditions for identification of the following:**

- 4.2.1 Those reports of explorations and tests of subsurface conditions at or contiguous to the site which have been utilized by Engineer in preparation of the Contract Documents. Bidder may rely upon the general accuracy of the "technical data" contained in such reports but not upon other data, interpretations, opinions or information contained in such reports or otherwise relating to the subsurface conditions at the site, nor upon the completeness thereof for the purposes of bidding or construction. Subsurface data are offered in good faith solely for the purpose of placing the Bidder in receipt of all information available to the Owner and the Engineer and in no event is to be considered part of the Contract Documents.

- 4.2.2 Those drawings of physical conditions in or relating to existing surface and subsurface structures (except Underground Facilities) which are at or contiguous to the site that have been utilized by Engineer in preparation of the Contract Documents. Bidder may rely upon the general accuracy of the "technical data" contained in such drawings but not upon other data, interpretations, opinions or information shown or indicated in such drawings or otherwise relating to such structures, nor upon the completeness thereof for the purposes of bidding or construction.

Copies of such reports and drawings will be made available by Owner to any Bidder on request. Those reports and drawings are part of the Contract Documents. Bidder is responsible for any interpretation or conclusion drawn from any “technical data” or any such data, interpretations, opinions or information.

- 4.2.3 Information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the site is based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities or others, and Owner and Engineer do not assume responsibility for the accuracy or completeness thereof unless it is expressly provided otherwise in the Supplementary Conditions.
- 4.3 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions and Underground Facilities, and possible changes in the Contract Documents due to differing or unanticipated conditions appear in Paragraphs 4.02 and 4.03 of the General Conditions.
- 4.4 Before submitting a Bid each Bidder will be responsible to obtain such additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the site or otherwise, which may affect cost, progress, performance or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences or procedures of construction to be employed by Bidder and safety precautions and programs incident thereto or which Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price and other terms and conditions of the Contract Documents.
- 4.5 On request, Owner will provide each Bidder access to the site to conduct such examinations, investigations, explorations, tests and studies, as each Bidder deems necessary for submission of a Bid. Bidder must fill all holes and clean up and restore the site to its former conditions upon completion of such explorations, investigations, tests and studies.
- 4.6 Reference is made to the Supplementary Conditions or the Division 1 Project Requirements for the identification of the general nature of work that is to be performed at the site by Owner or others (such as utilities and other prime contractors) that relates to the work for which a Bid is to be submitted. On request, Owner will provide to each Bidder for examination access to or copies of Contract Documents (other than portions thereof related to price) for such work.
- 4.7 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Contract Documents and applying the specific means, methods, techniques, sequences or procedures of construction (if any) that may be shown or indicated or expressly required by the Contract Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities and discrepancies that Bidder has discovered in the Contract Documents and the written resolutions thereof by Engineer is acceptable to Bidder, and that the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.
- 4.8 The Provisions of IB-4.1 through 4.8, inclusive, do not apply to Asbestos, Polychlorinated biphenyl (PCB), Petroleum, Hazardous Waste or Radioactive Material covered by Paragraph 4.06 of the General Conditions.

**5. Availability of Lands for Work, etc.**

The lands upon which the Work is to be performed, rights-of-way and easements for access thereto and other lands designated for use by CONTRACTOR in performing the Work are identified in the Contract Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by the CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by Owner unless otherwise provided in the Contract Documents.

**6. Interpretations and Addenda.**

- 6.1. All questions about the meaning or intent of the Bidding Documents are to be directed to the Engineer. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by Engineer as having received the Bidding Documents. Questions received less than ten days prior to the date for opening of Bids may not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 6.2. Addenda may also be issued to modify the Bidding Documents as deemed advisable by Owner or Engineer.

**7. Bid Security.**

- 7.1 Each Bid must be accompanied by Bid security made payable to Owner in an amount of five percent of Bidder's maximum Bid price and in the form of a certified or bank check or a Bid Bond (on form attached, if a form is prescribed) issued by a surety meeting the requirements of Paragraph 5.02 of the General Conditions.
- 7.2 The Bid security of Successful Bidder will be retained until such Bidder has executed the Agreement, furnished the required contract security and met the other conditions of the Notice of Intent to Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Agreement and furnish the required contract security within fifteen days after the Notice of Intent to Award, Owner may annul the Notice of Intent to Award and the Bid security of that Bidder will be forfeited.

The Bid security of other Bidders whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of the seventh day after the Effective Date of the Agreement or the ninetieth day after the Bid opening, whereupon Bid security furnished by such Bidders will be returned. Bid security with Bids which are not competitive will be returned within seven days after the Bid opening if requested by Bidder.

**8. Contract Times.**

The number of days within which, or the dates by which, the Work is to be substantially completed and also completed and ready for final payment (the term "Contract Times" is defined in paragraph 1.01A (14) of the General Conditions) are set forth in the Agreement and incorporated therein by reference to the attached Bid Form.

**9. Liquidated Damages.**

Provisions for liquidated damages are set forth in the Agreement and incorporated therein by reference to the attached Bid Form.

**10. Substitute and "Or Equal" Items.**

The Contract, if awarded, will be on the basis of materials and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute of "or equal" items. Whenever it is indicated in the Drawings or specified in the Specifications that a substitute or "or equal" item or material or equipment may be furnished or used by CONTRACTOR if acceptable to Engineer, application for such acceptance will not be considered by Engineer until after the Effective Date of the Agreement. The procedure for submission of any such application by CONTRACTOR and consideration by Engineer is set forth in Paragraph 6.05 of the General Conditions and may be supplemented in the Division 1 Project Requirements.

**11. Subcontractors, Suppliers and Others.**

If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers and other persons and organizations (including those who are to furnish the principal items of material and equipment) to be submitted to Owner in advance of a specified date prior to the Effective Date of the Agreement, apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening submit to Owner a list of all such Subcontractors, Suppliers and other persons and organizations proposed for those portions of the Work for which such identification is required. 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, person or organization if requested by Owner. An Owner or Engineer who after due investigation has reasonable objection to any proposed Subcontractor, Supplier, other person or organization, may before the Notice of Intent to Award is given request apparent Successful Bidder to submit an acceptable substitute, without an increase in Bid price.

If apparent Successful Bidder declines to make any such substitution, Owner may award the contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers and other persons and organizations. The declining to make requested substitutions would not constitute grounds for sacrificing the Bid security of any Bidder. Any Subcontractor, Supplier, other person or organization listed and to whom Owner or Engineer does not make written objection prior to the giving of the Notice of Intent to Award will be deemed acceptable to Owner and Engineer subject to revocation of such acceptance after the Effective Date of the Agreement as provided in Paragraph 6.06B of the General Conditions.

11.2 Refer to MINORITY BUSINESS SUPPLEMENTAL CONDITIONS for the City of Greenville's M/WBE goals.

11.3 No CONTRACTOR shall be required to employ any Subcontractor, Supplier, other person or organization against which CONTRACTOR has reasonable objection.

**12. Bid Form.**

12.1 The Bid Form is included with the Bidding Documents; additional copies may be obtained from Engineer (or the Issuing Office).

- 12.2 All blanks on the Bid Form must be completed by printing in ink or by typewriter.
- 12.3 Bids by corporations must be executed in the corporate name by the president or a vice-president (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation must be shown below the signature.
- 12.4 Bids by partnerships must be executed in the partnership name and signed by a partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature.
- 12.5 All names must be typed or printed in ink below the signature.
- 12.6 The Bid shall contain an acknowledgment of receipt of all Addenda (the numbers of which must be filled in on the Bid Form).
- 12.7 The address and telephone number for communications regarding the Bid must be shown.
- 12.8 Evidence of authority to conduct business as an out-of-state corporation in the state where the Work is to be performed shall be provided in accordance with Paragraph 3 above. State Contractor license number must also be shown.

**13. Submission of Bids.**

13.1 Bids shall be submitted at the time and place indicated in the Advertisement of Invitation to Bid and shall be enclosed in an opaque sealed envelope, marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted) and name and address of Bidder and accompanied by the Bid security and other required documents. If the Bid is sent through the mail or other delivery system the sealed envelope shall be enclosed in a separate envelope with the notation "BID ENCLOSED" on the face of it. Facsimile (Fax) bids are not acceptable.

- 13.2 The following items must be submitted as part of the completed Bid package at the time of Bid:
- Bid Form
  - Bid Security - Bid Bond or Certified Check
  - Non-Collusion Affidavit
  - M/WBE Documentation (if applicable)

**14. Modification and Withdrawal of Bids.**

- 14.1 Bids may be modified or withdrawn by an appropriate document duly executed (in the manner that a Bid must be executed) and delivered to the place where Bids are to be submitted at any time prior to the opening of Bids.
- 14.2 If, within seventy-two 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, that Bidder may withdraw its Bid and the Bid security will be returned in accordance with applicable North Carolina laws. Thereafter, that Bidder will be disqualified from further bidding on the Work to be provided under the Contract Documents.

**15. Opening of Bids.**

Bids will be opened and (unless obviously non-responsive) read aloud publicly at the place where Bids are to be submitted. 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.

**16. Bids to Remain Subject to Acceptance.**

All Bids will remain subject to acceptance for ninety (90) days after the day of the Bid opening, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to that date.

**17. Award of Contract.**

- 17.1 Owner reserves the right to reject any or all Bids, including without limitation the rights to reject any or all nonconforming, non-responsive, unbalanced or conditional Bids and to reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by Owner, including but not limited to past performance by the bidder involving other City projects. Owner also reserves the right to waive all informalities not involving price, time or changes in the Work and to negotiate contract terms with the Successful Bidder. 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. Discrepancies between words and figures will be resolved in favor of the words.
- 17.2 In evaluating Bids, Owner will consider the qualifications of Bidders, whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Intent to Award.
- 17.3 Owner may consider the qualifications and experience of Subcontractors, Suppliers, and other persons and organizations proposed for those portions of the Work as to which the identity of Subcontractors, Suppliers, and other persons and organizations must be submitted as provided in the Supplementary Conditions. Owner also may consider the operating costs, maintenance requirements, performance data and guarantees of major items of materials and equipment proposed for incorporation in the Work when such data is required to be submitted prior to the Notice of Intent to Award.
- 17.4 Owner may conduct such investigations as Owner deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications and financial ability of Bidders, proposed Subcontractors, Suppliers and other persons and organizations to perform and furnish the Work in accordance with the Contract Documents to Owner's satisfaction within the prescribed time.
- 17.5 If the contract is to be awarded, it will be awarded to lowest Bidder whose evaluation by owner indicates to Owner that the award will be in the best interests of the Project.



- 17.6 The Owner reserves the right to award any or all parts of a Contract but separate parts of the same Contract will not be awarded to different contractors.
- 17.7 If the contract is to be awarded, Owner will give Successful Bidder a Notice of Intent to Award within ninety days after the day of the Bid opening.

**18. Contract Security.**

Paragraph 5.1 of the General Conditions and the Supplementary Conditions set forth Owner's requirements as to performance and payment bonds. When the Successful Bidder delivers the executed Agreement to Owner, it must be accompanied by the required performance and payment Bonds.

**19. Signing of Agreement.**

When Owner gives a Notice of Intent to Award to the Successful Bidder, it will be accompanied by the required number of unsigned counterparts of the Agreement with all other written Contract Documents attached. Within ten (10) days thereafter CONTRACTOR shall sign and deliver the required number of counterparts of the Agreement and attached documents to Owner with the required Bonds. Within fourteen (14) days after award Owner shall deliver one fully signed counterpart to CONTRACTOR. Each counterpart is to be accompanied by a complete set of the Drawings with appropriate identification.

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# CITY OF GREENVILLE MBE/WBE PLAN

## POLICY STATEMENT

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

## OVERVIEW

The City of Greenville Minority and Women Business Enterprise Program (M/WBE) is a voluntary goals program in construction, purchasing, and professional and personal services based on "good-faith efforts". These goals are established for a three-year period and achievement will be evaluated annually.

The goals of the City for utilization of minority and women business enterprises are:

Minority business participation in construction services. . . . .	10%
Women business participation in construction services . . . . .	6%
Minority business participation in supplies and materials purchases. . . . .	2%
Women business participation in supplies and materials purchases. . . . .	2%
Minority business participation in professional and personal services. . . . .	4%
Women business participation in professional and personal services. . . . .	4%

# CITY OF GREENVILLE MBE/WBE PLAN

## I. INTRODUCTION

Efforts have been made by the City's staff to increase the amount of business the City awards to minority and women owned businesses. These efforts have produced minimal results.

In 1989, the North Carolina General Assembly amended G.S. 143-128 requiring the establishment of "verifiable percentage goals for minority business participation in contracts for the erection, construction, alteration or repair of public buildings" where the cost exceeded \$100,000.

Cities and other governmental bodies were to adopt a verifiable goal for participation by minority businesses after notice and public hearing. On December 12, 1989, the City of Greenville adopted an interim Minority Business Enterprise Participation Plan with a goal of ten (10) percent participation by minority individuals and businesses until a sufficient factual data base was collected to establish verifiable goals.

The City of Greenville conducted a Utilization Study of minority businesses in the City's purchasing programs based on an appropriate pool of qualified M/WBES. The City of Greenville contracted with the North Carolina Institute of Minority Economic Development to assist the City in establishing a verifiable Minority and Women Business Enterprise Goals Plan based on the statistical evidence of the study. The City of Greenville, in setting verifiable goals for the City's M/WBE Plan, considered statistical data derived from the Utilization Study and available potential M/WBES that could perform work in the disciplines germane to the City itself. The goals of the City do not require nor provide for racially based set-asides; rather they require a good faith effort by the City and its contractors to recruit and select minorities and women businesses, consistent with North Carolina General Statutes and the Constitution of the United States as interpreted by the **Croson Decision**.

## II. ADMINISTRATION

The City Manager is authorized to take all usual and legal administrative actions necessary to implement this Plan. The ultimate responsibility for the MBE/WBE Plan's administration is assigned to the City Manager. The City Manager is either to be personally responsible or to designate a specific person to coordinate and manage this Plan. The City Manager or his designee is responsible for determining whether a contractor has complied with the provisions of this Plan or has shown good-faith effort to do so. Except for those staff services specifically assigned by this Plan to other departments, the heads of departments responsible for construction, procurement of services and materials shall be responsible to the City Manager or his designee and shall cooperate with the City Manager in implementing this Plan.

The M/WBE Plan shall apply to all contracts for construction, supplies, and

## CITY OF GREENVILLE MBE/WBE PLAN

Services as specified in Sections IV through VI. The provisions of this Plan take precedence over any other department plans or procedures in conflict herewith, except specific requirements mandated by terms or conditions of agreements in force between the City and the federal government or the State of North Carolina that require different procedures than those described in this Plan. This Plan will be evaluated at the end of three years to determine its effectiveness and what adjustments are required.

### III. DEFINITIONS

**Affirmative Action** - Specific steps to eliminate discrimination and efforts to ensure nondiscriminatory results and practices in the future, and to fully involve minority business enterprises and women business enterprises in contracts and programs.

**Bidder/Participant** - Any person, firm, partnership, corporation, association, or joint venture seeking to be awarded a public contract or subcontract.

**Contract** - A mutually binding legal relationship or any modification thereof obligating the seller to furnish equipment or service, including construction and leases, and obligating the buyer to pay for them.

**Contractor** - Any person, firm, partnership, corporation, association, or joint venture that has been awarded a public contract or lease, including every subcontract on such a contract.

**Discrimination** - To distinguish, differentiate, separate and/or segregate on the basis of age, race, religion, color, sex, national origin, handicap and/or veteran status.

**Equipment** - Includes materials, supplies, commodities, and apparatus.

**Goal** - A voluntary percentage or quantitative objective.

**Joint Venture** - An association of two or more businesses to carry out a single business enterprise for profit, for which purpose they combine their property, capital, efforts, skills, and knowledge.

**Lessee** - A business that leases, or is negotiating to lease, property from the City or equipment or services to the City of Greenville, or to the public on City property.

**Minority** - A person who is a citizen or lawful permanent resident of the United States and who is:

- a. Black (a person having origins in any of the black racial groups of Africa);
- b. Hispanic (a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race);

## CITY OF GREENVILLE MBE/WBE PLAN

- c. Portuguese (a person of Portuguese, Brazilian, or other Portuguese culture origin, regardless of race);
- d. Asian (a person having origins in any of the original people of the Far East, Southeast Asia, the Indian sub-continent, or the Pacific Islands); and
- e. American Indian and Alaskan Native (a person having origins in any of the original people of North America).

**MBE/WBE** - Any minority or women business enterprise.

**Minority or Women Business Enterprise (MBE/WBE)** - A business that is at least fifty-one (51) percent owned and controlled by minority group members or women. An MBE/WBE is **bona fide** only if the minority group or female ownership interests are real and continuing and not created solely to meet the MBE/WBE requirement. In addition, the MBE/WBE must itself perform satisfactory work or services or provide supplies under the contract and not act as a mere conduit. In short, the contractual relationship must also be **bona fide**.

### IV. PROCEDURES FOR CONSTRUCTION CONTRACTS

#### A. Purpose and Application

1. The general purpose of this Plan is to help develop and support Minority and Women Business Enterprises (MBE and WBE) by providing opportunities for participation in the performance of all construction contracts financed entirely with City funds.
2. This Plan shall apply to construction contracts when the City's estimated contract cost is \$50,000 or more, except when a contract is exempt from competitive bidding under the General Statutes of North Carolina. Contracts between \$5,000 and \$50,000 that are negotiated will also be covered.
3. Where contracts are financed in whole or in part with federal or state funds, including grants, loans, or other funding sources containing MBE and WBE Programs, the City will, where permitted by the grantor, meet the Plan requirements with the highest MBE/WBE goals. The City Manager will be responsible for monitoring the Plan to ensure the goals are met.
4. Since City construction contracts are prepared and administered by the Engineering Department and various other departments, each of these departments shall prepare such departmental procedures for bidding and outreach as are required to implement this Plan.
  - a. Within ninety (90) days of City approval of this Program, appropriate staff and equipment will be in place for full implementation.

## CITY OF GREENVILLE MBE/WBE PLAN

- b. The departmental procedures and contract provisions shall be in effect for all bid documents Issued after the date of the City's approval.

### B. MBE/WBE Goals

1. To implement the purpose of this Plan, the goal shall be to award at least ten (10) percent of the total of all construction contract award amounts in each fiscal year in each department to MBE firms and at least four (6) percent to WBE firms.
2. The City Manager and/or M/WBE Plan Coordinator may determine that higher or lower goals are appropriate on a project by-project basis, where it can be shown that the type, size, or location of the project will affect the availability of MBE and WBE firms, so long as the aggregate of all contracts does not lower the annual goals.

### C. Bid Documents

1. Bidders shall submit MBE/WBE information with their bids. Such information shall be subject to verification by the City prior to the awarding of the contract. The information shall include names of MBE/WBES to be used and the dollar value of each such MBE/WBE transaction.
2. Contractors, subcontractors, suppliers, or MBE/WBE members of a joint venture intended to satisfy the City's MBE/WBE goals shall be certified by the State Department of Transportation (DOT) or shall be listed on another Public Agency certified list. The City may accept any of the following as alternate sources of certified MBES and WBES:
  - a. Listing in a City or certified registry established in accordance with Section IV, 0(2) of this Plan.
  - b. A self-certification form for a MBE/WBE or a MBE/WBE member of a joint venture not already listed in the Registry or certified by the State.
  - c. Evidence of certification or the self-certification form submitted to the City at or before the bid opening.

### D. City of Greenville Responsibilities

1. **MBE/WBE Registry** - The City will establish and maintain a registry of certified Minority and Women Business Enterprises. The purpose of the registry is to provide a resource for prime bidders on City's construction projects who intend to solicit bids from MBE and WBE subcontractors and suppliers to

## CITY OF GREENVILLE MBE/WBE PLAN

meet the City's MBE and WBE goals. The registry will not constitute a recommendation or endorsement of any listed firm. The registry will be developed and maintained by advertising at least annually, for letters of interest from MBE and WBE firms and community organizations wishing to be included in the registry and notified of construction contracts and sole source contracts (one source). Advertisements will be placed in at least one newspaper of general circulation and in at least one minority newspaper in the state.

### 2. Certification

- (a) The certification process will involve submission of a completed City certification form or inclusion on another acceptable public agency registry. All businesses must be recertified every twenty-four (24) months. The submitted form will be subject to approval by the City Manager or his designee. The City may accept proof of certification from the following:
- North Carolina Department of Transportation
  - North Carolina Department of Administration
  - Other North Carolina cities with established certification procedures.
- (b) Certification decisions made by the City can be appealed by the applicant or a third-party challenger. Protests must be delivered to the MIWBE Office in writing or forwarded to the City Manager's Office. MBE/WBE applicants for certification with the City are allowed ten (10) days after the receipt of the certification decision to protest. A third-party challenge can be submitted at any time. Written protests will be reviewed by the City Manager, who will render a final decision.

### 3. Certification Eligibility Standards

- (a) The eligibility of a business is determined by the ownership and control of the business.
- (b) An eligible Minority Business Enterprise owner is a citizen or lawful permanent resident of the United States, a member of a recognized ethnic or racial group, and fifty one (51) percent owner of the business.

The eligible ethnic or racial groups are:

- Black



## CITY OF GREENVILLE MBE/WBE PLAN

- . Hispanic
- . Portuguese
- . Asian/Pacific Islander
- . American Indian/Alaskan Native

(c) An eligible Women Business Enterprise owner is a citizen or lawful resident of the United States and a fifty-one (51) percent owner of the business and is female.

4. **Decertification Procedures** - A firm certified as a MBE/WBE may be decertified by the City Manager or his designee after an investigation and hearing for anyone of the following reasons:
- a. Change of Status - The City Manager or his designee may decertify a MBE/WBE if he finds that the ownership or control of the business changes so that the business no longer meets the requirements of Section IV, 0(3) (b) and (c) above.
  - b. Failure to comply with the MBE/WBE Plan - The certification of a business as a MBE/WBE may be revoked by the City Manager or his designee if he finds any of the following conditions:
    - 1. That a business has submitted inaccurate, false or incomplete information to the City;
    - 2. That in performance of a contract, a business has failed to comply with requirements of the contract with the City;
    - 3. That in performance of a contract, a business has failed to comply with MBE/WBE requirements of a contract established by a contractor with the City in response to City requirements; or
    - 4. That a business has otherwise failed to comply with the provisions of this MBE/WBE Plan.
  - c. Appeal of Decertification - A business may appeal a determination to decertify as a MBE/WBE by utilizing the procedures described in Section IV, D(2) above.
5. **Pre-bid Conference** - The City may hold a pre-bid conference on all formal bid contracts for all prospective bidders, subcontractors, and MBE/WBES for the purpose of explaining the provisions of the MBE/WBE Plan, the process for bidding, and the contract to be performed. Available data on MBE/WBES interested and/or capable of engaging in the prospective contract

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shall be made available to prospective bidders, contractors, and subcontractors.

### **E. Contractor Responsibilities**

1. The contractor (bidder) shall make good-faith efforts to encourage participation of MBE/WBES in projects prior to submission of bids in order to be considered as a responsive bidder. A good-faith effort shall include, at a minimum, specific affirmative action steps and complete documentation thereof. The following list of factors to determine good-faith effort is not exclusive or exhaustive:
  - a. Whether the bidder attended any pre-solicitation or pre-bid meetings, if scheduled by the City;
  - b. Whether the bidder identified and selected specific items of the project for which the contract could be performed by Minority and/or Women Business Enterprises, to provide an opportunity for participation by those enterprises (including, where appropriate, breaking down contracts into economically feasible units to facilitate MBE/WBE participation);
  - c. Whether the bidder advertised, a reasonable time before the date the bids are opened, in one or more daily or minority weekly newspaper or trade association (i.e., N.C. Minority Business Association), trade journal or other media;
  - d. Whether the bidder provided mail notice of his or her interest in bidding on the contract to at least three (3) Minority or Women Business Enterprises (for each identified sub-item of the contract) licensed to provide the specific items of the project a reasonable time prior to the opening of bids;
  - e. Whether the bidder provided interested Minority and Women Business Enterprises with information about the plans, specifications, and requirements for the selected subcontracting or material supply work;
  - f. Whether the bidder contacted the City's MIWBE Office for assistance in identifying minority and women businesses certified with the City and three (3) approved public agencies as referenced in Section IV, D(2)a;
  - g. Whether the bidder negotiated in good-faith with Minority or Women Business Enterprises and did not unjustifiably reject as unsatisfactory bids prepared by Minority or

## CITY OF GREENVILLE MBE/WBE PLAN

Women Business Enterprises, as defined by the City;

- h. Whether the bidder, where applicable, advised and made efforts to assist interested Minority and Women Business Enterprises in obtaining bonds, lines of credit, or insurance required by the City or contractor;
- i. Whether the bidder's efforts to obtain Minority and Women Business Enterprise participation could reasonably be expected by the City to produce a level of participation sufficient to meet the goals of the City.

Bidders are cautioned that even though their submittal indicates they will meet the MBE/WBE goals, they should document their good-faith efforts and be prepared to submit this information to protect their eligibility for award of the contract in the event the City questions whether the good-faith requirement has been met.

- 2. Performance of MBE and WBE Subcontractors and Suppliers The MBE/WBES listed by the contractor on the Schedule of MBE/WBE Participation, which are determined by the City to be certified, shall perform the work and supply the materials for which they are listed unless the contractor has received prior written authorization from the City to perform the work with other forces or to obtain the materials from other sources.

The contractor shall enter into and supply copies of fully executed subcontracts with each MBE/WBE listed on the "Bidder MBE/WBE Information" form to the City's MIWBE Plan Coordinator after award of the contract and prior to the issuance of a Notice to Proceed. Any amendments to the subcontracts shall be submitted to the MIWBE Office within five (5) days of execution.

Authorization to utilize other forces or sources of materials may be requested for the following reasons:

- a. The listed MBE/WBE, after having had a reasonable opportunity to do so, fails or refuses to execute a written contract, when such written contract, based upon the general terms, conditions, plans and specifications for the project, or on the terms of such subcontractor's or supplier's written bid, is presented by the contractor.
- b. The listed MBE/WBE becomes bankrupt or insolvent.
- c. The listed MBE/WBE fails or refuses to perform his/her subcontract or furnish the listed materials.

## CITY OF GREENVILLE MBE/WBE PLAN

- d. 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.

### **F. Awarding of Contracts**

1. If a construction contract is to be awarded, it shall be awarded in accordance with North Carolina General Statutes to the lowest responsible bidder who complies with all of the prescribed requirements and either:
  - a. Made a good-faith effort to comply with these goals and requirements before the time bids are opened as described above. Where a good-faith effort is claimed by the apparent lowest responsible bidder, the bidder shall be required to submit documentation WITHIN TWENTY-FOUR (24) HOURS OF THE CITY'S NOTIFICATION, which in most instances will occur the day of bid opening to show that the criteria for good-faith efforts have been met, or
  - b. Once a firm is determined to be an eligible MBE/WBE, and before the contract is awarded, the total dollar value to be paid to the MBE/WBE shall be evaluated by the MIWBE Office to ensure that it is in accordance with the bidder's proposal.

If the evaluation shows that the bidder has misrepresented MBE/WBE participation or has not made a good-faith effort to meet the contract goals for MBE and WBE participation, the bidder may be disqualified.

### **G. Counting MBE/WBE Participation Toward Meeting the Goals –**

The degree of participation by MBE/WBE contractors, subcontractors, suppliers, or joint-venture partners in contract awards shall be counted in the following manner:

1. Once a firm is determined to be an eligible MBE/WBE contractor in accordance with this Plan, the total dollar value of the contract awarded to the MBE/WBE is counted as participation.
2. The goals can be met by any certified MBE/WBE contractor, subcontractor, supplier, trucker, or joint venture partner as listed in the City and agency directory. All MBE/WBES used to meet the goal must be certified by the City or an approved agency at the time of bid opening. Only certified firms listed in the directory can be

## CITY OF GREENVILLE MBE/WBE PLAN

counted toward the goal. The standard for certification is set forth in this Plan.

3. The total dollar value of a contract with a business owned and controlled by a minority woman is counted toward either the minority goal or the goal for women, but not toward both. The contractor or City employing the firm may choose the goal to which the value is applied.
4. In the case of a joint venture, the joint venture recipient or contractor may count toward its MBE/WBE goals a portion of the total dollar value of the contract that the MBE/WBE partner's participation in the joint venture represents. Credit will be given equal to the minority partner's percentage of ownership in the joint venture. A MBE/WBE joint-venture partner must be responsible for a clearly defined portion of the work to be performed in addition to satisfying requirements for ownership and control.
5. A recipient or contractor may count toward its MBE/WBE goals only expenditures to MBE/WBE whose ownership interests are real and continuing and not created solely to meet the City's goals for participation, and that perform a commercially useful function in the work of a contract. A MBE/WBE is considered to perform a commercially useful function when it is responsible for execution of a distinct element of the work of a contract and carries out its responsibilities by actually performing, managing, and supervising the work involved. To determine whether a MBE/WBE is performing a commercially useful function, the M/WBE Office shall evaluate the amount of work subcontracted, industry practices, and other relevant factors. Consistent with normal industry practices, an MBE/WBE may enter into subcontracts. If a MBE/WBE contractor subcontracts a significantly greater portion of the work of the contract than would be expected on the basis of normal industry practices, the MBE/WBE shall be presumed not to be performing a commercially useful function. Evidence to rebut this presumption may be presented to the City. The MBE/WBE may present evidence to rebut this presumption. The M/WBE Office's decision on the rebuttal of this presumption is subject to review by the City Manager or his designated representative. Once a firm is determined to be an eligible MBE/WBE in accordance with this section, the total dollar value of the contract awarded to MBE/WBE is counted toward the applicable MBE/WBE goals, except as provided in the provisions of this section.

## CITY OF GREENVILLE MBE/WBE PLAN

6. A contractor may count toward its MBE/WBE goals expenditures for materials and supplies obtained from MBE/WBE suppliers and manufacturers, provided that the MBE/WBE assumes the actual and contractual responsibility for the provision of the materials and supplies.

**H. Documentation of Attainment of MBE/WBE Participation Requirements** - In order that the City Manager may make a recommendation to the City as to the responsiveness of bidders, bidders shall be required to submit the following information on each MIWBE-related subcontract:

1. A description of the subcontract and purchase(s) of significant equipment and supplies to be used to perform the subcontract or prime contract, including the name and address of each MBE/WBE firm selected, and the name and telephone number of a contact person;
2. The dollar amount of participation of each MBE/WBE;
3. A statement of intent from the MBE/WBE subcontractor or material supplier as
  - a. Identified in Section IV, H(1) above that they intend to contract or supply the materials, or
  - b. Sworn statements, with appropriate documentation, showing that the contractor made a good-faith effort to comply with the MBE/WBE Plan in accordance with Section IV, E of this Plan.

### **VII. GRIEVANCE PROCEDURE**

Any participant feeling himself/herself aggrieved by implementation of the MBE/WBE Program may present such grievance to the City. The grievance (except for certification as a MBE/WBE) shall be first discussed with the responsible operating department. If the grievance is not resolved, a written description of the grievance with appropriate supporting evidence shall be presented to the M/WBE Program Coordinator. The M/WBE Program Coordinator will review the grievance and supporting evidence and make a written response to the participant within ten (10) working days. In the event the participant is not satisfied, said participant may appeal the grievance by filing a written description thereof and supporting evidence with the City Manager. The City Manager shall hear the grievance within ten (10) working days and shall make a decision thereon, which shall be final.

**BID FORM**

PROJECT IDENTIFICATION: **ARLINGTON BOULEVARD IMPROVEMENTS  
HOOKER ROAD TO GREENVILLE BOULEVARD  
GREENVILLE, NORTH CAROLINA**

THIS BID IS SUBMITTED TO: **CITY OF GREENVILLE PUBLIC WORKS DEPARTMENT  
1500 BEATTY STREET  
GREENVILLE, NORTH CAROLINA**

1. The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into an agreement with OWNER in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the Bid Price and within the Bid Times indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.
2. BIDDER accepts all of the terms and conditions of the Advertisement or Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for ninety days after the day of Bid opening. BIDDER will sign and deliver the required number of counterparts of the Agreement with the Bonds and other documents required by the Bidding Requirements within ten days after the date of OWNER'S Notice of Intent to Award.
3. In submitting this Bid, BIDDER represents, as more fully set forth in the Agreement, that:
  - (a) BIDDER has examined and carefully studied the Bidding Documents and the following Addenda receipt of all, which is hereby acknowledged: (List Addenda by Addendum Number and Date)

<u>Addendum Number</u>	<u>Date</u>
_____	_____
_____	_____
_____	_____

- (b) BIDDER has visited the site and become familiar with and is satisfied as to the general, local and site conditions that may affect cost, progress, performance and furnishing of the Work;
- (c) BIDDER is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress, performance and furnishing of the Work.
- (d) BIDDER has carefully studied all reports of explorations and tests of subsurface conditions at or contiguous to the site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions. BIDDER accepts the determination set forth in paragraph the

## ARLINGTON BOULEVARD IMPROVEMENTS – HOOKER ROAD TO GREENVILLE BOULEVARD

Supplementary Conditions of the extent of the "technical data" contained in such reports and drawings upon which BIDDER is entitled to rely as provided in paragraph 4.02 of the General Conditions. BIDDER acknowledges that such reports and drawings are not Contract Documents and may not be complete for BIDDER'S purposes. BIDDER acknowledges that OWNER and Engineer do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Bidding Documents with respect to Underground Facilities at or contiguous to the site. BIDDER has obtained and carefully studied (or assumes responsibility for not having done so) all such additional or supplementary examinations, investigations, explorations, tests studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the site or otherwise which may affect cost progress, performance or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction to be employed by BIDDER and safety precautions and programs incident thereto. BIDDER does not consider that any additional examinations, investigations, explorations, tests, studies or data are necessary for the determination of this Bid for performance and furnishing of the Work in accordance with the times, price and other terms and conditions of the Contract Documents.

- (e) BIDDER is aware of the general nature of Work to be performed by Owner and others at the site that relates to Work for which this Bid is submitted as indicated in the Contract Documents.
  - (f) BIDDER has correlated the information known to BIDDER, information and observations obtained from visits to the site, reports and drawings identified in the Contract Documents and all additional examinations, investigations, explorations, tests, studies and data with the Contract Documents.
  - (g) BIDDER has given ENGINEER written notice of all conflicts, errors, ambiguities or discrepancies that BIDDER has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to BIDDER, and the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work for which this Bid is submitted.
  - (h) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; BIDDER has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; BIDDER has not solicited or induced any person, firm or corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for itself any advantage over any other BIDDER or over OWNER.
4. BIDDER will complete the Work in accordance with the Contract Documents for the following unit price(s):

All specific cash allowances are included in the price(s) set forth and have been computed in accordance with paragraph 11.02 of the General Conditions.

Unit Prices have been computed in accordance with paragraph 11.03 of the General Conditions.



5. BIDDER acknowledges that quantities for unit price work are not guaranteed and final payment will be based on actual quantities determined as provided in the Contract Documents. BIDDER agrees that the Work will be completed and ready for final payment in accordance with paragraph 14.07 of the General Conditions on or before the dates or number of calendar days indicated in the Agreement.
6. BIDDER accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified in the Agreement.
7. **Iran Divestment Act** - Vendor/Bidder certifies that:
  - (a) It is not on the Iran Final Divestment List created by the NC State Treasurer pursuant to N.C.G.S. 147-86.58.
  - (b) It will not take any actions causing it to appear on said list during the term of any contract with the City
  - (c) It will not utilize any subcontractor to provide goods and services hereunder that is identified on said list.
8. **E-Verify Compliance** - Bidder/Proposer acknowledges that compliance with the requirements of Article 2 of Chapter 64 of the North Carolina General Statutes is required by the Contractor and its Subcontractors by North Carolina Law and the provisions of the Contract Documents. The Bidder/Proposer represents that the Bidder/Proposer and it's Subcontractors are in compliance with the requirements of Article 2 of Chapter 64 of the North Carolina General Statutes. Article 2 of Chapter 64 of the North Carolina General Statutes requires employers, that transact business in the State of North Carolina and employ 25 or more employees in the State of North Carolina, to electronically verify the legal employment status of an employee through the federal E-Verify program after hiring the employee to work in the State of North Carolina.
9. List of Subcontractors – Attach page if additional space is needed.

LIST OF SUBCONTRACORS	
NAME OF COMPANY/ADDRESS	BID

10. The following documents are attached to and **made** a condition of this Bid:
  - Required Bid Security in the form of Bid Bond or Certified Check
  - Non-Collusion Affidavit
  - 00401- Contractor Reference Form
  - 00402 - M/WBE Documentation (if applicable)

11. Terms used in this Bid which are defined in the General Conditions or Instructions will have the meanings indicated in the General Conditions or Instructions.

SUBMITTED on the \_\_\_\_ day of \_\_\_\_\_, 201 .

By \_\_\_\_\_ being a \_\_\_\_\_  
Contractor's firm name Sole Proprietorship, Partnership, Corporation,  
Company, firm

State Contractor License No. \_\_\_\_\_.

BY: \_\_\_\_\_

TITLE: \_\_\_\_\_  
(Owner, Partner, or Corporate President or Vice-President only)

ADDRESS: \_\_\_\_\_  
\_\_\_\_\_

ATTEST: \_\_\_\_\_

TITLE: \_\_\_\_\_  
(Corporate Secretary or Assistant Secretary only)

(SEAL)

**SCHEDULE OF QUANTITIES FOR BID  
 ARLINGTON BOULEVARD IMPROVEMENTS  
 HOOKER RD TO GREENVILLE BLVD.**

**BID OPENING DATE:** \_\_\_\_\_

The unit prices noted herein are for installing in place, complete and accepted.

**Roadway Improvements - Base Bid - Refer to Section 1270 Unit Prices For a Description of the Items**

Item No.	Description	Quantity	Unit	Unit Price	Extended Price
1	Mobilization- <b>Must be no more than 5% of Bid- Roadway Portion</b>	1	LS	\$	\$
2	Erosion & Sedimentation Control	1	LS	\$	\$
3	Traffic Control	1	LS	\$	\$
4	Unclassified Excavation-Section 1 - Hooker Road to Evans Street	1	LS	\$	\$
5	Unclassified Excavation - Section 2 - Evans Street To Greenville Boulevard	1	LS	\$	\$
6	8-inch Aggregate Base Course- Section 1- Hooker Road to Evans St.	10,164	TN	\$	\$
7	9-inch Aggregate Base Course- Section 2- Evans St. to G'ville Blvd.	11,356	TN	\$	\$
8	4-inch Asphalt Binder Course for Section 1 and Section 2	4,681	TN	\$	\$
9	2-inch Asphalt Surface Course NCDOT S-9.5C - Section 1	1,105	TN	\$	\$
10	3-inch Asphalt Surface Course NCDOT S-9.5C - Section 2 (Provide in two lifts)	1,852	TN	\$	\$
11	Undercut Soft and Yielding Subgrade Where Shown on the Plans and Refill with Satisfactory Soils	2,700	CY	\$	\$
12	Provide Select Fill Import Material	2,700	CY	\$	\$
13	ABC Stone for Stabilization and Levelling of Subgrade Where Authorized by Engineer	300	TN	\$	\$

Item No.	Description	Quantity	Unit	Unit Price	Extended Price
14	Geotextile Stone Subgrade Underlayment, NCDOT Table 1056, Type 5, Where Requested by Engineer	1,500	SY	\$	\$
15	Valley Gutter- 3 Foot Width – Remove Existing and Replace with Reinforced Concrete	205	LF	\$	\$
16	Valley Gutter- 4 Foot Width – Remove Existing and Replace with Reinforced Concrete	533	LF	\$	\$
17	Mill Pavement to a 1.5-inch Depth to Transition to Existing Pavements	340	SY	\$	\$
18	New ADA Compliant Ramp for Sidewalk Driveway Crossings and Greenway Trail Driveway Crossings	400	SY	\$	\$
19	24-inch Curb and Gutter - Remove and Replace - Non-Reinforced	1,852	LF	\$	\$
20	4-inch Thick Sidewalk Remove and Replace	74	SY	\$	\$
21	4-inch Thick Sidewalk -New Walkway from Evans Park to Hooker Road	422	SY	\$	\$
22	Median Concrete 6-inch Thickness	40	SY	\$	\$
23	New ADA Compliant Pedestrian Crossing Station 8+50	1	LS	\$	\$
24	Greenway Trail - Unclassified Excavation – Station 8+50R- Station 11+50R on Sheet C1.1	1	LS	\$	\$
25	Provide New 6-inch thick Crushed Aggregate Base Course for 10-foot wide Greenway Trail– Station 8+50R - Station 11+50R on Sheet C1.1	115	TN	\$	\$
26	2-inch S-9.5B Asphalt Surface for Greenway Trail– Station 8+50R to Station 11+50R on Sheet C1.1	40	TN	\$	\$
27	Reset Water Valve Boxes within New Pavements	20	EA	\$	\$
28	Reset Manhole Ring and Cover within New Pavements	5	EA	\$	\$
29	Tree Removals	1	LS	\$	\$

Item No.	Description	Quantity	Unit	Unit Price	Extended Price
30	4" Thermoplastic White Line, 120 Mils	15,680	LF	\$	\$
31	12" Thermoplastic White Line, 120 Mils	360	LF	\$	\$
32	24" Thermoplastic White Line, 120 Mils	429	LF	\$	\$
33	4" Thermoplastic Yellow Line, 120 Mils	12,120	LF	\$	\$
34	Thermoplastic Pavement Marking Symbols, Arrows (Straight or Turn)	51	EA	\$	\$
35	Thermoplastic Pavement Marking Symbols, Combination Arrows	8	EA	\$	\$
36	Thermoplastic Pavement Marking, SCHOOL	2	EA	\$	\$
37	Thermoplastic Pavement Marking, RXR (Railroad Crossing)	2	EA	\$	\$
38	Temporary Paint Pavement Marking Lines, 4" White	15,680	LF	\$	\$
39	Temporary Paint Pavement Marking Lines, 12" White	360	LF	\$	\$
40	Temporary Paint Pavement Marking Lines, 24" White	429	LF	\$	\$
41	Temporary Paint Pavement Marking Lines, 4" Yellow	12,120	LF	\$	\$
42	Temporary Paint Pavement Marking Symbols, (Straight or Turn)	51	EA	\$	\$
43	Temporary Paint Pavement Marking Symbols, Combination Arrows	8	EA	\$	\$
44	Temporary Paint Pavement Marking, SCHOOL	2	EA	\$	\$
45	Temporary Paint Pavement Marking, RXR (Railroad Crossing)	3	EA	\$	\$

**Total Base Bid for Roadway Improvements  
 Bid Items 1 through 45**

\$

**Total Base Bid for  
 Roadway Improvements  
 Bid Items 1 through 45**

(written out)

**Roadway Improvements – Bid Alternate 1 – Greenway Trail- Hooker Road to Evans Street**

Item No.	Description	Quantity	Unit	Unit Price	Extended Price
A1-1	Unclassified Excavation - Bid Alternate for Greenway Trail	1	LS	\$	\$
A1-2	Provide New 6-inch thick Crushed Aggregate Base Course for 10-foot wide Greenway Trail	1,100	TN	\$	\$
A1-3	2-inch S-9.5B Asphalt Surface for Greenway Trail	350	TN		

**Total Bid Alternate 1 – Greenway Trail - Hooker Road to Evans Street - Roadway Improvements Bid Items A1-1 through A1-3**

\$

**Total Bid Alternate 1 – Greenway Trail - Hooker Road to Evans Street - Roadway Improvements Bid Items A1-1 through A1-3**

(written out)

**Roadway Improvements – Bid Alternate 2 –Asphalt Base Instead of Aggregate Base Course**

Item No.	Description	Quantity	Unit	Unit Price	Extended Price
A2-1	4-inch Asphalt Base Course-B-25.0C Section 1- Hooker Road to Evans St.	5,895	TN	\$	\$
A2-2	4.5-inch Asphalt Base Course-B-25.0C Section 2- Evans St. to G'ville Blvd.	6,587	TN	\$	\$
A2-3	<b>Deduct Item 6-</b> 8-inch Aggregate Base Course-Section 1- Hooker Road to Evans St.	-10,164	TN	\$ Same as Item 6	\$ *Deduct*
A2-4	<b>Deduct Item 7-</b> 9-inch Aggregate Base Course-Section 2- Evans St. to G'ville Blvd.	-11,356	TN	\$ Same as Item 7	\$ *Deduct*

A2-5	<b>Deduct From Item 4 for Lesser Depth of Excavation Asphalt Base vs ABC -</b> Unclassified Excavation-Section 1 - Hooker Road to Evans Street	-1	LS	\$ <hr/> Partial Deduct	\$ <hr/> *Deduct*
A2-6	<b>Deduct From Item 5 for Lesser Depth of Excavation Asphalt Base vs ABC -</b> Unclassified Excavation - Section 2 - Evans Street To Greenville Boulevard	-1	LS	\$ <hr/> Partial Deduct	\$ <hr/> *Deduct*

**Total Bid Alternate 2 – Asphalt Base - Roadway  
 Improvements Bid Items A2-1 through A2-6**

\$

**Total Bid Alternate 2 –Asphalt Base -  
 Roadway Improvements Bid Items A2-1  
 through A1-6**

(written out)

**Total Base Bid Plus Bid Alternates 1 & 2 –  
 Roadway Improvements**

\$

**Total Base Bid Plus Bid Alternates 1 & 2 –  
 Roadway Improvements**

(written out)

**Drainage Improvements - Base Bid - Refer to Section 1270 Unit Prices for a Description of the Items**

Item No.	Description	Quantity	Unit	Unit Price	Extended Price
46	Mobilization- <b>Must be no more than 5% of Bid- Drainage Portion</b>	1	LS	\$	\$
47	Erosion & Sedimentation Control	1	LS	\$	\$
48	Traffic Control	1	LS	\$	\$
49	60-inch Class III RCP Drainage Piping	68	LF	\$	\$
50	54-inch Class III RCP Drainage Piping	150	LF	\$	\$
51	48-inch Class III RCP Drainage Piping	188	LF	\$	\$
52	42-inch Class III RCP Drainage Piping	576	LF	\$	\$
53	24-inch Class III RCP Drainage Piping	484	LF	\$	\$
54	18-inch Class III RCP Drainage Piping	622	LF	\$	\$
55	15-inch Class III RCP Drainage Piping	368	LF	\$	\$
56	New Combination Catch Basin	8	EA	\$	\$
57	New Grate Inlet	3	EA	\$	\$
58	New Junction Box - Standard (For 36-inch and Smaller Pipes)	2	EA	\$	\$
59	New Junction Box - Large (For 42-inch and Larger Pipes)	8	EA	\$	\$
60	New Headwall with Rip Rap Outlet Protection	1	LS	\$	\$
61	Trench Stabilization Stone-Contingency Item for Yielding Subgrades	400	TN	\$	\$
62	Excavate Yielding Pipe Foundation Soils Up to Two Feet Deep Below Proposed Pipe Subgrade Elevation	200	CY	\$	\$
63	Provide Select Material In Addition to That Shown on the Details When Requested by Engineer	1,200	CY	\$	\$



Item No.	Description	Quantity	Unit	Unit Price	Extended Price
64	Remove 24-inch & 30-inch CMP	900	LF	\$	\$
65	Remove 48-inch & 54-inch CMP	165	LF	\$	\$
66	Water Line Relocation	1	LS		

**Total Base Bid for Drainage Improvements  
 Bid Items 46 through 66** \$ \_\_\_\_\_

**Total Base Bid for  
 Drainage Improvements  
 Bid Items 46 through 66**  
 \_\_\_\_\_  
 (written out)

**Sum of All Base Bids for Roadway and Drainage Improvements:**

**Total Project Base Bids Including Roadway  
 Base Bid, And Drainage Base Bid (Excluding  
 Alternates)** \$ \_\_\_\_\_

**Total Project Base Bids Including Roadway  
 Base Bid, And Drainage Base Bid  
 (Excluding Alternates)**  
 \_\_\_\_\_  
 (written out)

**Sum of All Base Bids Plus Bid Alternates for Roadway and Drainage Improvements:**

**Total Project Base Bids Including Roadway  
 Base Bid, Alternate Bids 1 & 2, And Drainage  
 Base Bid** \$ \_\_\_\_\_

**Total Project Base Bids Including Roadway  
 Base Bid, Alternate Bids 1 & 2, And  
 Drainage Base Bid**  
 \_\_\_\_\_  
 (written out)

Contractor \_\_\_\_\_  
 License No. \_\_\_\_\_  
 Signature \_\_\_\_\_  
 Date \_\_\_\_\_

**BID BOND**

KNOW ALL MEN BY THESE PRESENTS: that we, the undersigned, \_\_\_\_\_  
as Principal, and \_\_\_\_\_ as Surety, are hereby held and firmly bound unto  
\_\_\_\_\_ as OWNER in the penal sum of  
\_\_\_\_\_ for payment of which, well and truly  
to be made, we hereby jointly and severally bind ourselves, successors and assigns.

Signed, this \_\_\_\_\_ day of \_\_\_\_\_, 201 .

The Condition of the above obligation is such that whereas the Principal has submitted to  
\_\_\_\_\_ a certain BID, attached hereto and hereby made a  
part hereof to enter into a contract in writing, for the \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NOW, THEREFORE,

(a) If said BID shall be rejected, or

(b) If said BID shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said BID) and shall furnish a BOND for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said BID, then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND shall be in no way impaired or affected by any extension of the time within which the OWNER may accept such BID; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

\_\_\_\_\_(L.S.)  
Principal

\_\_\_\_\_  
Surety

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

IMPORTANT - Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the project is located.

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**NONCOLLUSION AFFIDAVIT OF PRIME BIDDER**

State of (\_\_\_\_\_)

County of (\_\_\_\_\_)

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

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

(Contractor Signature) \_\_\_\_\_

(Title) \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_ day of \_\_\_\_\_, 201 .

Signature of Notary Public \_\_\_\_\_

My commission expires \_\_\_\_\_.

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**CITY OF GREENVILLE  
ARLINGTON BOULEVARD IMPROVEMENTS  
HOOKER ROAD TO GREENVILLE BOULEVARD**

**REFERENCE INFORMATION**

All bidders must provide a list of three (3) client references of similar work. The reference information must include the company's name, a contact person's name with his or her title and their telephone number. Contractor must provide the information below with their bid sheet.

1. COMPANY NAME: \_\_\_\_\_

CONTACT PERSON: \_\_\_\_\_

PHONE NUMBER: \_\_\_\_\_ MOBILE PHONE NO. \_\_\_\_\_

EMAIL: \_\_\_\_\_ BUSINESS FAX NO. \_\_\_\_\_

2. COMPANY NAME: \_\_\_\_\_

CONTACT PERSON: \_\_\_\_\_

PHONE NUMBER: \_\_\_\_\_ MOBILE PHONE NO. \_\_\_\_\_

EMAIL: \_\_\_\_\_ BUSINESS FAX NO. \_\_\_\_\_

3. COMPANY NAME: \_\_\_\_\_

CONTACT PERSON: \_\_\_\_\_

PHONE NUMBER: \_\_\_\_\_ MOBILE PHONE NO. \_\_\_\_\_

EMAIL: \_\_\_\_\_ BUSINESS FAX NO. \_\_\_\_\_

**CITY OF GREENVILLE  
ARLINGTON BOULEVARD IMPROVEMENTS  
HOOKER ROAD TO GREENVILLE BOULEVARD**

**CONTRACTOR INFORMATION**

Contractor must provide the information below with the bid sheet.

**PROSPECTIVE CONTRACTOR DATA FORM**

COMPANY NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

PHONE NUMBER: \_\_\_\_\_ MOBILE PHONE NO. \_\_\_\_\_

EMAIL: \_\_\_\_\_ BUSINESS FAX NO. \_\_\_\_\_

TAX ID#: \_\_\_\_\_

Corporation Or Partnership: \_\_\_\_\_

Number of Years in Business: \_\_\_\_\_

Number of Years in Greenville Area: \_\_\_\_\_

Number of Permanent Employees: \_\_\_\_\_

Number of Part-time Employees: \_\_\_\_\_



**City of Greenville/Greenville Utilities Commission  
Minority and Women Business Enterprise (MWBE) Program**

**City of Greenville  
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 Women Business Enterprise Program

### \$100,000 and Construction Guidelines for MWBE 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 MWBE program by making Good Faith Efforts to achieve the following aspiration goals for participation.

	CITY	
	MBE	WBE
<b>Construction</b> This goal includes Construction Manager at Risk.	10%	6%

Bidders shall submit MWBE information with their bids on the forms provided. This information will be subject to verification by the City prior to contract award. **As of July 1, 2009, contractors, subcontractors, suppliers, service providers, or MWBE members of joint ventures intended to satisfy City MWBE goals shall be certified by the NC Office of Historically Underutilized Businesses (NC HUB) only.** Firms qualifying as “WBE” for City’s goals must be designated as a “women-owned business” by the HUB Office. Firms qualifying as “MBE” for the City’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. **Each goal must be met separately. Exceeding one goal does not satisfy requirements for the other.** 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.greenvillenc.gov](http://www.greenvillenc.gov). However, the HUB status of these firms must be verified by the HUB database. The City shall accept NCDOT certified firms on federally funded projects only. Please note: A contractor may utilize any firm desired. However, for participation purposes, all MWBE vendors who wish to do business as a minority or female must be certified by NC HUB.

The Bidder shall make good faith efforts to encourage participation of MWBEs 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 MWBE goal, they should document their good faith efforts and be prepared to submit this information, if requested.

The MWBE’s listed by the Contractor on the **Identification of Minority/Women Business Participation** which are determined by the City to be certified shall perform the work and supply the materials for which they are listed unless the Contractors receive prior authorization from the City 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.

Attach to Bid Attach to Bid Attach to Bid Attach to Bid Attach to Bid Attach to Bid Attach to Bid Attach to Bid  
The Contractor shall enter into and supply copies of fully executed subcontracts with each MWBE 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; will need to provide documentation of similar projects in scope, scale and cost)

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 MWBE subcontractors.**

**\*\*\*If a change is needed in MWBE Participation, submit a Request to Change MWBE Participation Form. Good Faith Efforts to substitute with another MWBE 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 City 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 City 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 City whether to terminate the contract for breach or not. In determining whether a contractor has made Good Faith Efforts, the CITY will evaluate all efforts made by the Contractor and will determine compliance in regard to quantity, intensity, and results of these efforts.

MBForms 2002-  
Revised July 2010  
Updated 2019

## Identification of Minority/Women Business Participation

I, \_\_\_\_\_, (Name of Bidder)

do hereby certify that on this project, we will use the following minority/women business enterprises as construction subcontractors, vendors, suppliers or providers of professional services.

Firm Name, Address and Phone #	Work type	*MWBE Category

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

**If you will not be utilizing MWBE contractors, please certify by entering zero “0”**

**The total value of MBE business contracting will be (\$)\_\_\_\_\_.**

**The total value of WBE business contracting will be (\$)\_\_\_\_\_.**

# City of Greenville 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.

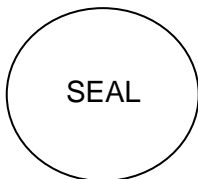
The undersigned, if apparent low bidder, will enter into a formal agreement with the firms listed in the Identification of Minority/Women Business Participation schedule conditional upon scope of contract to be executed with the Owner. Substitution of contractors must be in accordance with GS143-128.2(d)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

**City of Greenville --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

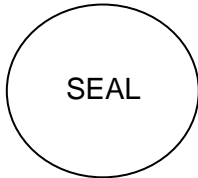
The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement.

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 \_\_\_\_\_

## City of Greenville - **AFFIDAVIT C** - Portion of the Work to be Performed by MWBE 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 MWBE businesses as defined in GS143-128.2(g) and the COG/CITY MWBE Plan sec. III is equal to or greater than 16% 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# \_\_\_\_\_ Amount of Bid \$ \_\_\_\_\_  
(Project Name)

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	*MWBE 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**)

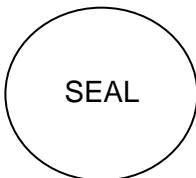
Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with MWBE Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

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 \_\_\_\_\_

# City of Greenville **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 16% 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	*MWBE 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.



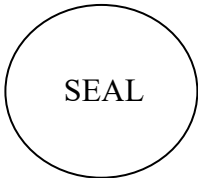
Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with MWBE Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

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 MWBE Subcontractor Performance

**Please submit this form or executed subcontracts with MWBE 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 MWBE 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 MWBE Firm)

\_\_\_\_\_  
(Name & Title of Authorized Representative of MWBE)

\_\_\_\_\_  
(Signature of Authorized Representative of MWBE)

# REQUEST TO CHANGE MWBE 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 MWBE 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 MWBE 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** \_\_\_\_\_

<b>Pay Application No.</b> _____ <b>Purchase Order No.</b> _____
---

## Proof of Payment Certification

### MWBE 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	MWBE 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

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**NOTICE OF INTENT TO AWARD**

TO: CONTRACTOR

PROJECT: **Arlington Boulevard Improvements  
Hooker Road to Greenville Boulevard**

The City of Greenville has considered the bid submitted by you on ..... for the above-described Work in response to its Advertisement for Bids and Instructions to Bidders.

You are required by the Instructions to Bidders to execute the Agreement and furnish the required Contractor's Performance Bond, Payment Bond, and Certificate of Insurance within ten (10) calendar days from the date of this Notice to you.

You are required to acknowledge and return to the Owner a copy of this Notice of Award.

Dated this \_\_\_\_ day of \_\_\_\_\_, 201\_\_.

Owner: City of Greenville

BY: \_\_\_\_\_  
Scott P. M. Godefroy, PE  
City Engineer

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF INTENT TO AWARD is hereby acknowledged:

By: \_\_\_\_\_ Signature: \_\_\_\_\_  
(Print name)

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

This the \_\_\_\_\_ day of \_\_\_\_\_, 201\_ .

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

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

Prepared by



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

THIS AGREEMENT is by and between City of Greenville, NC ("Owner") and  

---

 ("Contractor").

Owner and Contractor hereby agree as follows:

**ARTICLE 1 – WORK**

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

**ARTICLE 2 – THE PROJECT**

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: Arlington Boulevard Improvements- Hooker Road to Greenville Boulevard.

**ARTICLE 3 – ENGINEER**

3.01 The Project has been designed by The East Group.

3.02 The Owner has retained The East Group ("Engineer") to act as Owner’s representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

**ARTICLE 4 – CONTRACT TIMES**

4.01 *Time of the Essence*

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

4.02 *Contract Times: Days*

A. The Work will be substantially completed within 170 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 200 days after the date when the Contract Times commence to run.

B. Parts of the Work shall be substantially completed on or before the following Milestone(s):

1. Milestone 1 - **August 15, 2019** - Substantial Completion of Drainage on Plan Sheet C4.1 as well as the roadway pavement sufficient to restore traffic. The completion of this milestone must be such that traffic can be restored from Evans to Hooker Road in both directions on Arlington Boulevard. The completion of Bid Alternate 1 if selected is not required to be completed in this milestone. Bid Alternate 1 will be required to be completed within the contract time for full completion of the project given above.

#### 4.03 *Liquidated Damages*

- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):
  1. Substantial Completion: Contractor shall pay Owner \$ 600 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
  2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$ 600 for each day that expires after such time until the Work is completed and ready for final payment.
  3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.
  4. Milestones: Contractor shall pay Owner \$ 1,000 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for achievement of Milestone 1, until Milestone 1 is achieved.
- B. ~~Bonus: Contractor and Owner further recognize the Owner will realize financial and other benefits if the Work is completed prior to the time specified for Substantial Completion. Accordingly, Owner and Contractor agree that as a bonus for early completion, Owner shall pay Contractor \$ \_\_\_\_\_ for each day prior to the time specified in Paragraph 4.02 for Substantial Completion (as duly adjusted pursuant to the Contract) that the Work is substantially complete. The maximum value of the bonus shall be limited to \$ \_\_\_\_\_.~~

---

#### 4.04 *Special Damages [Deleted]*

- A. ~~In addition to the amount provided for liquidated damages, Contractor shall reimburse Owner (1) for any fines or penalties imposed on Owner as a direct result of the Contractor's failure to attain Substantial Completion according to the Contract Times, and (2) for the actual costs reasonably incurred by Owner for engineering, construction observation,~~

~~inspection, and administrative services needed after the time specified in Paragraph 4.02 for Substantial Completion (as duly adjusted pursuant to the Contract), until the Work is substantially complete.~~

- ~~B. After Contractor achieves Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times, Contractor shall reimburse Owner for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Work to be completed and ready for final payment (as duly adjusted pursuant to the Contract), until the Work is completed and ready for final payment.~~

## ARTICLE 5 – CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents the amounts that follow, subject to adjustment under the Contract:

- A. ~~For all Work other than Unit Price Work, a lump sum of: \$\_\_\_\_\_.~~

~~All specific cash allowances are included in the above price in accordance with Paragraph 13.02 of the General Conditions.~~

- B. 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):

**- Bid Schedule to be Attached by Reference -**

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.

- C. Total of Lump Sum Amount and Unit Price Work (subject to final Unit Price adjustment) \$\_\_\_\_\_. (This amount is the adjusted amount after the correction to the unit price bid.)
- D. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

## ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

- A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

- A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the \_\_\_\_ day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the

requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

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

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

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

B. Upon Substantial Completion **of the entire construction to be provided under the Contract Documents**, Owner shall pay an amount sufficient to increase total payments to Contractor to \_\_\_\_\_ percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less \_\_\_\_\_ percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

#### 6.03 Final Payment

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

### ARTICLE 7 – INTEREST

7.01 All amounts not paid when due shall bear interest at the rate of \_\_\_\_\_ percent per annum.

### ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

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

A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.

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

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

- D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
- E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor's safety precautions and programs.
- F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
- G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- J. 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.

## ARTICLE 9 – CONTRACT DOCUMENTS

### 9.01 *Contents*

- A. The Contract Documents consist of the following:
  - 1. This Agreement (pages 1 to 11, inclusive).
  - 2. Performance bond (pages 1 to 3, inclusive).
  - 3. Payment bond (pages 1 to 3, inclusive).
  - 4. Other bonds.
    - a. Bid Bond (pages 1 to 2, inclusive).
  - 5. General Conditions (pages 1 to 76, inclusive).

6. Supplementary Conditions (pages 1 to 6, inclusive plus attachments).
  7. Standard Special Conditions (pages 1 to 13, inclusive).
  8. Specifications as listed in the table of contents of the Project Manual.
  9. Drawings prepared by The East Group (not attached but incorporated by reference) consisting of 13 sheets with each sheet bearing the following general title: Arlington Boulevard Improvements.
  10. Drawings prepared by Davenport (not attached but incorporated by reference) consisting of 33 sheets with each sheet bearing the following general title: City of Greenville Arlington Boulevard Improvements and with the overall plan assembly title of Transportation Management Plan.
  11. Addenda (numbers    to   , inclusive).
  12. Exhibits to this Agreement (enumerated as follows):
    - a. Contractor's Bid (pages    to   , inclusive).
  13. 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.
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

## ARTICLE 10 – MISCELLANEOUS

### 10.01 *Terms*

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

### 10.02 *Assignment of Contract*

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an



assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 *Successors and Assigns*

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

10.04 *Severability*

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

10.05 *Contractor's Certifications*

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

10.06 *Other Provisions*

- A. Owner stipulates that if the General Conditions that are made a part of this Contract are based on EJCDC® C-700, Standard General Conditions for the Construction Contract, 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.

City of Greenville, NC  
Arlington Boulevard Improvements  
Hooker Road to Greenville Boulevard  
TEG Project No. 20180161

Agreement Between Owner and Contractor

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:

\_\_\_\_\_  
City of Greenville, NC

\_\_\_\_\_

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

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

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

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

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

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

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

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

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

Address for giving notices:

Address for giving notices:

\_\_\_\_\_  
1500 Beatty Street

\_\_\_\_\_

\_\_\_\_\_  
Greenville, NC

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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

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

## PERFORMANCE BOND

CONTRACTOR *(name and address)*:

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

OWNER *(name and address)*:  
City of Greenville  
1500 Beatty Street  
Greenville, NC 27834

### CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location)*: Arlington Boulevard Improvements  
Hooker Road to Greenville Boulevard

### BOND

Bond Number:

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

Amount:

Modifications to this Bond Form:  None  See Paragraph 16

---

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

### CONTRACTOR AS PRINCIPAL

### SURETY

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

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

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

By: \_\_\_\_\_  
Signature *(attach power of attorney)*

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

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

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

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

#### 14. Definitions

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

for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

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

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

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

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

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

16. Modifications to this Bond are as follows:

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**PAYMENT BOND**

CONTRACTOR (name and address):

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

OWNER (name and address):  
City of Greenville  
1500 Beatty Street  
Greenville, NC  
27834

**Attest:** \_\_\_\_\_  
Signature

**CONSTRUCTION CONTRACT**

\_\_\_\_\_  
Title

Effective Date of the Agreement:  
Amount:  
Description (name and location): Arlington  
Boulevard Improvements  
Hooker Road to  
Greenville Boulevard

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

**BOND**

Bond Number:  
Date (not earlier than the Effective Date of the Agreement of the Construction Contract):  
Amount:  
Modifications to this Bond Form:  None   
See Paragraph 18

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract.

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

**CONTRACTOR AS PRINCIPAL**

**SURETY**

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

\_\_\_\_\_  
(seal)  
Surety's Name and Corporate Seal

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

**By:** \_\_\_\_\_  
Signature (attach power of attorney)  
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.

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Print Name  
5. The Surety's obligations to a Claimant under this Bond shall arise after the following:

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

- 5.1 Claimants who do not have a direct contract with the Contractor,
  - 5.1.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
  - 5.1.2 have sent a Claim to the Surety (at the address described in Paragraph 13).
- 5.2 Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
  - 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
  - 7.2 Pay or arrange for payment of any undisputed amounts.
  - 7.3 The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
8. The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.



## 16. Definitions

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

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

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

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

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

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

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

18. Modifications to this Bond are as follows:

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**Contractor's Application for Payment No.**

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

**Application For Payment  
Change Order Summary**

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

1. ORIGINAL CONTRACT PRICE.....		\$ _____
2. Net change by Change Orders.....		\$ _____
3. Current Contract Price (Line 1 ± 2).....		\$ _____
4. TOTAL COMPLETED AND STORED TO DATE		
(Column F total on Progress Estimates).....		\$ _____
5. RETAINAGE:		
a.     X _____ Work Completed.....		\$ _____
b.     X _____ Stored Material.....		\$ _____
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, PLUS RETAINAGE		
(Column G total on Progress Estimates + Line 5.c above).....		\$ _____

**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**

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

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

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**Progress Estimate - Unit Price Work**

**Contractor's Application**

For (Contract):						Application Number:					
Application Period:						Application Date:					
A				B	C	D	E	F			
Item		Contract Information				Estimated Quantity Installed	Value of Work Installed to Date	Materials Presently Stored (not in C)	Total Completed and Stored to Date (D + E)	% (F / B)	Balance to Finish (B - F)
Bid Item No.	Description	Item Quantity	Units	Unit Price	Total Value of Item (\$)						
<b>Totals</b>											

**Stored Material Summary**

**Contractor's Application**

For (Contract):								Application Number:			
Application Period:								Application Date:			
Bid Item No.	A Supplier Invoice No.	B Submittal No. (with Specification Section No.)	Storage Location	C Description of Materials or Equipment Stored	D		E Amount Stored this Month (\$)	Subtotal Amount Completed and Stored to Date (D + E)	F		G Materials Remaining in Storage (\$) (D + E - F)
					Stored Previously				Incorporated in Work		
					Date Placed into Storage (Month/Year)	Amount (\$)			Date (Month/Year)	Amount (\$)	
<b>Totals</b>											

**NORTH CAROLINA**  
**TAX STATEMENT AND CERTIFICATION**

This is to certify that the foregoing or attached statements are a true and complete statement of all State and County Sales or Use Tax paid by the undersigned contractor from \_\_\_\_\_, 20\_\_\_\_, to \_\_\_\_\_, 20\_\_\_\_, inclusive for the materials and equipment that were or will become a part of the construction of the **Arlington Boulevard Improvements** Project.

(THE FOLLOWING PORTION TO BE FILLED OUT BY GENERAL CONTRACTOR ONLY.)

It is further certified that \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Are all of the subcontractors that are, or were engaged by the contractor in the performance of this contract and whose tax statements are also enclosed herewith.

\_\_\_\_\_  
CONTRACTOR OR SUBCONTRACTOR

Sworn and subscribed before me

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

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

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

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**CONTRACTOR'S AFFIDAVIT  
RELEASE OF LIEN AND WAIVER OF CLAIM**

STATE OF: \_\_\_\_\_ COUNTY OF: \_\_\_\_\_

\_\_\_\_\_, \_\_\_\_\_  
(Name) (Title)

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

1. The undersigned is authorized to execute this Affidavit, Release of Lien and Waiver of Claim on behalf of the Contractor and has personal knowledge of all facts set forth herein;
2. This Affidavit, Release of Lien and Waiver of Claim is made concerning the construction of the following project:  
  
Project Name: \_\_\_\_\_  
  
Project No.: \_\_\_\_\_
3. All payrolls, material bills, sales tax, social security tax, state and federal unemployment insurance, and all other liabilities and taxes owed by the Contractor and arising in any manner from the above-described project have been paid in full;
4. No liens or claims exists in favor of any supplier of materials or labor or in favor of any subcontractor furnishing materials or labor on the above-described project;
5. Notwithstanding the foregoing, if the City of Greenville or property of the City of Greenville is subject to any claim or lien which arises in any manner from the failure of the Contractor to pay any liability described above, the Contractor will indemnify and hold the City of Greenville harmless for any amount which the City of Greenville is required to pay to discharge such lien or settle such claim and further will pay the City of Greenville's expenses, costs, and attorney fees incurred in connection therewith;
6. All claims, suits, and proceedings of every name, description, or nature arising out of the above project against the City of Greenville, its officers, employees and agents have been settled;
7. The Contractor releases and waives any and all claims of every type and description, which the Contractor may have against the City of Greenville arising in any manner from the construction of the above-described project.

\_\_\_\_\_  
(Contractors Signature)

Sworn to and subscribed before me \_\_\_\_\_ this the \_\_\_\_\_ day of \_\_\_\_\_, 201\_\_\_\_\_ .

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Date)

Notary Public

My Commission Expires \_\_\_\_\_ (Date)

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## CERTIFICATE OF SUBSTANTIAL COMPLETION

---

Owner:	Owner's Contract No.:
Contractor:	Contractor's Project No.:
Engineer:	Engineer's Project No.:
Project:	Contract Name:

---

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

All Work  The following specified portions of the Work:

---

### Date of Substantial Completion

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

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

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

Amendments to Owner's responsibilities:  None  
 As follows

Amendments to Contractor's responsibilities:  None  
 As follows:

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

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

---

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

---

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

## STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by



Issued and Published Jointly by



These General Conditions have been prepared for use with the Agreement Between Owner and Contractor for Construction Contract (EJCDC® C-520, Stipulated Sum, or C-525, Cost-Plus, 2013 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other.

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## 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 form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
  4. *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, or both; 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, or both; 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; or (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. 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), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. (“CERCLA”); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. (“RCRA”); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree 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 the 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. *Engineer*—The individual or entity named as such in the Agreement.
21. *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.
22. *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. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.
23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
25. *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.
26. *Notice of Award*—The written notice by Owner to a Bidder of Owner’s acceptance of the Bid.
27. *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.
28. *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.
29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor’s plan to accomplish the Work within the Contract Times.
30. *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.
31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or “RPR” includes any assistants or field staff of Resident Project Representative.
33. *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.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals and the performance of related construction activities.
35. *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.
36. *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.

37. *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 furnished by Owner which are designated for the use of Contractor.
38. *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.
39. *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.
40. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.
42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
43. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.
45. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
46. *Unit Price Work*—Work to be paid for on the basis of unit prices.
47. *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.

48. *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 the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:*
  1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the 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:*
  1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:*
  1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
    - a. does not conform to the Contract Documents; or
    - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
    - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).
- E. *Furnish, Install, Perform, Provide:*
  1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
  2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.



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

- A. *Bonds*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.
- C. *Evidence of Owner’s Insurance*: After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

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

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

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

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise specifically 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 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
  1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
  2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
  3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

#### 2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.
- B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items 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 items, or from those established in applicable transmittal protocols.

### **ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE**

#### **3.01 *Intent***

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall 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.

#### **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, shall mean 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, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, 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 Documents 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 Documents 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 shall 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 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 thereunder.
- 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 give written notice to Owner and Contractor 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 editions, 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 shall preclude 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 thirtieth 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 sixtieth day after the day of Bid opening or the thirtieth 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 shall 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 shall 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 shall 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 the Contract Times and Contract Price. 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.
- 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. 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. Such an adjustment shall 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 utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
  4. acts of war or terrorism.
- D. 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.
- E. Paragraph 8.03 governs 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.
- F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times 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.

- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

**ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS**

5.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.
- 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; 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 7.12, 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 at law; 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 shall conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site 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 known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;
  - 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); 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 upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. 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; or
  - 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
  - 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.



#### 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 either:
1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or
  2. is of such a nature as to require a change in the Drawings or Specifications; or
  3. differs materially from that shown or indicated in the Contract Documents; or
  4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 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 5.04.A above; 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. *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 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 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 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.

#### 5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:
  1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and
  2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
    - a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
    - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
    - c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
    - d. 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 in the Contract Documents, or was not shown or indicated 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), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.

- C. *Engineer's Review:* Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; 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 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. *Possible Price and Times Adjustments:*
  - 1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, 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. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
    - 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;
    - 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; and
    - d. 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, or both, then any such adjustment shall 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, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

5.06 *Hazardous Environmental Conditions at Site*

- A. *Reports and Drawings*: The Supplementary Conditions identify:
1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
  2. 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 Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. 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; or
  2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
  3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for 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, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, 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.
- 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 or 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.H shall obligate 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 shall obligate 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 all of Contractor's obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.
- B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, 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 shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.
- D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.
- E. 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.
- F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

### 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. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is

maintaining the policies, coverages, and endorsements 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 and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements 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 and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- E. 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, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- F. If either party does not purchase or maintain all of 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.
- G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect 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 shall be adjusted accordingly.
- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

### 6.03 *Contractor's Insurance*

- A. *Workers' Compensation:* Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:
  - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.
  - 2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
  - 3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).

4. Foreign voluntary worker compensation (if applicable).
- B. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:
1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
  2. claims for damages insured by reasonably available personal injury liability coverage.
  3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- C. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage:
    - a. Such insurance shall be maintained for three years after final payment.
    - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
  2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
  3. Broad form property damage coverage.
  4. Severability of interest.
  5. Underground, explosion, and collapse coverage.
  6. Personal injury coverage.
  7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
  8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- D. *Automobile liability:* Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.
- E. *Umbrella or excess liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.
- F. *Contractor's pollution liability insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result



of pollution conditions arising from Contractor's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.

- G. *Additional insureds*: The Contractor's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.
- H. *Contractor's professional liability insurance*: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.
- I. *General provisions*: The policies of insurance required by this Paragraph 6.03 shall:
  - 1. include at least the specific coverages provided in this Article.
  - 2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.
  - 3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
  - 4. remain in effect at least until final payment (and longer if expressly required in this Article) 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 Documents.
  - 5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.
- J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

#### 6.04 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.
- B. 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.

#### 6.05 *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 full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
  - 1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."
  - 2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.
  - 3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
  - 4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).

5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
  6. extend to cover damage or loss to insured property while in transit.
  7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
  8. allow for the waiver of the insurer's subrogation rights, as set forth below.
  9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
  10. not include a co-insurance clause.
  11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
  12. include performance/hot testing and start-up.
  13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.
- B. *Notice of Cancellation or Change:* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed 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.
- C. *Deductibles:* The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
- 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 notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
- E. *Additional Insurance:* 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 6.05, it may do so at Contractor's expense.
- F. *Insurance of Other Property:* If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

## 6.06 *Waiver of Rights*

- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. 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 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 Subcontractors, all individuals or entities identified in the Supplementary Conditions as 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. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. 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:
  - 1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
  - 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial 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.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.
- D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work 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 any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

## 6.07 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 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 6.05 shall 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, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

## **ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES**

### *7.01 Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

### *7.02 Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, 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.

### *7.03 Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and

guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

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

#### 7.04 "Or Equals"

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the 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 material or equipment, or items from other proposed suppliers under the circumstances described below.
  - 1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:
    - a. in the exercise of reasonable judgment Engineer determines that:
      - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
      - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
      - 3) it has a proven record of performance and availability of responsive service; and
      - 4) it is not objectionable to Owner.
    - b. Contractor certifies that, if approved and incorporated into the Work:
      - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
      - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.
- 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 shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

#### 7.05 *Substitutes*

- A. Unless the specification or description of an item of material or equipment 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 material or equipment under the circumstances described below. To the extent possible such requests shall 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 material or equipment from anyone other than Contractor.
  - 2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.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 material or equipment that Contractor seeks to furnish or use. The application:
    - a. shall 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 that specified, and
      - 3) be suited to the same use as that 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 that specified, and

- 2) available engineering, sales, maintenance, repair, and replacement services.
  - d. shall 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 shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

#### 7.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.
- B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities 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, Supplier, or other individual or entity 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 five days.



- E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. 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, Suppliers, or other individuals or entities 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, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.
- F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, 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, Supplier, or other individual or entity, whether initially or as a replacement, shall 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 fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.
- J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.
- K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.
- L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.
- N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.

- O. Nothing in the Contract Documents:
1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor
  2. shall create 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.

7.07 *Patent Fees and Royalties*

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

7.08 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of 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

#### 7.09 *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.

#### 7.10 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work 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 shall not be Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Owner or Contractor may give 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 notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

#### 7.11 *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.

#### 7.12 *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. 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.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when 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.
  - C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
  - D. 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.
  - E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor 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).
  - F. Contractor's duties and responsibilities for safety and protection shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
  - G. Contractor's duties and responsibilities for safety and protection shall 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.

#### 7.13 *Safety Representative*

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

#### 7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or

exchanged between or among employers at the Site in accordance with Laws or Regulations.

#### 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 threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

#### 7.16 *Shop Drawings, Samples, and Other Submittals*

##### A. *Shop Drawing and Sample Submittal Requirements:*

1. Before submitting a Shop Drawing or Sample, Contractor shall have:
  - a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
  - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
  - c. determined and verified 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
  - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.
3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.

- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.

##### 1. *Shop Drawings:*

- a. Contractor shall submit the number of copies required in the Specifications.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to

provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.

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.D.
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. *Other Submittals:* Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.
- D. *Engineer's Review:*
  1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
  2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction 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 shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 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.
  5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 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, shall 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, Sample, or other submittal shall 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.D.4.

E. *Resubmittal Procedures:*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.
2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

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 and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
  1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
  2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
  1. observations by Engineer;
  2. recommendation by Engineer or payment by Owner of any progress or final payment;
  3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
  4. use or occupancy of the Work or any part thereof by Owner;
  5. any review and approval of a Shop Drawing or Sample submittal;
  6. the issuance of a notice of acceptability by Engineer;
  7. any inspection, test, or approval by others; or
  8. any correction of defective Work by Owner.

- D. 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 shall 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 and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer or any of their 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 shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
  - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
  - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

#### 7.19 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.
- B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop



Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this paragraph, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

## **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 utility work at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. 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.
- D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, 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.

## 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 at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner 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, or both. 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 shall 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. When applicable, any such equitable adjustment in Contract Price shall 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 is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- 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. 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 to 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.
- C. 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 to Contractor.

- D. 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 shall 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 Documents (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 10.08. 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 *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 Paragraph 10.08. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent, or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

10.04 *Rejecting Defective Work*

- A. Engineer has the authority to reject Work in accordance with Article 14.

10.05 *Shop Drawings, Change Orders and Payments*

- A. Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.
- B. Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 7.19.
- C. Engineer's authority as to Change Orders is set forth in Article 11.
- D. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.06 *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.

10.07 *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.

10.08 *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, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 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 10.08 shall also apply to the Resident Project Representative, if any.

#### 10.09 *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 (if any) of which Engineer has been informed.

### **ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK**

#### 11.01 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
  1. *Change Orders:*
    - a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
    - b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not 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, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.
  2. *Work Change Directives:* 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 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an

adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.

3. *Field Orders*: 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. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

#### 11.02 *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. Such changes shall be supported by Engineer's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes 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 shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate 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.

#### 11.03 *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.

#### 11.04 *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 shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall 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); or
  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 11.04.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 11.04.C).

- C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit shall be determined as follows:
1. a mutually acceptable fixed fee; or
  2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
    - a. for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;
    - b. for costs incurred under Paragraph 13.01.B.3, the Contractor's fee shall be five percent;
    - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.01.C.2.a and 11.01.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.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 five 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 shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;
    - d. no fee shall 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 will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
    - f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04.C.2.a through 11.04.C.2.e, inclusive.

#### 11.05 *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 shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.
- B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

#### 11.06 *Change Proposals*

- A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under



the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.

1. *Procedures:* Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. 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. The supporting data shall 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. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.
  2. *Engineer's Action:* Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall 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.
  3. *Binding Decision:* Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- B. *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 that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

#### 11.07 Execution of Change Orders

- A. Owner and Contractor shall execute appropriate Change Orders covering:
1. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
  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 11.02, (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 in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.

- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

#### 11.08 *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 shall be submitted 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; and
  - 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.
- 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 shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, 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 shall 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 shall 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 shall 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 shall 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 shall 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 shall 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 shall be incorporated in a Change Order 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. 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 shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall 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. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable

thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
  - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
  - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
  - c. Rentals of all construction equipment and machinery, and the parts thereof, whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
  - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, 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 property insurance established in accordance with Paragraph 6.05), provided such losses and damages have resulted from causes

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

- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as 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 shall not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 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. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
- 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee:* When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 11.04.C.

E. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

## 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 on account of any of the foregoing will be valid.
- C. *Contingency Allowance*: Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

### 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, subject to the provisions of the following paragraph.
- E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:
  - 1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;
  - 2. there is no corresponding adjustment with respect to any other item of Work; and
  - 3. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.

## **ARTICLE 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 will 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 therewith 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 shall 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 shall 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 shall 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 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 shall 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 special 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, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, 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 shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

#### 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 rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 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 on account of 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. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
  2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
  3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.
- 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, or
    - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
    - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
    - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or
    - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
  5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 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 on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of 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 that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
  - j. liquidated 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;
  - l. there are other items entitling 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 shall 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 shall be treated as an amount due as determined by Paragraph 15.01.C.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 seven 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 shall 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 seven 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 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 6.05 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 7.11), and other documents, Contractor may make application for final payment.

2. The final Application for Payment shall 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 disputes that Contractor believes are unsettled; 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 Application and Acceptance:***

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall 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. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to the provisions of Paragraph 15.07. 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. *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.

**D. *Payment Becomes Due:*** Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation,

including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

#### 15.07 *Waiver of Claims*

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.
- 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 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 terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then 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 other adjacent areas;
  - 2. correct such defective Work;
  - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
  - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.



- E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not 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, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall 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) ten 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) 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 seven 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 shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

#### 16.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
  - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
  - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; 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 on account of loss of anticipated overhead, profits, or revenue, 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 seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 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, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph 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; and
  - 2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising 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; or
  - 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 Documents requires the giving of written notice, it will be deemed to have been validly given if:
  - 1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or
  - 2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

### **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 shall not constitute a waiver of that provision, nor shall 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 or completion of the Contract or termination 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 *Headings*

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

**City of Greenville  
Arlington Boulevard Improvements  
Hooker Road to Greenville Boulevard**

**00800 - SUPPLEMENTARY GENERAL CONDITIONS**

**1. SUPPLEMENTARY GENERAL CONDITIONS**

The following supplementary general conditions modify, change, delete from or add to the "Standard General Conditions of the Construction Contract", EJCDC Document C-700, Copyright 2013 Edition. Where any article of the general conditions is modified or any paragraph, subparagraph, or clause thereof is modified or deleted by these supplementary general conditions, the unaltered provisions of that article, paragraph, subparagraph, or clause shall remain in effect.

**2. SC-5.03- TECHNICAL DATA**

Add a new Paragraph 5.03C to the General Conditions as follows:

**5.03C: Owner has obtained the services of a Geotechnical Engineer to perform preliminary field investigation, analysis and make recommendations regarding the pavement sections used for the project. The resulting report from this work is attached (Attachment 1) as Technical Data as defined in the General Conditions. This report, entitled, Geotechnical Engineering Report – COG Arlington Boulevard Pavements – Arlington Boulevard from Greenville Blvd to Hooker Rd, by Terracon Consultants, Inc. and dated November 30, 2018, is made available for informational purposes and is subject to the limits of the field work obtained and the necessarily incomplete information available from soil borings, samples and work carried out by the Geotechnical Engineer. The Contractor is charged with making his or her own interpretations and judgements concerning the report and making his or her own supplemental investigations if Contractor deems these prudent. Refer to the report for further limitations and details.**

Add a new Paragraph 5.03D to the General Conditions as follows:

**5.03D: Owner has obtained the services of a location service to provide location data on certain utilities that may be impacted by the storm drainage replacements shown on Sheet C4.1 of the plans. This data is provided to assist in design but has been made available to the Contractor in the construction of the storm drainage work. See Attachment 2. The Contractor is charged with requesting utility locations from the utility location service as required by the North Carolina General Assembly Article 8A Underground Utility Safety and Damage Prevention Act. No specific field data was obtained for the storm drainage replacements shown on Sheet C4.2 as this work is intended to be a replacement in kind at the same locations and grades already present.**

**3. SC-5.05 UNDERGROUND FACILITIES**

Add new paragraph e after paragraph 5.05A.2.d. as follows:

**5.05.A.2.e: Contractor shall be responsible for compliance with the General Assembly of North Carolina Article 8A Underground Utility Safety and Damage Prevention Act. Contractor is advised to particularly note the following provisions of the Act:**

- 1. Paragraph 87-122 Excavator Responsibilities**
- 2. Paragraph 87-123 Training**
- 3. Paragraph 87-125 Notice in case of emergency excavation or demolition**
- 4. Paragraph 87-126 Notice required when damage is done.**

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**4. SC-5.06 HAZARDOUS ENVIRONMENTAL CONDITIONS**

Delete Paragraphs A and B in their entirety and in their place insert the following:

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

**5. CONTRACTOR'S RESPONSIBILITIES**

The Contractor shall provide a competent superintendent, satisfactory to the City of Greenville and the Engineer, on the work at all times during working hours with full authority to act for him. The Contractor shall also provide an adequate staff for the proper coordination and expediting of his work. The City of Greenville may require the Contractor to dismiss from the work such employee or employees as the City of Greenville or the Engineer may deem incompetent, careless, or insubordinate.

**6. SUBCONTRACTS**

The Contractor shall not execute an agreement with a Subcontractor or permit any Subcontractor to perform any work included in this Contract until he has submitted a non-collusion affidavit from the Subcontractor in substantially the form provided and has received written approval of such Subcontractor from the City of Greenville.

**7. SC 7.06A AMEND THE GENERAL CONDITIONS**

Amend Paragraph 7.06A of the General Conditions by adding the following text to the end of the Paragraph:

**The Contractor shall not award work valued at more than fifty percent of the Contract Price to Subcontractor(s) without prior written approval of the Owner.**

**8. SC 7.08B AMEND THE GENERAL CONDITIONS**

Add Paragraph 7.08.B of the General Conditions:

**Owner has obtained the following permits for the project:**

- **NWP -3 for the minor impacts to the outfall stream located at Station 0+00 on Sheet C4.1 of the plans and at Greens Mill Run on Sheet C4.2 of the plans.**
- **Erosion and Sedimentation Control Plan Approval**
- **Application for Land Disturbing and Related Activities**
- **NCDOT Right-of-Way Encroachment Agreement for Curb and Gutter, Pavement Widening and Storm Drainage.**

**All other permits including local building permits or any other permits not referenced above but which are required for construction of the project shall be obtained by and paid for by the Contractor. Provisions of the attached permits that pertain to construction activity within the Contractor's scope of work will be adhered to by the Contractor and Contractor (Bidder) shall include the cost of compliance with these provisions in the bid price of various items of work in the Bid Schedule.**

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**9. SC 7.08 AMEND THE GENERAL CONDITIONS**

Add a new Paragraph 7.08.C after Paragraph 7.08.B with the following language:

**7.08.C. Contractor shall be responsible for conforming to the requirements of the approved sedimentation control plan, the rules and regulations of the Erosion Control Laws of the State of North Carolina, specifically the Sedimentation Pollution Control Act of 1973 (G.S. 113A) as amended, and the local jurisdiction where the project is located as it relates to land disturbing activities undertaken by Contractor. Contractor shall be responsible to Owner for any fines imposed on Owner as a result of Contractor's failure to comply with the above as it is further described in the Erosion Control Section of the Specifications.**

Add a new Paragraph 7.08.D after Paragraph 7.08.C with the following language:

**7.08.D. Should the Contractor cause the Owner to receive a Notice of Violation from a governmental agency, Contractor shall pay costs associated with Notice of Violation within ten (10) days of receipt of written notification. Costs shall include, but not be limited to:**

- 1. Fines imposed on the Owner by the agency.**
- 2. Required legal newspaper publications concerning violation.**
- 3. Required mailings to customers concerning notification of violation.**
- 4. Administrative and engineering costs associated with resolving the Notice of Violation.**

**10. SC 7.09 AMEND THE GENERAL CONDITIONS**

Add a new Paragraph 7.09.B after Paragraph 7.09.A with the following language:

**7.09.B. Contractor and his Subcontractors shall maintain accurate records of payment of N.C. State Sales Tax on materials, supplies, fixtures, and equipment, which become a part of the Work. Contractor shall submit with the Application for Payment a certified statement showing sales tax paid by Contractor and Subcontractors. Certified statement shall list suppliers' invoices showing invoice number, amount paid, tax paid, date and county paid. Sales tax records and certified statements shall be in such form and substance as to meet the requirements of the N.C. State Department of Revenue in the matter of the Owner obtaining a refund from the State of North Carolina of sales taxes paid by Contractor and his Subcontractors. Refer to the attachments for a sample sales tax form.**

**11. MUTUAL RESPONSIBILITY OF CONTRACTORS**

If through acts or neglect on the part of the Contractor, any other Contractor or any Subcontractor shall suffer loss or damage on the work, the Contractor shall settle with such other Contractor or Subcontractor by agreement or arbitration, if such other Contractor or Subcontractor will so settle. If such other Contractor or Subcontractor shall assert any claim against the City of Greenville on account of any damage alleged to have been so sustained, the City of Greenville will notify the Contractor, who shall defend at his own expense any suit based upon such claim, and, if any judgment or claims against the City of Greenville shall be allowed, the Contractor shall pay or satisfy such judgment or claim and pay all costs and expenses in connection therewith.

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**12. PAYMENTS SUBJECT TO SUBMISSION OF CERTIFICATES**

Each payment to the Contractor by the City of Greenville shall be made subject to submission by the Contractor of all written certificates required of him and his Subcontractors.

**13. DELAYS AND LIQUIDATED DAMAGES**

- a. Liquidated Damages for Delays: If the work is not completed within the time stipulated in the AGREEMENT thereof, including any extensions of time for excusable delays as herein provided, the Contractor shall pay to the City of Greenville liquidated damages for each calendar day of delay, until the work is completed, the amount as set forth in the AGREEMENT thereof and the Contractor and his sureties shall be liable to the City of Greenville for the amount thereof.
- b. The Contractor shall promptly notify the City of Greenville and Engineer within ten (10) days in writing of any probable cause of a delay. Upon receipt of such notification, the City of Greenville shall ascertain the facts and the cause and extent of delay. If upon the basis of the facts and the terms of this Contract the delay is properly excusable, the City of Greenville shall extend the time for completing the work for a period of time commensurate with the period of excusable delay.

**14. REQUESTS FOR SUPPLEMENTARY INFORMATION**

It shall be the responsibility of the Contractor to make timely requests of the City of Greenville for any additional information not already in his possession which should be furnished by the City of Greenville under the terms of this Contract, and which he will require in the planning and execution of the work. Such requests may be submitted from time to time as the need is approached, but each shall be filed in ample time to permit appropriate action to be taken by all parties involved so as to avoid delay. Each request shall be in writing and list the various items and the latest date by which each will be required by the Contractor. The first list shall be submitted within two (2) weeks after Contract award and shall be as complete as possible at that time. The Contractor shall, if requested, furnish promptly any assistance and information the Engineer may require in responding to these requests of the Contractor. The Contractor shall be fully responsible for any delay in his work or to others arising from his failure to comply fully with the provisions of this section.

**15. TEMPORARY FACILITIES AND CONTROLS**

The Contractor shall provide and pay for all utilities, water, lights, power, and all temporary construction and facilities of every nature whatever necessary to execute, complete, and deliver the work.

The Contractor shall provide and maintain in a neat and sanitary condition such accommodations for the use of his employees as may be necessary to comply with the requirements and regulations of the Department of Health, or of the other bodies, or tribunals, having jurisdiction thereof. He shall commit no public nuisance.

The Contractor shall be limited to work with the right of way limits of the roadway.

The Contractor shall provide and be responsible for all barricades, warning lights, signs, signal and flagmen, and all else required to allow safe vehicular movement in the vicinity of construction operations.



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The Contractor shall adhere to all applicable requirements of Part VI of the "Manual on Uniform Traffic Control Devices for Streets and Highways", published by the US Department of Transportation, Federal Highway Administration, latest edition, the "North Carolina Construction and Maintenance Operations Supplement" thereto, latest edition, prepared by the North Carolina Department of Transportation, and the "Work Zone Traffic Control Standards and Guidelines" published by the US Department of Transportation.

The Contractor shall also be guided by requirements promulgated by officials of the City of Greenville. The Contractor shall implicitly follow instructions given by said officials.

In addition to complying with safety requirements set forth in the General Conditions, the Contractor shall:

Inform himself of and fully comply with all applicable requirements of the Williams-Steiger Occupational Safety and Health Act of 1970 (p.L.91596) in the performance of work required under this Contract.

The Contractor shall adhere to the rules, regulations, and interpretations of the Secretary of the Department of Labor (29 CFR Part 1518, 36 F.R., 7340, April 17, 1971) relating to safety and health for construction which are hereby incorporated into these requirements.

The Contractor shall follow all rules set out; in the regulations and recommendations published by the Associated General Contractors and the North Carolina Department of Labor, and use every effort to safeguard life and property throughout his operations.

**16. PRECONSTRUCTION CONFERENCE**

A pre-construction conference shall be held as provided in the Contract Documents, after review by the Engineer of the construction progress schedules submitted by the Contractor.

In addition to the representatives required to attend this conference, the Engineer will request that representatives of major subcontractors and affected utility companies and governmental agencies also attend the conference.

**17. TESTING**

General: The City through a separate contract will provide quality assurance testing for concrete, asphalt, and compaction. The Contractor is charged with coordinating work to allow access for the testing agency personnel and in scheduling testing as required in the Contract Documents.

**18. ARBITRATION - Delete Article 17 of the General Conditions in its entirety.**

**END OF SUPPLEMENTARY CONDITIONS**

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## **Attachment 1 – Technical Data**

Geotechnical Engineering Report – COG Arlington Boulevard Pavements – Arlington Boulevard from Greenville Blvd to Hooker Rd, by Terracon Consultants, Inc. and dated November 30, 2018 is added as technical data per Item SC-503 of the Supplementary General Conditions.

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# Geotechnical Engineering Report

COG Arlington Blvd Pavements  
Arlington Blvd from Greenville Blvd to Hooker Rd  
Greenville, North Carolina

November 30, 2018  
Project No. 72185073

**Prepared for:**

East Group PA  
Greenville, North Carolina

**Prepared by:**

Terracon Consultants, Inc.  
Winterville, North Carolina

[terracon.com](http://terracon.com)

**Terracon**

Environmental



Facilities



Geotechnical



Materials

November 30, 2018



East Group PA  
324 Evans St  
Greenville, NC 27858-1830

Attn: Ms. Michelle Clements, PE

Re: Geotechnical Engineering Report  
COG Arlington Blvd Pavements  
Arlington Blvd from Greenville Blvd to Hooker Rd  
Greenville, North Carolina  
Terracon Project No. 72185073

Dear Ms. Clements:

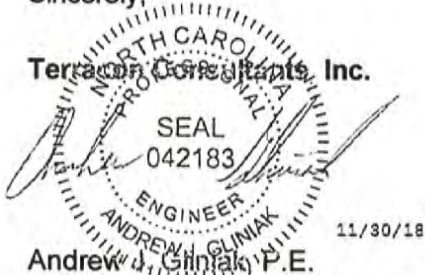
Terracon Consultants, Inc. (Terracon) has completed the geotechnical engineering services for the above referenced project. This study was performed in general accordance with our proposal P72185073 dated July 11, 2018.

This report presents the findings of the subsurface exploration and provides geotechnical parameters and recommendations concerning the design and construction of pavement sections on the existing road.

We appreciate the opportunity to be of service to you on this project. Materials testing services are provided by Terracon. We would be pleased to discuss these services with you. If you have any questions concerning this report, or if we may be of further service, please contact us.

Sincerely,

Terracon Consultants, Inc.



Andrew Gliniak, P.E.  
Geotechnical Project Engineer  
Registered NC 042183

For: Kevin Sohrabnia, P.E.  
Senior Principal

Enclosures

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**APPENDIX A – FIELD EXPLORATION**

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## EXECUTIVE SUMMARY

The following items represent a brief summary of the findings of our subsurface exploration and recommendations for the proposed repair of Arlington Boulevard between Greenville Boulevard and Hooker Road in Greenville, North Carolina. A total of 24 borings spaced approximately 250 feet apart were advanced to a depth of about 5 feet below the existing ground surface.

- The majority of the subgrade encountered in the borings was relatively dense/stiff moisture sensitive clay and sand. Fill was encountered in some of the borings and consisted mainly medium dense sands except for Boring B-11 that encountered medium stiff expansive clay fill.
- The pavement distress is primarily minor to moderate longitudinal cracking. Some moderate alligator cracking was observed near the curb/road edges. Existing pavement thickness varied from 1 to 7 inches of asphalt underlain by 0 to 5 inches of stone.
- A new pavement section is recommended due to the proposed traffic and current pavement distress along Arlington Blvd. Full depth reclamation (FDR) was considered but not recommended due to the amount of the existing pavements that could be incorporated into the design mix and the reclamation depth based on the provided design traffic. Pavement sections consisting of a new asphalt section or roller compacted concrete (RCC) for two segments of Arlington Blvd for E Arlington Blvd from Greenville Blvd to Evans St and W Arlington Blvd from Evans St to Hooker Rd are provided in this report.
- Expansive fill soils such as those encountered in Boring B-11 should be removed and replaced with engineered fill to depths of 2 feet below the new pavement section. The expansive fill soils appear to be limited to within 400 feet east of the intersection of Evans Street along the sloping portion of East Arlington Blvd.
- Boring B-21 did encounter some organics at depths of 2.5 to 5 feet which could be associated with the adjacent drainage culvert. The pavements can be supported on the overlying soils, however, there is some risk that these underlying organics can cause long term distress to the pavements if they are not completely removed.
- We recommend Terracon be retained to observe and test the subgrade and pavements across the project site during construction.

This summary should be used in conjunction with the entire report for design purposes. Details were not included or fully developed in this section, and the report must be read in its entirety for a comprehensive understanding of the items contained herein. The section titled **GENERAL COMMENTS** should be read for an understanding of report limitations.



**GEOTECHNICAL ENGINEERING REPORT  
ARLINGTON BOULEVARD PAVEMENT  
ARLINGTON BLVD FROM GREENVILLE BLVD TO HOOKER RD  
GREENVILLE, NORTH CAROLINA**

Terracon Project No. 72185073

November 30, 2018

## **1.0 INTRODUCTION**

We have completed the geotechnical engineering report for the proposed repair of Arlington Boulevard between Greenville Boulevard and Hooker Road in Greenville, North Carolina. A total of 24 borings spaced approximately 250 feet apart were advanced to a depth of about 5 feet below the existing ground surface. Logs of the borings along with a site location plan and a boring location plan are included in Appendix A of this report.

The purpose of these services is to provide information and geotechnical engineering recommendations relative to:

- Subbase/Subsurface soil conditions
- Pavements
- Groundwater conditions

## **2.0 PROJECT INFORMATION**

Project information was obtained during our meetings on January 12, 2018 and July 9, 2018. We understand pavement recommendations have been requested for the section of Arlington Boulevard between Red Banks and Hooker Road excluding the intersection radii's on either side of Evans Street and Greenville Boulevard. A portion of the exploration has been completed for Arlington Boulevard between Red Banks Road and Greenville Boulevard for the City of Greenville in our report dated June 14, 2016, Terracon project number 72165042 that included recommendations for the estimated design life of an overlay and a new pavement section.

Design lives of 10, 15, and 20 years and a roller compacted concrete (RCC) pavement section was requested after review of our draft report dated October 24, 2018. In addition to these requests, the design traffic volume was increased from an ADT of 25,000 to 30,000.

## 2.1 Project Description

ITEM	DESCRIPTION
Site Location	See Appendix A, Exhibit A-1, Site Location Plan
Site layout	See Appendix A, Exhibit A-2, Boring Location Plan
Road Repair or Replacement	The project includes repairing Arlington Boulevard with a new pavement design, including Full Depth Reclamation (FDR) if applicable. We understand the geometry/pavement profile will remain unchanged.
Traffic	The design traffic flow is based on an Average Daily Traffic (ADT) of 30,000 with 0.5 percent trucks, 0.5 percent buses, and a 1 percent annual increase. We understand design periods of 10, 15, and 20 years have been requested.

## 2.2 Site Location and Description

ITEM	DESCRIPTION
Location	Approximately 6400 feet of East and West Arlington Boulevard between Hooker Road and Greenville Boulevard in Greenville, North Carolina requested for exploration. We have completed exploration for the remaining length of approximately 1750 feet extends from Greenville Boulevard to Red Banks Road.  Coordinates: N 35.5906° W 77.3783°
Existing improvements	Pavement, numerous underground utilities and a railroad crossing. The railroad crosses near the intersection with Marvin Jarvan Road. We understand the repairs will not include the area around the railroad crossing. Curbs and gutters are associated with most of Arlington Boulevard. A center turn lane runs the length E Arlington Blvd from Greenville Blvd to Evans St. W Arlington Blvd from Hooker Rd to Evans St includes center traffic islands separated by center turn lanes.  The pavement distress is primarily minor to moderate longitudinal cracking. Some moderate alligator cracking was observed near the curb/road edges. In addition, it appears major repairs such as milling and overlaying the existing pavements have not been performed and the pavements are reaching the end of their design life.
Existing topography	Relatively level along much of the alignment. The road slopes up to the east from the intersection with Evans Street.

### 3.0 SUBSURFACE CONDITIONS

#### 3.1 Typical Profile

Based on the results of the borings, subsurface conditions on the project site can be generalized as shown on the following table:

Description	Approximate Depth to Bottom of Stratum (feet)	Material Encountered	Consistency/Density
Stratum 1	0.33 to 0.83	Asphalt Pavement (1 to 7 inches)	NA
Stratum 2	1.08 to 1.38	Stone Base (0 to 5 inches)	NA
Stratum 2A	2.5	Fill: Fat Clay, Silty Sand, Clayey Sand. Borings B-11, B-16, and B-21	NA
Stratum 3	Borings Terminated – 5	Poorly Graded Sand with Silt (SP-SM), Poorly Graded Sand (SP), Lean Clay (CL), Clayey Sand (SC), Silty Sand (SM)	Soft to Medium Stiff/ Loose to Medium Dense

The borings were located and numbered sequentially from east to west beginning with Boring B-1 on E Arlington Blvd near the intersection Greenville Blvd continuing to Boring B-11 near the intersection with Evans St. Boring B-12 was located on W Arlington Blvd near the intersection with Evans St and borings continued to Boring B-24 near the intersection of W Arlington Blvd with Hooker Rd. The pavement thickness, stone base thickness, and traffic lane are shown in the following table.

Boring	Lane Location	Asphalt (inches)	Aggregate Base Course (inches)
B-1	West Bound Right Lane	2	4
B-2	West Bound Left Lane	2	2
B-3	East Bound Left Lane	3	3
B-4	East Bound Right Lane	4	2
B-5	West Bound Right Lane	1	3
B-6	West Bound Left Lane	3	2
B-7	East Bound Left Lane	4	1
B-8	East Bound Right Lane	6	5
B-9	West Bound Right Lane	2	3
B-10	West Bound Left Lane	4	3
B-11	East Bound Left Lane	7	0
B-12	East Bound Right Lane	6	4
B-13	West Bound Right Lane	7	3
B-14	West Bound Left Lane	4	1
B-15	East Bound Left Lane	3	2
B-16	East Bound Right Lane	5	3
B-17	West Bound Right Lane	2	2
B-18	West Bound Left Lane	5	4
B-19	East Bound Left Lane	4	2
B-20	East Bound Right Lane	4	1
B-21	West Bound Right Lane	6	2
B-22	West Bound Left Lane	4	3
B-23	East Bound Left Lane	2	4
B-24	East Bound Right Lane	3	3

Laboratory tests for water content, Atterberg limits, grain size, maximum dry density, and California Bearing Ratio (CBR) were conducted on selected soil samples. The test results are presented in the Appendix B of this report.

Conditions encountered at the boring locations are indicated on the boring logs. Stratification boundaries on the boring logs represent the approximate location of changes in soil types; in-situ, the transition between materials may be gradual. For a comprehensive description of the conditions encountered in the borings, refer to the boring logs in Appendix A of this report.

### 3.2 Groundwater

Hollow stem auger drilling techniques were used to advance the borings. The boreholes were observed while drilling for the presence and level of groundwater. Groundwater was not observed in the majority of borings while drilling except for Borings B-3 and B-20, or for the short duration that the borings were allowed to remain open. Boring B-3 encountered groundwater at a depth of 2 feet and Boring B-20 encountered groundwater at a depth of 5 feet.

The groundwater level can change due to seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the borings were performed. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

## 4.0 RECOMMENDATIONS FOR DESIGN AND CONSTRUCTION

### 4.1 Geotechnical Considerations

A new pavement section is recommended due to the proposed traffic and current pavement distress along Arlington Blvd. Full depth reclamation (FDR) was considered but not recommended due to the relatively thin existing pavement sections encountered in the borings and the thickness of the proposed pavement section based on the provided design traffic. FDR is discussed in the following section and geotechnical considerations for Arlington Blvd are divided into two segments between Greenville Blvd to Evans St and from Evans St to Hooker Rd due to the relatively similar subsurface conditions in each of these segments.

A new asphalt section or roller compacted concrete (RCC) can be used as the new pavement section. Geotechnical considerations for RCC are included in the following report sub section. The pavements section of this report includes additional details regarding the new asphalt or RCC sections.

The majority of the subgrade soils encountered in the borings was relatively dense/stiff and moisture sensitive. Fill was encountered in the borings and is discussed in the following sections. The pavements can be supported on the existing fill soils. However, even with the recommended undercut and construction testing services, there is an inherent risk for the owner that compressible fill or unsuitable material within or buried by the fill will not be discovered. This risk of unforeseen conditions cannot be eliminated without completely removing the existing fill, but

can be reduced by performing additional testing and evaluation. This risk should be relatively low as major repairs, do not appear to have been completed in this section.

The geotechnical engineer should be retained during the construction phase of the project to observe pavements and to perform necessary tests and observations during subgrade preparation; proofrolling; and placement and compaction of the new pavement section.

#### **4.1.1 Roller Compacted Concrete (RCC)**

A minimum design life of 20 years is recommended for RCC. In addition to the minimum design life, a 30 year design life has been included which resulted in another ½ inch of RCC. RCC is typically used for heavy duty pavement applications, and it can provide economic benefits due to its construction process and design. The pavement is constructed without reinforcing steel or dowels, and does not require formwork or finishing. The concrete mix is designed for zero-slump, so it cannot be placed using the same methods as conventional concrete pavement. RCC pavements are usually placed with an asphalt paver and then densified through compaction with a vibratory steel roller.

The quality of the contractor's equipment and the expertise of his personnel are critical to successful installation a RCC section. We recommend that as a minimum the contractor's personnel have at least 5 years of total experience in RCC. Testing includes densities and compressive strength testing.

#### **4.1.2 Full Depth Reclamation (FDR)**

Design sections for the proposed traffic with a 15-year design period for full depth reclamation (FDR) of the existing pavements with a respected 2 and 3-inch asphalt pavement surface course were estimated to require a 12.5 and 14-inch layer of reclaimed material. The FDR process would include cutting the existing pavement section and subgrade 14.5 to 17 inches deep, adding additional stone as required for mix design, removing excess material, and mixing in cement prior to installing the 2 to 3-inch asphalt surface course. A milling depth over 12 inches can be difficult to achieve and could require a second pass after moving the material milled from the first pass. Existing underground utilities would likely impede the reclamation process.

The borings encountered relatively inconsistent amounts of asphalt and stone base that varied from 1 to 7 inches of asphalt underlain by zero (0) to 5 inches of stone. The total existing pavement sections ranged from 4 to 11 inches (asphalt and stone). Reclaiming the existing pavements and subgrade will produce varying amounts of aggregate.

In our opinion, FDR is not practical for the proposed repairs to Arlington Blvd between Greenville Blvd and Hooker Rd based on the inconsistency of the existing pavement sections and depth of

reclamation required. Removing the existing pavement section and a portion of the underlying soils and replacing with a new proposed asphalt or RCC pavement section is recommended.

#### **4.1.3 East Arlington Blvd from Greenville Blvd to Evans St**

Expansive fill soils were encountered in Boring B-11 to depths of 2.5 feet. Pavement distress to a new pavement section can occur as underlying expansive soils experience variations in moisture content. We recommend that these expansive fill soils be removed within 2 feet of the new pavement subgrade up to the curb and replaced with engineered fill. The expansive fill soils appear to be limited to within 400 feet east of the intersection of Evans Street along the sloping portion of East Arlington Blvd.

Laboratory testing on the clayey subgrade along this segment resulted in relatively low CBR values of 2 and 4. Recommendations for a new asphalt or RCC pavement section should provide a service life of 10 to 30 years relative to the section chosen.

#### **4.1.4 West Arlington Blvd from Evans St to Hooker Rd**

Boring B-21 did encounter some organics at depths of 2.5 to 5 feet which could be associated with the adjacent drainage culvert. The pavements can be supported on the overlying soils, however, there is some risk that these underlying organics can cause long term distress to the pavements if they are not completely removed. This risk should be relatively low as major repairs, do not appear to have been completed in this section. We should be consulted if this is not the case.

Laboratory testing on the clayey subgrade along this segment resulted in CBR values of 8 and 13. After removing the existing pavement section and a portion of the underlying subgrade to match the existing geometry, a new asphalt or RCC pavement section should provide a service life of 10 to 30 years relative to the section chosen.

### **4.2 Earthwork**

The expansive soils that appear to be limited to within 400 feet east of the intersection of Evans Street along the sloping portion of East Arlington Blvd should be removed within 2 feet of the new pavement subgrade up to the curb and replaced with engineered fill. Proofrolling should be completed on design subgrades after removing the existing pavement section and placing engineered fill as required.

Proofrolling should be performed on the design subgrade with a fully loaded, tandem-axle dump truck or similar rubber-tired construction equipment prior to construction of the new pavement sections. Proofrolling is recommended as a means of detecting areas of soft or unstable subgrade soils. The proofrolling should be performed during a period of dry weather to avoid degrading an otherwise suitable subgrade. The proofrolling operations should be observed by a representative of the geotechnical engineer. Subgrade soils that exhibit excessive rutting or deflection during

proofrolling should be repaired as directed by the field representative. Typical repairs include overexcavation followed by replacement with either properly compacted engineered fill or by a subgrade stabilization fabric in conjunction with a clean sand fill or crushed stone. Following proofrolling, the upper 8 inches of exposed subgrade should then be scarified and compacted based on the criteria specified in the following sections.

Engineered fill should meet the following material property requirements:

Fill Type <sup>1</sup>	USCS Classification	Acceptable Location for Placement
Imported Soil	SP	Most locations and elevations. Do not use in the sloped area to the east of Evans Street <sup>2</sup> .
	SM, SC	All locations and elevations.
On-site Soils	Sand: SC, SM, SP-SM, SP Clay: CL	All locations and elevations.

1. Controlled, compacted fill should consist of approved materials that are free of organic matter and debris. Frozen material should not be used, and fill should not be placed on a frozen subgrade. A sample of each material type should be submitted to the geotechnical engineer for evaluation.
2. Sand with less than 15 % fines should not be used as it may create perched water tables below pavements underlain by expansive soils.

#### 4.2.1 Compaction Requirements

We recommend that the fill be placed as recommended in the following table.

ITEM	DESCRIPTION
Fill Lift Thickness	9-inches or less in loose thickness (4" to 6" lifts when hand-operated equipment is used).
Compaction Requirements <sup>1</sup>	Compact to a minimum of 95% of the materials standard Proctor maximum dry density (ASTM D 698).
Moisture Content – Structural Fill	Within the range of -2% to +2% of optimum moisture content as determined by the standard Proctor test at the time of placement and compaction.

1. Engineered fill should be tested for moisture content and compaction during placement. If in-place density tests indicate the specified moisture or compaction limits have not been met, the area represented by the tests should be reworked and retested as required until the specified moisture and compaction requirements are achieved.

#### 4.2.2 Construction Considerations

Once an excavation is dewatered, it should remain dewatered until construction is complete and the excavation is backfilled. Most of the material excavated below the groundwater table is expected to be too wet for adequate recompaction.



Covering excavations could reduce dewatering storm water from that is collected within the excavations. If the subgrade should become frozen, desiccated, saturated, or disturbed, the affected material should be removed or these materials should be scarified, moisture conditioned, and recompacted.

As a minimum, all the temporary excavations should be sloped or braced as required by Occupational Safety and Health Administration (OSHA) regulations to provide stability and safe working conditions. Temporary excavations will most likely be required during grading operations. The grading contractor, by his contract, is usually responsible for designing and constructing stable, temporary excavations and should shore, slope or bench the sides of the excavations as required, to maintain stability of both the excavation sides and bottom. All excavations should comply with applicable local, state and federal safety regulations, including the current OSHA Excavation and Trench Safety Standards.

The geotechnical engineer should be retained during the construction phase of the project to observe earthwork and to perform necessary tests and observations during subgrade preparation; proofrolling; placement and compaction of controlled compacted fills; and backfilling of excavations.

### **4.3 Pavements**

#### **4.3.1 Subbase/Subgrade Preparation**

After removing the existing pavement, the subbase/subgrade should be proof-rolled with a fully loaded tandem axle dump truck or similar rubber-tired construction equipment. Proof-rolling is recommended as a means of detecting unstable subgrade/subbase materials.

Approximately 12.5 to 17 inches of the existing pavement and underlying soils should be removed for the new asphalt or RCC pavement section selected to match the current top of pavement geometry.

#### **4.3.2 Pavement Design Considerations**

A CBR value of 4 and a resilient modulus (Mr) of 6200 psi was used for the soil subgrade materials for the segment from Greenville Blvd to Evans Street. A CBR value of 8 and resilient modulus (Mr) of 9650 was use for the soil subgrade materials for the segment from Evans Street to Hooker Rd. The CBR values were selected from the results of the CBR testing on the bulk samples collected from the borings, the relatively stiff/dense subgrade, and the recommended removal of the expansive soils to the east of the intersection with Evans Street. Other pavement design input parameters used include:

PAVEMENT DESIGN INPUT		
Input Parameter	Asphalt	RCC
Reliability	85%	85%
Initial Serviceability	4.2	4.5
Terminal Serviceability	2.0	2.5
Standard Deviation	0.45	0.35
Load Transfer	---	3.0
Drainage	1.0	1.0

The traffic conditions were converted to the 18-kip equivalent single axle loads (ESALs) provided in the project information. A design period of 10, 15, and 20 years has been requested. A design period of 30 years was included for RCC. Should there be any changes in the assumed traffic patterns or frequency, our office should be notified to review the design and make supplementary recommendations.

Roadway	DESIGN ESAL VALUES		
	Years	Pavement Type	
		Asphalt	RCC
East and West Arlington Boulevard from Greenville Blvd to Evans Street	10	2.3 Million	---
	15	3.55 Million	---
	20	4.85 Million	6.75 Million
	30	---	10.8 Million

### 4.3.3 Design Pavement Sections

MINIMUM PAVEMENT RECOMMENDATIONS				
Arlington Boulevard Segment (Design Life)	Flexible (Superpave)		RCC	
	Layer Thickness (inches)	Material	Layer Thickness (inches)	Material
Greenville Blvd to Evans Street (10 Years)	3 <sup>1</sup>	Asphalt Surface (NCDOT S-9.5B)	/	
	3.5	Intermediate Course <sup>2</sup>		
	8	CABC <sup>3</sup>		
Greenville Blvd to Evans Street (15 Years)	3 <sup>1</sup>	Asphalt Surface (NCDOT S-9.5C)	/	
	4	Intermediate Course <sup>2</sup>		
	8	CABC <sup>3</sup>		
Greenville Blvd to Evans Street (20 Years)	3 <sup>1</sup>	Asphalt Surface (NCDOT S-9.5C)	8.5	RCC (5,500 psi compressive and 700 psi flexural) <sup>4</sup>
	4	Intermediate Course <sup>2</sup>	8	CABC <sup>3</sup>
	9	CABC <sup>3</sup>		
Greenville Blvd to Evans Street (30 Years)	/		9	RCC (5,500 psi compressive and 700 psi flexural) <sup>4</sup>
			8	CABC <sup>3</sup>
Evans Street to Hooker Road (10 Years)	1.5	Asphalt Surface (NCDOT S-9.5B)	/	
	4	Intermediate Course <sup>2</sup>		
	7	CABC <sup>3</sup>		
Evans Street to Hooker Road (15 Years)	1.5	Asphalt Surface (NCDOT S-9.5C)	/	
	4	Intermediate Course <sup>2</sup>		
	8	CABC <sup>3</sup>		
Evans Street to Hooker Road (20 Years)	2	Asphalt Surface (NCDOT S-9.5C)	8.5	RCC (5,500 psi compressive and 700 psi flexural) <sup>4</sup>
	4	Intermediate Course <sup>2</sup>	8	CABC <sup>3</sup>
	8	CABC <sup>3</sup>		
Evans Street to Hooker Road (30 Years)	/		9	RCC (5,500 psi compressive and 700 psi flexural) <sup>4</sup>
			8	CABC <sup>3</sup>

- 1) Placed in two 1.5 inch lifts.
- 2) (NCDOT I-19.0C)
- 3) Crushed Aggregate Base Course (CABC) NCDOT CABC Type 1 or Type 2.
- 4) Minimum 28 day strength

The placement of a partial pavement thickness for use during construction is not suggested without a detailed pavement analysis incorporating construction traffic. In addition, we should be contacted to confirm the traffic assumptions outlined above. If the actual traffic varies from the assumptions outlined above, modification of the pavement section thickness will be required.

Recommendations for pavement construction presented depend upon compliance with recommended material specifications. To assess compliance, observation and testing should be performed under the direction of the geotechnical engineer.

Asphalt concrete and RCC should conform to the North Carolina Department of Transportation (NCDOT) "Standard Specifications for Roads and Structures".

The performance of all pavements can be enhanced by minimizing excess moisture which can reach the subgrade soils. The following recommendations should be considered a minimum:

- Subgrade and pavement surface with a minimum 1/4 inch per foot slope to promote proper surface drainage.
- Installation of joint sealant to seal cracks immediately.

#### **4.4 Pavement Maintenance**

Preventative maintenance should be planned and provided for through an ongoing pavement management program to enhance future pavement performance. Preventative maintenance activities are intended to slow the rate of pavement deterioration and to preserve the pavement investment. Preventative maintenance, which consists of both localized maintenance (e.g. crack and joint sealing and patching) and global maintenance (e.g. surface sealing), is usually the first priority when implementing a planned pavement maintenance program and provides the highest return on investment for pavements.

#### **4.5 RCC Construction Considerations**

The RCC should be placed out of the paver at a minimum of 92% of the material's maximum wet density. Compaction of RCC should begin within 15 minutes of spreading the RCC mix utilizing self-propelled, double drum, steel wheel vibratory rollers weighing at least 10 tons. The time between mixing and compacting of RCC should not exceed 2 hours. The contractor should establish an optimum rolling pattern to obtain at least 98% compaction (based on wet density).

RCC placement is not allowed during rainy conditions sufficient to be detrimental to the finished product. Ambient temperature should be a minimum of 40 degrees Fahrenheit and rising.

RCC surface should be troweled (with a mechanical trowel machine) to evenly distribute the natural RCC material in the mix without addition of water. Once the troweling process is complete, drag the surface with wet broom capable of producing a uniform textured surface in appearance and reasonably free from encrusted matter.

Contraction joints should be made as soon as possible after compaction of RCC without damaging the pavement. Transverse joints should have a maximum spacing of 20 feet and longitudinal breaks at a maximum spacing of 15 feet, unless specified otherwise by the engineer. The roadway should have at least two longitudinal contraction joints.

## **5.0 GENERAL COMMENTS**

Terracon should be retained to review the final design plans and specifications so comments can be made regarding interpretation and implementation of our geotechnical recommendations in the design and specifications. Terracon also should be retained to provide observation and testing services during grading, excavation, foundation construction and other earth-related construction phases of the project.

The analysis and recommendations presented in this report are based upon the data obtained from the borings performed at the indicated locations and from other information discussed in this report. This report does not reflect variations that may occur between borings, across the site, 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 should be immediately notified so that further evaluation and supplemental recommendations can be provided.

The scope of services for this project 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.

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No warranties, either express or implied, are intended or made. Site safety, excavation support, and dewatering requirements are the responsibility of others. In the event that changes in the nature, design, or location of the project as outlined in this report are planned, the conclusions and recommendations contained in this report shall not be considered valid unless Terracon reviews the changes and either verifies or modifies the conclusions of this report in writing.

**APPENDIX A**  
**FIELD EXPLORATION**

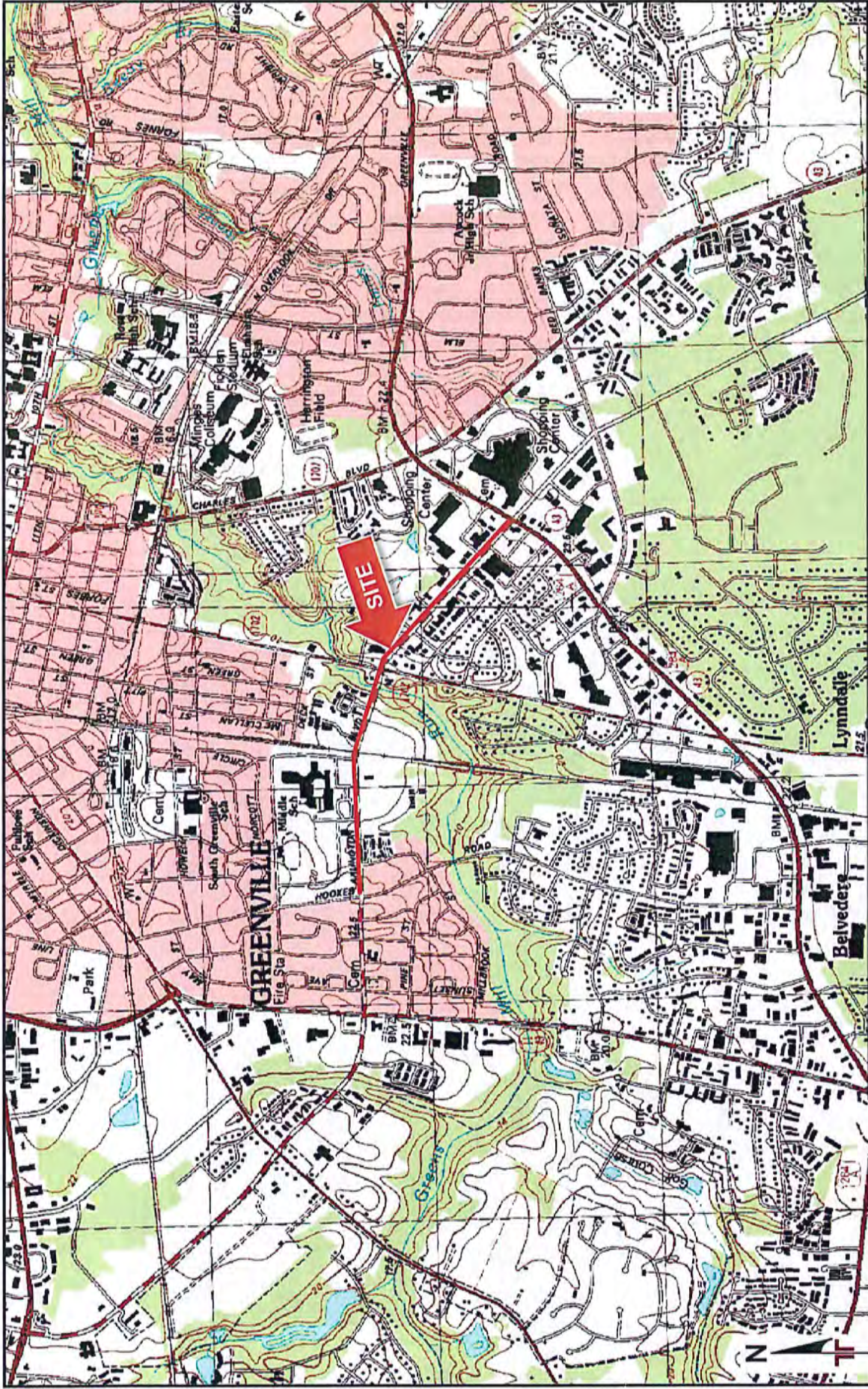


Exhibit  
**A-1**

**SITE LOCATION PLAN**

**COG Arlington Blvd Pavements**  
Arlington Blvd from Greenville Blvd to Hooker Rd  
Greenville, NC

**Terracon**  
314 Beacon Dr  
Winterville, NC 28550-7956

Project No.	72185073
Scale:	1"=2,000'
File Name:	72185073 EXA
Date:	10/24/2018
Project Manager:	AJG
Drawn by:	AJG
Checked by:	CFB
Approved by:	CFB

TOPOGRAPHIC MAP IMAGE COURTESY OF THE U.S. GEOLOGICAL SURVEY. QUADRANGLES INCLUDE: GREENVILLE SW, NC (11/1988) and GREENVILLE SE, NC (11/1988).

DIAGRAM IS FOR GENERAL LOCATION ONLY AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES.

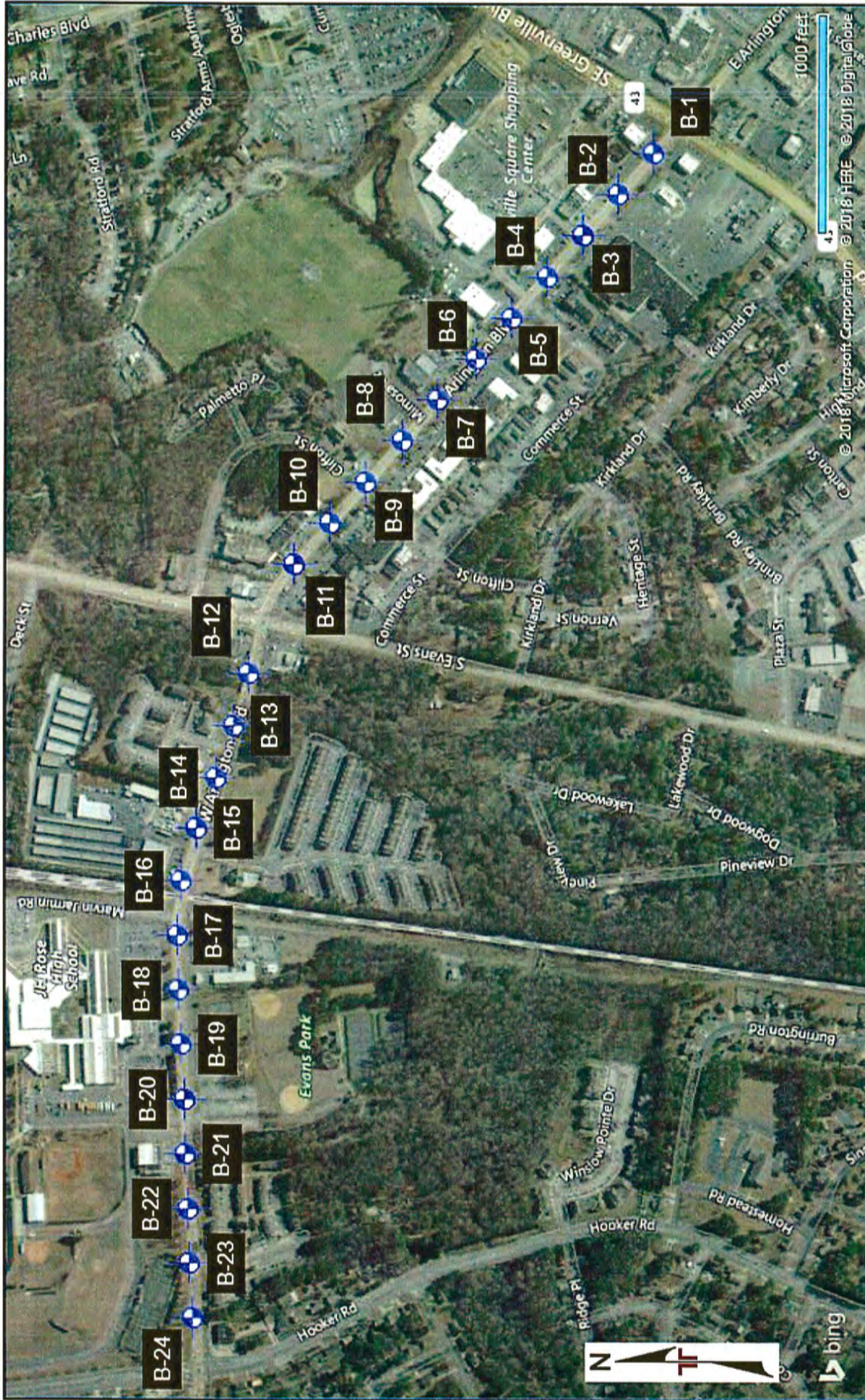


Exhibit  
**A-2**

**BORING LOCATION PLAN**

**COG Arlington Blvd Pavements**  
Arlington Blvd from Greenville Blvd to Hooker Rd  
Greenville, NC

**Terracon**  
314 Beacon Dr  
Winterville, NC 28590-7956

Project Manager:	AJG	Project No.:	72185073
Drawn by:	AJG	Scale:	AS SHOWN
Checked by:	CFB	File Name:	72185073 EXA
Approved by:	CFB	Date:	10/24/2018

AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES



## **Field Exploration Description**

Boring locations were determined by spacing the borings at approximately 250 foot intervals on aerial. The boring locations were marked in the field by Terracon by referencing existing site features. GPS locations of the borings were recorded by referencing existing site features on aerial photography. The locations of the borings should be considered accurate only to the degree implied by the means and methods used to define them.

Traffic control was required to perform the soil test borings. The soil test borings were performed by a trailer-mounted power drilling rig utilizing hollow stem auger drilling procedures to advance the boreholes. Representative soil samples were obtained directly below the pavement section and at a depth of 3.5 feet using split-barrel sampling procedures. In the split barrel sampling procedure, the number of blows required to advance a standard 2 inch O.D. split barrel sampler the last 12 inches of the typical total 18 inch penetration by means of a 140 pound safety hammer with a free fall of 30 inches, is the standard penetration resistance value (SPT-N). This value is used to estimate the in-situ relative density of cohesionless soils and consistency of cohesive soils.

An automatic SPT hammer was used to advance the split-barrel sampler in the borings performed on this site. A greater efficiency is typically achieved with the automatic hammer compared to the conventional safety hammer operated with a cathead and rope. Published correlations between the SPT values and soil properties are based on the lower efficiency cathead and rope method. This higher efficiency affects the standard penetration resistance blow count (N) value by increasing the penetration per hammer blow over what would be obtained using the cathead and rope method. The effect of the automatic hammer's efficiency has been considered in the interpretation and analysis of the subsurface information for this report.

The samples were tagged for identification, sealed to reduce moisture loss, and taken to our laboratory for further examination, testing, and classification. Information provided on the boring logs attached to this report includes soil descriptions, consistency evaluations, boring depths, sampling intervals, and groundwater conditions.

A field log of each boring was prepared by the drill crew. These logs included visual classifications of the materials encountered during drilling as well as the driller's interpretation of the subsurface conditions between samples. Final boring logs included with this report represent the engineer's interpretation of the field logs and include modifications based on laboratory observation and tests of the samples. Additional information provided on the boring logs attached to this report includes soil descriptions, consistency evaluations, boring depths, sampling intervals, and groundwater conditions.



# BORING LOG NO. B-2

**PROJECT:** COG Arlington Blvd Pavements

**CLIENT:** East Group PA  
Greenville, NC

**SITE:** E Arlington Blvd  
Greenville, NC

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL\_72185073 COG ARLINGTON BLVD- GREENVILLE, NC.GPJ TERRACON\_DATATEMPLATE.GDT 11/21/18

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 35.5865° Longitude: -77.3716°	DEPTH (FL)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS	
							LL-PL-PI	PERCENT FINES
	DEPTH							
	0.2 <b>ASPHALT (2")</b>							
	0.3 <b>AGGREGATE BASE COURSE (2")</b>							
	<b>CLAYEY SAND (SC)</b> , tan and light brown, loose to medium dense			X	4-7-5 N=12	14		
				X	2-2-2 N=4			
	5.0 <b>Boring Terminated at 5 Feet</b>	5						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:

See Exhibit A-3 for description of field procedures.

Notes:

Abandonment Method:

Borings backfilled with soil cuttings and sand upon completion. Sealed with bituminous cold patch at surface.

See Appendix B for description of laboratory procedures and additional data (if any).  
See Appendix C for explanation of symbols and abbreviations.

**WATER LEVEL OBSERVATIONS**

*No free water observed*



314 Beacon Dr  
Winterville, NC

Boring Started: 09-06-2018

Boring Completed: 09-06-2018

Drill Rig: Trailer

Driller: Carolina Drilling, Inc.

Project No.: 72185073

Exhibit: A-5

# BORING LOG NO. B-3

**PROJECT:** COG Arlington Blvd Pavements

**CLIENT:** East Group PA  
Greenville, NC

**SITE:** E Arlington Blvd  
Greenville, NC

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 72185073 COG ARLINGTON BLVD, GREENVILLE, NC.GPJ TERRACON\_DATATEMPLATE.GDT 11/21/18

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 35.5869° Longitude: -77.3723°	DEPTH (FL)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	DEPTH							
	<b>ASPHALT (3")</b>							
	0.3							
	<b>AGGREGATE BASE COURSE (3")</b>							
	0.5							
	<b>SANDY LEAN CLAY (CL)</b> , brown and orange, medium stiff		X		2-3-4 N=7	17	28-12-16	54
			▽					
	2.5							
	<b>LEAN CLAY (CL)</b> , grayish brown, soft to medium stiff							
	5.0				3-2-2 N=4			
	<b>Boring Terminated at 5 Feet</b>	5						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:	See Exhibit A-3 for description of field procedures.  See Appendix B for description of laboratory procedures and additional data (if any).	Notes:
Abandonment Method: Borings backfilled with soil cuttings and sand upon completion. Sealed with bituminous cold patch at surface.	See Appendix C for explanation of symbols and abbreviations.	
<b>WATER LEVEL OBSERVATIONS</b>		
▽ At completion of drilling		
314 Beacon Dr Winterville, NC		Boring Started: 09-05-2018 Boring Completed: 09-05-2018
		Drill Rig: Trailer Driller: Carolina Drilling, Inc.
		Project No.: 72185073 Exhibit: A-6



# BORING LOG NO. B-5

**PROJECT:** COG Arlington Blvd Pavements

**CLIENT:** East Group PA  
Greenville, NC

**SITE:** E Arlington Blvd  
Greenville, NC

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 72185073 COG ARLINGTON BLVD, GREENVILLE, NC.GPJ TERRACON\_DATATEMPLATE.GDT 11/21/18

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 35.5878° Longitude: -77.3735°	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS	
								LL-PL-PI	PERCENT FINES
		0.1							
	<b>ASPHALT (1")</b>								
	<b>AGGREGATE BASE COURSE (3")</b>	0.3							
	<b>SANDY LEAN CLAY (CL)</b> , brown and orange, medium stiff				X	5-3-4 N=7	16		
					X				
	<b>CLAYEY SAND (SC)</b> , brown, loose	2.5							
					X	4-3-4 N=7			
					X				
	<b>Boring Terminated at 5 Feet</b>	5.0	5						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

<p><b>Advancement Method:</b></p>	<p>See Exhibit A-3 for description of field procedures.</p> <p>See Appendix B for description of laboratory procedures and additional data (if any).</p>	<p><b>Notes:</b></p>						
<p><b>Abandonment Method:</b> Borings backfilled with soil cuttings and sand upon completion. Sealed with bituminous cold patch at surface.</p>	<p>See Appendix C for explanation of symbols and abbreviations.</p>							
<p><b>WATER LEVEL OBSERVATIONS</b></p> <p><i>No free water observed</i></p>	<p>314 Beacon Dr Winterville, NC</p>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Boring Started: 09-05-2018</td> <td style="width: 50%;">Boring Completed: 09-05-2018</td> </tr> <tr> <td>Drill Rig: Trailer</td> <td>Driller: Carolina Drilling, Inc.</td> </tr> <tr> <td>Project No.: 72185073</td> <td>Exhibit: A-8</td> </tr> </table>	Boring Started: 09-05-2018	Boring Completed: 09-05-2018	Drill Rig: Trailer	Driller: Carolina Drilling, Inc.	Project No.: 72185073	Exhibit: A-8
Boring Started: 09-05-2018	Boring Completed: 09-05-2018							
Drill Rig: Trailer	Driller: Carolina Drilling, Inc.							
Project No.: 72185073	Exhibit: A-8							

# BORING LOG NO. B-6

**PROJECT:** COG Arlington Blvd Pavements

**CLIENT:** East Group PA  
Greenville, NC

**SITE:** E Arlington Blvd  
Greenville, NC

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 72185073 COG ARLINGTON BLVD, GREENVILLE, NC.GPJ TERRACON\_DATA\TEMPLATE.GDT 11/21/18

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 35.5883° Longitude: -77.3742°	DEPTH (FL)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS	
							LL-PL-PI	PERCENT FINES
	DEPTH							
	<b>ASPHALT (3")</b>							
	0.3							
	<b>AGGREGATE BASE COURSE (2")</b>							
	0.4							
	<b>CLAYEY SAND (SC)</b> , brown to dark brown, and orange, loose to medium dense			X	6-7-4 N=11	11		
				X	2-3-4 N=7			
	5.0							
	<i>Boring Terminated at 5 Feet</i>	5						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

<p><b>Advancement Method:</b></p>	<p>See Exhibit A-3 for description of field procedures.</p> <p>See Appendix B for description of laboratory procedures and additional data (if any).</p>	<p><b>Notes:</b></p>
<p><b>Abandonment Method:</b> Borings backfilled with soil cuttings and sand upon completion. Sealed with bituminous cold patch at surface.</p>	<p>See Appendix C for explanation of symbols and abbreviations.</p>	
<p><b>WATER LEVEL OBSERVATIONS</b></p>		
<p><i>No free water observed</i></p>		
<p>314 Beacon Dr Winterville, NC</p>		
		<p>Boring Started: 09-06-2018      Boring Completed: 09-06-2018</p> <p>Drill Rig: Trailer                      Driller: Carolina Drilling, Inc.</p> <p>Project No.: 72185073                  Exhibit: A-9</p>

# BORING LOG NO. B-7

**PROJECT:** COG Arlington Blvd Pavements

**CLIENT:** East Group PA  
Greenville, NC

**SITE:** E Arlington Blvd  
Greenville, NC

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 72185073 COG ARLINGTON BLVD, GREENVILLE, NC.GPJ TERRACON\_DATATEMPLATE.GDT 11/21/18

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 35.5888° Longitude: -77.3748°	DEPTH	DEPTH (FL)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS	
								LL-PL-PI	PERCENT FINES
0.3	<b>ASPHALT (4")</b>	0.3							
0.4	<b>AGGREGATE BASE COURSE (1")</b>	0.4							
2.5	<b>SANDY LEAN CLAY (CL)</b> , brown, medium stiff to stiff	2.5			X	3-4-4 N=8	22		
5.0	<b>CLAYEY SAND (SC)</b> , brown, loose	5.0			X	3-3-3 N=6			
	<b>Boring Terminated at 5 Feet</b>	5.0	5						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

<p><b>Advancement Method:</b></p>	<p>See Exhibit A-3 for description of field procedures.</p> <p>See Appendix B for description of laboratory procedures and additional data (if any).</p>	<p><b>Notes:</b></p>						
<p><b>Abandonment Method:</b> Borings backfilled with soil cuttings and sand upon completion. Sealed with bituminous cold patch at surface.</p>	<p>See Appendix C for explanation of symbols and abbreviations.</p>							
<p><b>WATER LEVEL OBSERVATIONS</b></p> <p><i>No free water observed</i></p>	<p>314 Beacon Dr Winterville, NC</p>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Boring Started: 09-05-2018</td> <td style="width: 50%;">Boring Completed: 09-05-2018</td> </tr> <tr> <td>Drill Rig: Trailer</td> <td>Driller: Carolina Drilling, Inc.</td> </tr> <tr> <td>Project No.: 72185073</td> <td>Exhibit: A-10</td> </tr> </table>	Boring Started: 09-05-2018	Boring Completed: 09-05-2018	Drill Rig: Trailer	Driller: Carolina Drilling, Inc.	Project No.: 72185073	Exhibit: A-10
Boring Started: 09-05-2018	Boring Completed: 09-05-2018							
Drill Rig: Trailer	Driller: Carolina Drilling, Inc.							
Project No.: 72185073	Exhibit: A-10							



# BORING LOG NO. B-8

**PROJECT:** COG Arlington Blvd Pavements

**CLIENT:** East Group PA  
Greenville, NC

**SITE:** E Arlington Blvd  
Greenville, NC

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 72185073 COG ARLINGTON BLVD, GREENVILLE, NC.GPJ TERRACON\_DATA\TEMPLATE.GDT 11/21/18

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 35.5892° Longitude: -77.3754°	DEPTH (FL)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS	PERCENT FINES
							LL-PL-PI	
0.0	<b>ASPHALT (6")</b>							
0.5	<b>AGGREGATE BASE COURSE (5")</b>							
0.9	<b>SANDY LEAN CLAY (CL)</b> , orangish brown, medium stiff			X	4-4-3 N=7	17		
2.5	<b>CLAYEY SAND (SC)</b> , orangish brown, loose			X	4-3-3 N=6			
5.0	<b>Boring Terminated at 5 Feet</b>	5						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

<p><b>Advancement Method:</b></p>	<p>See Exhibit A-3 for description of field procedures.</p> <p>See Appendix B for description of laboratory procedures and additional data (if any).</p>	<p><b>Notes:</b></p>						
<p><b>Abandonment Method:</b> Borings backfilled with soil cuttings and sand upon completion. Sealed with bituminous cold patch at surface.</p>	<p>See Appendix C for explanation of symbols and abbreviations.</p>							
<p><b>WATER LEVEL OBSERVATIONS</b></p> <p><i>No free water observed</i></p>	<p>314 Beacon Dr Winterville, NC</p>	<table style="width: 100%; border: none;"> <tr> <td style="border: none;">Boring Started: 09-05-2018</td> <td style="border: none;">Boring Completed: 09-05-2018</td> </tr> <tr> <td style="border: none;">Drill Rig: Trailer</td> <td style="border: none;">Driller: Carolina Drilling, Inc.</td> </tr> <tr> <td style="border: none;">Project No.: 72185073</td> <td style="border: none;">Exhibit: A-11</td> </tr> </table>	Boring Started: 09-05-2018	Boring Completed: 09-05-2018	Drill Rig: Trailer	Driller: Carolina Drilling, Inc.	Project No.: 72185073	Exhibit: A-11
Boring Started: 09-05-2018	Boring Completed: 09-05-2018							
Drill Rig: Trailer	Driller: Carolina Drilling, Inc.							
Project No.: 72185073	Exhibit: A-11							

# BORING LOG NO. B-9

**PROJECT:** COG Arlington Blvd Pavements

**CLIENT:** East Group PA  
Greenville, NC

**SITE:** E Arlington Blvd  
Greenville, NC

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 72185073 COG ARLINGTON BLVD, GREENVILLE, NC.GPJ TERRACON\_DATATEMPLATE.GDT 11/21/18

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 35.5897° Longitude: -77.3761°	DEPTH (FL)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS		PERCENT FINES
							LL	PL-PI	
		0.2							
	<b>ASPHALT (2")</b>								
	<b>AGGREGATE BASE COURSE (3")</b>								
	0.4								
	<b>SANDY LEAN CLAY (CL)</b> , brown, red, and orange, medium stiff			X	2-3-3 N=6	19	36-15-21	40	
	2.5								
	<b>CLAYEY SAND (SC)</b> , reddish brown, loose								
	5.0								
	<b>Boring Terminated at 5 Feet</b>	5		X	3-3-4 N=7				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

<p><b>Advancement Method:</b></p>	<p>See Exhibit A-3 for description of field procedures.</p> <p>See Appendix B for description of laboratory procedures and additional data (if any).</p>	<p><b>Notes:</b></p>						
<p><b>Abandonment Method:</b> Borings backfilled with soil cuttings and sand upon completion. Sealed with bituminous cold patch at surface.</p>	<p>See Appendix C for explanation of symbols and abbreviations.</p>							
<p><b>WATER LEVEL OBSERVATIONS</b></p> <p><i>No free water observed</i></p>	<p>314 Beacon Dr Winterville, NC</p>	<table style="width: 100%; border: none;"> <tr> <td style="border: none;">Boring Started: 09-05-2018</td> <td style="border: none;">Boring Completed: 09-05-2018</td> </tr> <tr> <td style="border: none;">Drill Rig: Trailer</td> <td style="border: none;">Driller: Carolina Drilling, Inc.</td> </tr> <tr> <td style="border: none;">Project No.: 72185073</td> <td style="border: none;">Exhibit: A-12</td> </tr> </table>	Boring Started: 09-05-2018	Boring Completed: 09-05-2018	Drill Rig: Trailer	Driller: Carolina Drilling, Inc.	Project No.: 72185073	Exhibit: A-12
Boring Started: 09-05-2018	Boring Completed: 09-05-2018							
Drill Rig: Trailer	Driller: Carolina Drilling, Inc.							
Project No.: 72185073	Exhibit: A-12							

# BORING LOG NO. B-10

**PROJECT:** COG Arlington Blvd Pavements

**CLIENT:** East Group PA  
Greenville, NC

**SITE:** E Arlington Blvd  
Greenville, NC

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 72185073 COG ARLINGTON BLVD, GREENVILLE, NC.GPJ TERRACON\_DATA\TEMPLATE.GDT 11/21/18

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 35.5901° Longitude: -77.3767°	DEPTH (FL)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS	PERCENT FINES
							LL-PL-PI	
	DEPTH							
	<b>ASPHALT (4")</b>							
	0.3							
	<b>AGGREGATE BASE COURSE (3")</b>							
	0.6							
	<b>CLAYEY SAND (SC)</b> , orangish brown, loose			X	4-5-4 N=9	17		
				X	2-4-5 N=9			
	5.0							
	<b>Boring Terminated at 5 Feet</b>	5						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:

See Exhibit A-3 for description of field procedures.

Notes:

Abandonment Method:

Borings backfilled with soil cuttings and sand upon completion. Sealed with bituminous cold patch at surface.

See Appendix B for description of laboratory procedures and additional data (if any).

See Appendix C for explanation of symbols and abbreviations.

**WATER LEVEL OBSERVATIONS**

*No free water observed*



314 Beacon Dr  
Winterville, NC

Boring Started: 09-06-2018

Boring Completed: 09-06-2018

Drill Rig: Trailer

Driller: Carolina Drilling, Inc.

Project No.: 72185073

Exhibit: A-13

# BORING LOG NO. B-11

**PROJECT:** COG Arlington Blvd Pavements

**CLIENT:** East Group PA  
Greenville, NC

**SITE:** E Arlington Blvd  
Greenville, NC

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 72185073 COG ARLINGTON BLVD, GREENVILLE, NC.GPJ TERRACON.DATATEMPLATE.GDT 11/21/18

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 35.5906° Longitude: -77.3773°	DEPTH (FL)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.6	<b>ASPHALT (7")</b>							
2.5	<b>FILL - FAT CLAY</b> , black, brown, and gray			X	2-3-2 N=5	26		
5.0	<b>LEAN CLAY (CL)</b> , trace gravel, grayish brown, soft			X	2-1-2 N=3			
5.0	<b>Boring Terminated at 5 Feet</b>	5						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

<b>Advancement Method:</b>  <b>Abandonment Method:</b> Borings backfilled with soil cuttings and sand upon completion. Sealed with bituminous cold patch at surface.	See Exhibit A-3 for description of field procedures.  See Appendix B for description of laboratory procedures and additional data (if any).  See Appendix C for explanation of symbols and abbreviations.	<b>Notes:</b>   Boring Started: 09-05-2018 Boring Completed: 09-05-2018 Drill Rig: Trailer Driller: Carolina Drilling, Inc. Project No.: 72185073 Exhibit: A-14
<b>WATER LEVEL OBSERVATIONS</b> No free water observed		314 Beacon Dr Winterville, NC

# BORING LOG NO. B-12

**PROJECT:** COG Arlington Blvd Pavements

**CLIENT:** East Group PA  
Greenville, NC

**SITE:** E Arlington Blvd  
Greenville, NC

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 72185073 COG ARLINGTON BLVD, GREENVILLE, NC.GPJ TERRACON\_DATATEMPLATE.GDT 11/21/18

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 35.5911° Longitude: -77.379°	DEPTH (FL)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS	PERCENT FINES
							LL-PL-PI	
	<b>ASPHALT (6")</b>							
	0.5 <b>AGGREGATE BASE COURSE (4")</b>							
	0.8 <b>CLAYEY SAND (SC)</b> , brown to dark brown, loose to medium dense				4-6-9 N=15	10		
					5-5-4 N=9			
	5.0 <b>Boring Terminated at 5 Feet</b>	5						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:

See Exhibit A-3 for description of field procedures.

Notes:

Abandonment Method:

Borings backfilled with soil cuttings and sand upon completion. Sealed with bituminous cold patch at surface.

See Appendix B for description of laboratory procedures and additional data (if any).

See Appendix C for explanation of symbols and abbreviations.

**WATER LEVEL OBSERVATIONS**

*No free water observed*



314 Beacon Dr  
Winterville, NC

Boring Started: 09-05-2018

Boring Completed: 09-05-2018

Drill Rig: Trailer

Driller: Carolina Drilling, Inc.

Project No.: 72185073

Exhibit: A-15

# BORING LOG NO. B-13

**PROJECT:** COG Arlington Blvd Pavements

**CLIENT:** East Group PA  
Greenville, NC

**SITE:** E Arlington Blvd  
Greenville, NC

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 72185073 COG ARLINGTON BLVD, GREENVILLE, NC.GPJ TERRACON\_DATATEMPLATE.GDT 11/21/18

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 35.5913° Longitude: -77.3798°	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
DEPTH								
ASPHALT (7")								
0.6								
AGGREGATE BASE COURSE (3")								
0.8								
SANDY LEAN CLAY (CL), dark brown and orange, medium stiff			X		2-2-3 N=5	14		
2.5								
CLAYEY SAND (SC), trace gravel, orangish brown, loose			X		3-3-3 N=6			
5.0								
<i>Boring Terminated at 5 Feet</i>		5						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:  Abandonment Method: Borings backfilled with soil cuttings and sand upon completion. Sealed with bituminous cold patch at surface.	See Exhibit A-3 for description of field procedures.  See Appendix B for description of laboratory procedures and additional data (if any).  See Appendix C for explanation of symbols and abbreviations.	Notes:   
<b>WATER LEVEL OBSERVATIONS</b> <i>No free water observed</i>		
	Boring Started: 09-05-2018 Drill Rig: Trailer Project No.: 72185073	Boring Completed: 09-05-2018 Driller: Carolina Drilling, Inc. Exhibit: A-16

**Terracon**  
 314 Beacon Dr  
 Winterville, NC

# BORING LOG NO. B-14

**PROJECT:** COG Arlington Blvd Pavements

**CLIENT:** East Group PA  
Greenville, NC

**SITE:** E Arlington Blvd  
Greenville, NC

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 72185073 COG ARLINGTON BLVD, GREENVILLE, NC.GPJ TERRACON\_DATATEMPLATE.GDT 11/21/18

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 35.5915° Longitude: -77.3806°	DEPTH (FL)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	<b>ASPHALT (4")</b>							
	0.3							
	0.4 <b>AGGREGATE BASE COURSE (1")</b> <b>CLAYEY SAND (SC)</b> , light brown, orange, and gray, medium dense				6-8-6 N=14	13		
	2.5 <b>POORLY GRADED SAND WITH SILT (SP-SM)</b> , orangish brown, medium dense				5-7-6 N=13			
	5.0 <b>Boring Terminated at 5 Feet</b>	5						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:

See Exhibit A-3 for description of field procedures.

Notes:

Abandonment Method:

Borings backfilled with soil cuttings and sand upon completion. Sealed with bituminous cold patch at surface.

See Appendix B for description of laboratory procedures and additional data (if any).

See Appendix C for explanation of symbols and abbreviations.

**WATER LEVEL OBSERVATIONS**

No free water observed



314 Beacon Dr  
Winterville, NC

Boring Started: 09-06-2018

Boring Completed: 09-06-2018

Drill Rig: Trailer

Driller: Carolina Drilling, Inc.

Project No.: 72185073

Exhibit: A-17

# BORING LOG NO. B-15

**PROJECT:** COG Arlington Blvd Pavements

**CLIENT:** East Group PA  
Greenville, NC

**SITE:** E Arlington Blvd  
Greenville, NC

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 72185073 COG ARLINGTON BLVD: GREENVILLE, NC.GPJ TERRACON\_DATATEMPLATE.GDT 11/21/18

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 35.5918° Longitude: -77.3814°	DEPTH (FL)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	DEPTH							
0.3	<b>ASPHALT (3")</b>							
0.4	<b>AGGREGATE BASE COURSE (2")</b>							
5.0	<b>CLAYEY SAND (SC)</b> , trace gravel, grayish brown, loose to medium dense		X		3-4-4 N=8	13	29-14-15	38
5.0	<b>Boring Terminated at 5 Feet</b>	5	X		3-4-6 N=10			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

<p><b>Advancement Method:</b></p>	<p>See Exhibit A-3 for description of field procedures. See Appendix B for description of laboratory procedures and additional data (if any). See Appendix C for explanation of symbols and abbreviations.</p>	<p><b>Notes:</b></p>						
<p><b>Abandonment Method:</b> Borings backfilled with soil cuttings and sand upon completion. Sealed with bituminous cold patch at surface.</p>								
<p><b>WATER LEVEL OBSERVATIONS</b> <i>No free water observed</i></p>	<p>314 Beacon Dr Winterville, NC</p>	<table style="width: 100%; border: none;"> <tr> <td style="border: none;">Boring Started: 09-05-2018</td> <td style="border: none;">Boring Completed: 09-05-2018</td> </tr> <tr> <td style="border: none;">Drill Rig: Trailer</td> <td style="border: none;">Driller: Carolina Drilling, Inc.</td> </tr> <tr> <td style="border: none;">Project No.: 72185073</td> <td style="border: none;">Exhibit: A-18</td> </tr> </table>	Boring Started: 09-05-2018	Boring Completed: 09-05-2018	Drill Rig: Trailer	Driller: Carolina Drilling, Inc.	Project No.: 72185073	Exhibit: A-18
Boring Started: 09-05-2018	Boring Completed: 09-05-2018							
Drill Rig: Trailer	Driller: Carolina Drilling, Inc.							
Project No.: 72185073	Exhibit: A-18							



# BORING LOG NO. B-16

**PROJECT:** COG Arlington Blvd Pavements

**CLIENT:** East Group PA  
Greenville, NC

**SITE:** E Arlington Blvd  
Greenville, NC

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 72185073 COG ARLINGTON BLVD GREENVILLE, NC.GPJ TERRACON\_DATATEMPLATE.GDT 11/21/18

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 35.592° Longitude: -77.3822°	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS	
							LL-PL-PI	PERCENT FINES
	DEPTH							
	<b>ASPHALT (5")</b>	0.4						
	<b>AGGREGATE BASE COURSE (3")</b>	0.7						
	<b>FILL - SILTY SAND</b> , with gravel, gray				8-9-5 N=14	5		
	<b>LEAN CLAY (CL)</b> , grayish brown and red, medium stiff	2.5						
					2-3-4 N=7			
	<b>Boring Terminated at 5 Feet</b>	5.0						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:

See Exhibit A-3 for description of field procedures.

Notes:

Abandonment Method:

Borings backfilled with soil cuttings and sand upon completion. Sealed with bituminous cold patch at surface.

See Appendix B for description of laboratory procedures and additional data (if any).

See Appendix C for explanation of symbols and abbreviations.

**WATER LEVEL OBSERVATIONS**

*No free water observed*



314 Beacon Dr  
Winterville, NC

Boring Started: 09-05-2018

Boring Completed: 09-05-2018

Drill Rig: Trailer

Driller: Carolina Drilling, Inc.

Project No.: 72185073

Exhibit: A-19

# BORING LOG NO. B-17

**PROJECT:** COG Arlington Blvd Pavements

**CLIENT:** East Group PA  
Greenville, NC

**SITE:** E Arlington Blvd  
Greenville, NC

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL: 72185073 COG ARLINGTON BLVD, GREENVILLE, NC.GPJ TERRACON\_DATATEMPLATE.GDT 11/21/18

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 35.592° Longitude: -77.383°	DEPTH (FL)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	DEPTH							
0.2	<b>ASPHALT (2")</b>							
0.3	<b>AGGREGATE BASE COURSE (2")</b>							
	<b>POORLY GRADED SAND (SP)</b> , dark brown, medium dense		X		5-7-5 N=12	9		
2.5	<b>SANDY LEAN CLAY (CL)</b> , dark brown and orange, medium stiff							
5.0	<b>Boring Terminated at 5 Feet</b>	5			2-3-3 N=6			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:

See Exhibit A-3 for description of field procedures.

Notes:

Abandonment Method:

Borings backfilled with soil cuttings and sand upon completion. Sealed with bituminous cold patch at surface.

See Appendix B for description of laboratory procedures and additional data (if any).

See Appendix C for explanation of symbols and abbreviations.

**WATER LEVEL OBSERVATIONS**

*No free water observed*



314 Beacon Dr  
Winterville, NC

Boring Started: 09-05-2018

Boring Completed: 09-05-2018

Drill Rig: Trailer

Driller: Carolina Drilling, Inc.

Project No.: 72185073

Exhibit: A-20

# BORING LOG NO. B-18

**PROJECT:** COG Arlington Blvd Pavements

**CLIENT:** East Group PA  
Greenville, NC

**SITE:** E Arlington Blvd  
Greenville, NC

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. 72185073 COG ARLINGTON BLVD; GREENVILLE, NC.GPJ TERRACON\_DATATEMPLATE.GDT 11/21/18

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 35.592° Longitude: -77.3839°	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS	PERCENT FINES
	LL-PL-PI							
DEPTH								
0.4	<b>ASPHALT (5")</b>							
0.8	<b>AGGREGATE BASE COURSE (4")</b>							
2.5	<b>POORLY GRADED SAND WITH SILT (SP-SM)</b> , dark brown, medium dense			5-7-6 N=13	9			
5.0	<b>SANDY LEAN CLAY (CL)</b> , brown, orange, and red, medium stiff			2-3-4 N=7				
	<b>Boring Terminated at 5 Feet</b>	5						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:

See Exhibit A-3 for description of field procedures.

Notes:

Abandonment Method:

Borings backfilled with soil cuttings and sand upon completion. Sealed with bituminous cold patch at surface.

See Appendix B for description of laboratory procedures and additional data (if any).

See Appendix C for explanation of symbols and abbreviations.

**WATER LEVEL OBSERVATIONS**

*No free water observed*



314 Beacon Dr  
Winterville, NC

Boring Started: 09-06-2018

Boring Completed: 09-06-2018

Drill Rig: Trailer

Driller: Carolina Drilling, Inc.

Project No.: 72185073

Exhibit: A-21

# BORING LOG NO. B-19

**PROJECT:** COG Arlington Blvd Pavements

**CLIENT:** East Group PA  
Greenville, NC

**SITE:** E Arlington Blvd  
Greenville, NC

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 72185073 COG ARLINGTON BLVD: GREENVILLE, NC.GPJ TERRACON\_DATA\TEMPLATE.GDT 11/21/18

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 35.592° Longitude: -77.3847°	DEPTH (FL)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS	PERCENT FINES
							LL-PL-PI	
0.3	<b>ASPHALT (4")</b>							
0.5	<b>AGGREGATE BASE COURSE (2")</b>							
5.0	<b>SANDY LEAN CLAY (CL)</b> , gray to dark gray, soft to medium stiff			X	2-3-3 N=6	14		
5.0	<b>Boring Terminated at 5 Feet</b>	5		X	2-2-2 N=4			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

<p><b>Advancement Method:</b></p>	<p>See Exhibit A-3 for description of field procedures.</p> <p>See Appendix B for description of laboratory procedures and additional data (if any).</p>	<p><b>Notes:</b></p>						
<p><b>Abandonment Method:</b> Borings backfilled with soil cuttings and sand upon completion. Sealed with bituminous cold patch at surface.</p>	<p>See Appendix C for explanation of symbols and abbreviations.</p>							
<p style="text-align: center;"><b>WATER LEVEL OBSERVATIONS</b></p> <p style="text-align: center;"><i>No free water observed</i></p>	<p style="font-size: 0.8em;">314 Beacon Dr Winterville, NC</p>	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Boring Started: 09-05-2018</td> <td style="width: 50%;">Boring Completed: 09-05-2018</td> </tr> <tr> <td>Drill Rig: Trailer</td> <td>Driller: Carolina Drilling, Inc.</td> </tr> <tr> <td>Project No.: 72185073</td> <td>Exhibit: A-22</td> </tr> </table>	Boring Started: 09-05-2018	Boring Completed: 09-05-2018	Drill Rig: Trailer	Driller: Carolina Drilling, Inc.	Project No.: 72185073	Exhibit: A-22
Boring Started: 09-05-2018	Boring Completed: 09-05-2018							
Drill Rig: Trailer	Driller: Carolina Drilling, Inc.							
Project No.: 72185073	Exhibit: A-22							

# BORING LOG NO. B-20

**PROJECT:** COG Arlington Blvd Pavements

**CLIENT:** East Group PA  
Greenville, NC

**SITE:** E Arlington Blvd  
Greenville, NC

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 72185073 COG ARLINGTON BLVD, GREENVILLE, NC.GPJ TERRACON\_DATATEMPLATE.GDT 11/21/18

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 35.5919° Longitude: -77.3856°	DEPTH (FL)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS	
							LL-PL-PI	PERCENT FINES
	<b>ASPHALT (4")</b>							
	0.3							
	<b>AGGREGATE BASE COURSE (2")</b>							
	0.5							
	<b>SANDY LEAN CLAY (CL)</b> , grayish brown and orange, soft to medium stiff				2-2-2 N=4	21	39-15-24	67
	2.5							
	<b>LEAN CLAY (CL)</b> , grayish brown and orange, medium stiff to stiff				3-3-5 N=8			
	5.0							
	<b>Boring Terminated at 5 Feet</b>	5	▽					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:

See Exhibit A-3 for description of field procedures.

Notes:

Abandonment Method:

Borings backfilled with soil cuttings and sand upon completion. Sealed with bituminous cold patch at surface.

See Appendix B for description of laboratory procedures and additional data (if any).

See Appendix C for explanation of symbols and abbreviations.

**WATER LEVEL OBSERVATIONS**

▽ At completion of drilling



314 Beacon Dr  
Winterville, NC

Boring Started: 09-05-2018

Boring Completed: 09-05-2018

Drill Rig: Trailer

Driller: Carolina Drilling, Inc.

Project No.: 72185073

Exhibit: A-23

# BORING LOG NO. B-21

**PROJECT:** COG Arlington Blvd Pavements

**CLIENT:** East Group PA  
Greenville, NC

**SITE:** E Arlington Blvd  
Greenville, NC

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. 72185073 COG ARLINGTON BLVD; GREENVILLE, NC.GPJ TERRACON\_DATATEMPLATE.GDT 11/29/18

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 35.5919° Longitude: -77.3864°	DEPTH (FL)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS	
							LL-PL-PI	PERCENT FINES
		DEPTH						
ASPHALT (6")		0.5						
AGGREGATE BASE COURSE (2")		0.7						
FILL - CLAYEY SAND (SC), dark gray, medium dense				X	6-7-5 N=12	13		
LEAN CLAY (CL), with organics (roots), black, soft		2.5		X	1-1-1 N=2	79		
<b>Boring Terminated at 5 Feet</b>		5.0						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

<p><b>Advancement Method:</b></p>	<p>See Exhibit A-3 for description of field procedures.</p> <p>See Appendix B for description of laboratory procedures and additional data (if any).</p> <p>See Appendix C for explanation of symbols and abbreviations.</p>	<p><b>Notes:</b></p>						
<p><b>Abandonment Method:</b> Borings backfilled with soil cuttings and sand upon completion. Sealed with bituminous cold patch at surface.</p>								
<p><b>WATER LEVEL OBSERVATIONS</b></p> <p><i>No free water observed</i></p>	<p>314 Beacon Dr Winterville, NC</p>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Boring Started: 09-05-2018</td> <td style="width: 50%;">Boring Completed: 09-05-2018</td> </tr> <tr> <td>Drill Rig: Trailer</td> <td>Driller: Carolina Drilling, Inc.</td> </tr> <tr> <td>Project No.: 72185073</td> <td>Exhibit: A-24</td> </tr> </table>	Boring Started: 09-05-2018	Boring Completed: 09-05-2018	Drill Rig: Trailer	Driller: Carolina Drilling, Inc.	Project No.: 72185073	Exhibit: A-24
Boring Started: 09-05-2018	Boring Completed: 09-05-2018							
Drill Rig: Trailer	Driller: Carolina Drilling, Inc.							
Project No.: 72185073	Exhibit: A-24							

# BORING LOG NO. B-22

**PROJECT:** COG Arlington Blvd Pavements

**CLIENT:** East Group PA  
Greenville, NC

**SITE:** E Arlington Blvd  
Greenville, NC

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 72185073 COG ARLINGTON BLVD: GREENVILLE, NC.GPJ TERRACON\_DATATEMPLATE.GDT 11/21/18

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 35.5919° Longitude: -77.3872°	DEPTH (FL)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS	
							LL-PL-PI	PERCENT FINES
	<b>DEPTH</b>							
	<b>ASPHALT (4")</b>							
	0.3							
	<b>AGGREGATE BASE COURSE (2")</b>							
	0.6							
	<b>SANDY LEAN CLAY (CL)</b> , light brown and orange, stiff				4-4-5 N=9	15		
	2.5							
	<b>CLAYEY SAND (SC)</b> , reddish brown, loose				4-5-4 N=9			
	5.0							
	<b>Boring Terminated at 5 Feet</b>	5						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:

See Exhibit A-3 for description of field procedures.

Notes:

Abandonment Method:

Borings backfilled with soil cuttings and sand upon completion. Sealed with bituminous cold patch at surface.

See Appendix B for description of laboratory procedures and additional data (if any).

See Appendix C for explanation of symbols and abbreviations.

**WATER LEVEL OBSERVATIONS**

No free water observed



314 Beacon Dr  
Winterville, NC

Boring Started: 09-06-2018

Boring Completed: 09-06-2018

Drill Rig: Trailer

Driller: Carolina Drilling, Inc.

Project No.: 72185073

Exhibit: A-25

# BORING LOG NO. B-23

**PROJECT:** COG Arlington Blvd Pavements

**CLIENT:** East Group PA  
Greenville, NC

**SITE:** E Arlington Blvd  
Greenville, NC

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL: 72185073 COG ARLINGTON BLVD; GREENVILLE, NC.GPJ TERRACON\_DATATEMPLATE.GDT 11/21/18

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 35.5919° Longitude: -77.3881°	DEPTH (FL)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS	PERCENT FINES
							LL-PL-PI	
		0.2						
	<b>ASPHALT (2")</b>							
	<b>AGGREGATE BASE COURSE (4")</b>							
		0.5						
	<b>POORLY GRADED SAND WITH SILT (SP-SM)</b> , light brown to brown, loose to medium dense			X	5-9-7 N=16	14		
				X	4-5-4 N=9			
		5.0						
	<b>Boring Terminated at 5 Feet</b>							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

<p><b>Advancement Method:</b></p>	<p>See Exhibit A-3 for description of field procedures.</p> <p>See Appendix B for description of laboratory procedures and additional data (if any).</p> <p>See Appendix C for explanation of symbols and abbreviations.</p>	<p><b>Notes:</b></p>						
<p><b>Abandonment Method:</b> Borings backfilled with soil cuttings and sand upon completion. Sealed with bituminous cold patch at surface.</p>								
<p><b>WATER LEVEL OBSERVATIONS</b> <i>No free water observed</i></p>	<p>314 Beacon Dr Winterville, NC</p>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Boring Started: 09-05-2018</td> <td style="width: 50%;">Boring Completed: 09-05-2018</td> </tr> <tr> <td>Drill Rig: Trailer</td> <td>Driller: Carolina Drilling, Inc.</td> </tr> <tr> <td>Project No.: 72185073</td> <td>Exhibit: A-26</td> </tr> </table>	Boring Started: 09-05-2018	Boring Completed: 09-05-2018	Drill Rig: Trailer	Driller: Carolina Drilling, Inc.	Project No.: 72185073	Exhibit: A-26
Boring Started: 09-05-2018	Boring Completed: 09-05-2018							
Drill Rig: Trailer	Driller: Carolina Drilling, Inc.							
Project No.: 72185073	Exhibit: A-26							



# BORING LOG NO. B-24

**PROJECT:** COG Arlington Blvd Pavements

**CLIENT:** East Group PA  
Greenville, NC

**SITE:** E Arlington Blvd  
Greenville, NC

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 72185073 COG ARLINGTON BLVD; GREENVILLE, NC.GPJ TERRACON\_DATATEMPLATE.GDT 11/21/18

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 35.5918° Longitude: -77.3889°	DEPTH (FL)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
DEPTH								
0.3	<b>ASPHALT (3")</b>							
0.5	<b>AGGREGATE BASE COURSE (3")</b>							
5.0	<b>CLAYEY SAND (SC)</b> , brown to dark brown, loose to medium dense			6-5-5 N=10	18			
5.0	<b>Boring Terminated at 5 Feet</b>	5		3-3-4 N=7				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:

See Exhibit A-3 for description of field procedures.

Notes:

Abandonment Method:  
Borings backfilled with soil cuttings and sand upon completion. Sealed with bituminous cold patch at surface.

See Appendix B for description of laboratory procedures and additional data (if any).  
See Appendix C for explanation of symbols and abbreviations.

**WATER LEVEL OBSERVATIONS**

No free water observed



314 Beacon Dr  
Winterville, NC

Boring Started: 09-05-2018

Boring Completed: 09-05-2018

Drill Rig: Trailer

Driller: Carolina Drilling, Inc.

Project No.: 72185073

Exhibit: A-27

**APPENDIX B**  
**LABORATORY TESTING**

## **Laboratory Test Description**

Descriptive classifications of the soils indicated on the boring logs are in accordance with the enclosed General Notes and the Unified Soil Classification System. Also shown are estimated Unified Soil Classification Symbols. A brief description of this classification system is attached to this report. Soils laboratory testing was performed under the direction of a geotechnical engineer and included visual classification, moisture content, grain size analysis, Atterberg limits, optimum dry density, and California Bearing Ratio (CBR) testing as appropriate. The results of the laboratory testing are shown on the borings logs and in Appendix B.

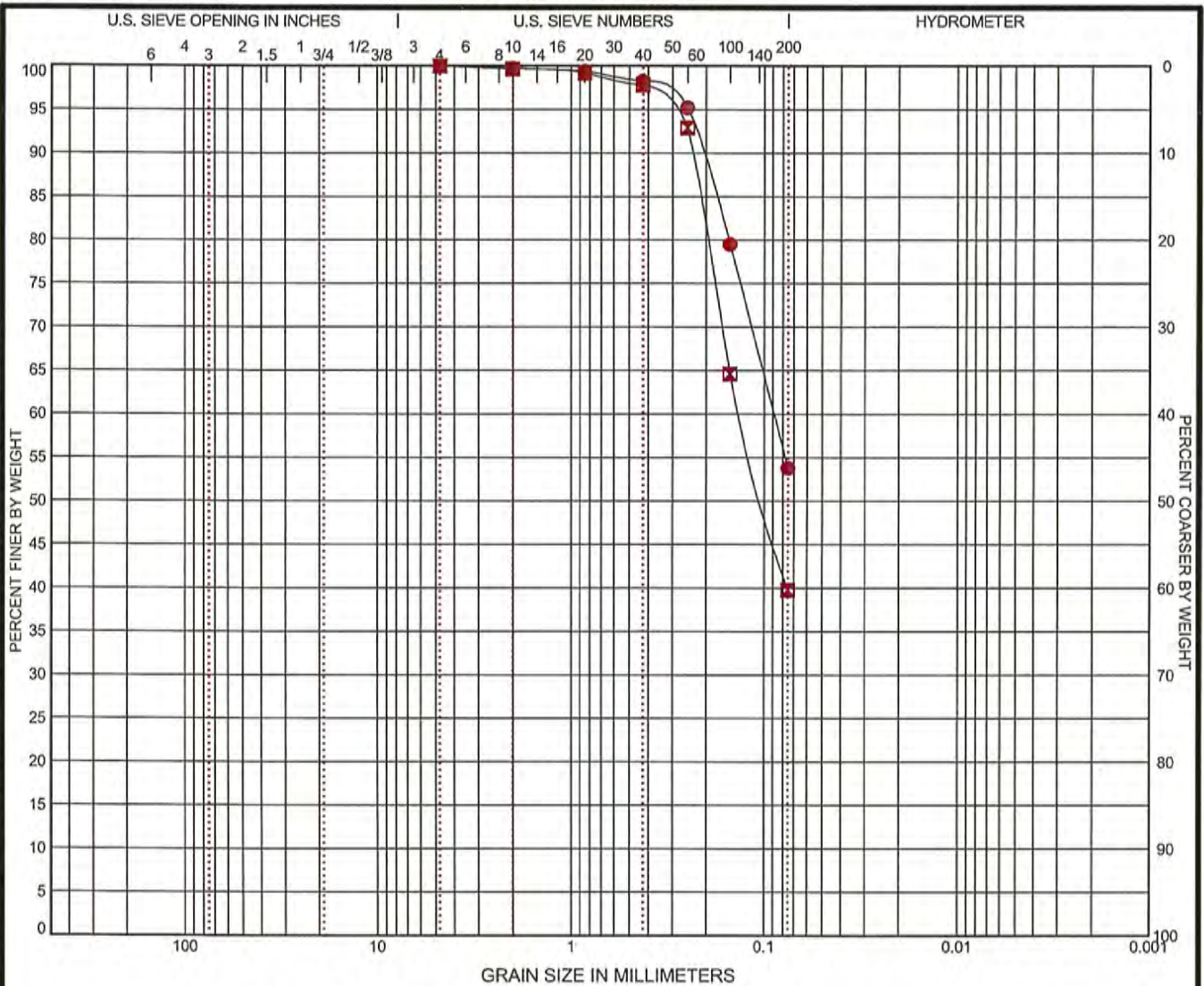
The laboratory test methods are described in the ASTM Standards listed below:

ASTM D2216 Standard Test Method of Determination of Water Content of Soil and Rock by Mass  
ASTM D2487 Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)  
ASTM D2488 Standard Practice of Description and Identification of Soils (Visual Manual Method)  
ASTM D422 Standard Test Method for Particle Size Analysis of Soils  
ASTM D1140 Standard Test Methods for Determining the Amount of Material Finer than No. 200 Sieve in Soils by Washing  
ASTM D4318 Standard Test Method for Liquid Limit, Plastic Limit and Plasticity Index of Soils  
ASTM D698 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort  
ASTM D1883 Standard Test Method for California Bearing Ratio (CBR) of Laboratory-Compacted Soils

Procedural 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.

# GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

BORING ID	DEPTH	% COBBLES	% GRAVEL	% SAND	% SILT	% FINES	% CLAY	USCS
● B-3	0.5 - 2	0.0	0.0	46.2		53.8		CL
☒ B-9	0.4 - 1.9	0.0	0.0	60.2		39.8		SC

GRAIN SIZE				SOIL DESCRIPTION						
				●	☒					● SANDY LEAN CLAY (CL)
				☒	●					☒ CLAYEY SAND (SC)
COEFFICIENTS				REMARKS						
D <sub>60</sub>	0.089	0.132		● ☒						

Sieve	% Finer	Sieve	% Finer	Sieve	% Finer
#4	100.0	#4	100.0		
#10	99.73	#10	99.69		
#20	99.39	#20	99.19		
#40	98.27	#40	97.87		
#60	95.23	#60	92.93		
#100	79.54	#100	64.61		
#200	53.79	#200	39.78		

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS 1 72185073 COG ARLINGTON BLVD; GREENVILLE, NC.GPJ TERRACON\_DATATEMPLATE.GDT 10/13/18

PROJECT: COG Arlington Blvd Pavements

SITE: Arlington Blvd  
Greenville, NC



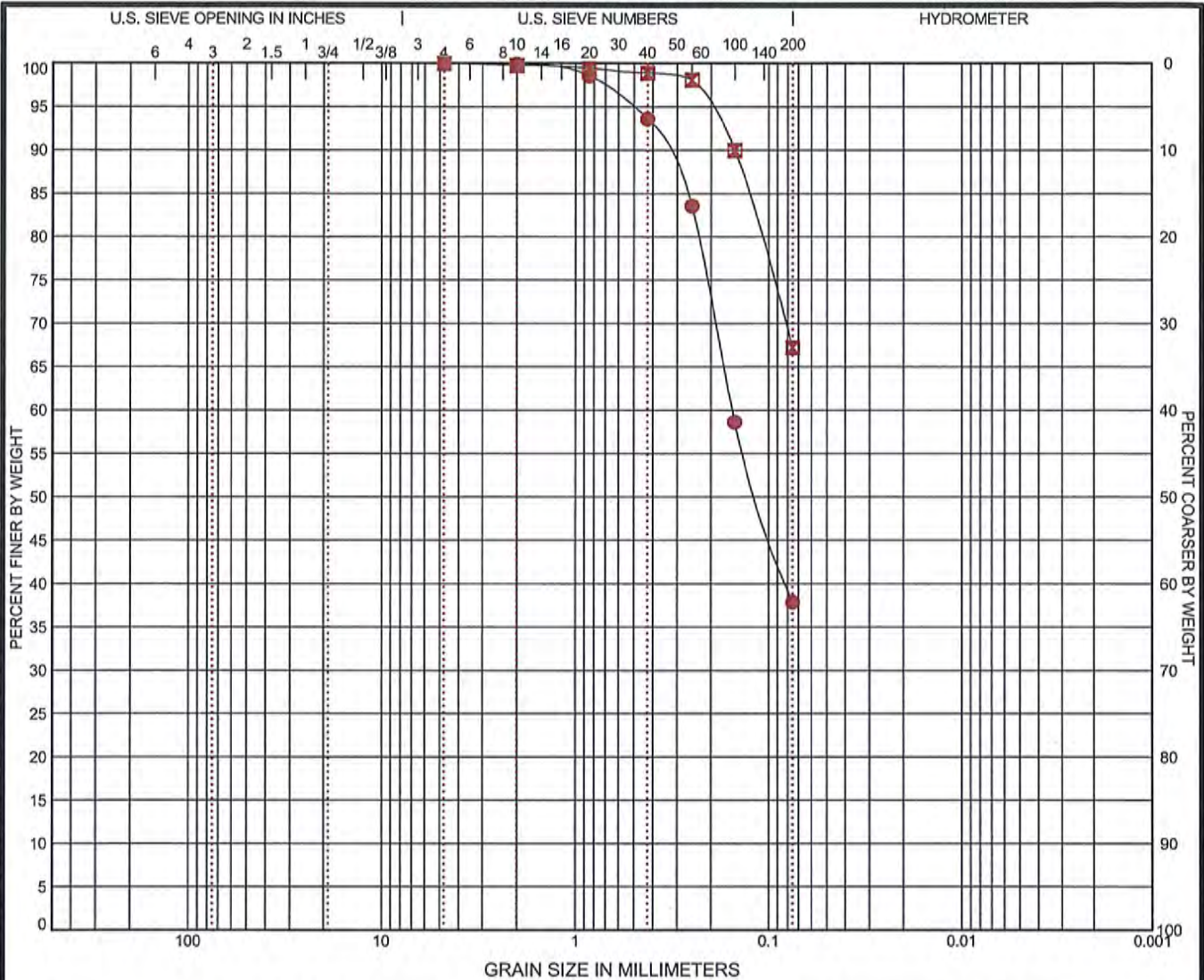
PROJECT NUMBER: 72185073

CLIENT: East Group PA  
Greenville, NC

EXHIBIT: B-2

# GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

BORING ID	DEPTH	% COBBLES	% GRAVEL	% SAND	% SILT	% FINES	% CLAY	USCS
● B-15	0.4 - 1.9	0.0	0.0	62.2		37.8		SC
☒ B-20	0.5 - 2	0.0	0.0	32.8		67.2		CL

GRAIN SIZE	
D <sub>60</sub>	0.154
D <sub>30</sub>	
D <sub>10</sub>	
COEFFICIENTS	
C <sub>c</sub>	
C <sub>u</sub>	

Sieve	% Finer	Sieve	% Finer	Sieve	% Finer
#4	100.0	#4	100.0		
#10	99.91	#10	99.77		
#20	98.57	#20	99.41		
#40	93.62	#40	98.91		
#60	83.57	#60	98.12		
#100	58.63	#100	89.99		
#200	37.85	#200	67.23		

**SOIL DESCRIPTION**

- CLAYEY SAND (SC)
- ☒ SANDY LEAN CLAY (CL)

**REMARKS**

●

☒

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS 1 72185073 COG ARLINGTON BLVD; GREENVILLE, NC.GPJ TERRACON\_DATATEMPLATE.GDT 10/13/18

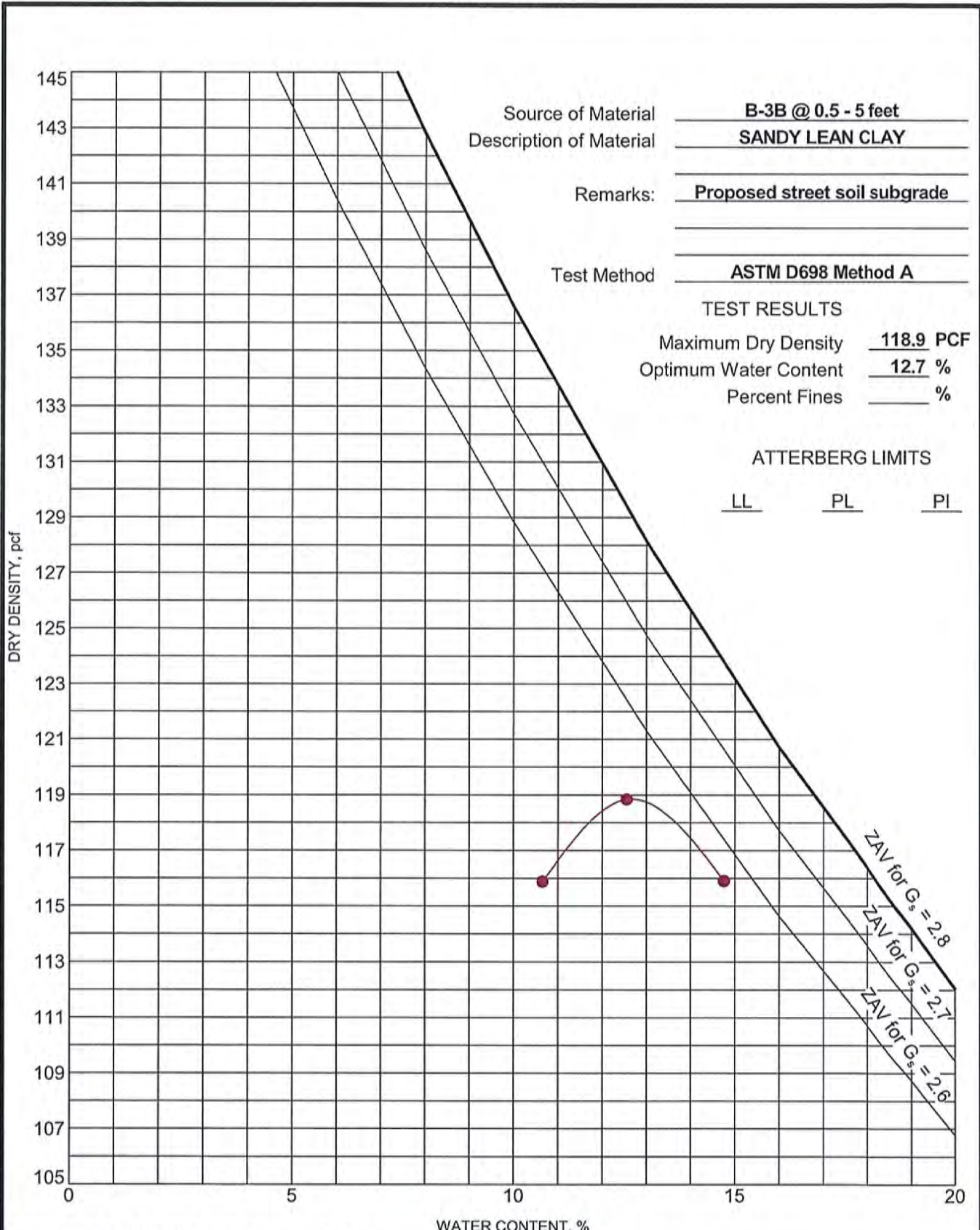
PROJECT: COG Arlington Blvd Pavements	<b>Terracon</b> 314 Beacon Dr Winterville, NC	PROJECT NUMBER: 72185073
SITE: Arlington Blvd Greenville, NC		CLIENT: East Group PA Greenville, NC
		EXHIBIT: B-3



# MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. COMPACTION - V1 72185073 COG ARLINGTON BLVD, GREENVILLE, NC.GPJ TERRACON\_DATATEMPLATE.GDT 10/13/18

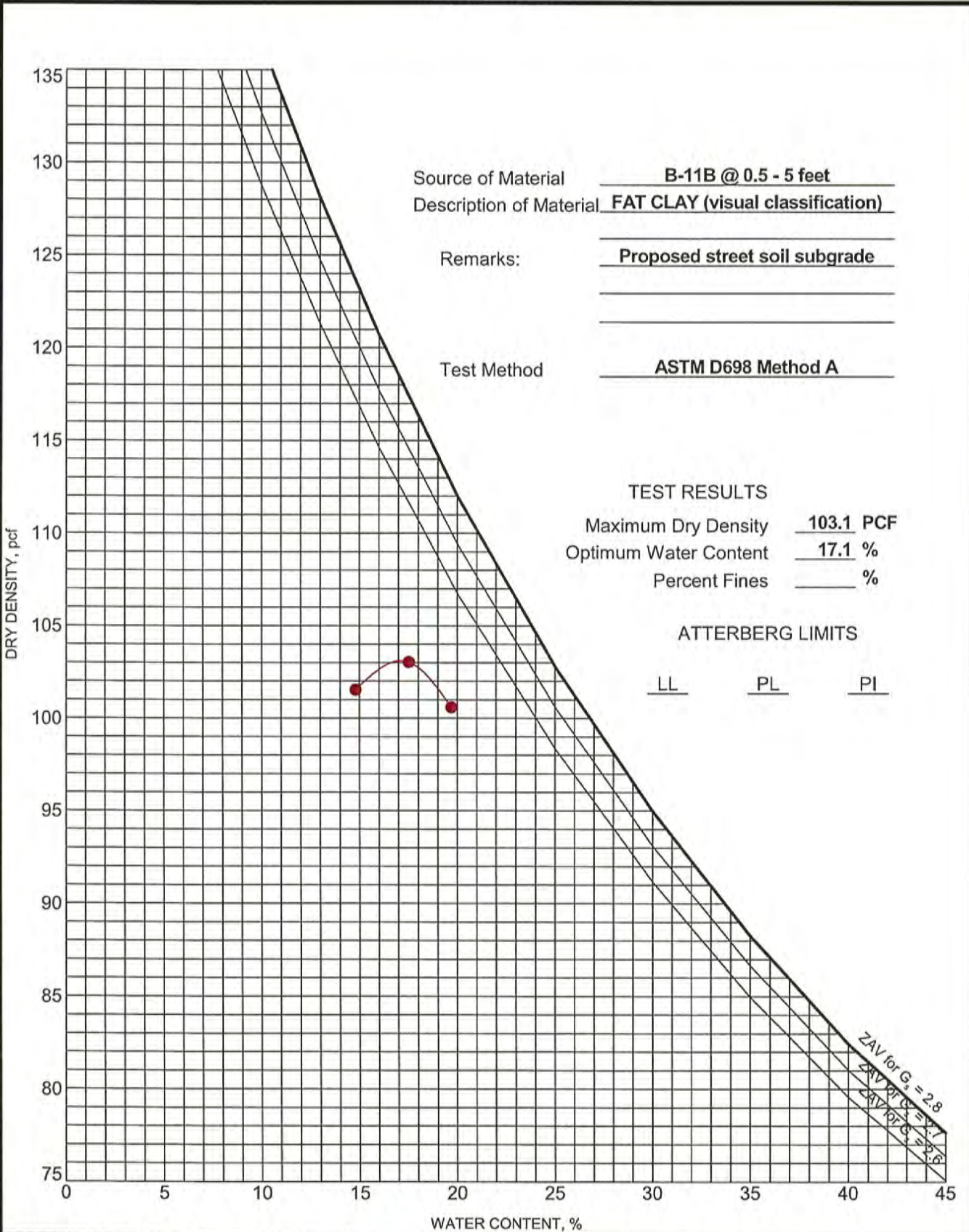


PROJECT: COG Arlington Blvd Pavements	<p>314 Beacon Dr Winterville, NC</p>	PROJECT NUMBER: 72185073
SITE: Arlington Blvd Greenville, NC		CLIENT: East Group PA Greenville, NC
		EXHIBIT: B-5

# MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. COMPACTON - V2 72185073 COG ARLINGTON BLVD; GREENVILLE, NC.GPJ TERRACON\_DATATEMPLATE.GDT 10/13/18



Source of Material B-11B @ 0.5 - 5 feet  
 Description of Material FAT CLAY (visual classification)  
 Remarks: Proposed street soil subgrade  
 Test Method ASTM D698 Method A

**TEST RESULTS**  
 Maximum Dry Density 103.1 PCF  
 Optimum Water Content 17.1 %  
 Percent Fines \_\_\_\_\_ %

**ATTERBERG LIMITS**  
LL      PL      PI

PROJECT: COG Arlington Blvd Pavements  
 SITE: Arlington Blvd  
 Greenville, NC



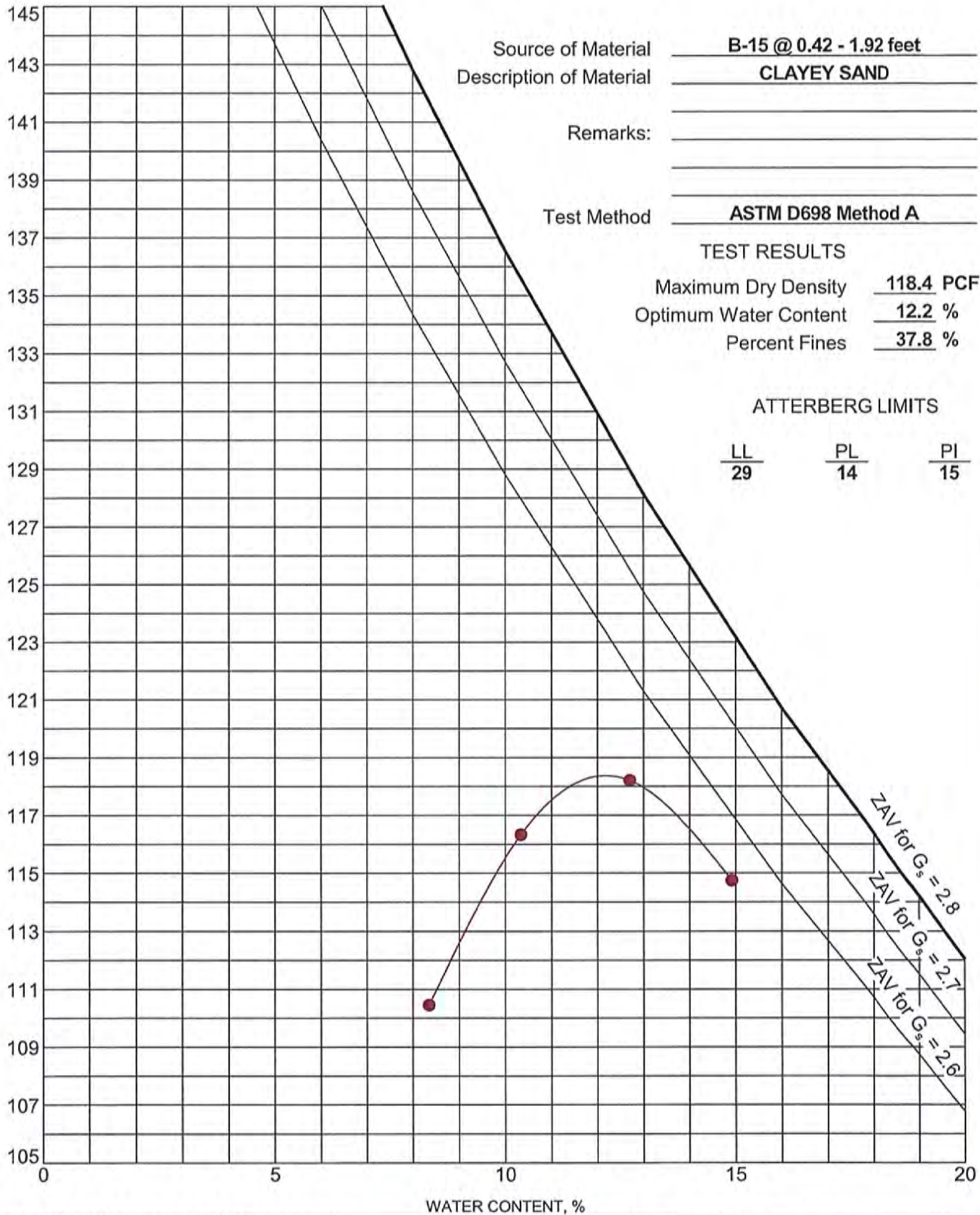
PROJECT NUMBER: 72185073  
 CLIENT: East Group PA  
 Greenville, NC  
 EXHIBIT: B-6



# MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. COMPACTON - V1 72185073 COG ARLINGTON BLVD; GREENVILLE, NC.GPJ TERRACON\_DATATEMPLATE.GDT 10/13/18



Source of Material B-15 @ 0.42 - 1.92 feet  
 Description of Material CLAYEY SAND  
 Remarks: \_\_\_\_\_  
 Test Method ASTM D698 Method A

**TEST RESULTS**

Maximum Dry Density 118.4 PCF  
 Optimum Water Content 12.2 %  
 Percent Fines 37.8 %

**ATTERBERG LIMITS**

LL      PL      PI  
29      14      15

PROJECT: COG Arlington Blvd Pavements

SITE: Arlington Blvd  
 Greenville, NC



PROJECT NUMBER: 72185073

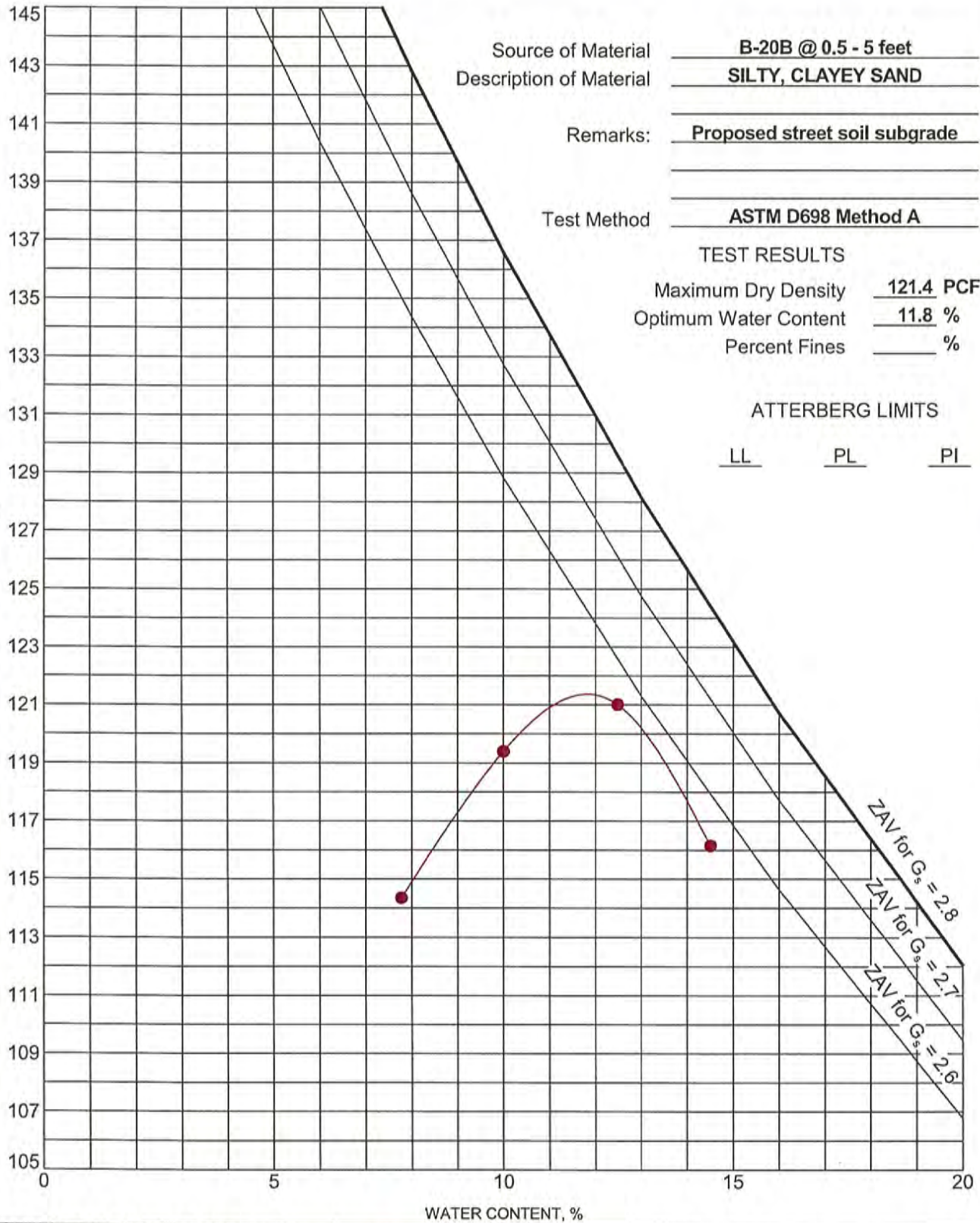
CLIENT: East Group PA  
 Greenville, NC

EXHIBIT: B-7

# MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. COMPACTION - V1 72185073 COG ARLINGTON BLVD; GREENVILLE, NC.GPJ TERRACON\_DATATEMPLATE.GDT 10/13/18



PROJECT: COG Arlington Blvd Pavements

SITE: Arlington Blvd  
Greenville, NC



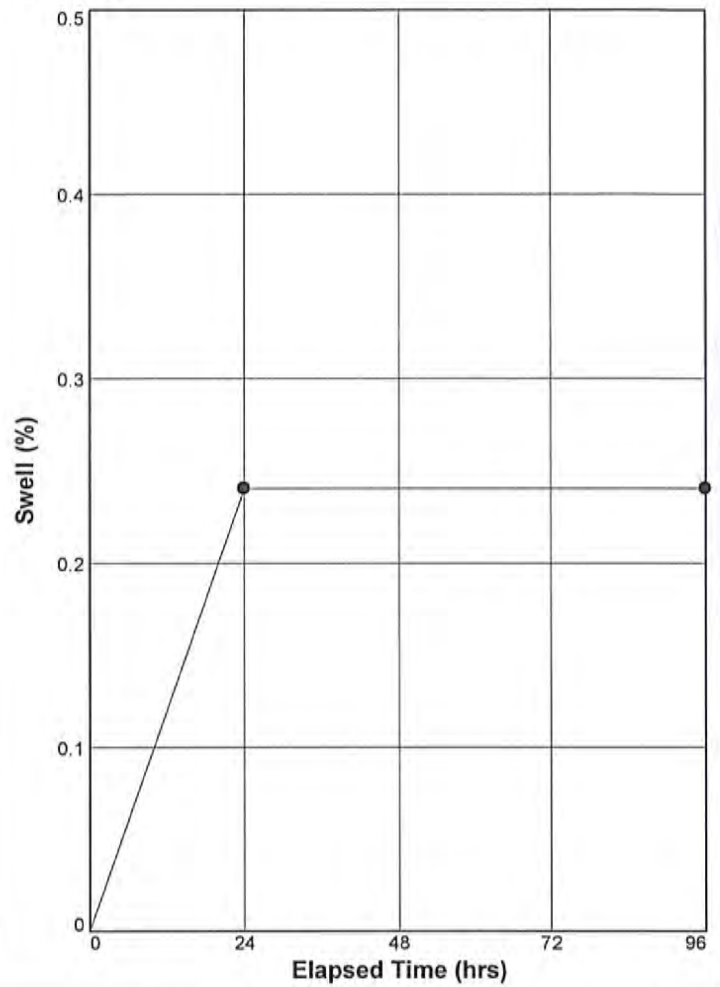
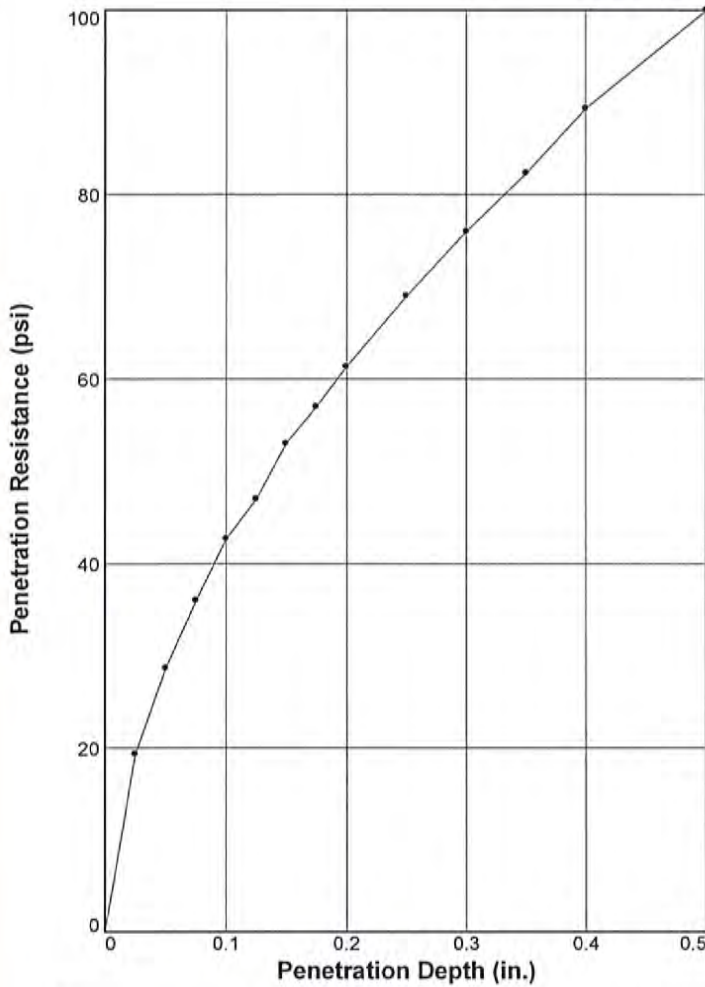
PROJECT NUMBER: 72185073

CLIENT: East Group PA  
Greenville, NC

EXHIBIT: B-8

# BEARING RATIO TEST REPORT

## ASTM D 1883-07



	Molded			Soaked			CBR (%)		Linearity Correction (in.)	Surcharge (lbs.)	Max. Swell (%)
	Density (pcf)	Percent of Max. Dens.	Moisture (%)	Density (pcf)	Percent of Max. Dens.	Moisture (%)	0.10 in.	0.20 in.			
1 ○	114.2	96	13.1	113.9	95.8	14.7	4.3	4.1	0.000	10	0.2
2 △											
3 □											

Material Description	USCS	Max. Dens. (pcf)	Optimum Moisture (%)	LL	PI

**Project No:** 72185073  
**Project:** COG Arlington Blvd Pavements; Arlington Blvd; Greenville, NC  
**Location:** B-3  
**Sample Number:** 1      **Depth:** 0.5-5.0 ft  
**Date:** 9-5-18

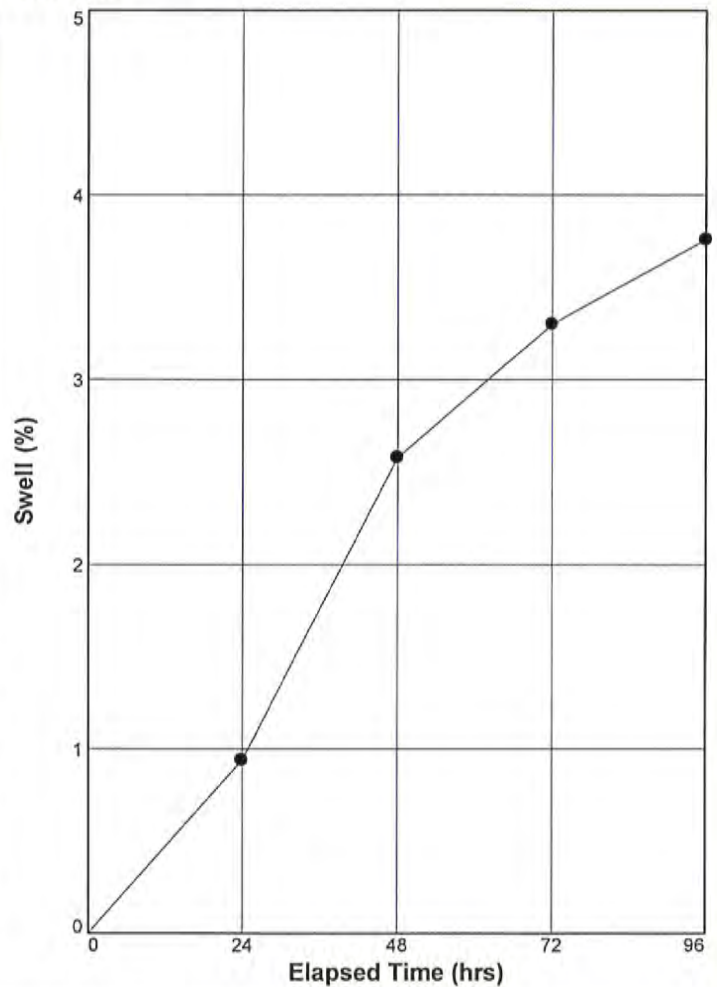
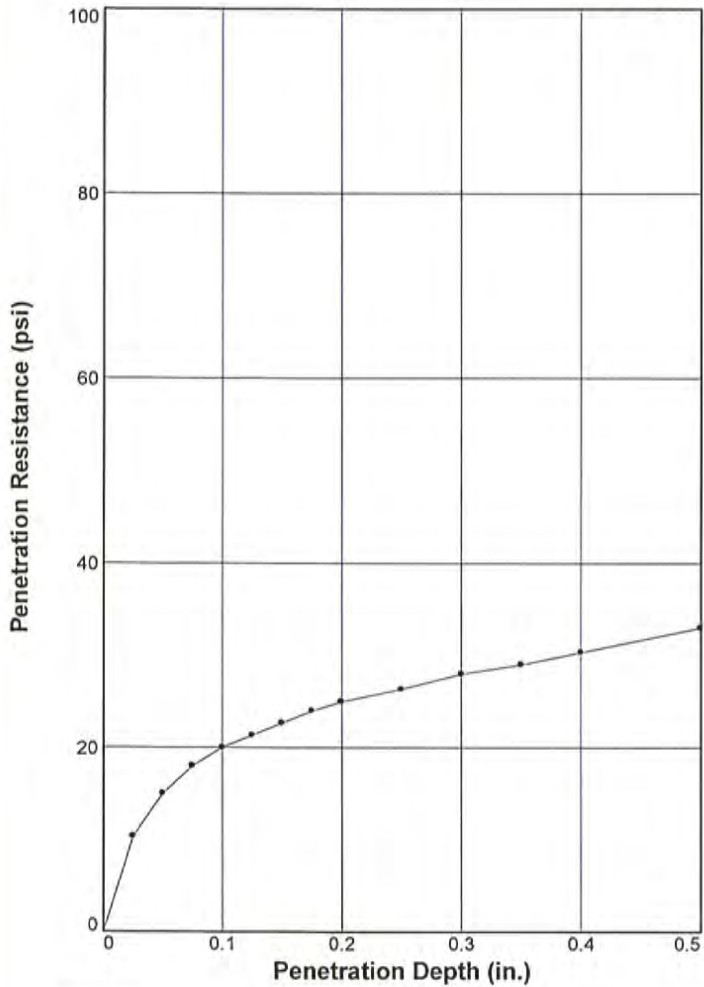
**Test Description/Remarks:**  
 ASTM D1883; SOAKED  
  
 Proposed street soil subgrade

BEARING RATIO TEST REPORT  
**Terracon Consultants, Inc.**

Exhibit B-9

# BEARING RATIO TEST REPORT

## ASTM D 1883-07



	Molded			Soaked			CBR (%)		Linearity Correction (in.)	Surcharge (lbs.)	Max. Swell (%)
	Density (pcf)	Percent of Max. Dens.	Moisture (%)	Density (pcf)	Percent of Max. Dens.	Moisture (%)	0.10 in.	0.20 in.			
1 ○	97.7	94.8	18.5	94.2	91.3	27.9	2.0	1.7	0.000	10	3.8
2 △											
3 □											
Material Description							USCS	Max. Dens. (pcf)	Optimum Moisture (%)	LL	PI
Gray and orange fat clay (visual classification)											
								103.1	17.1		

**Project No:** 72185073  
**Project:** COG Arlington Blvd Pavements; Arlington Blvd; Greenville, NC  
**Location:** B-11  
**Sample Number:** 1      **Depth:** 0.5-5.0 ft  
**Date:** 9-5-18

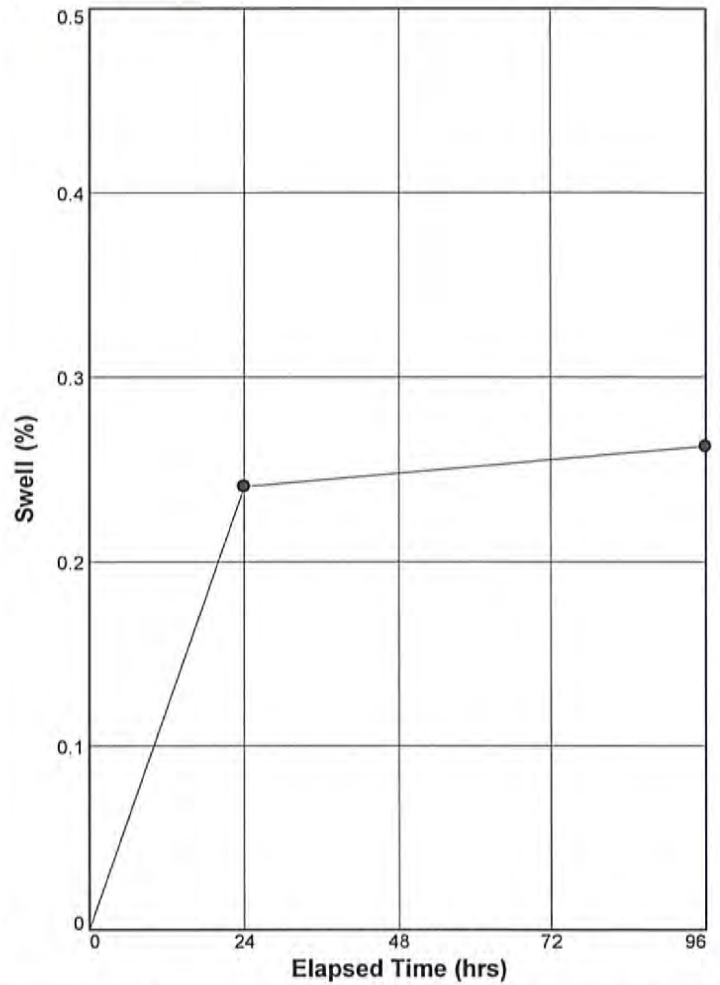
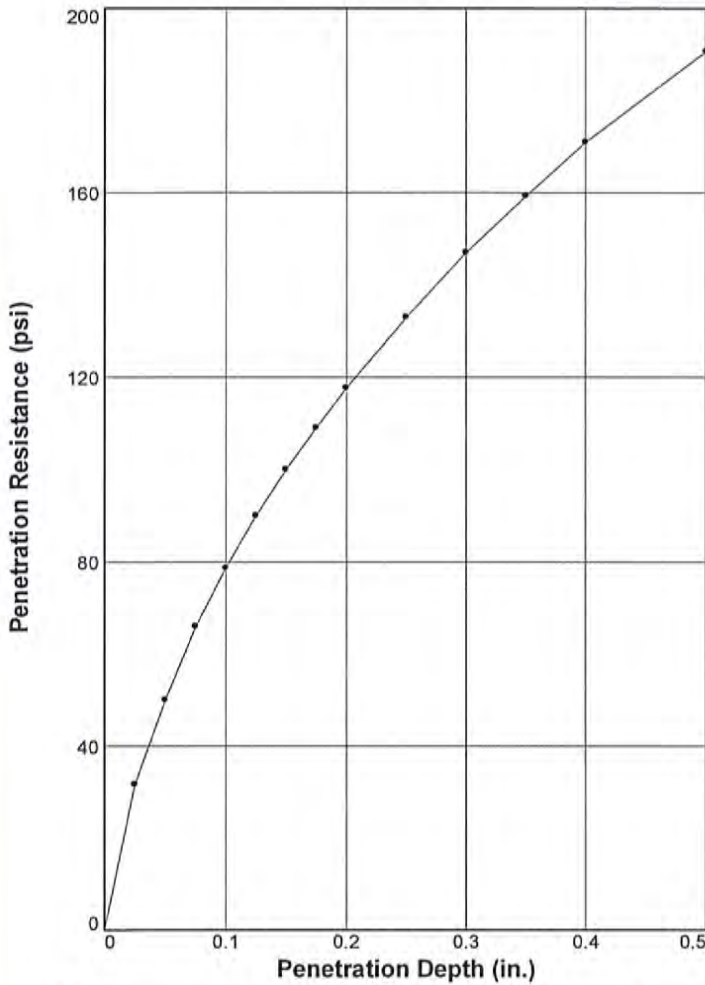
**Test Description/Remarks:**  
 ASTM D1883; SOAKED  
  
 Proposed street soil subgrade

BEARING RATIO TEST REPORT  
**Terracon Consultants, Inc.**

Exhibit B-10

# BEARING RATIO TEST REPORT

## ASTM D 1883-07



	Molded			Soaked			CBR (%)		Linearity Correction (in.)	Surcharge (lbs.)	Max. Swell (%)
	Density (pcf)	Percent of Max. Dens.	Moisture (%)	Density (pcf)	Percent of Max. Dens.	Moisture (%)	0.10 in.	0.20 in.			
1 ○	112.5	95	12.8	112.2	94.8	14.2	7.9	7.8	0.000	10	0.3
2 △											
3 □											

Material Description	USCS	Max. Dens. (pcf)	Optimum Moisture (%)	LL	PI
Dark gray brown & orange clayey sand		118.4	12.2		

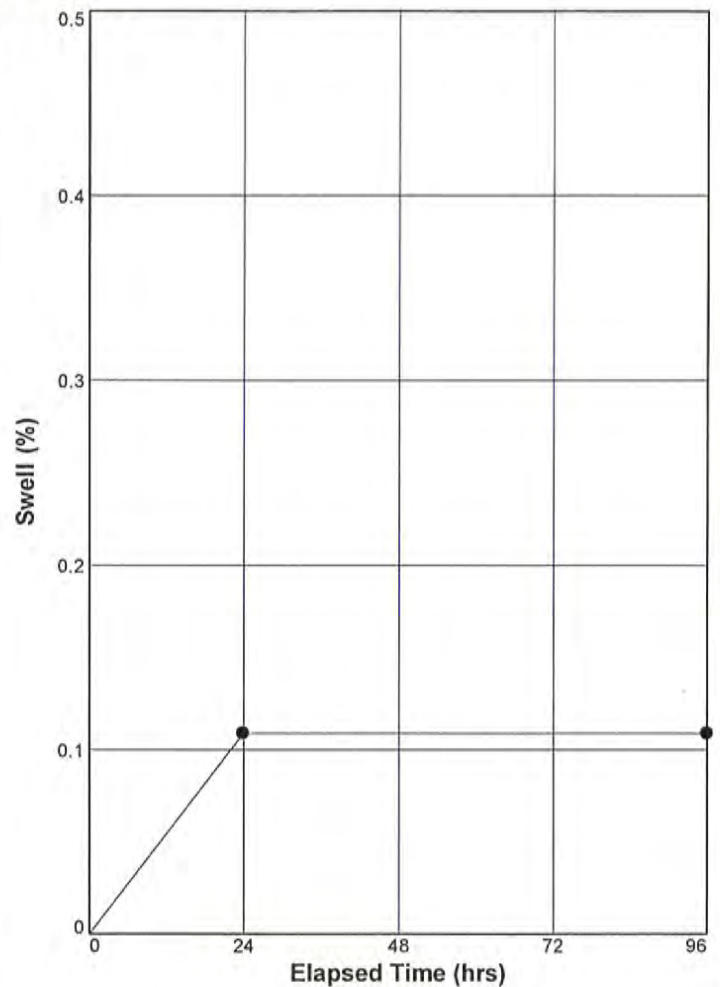
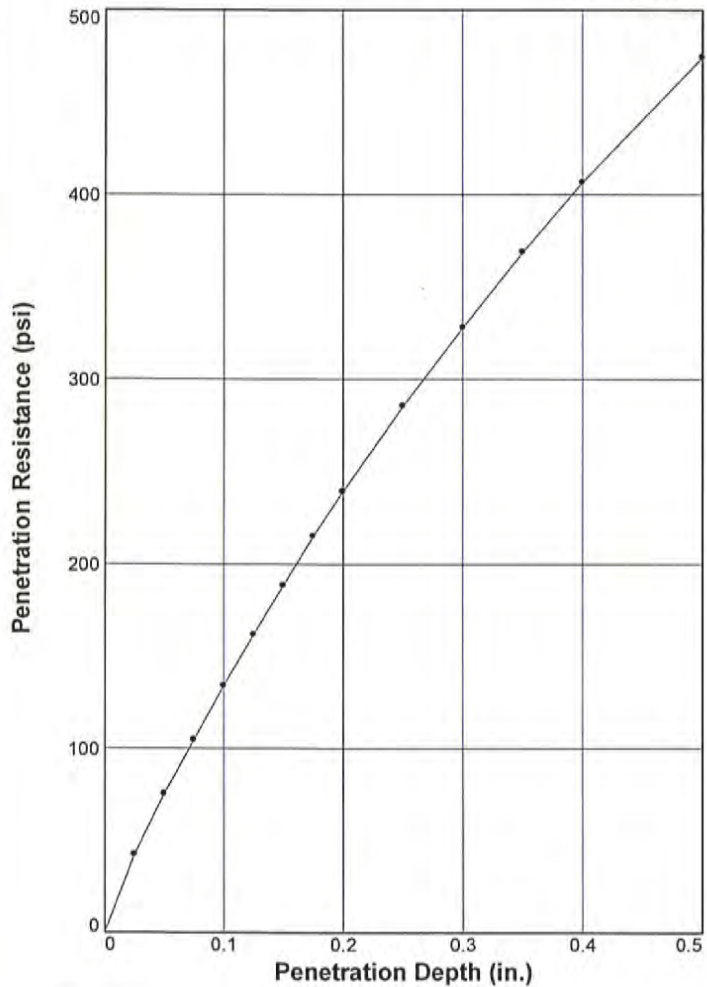
**Project No:** 72185073  
**Project:** COG Arlington Blvd Pavements; Arlington Blvd; Greenville, NC  
**Location:** B-15  
**Sample Number:** 1      **Depth:** 0.5-5.0 ft  
**Date:** 9-5-18

**Test Description/Remarks:**  
 ASTM D1883; SOAKED  
 Proposed street soil subgrade

BEARING RATIO TEST REPORT  
**Terracon Consultants, Inc.**

# BEARING RATIO TEST REPORT

## ASTM D 1883-07



	Molded			Soaked			CBR (%)		Linearity Correction (in.)	Surcharge (lbs.)	Max. Swell (%)
	Density (pcf)	Percent of Max. Dens.	Moisture (%)	Density (pcf)	Percent of Max. Dens.	Moisture (%)	0.10 in.	0.20 in.			
1 ○	116.4	95.9	11.6	116.3	95.8	12.6	13.4	16.0	0.000	10	0.1
2 △											
3 □											

Material Description	USCS	Max. Dens. (pcf)	Optimum Moisture (%)	LL	PI
Orange & gray silty, clayey sand (visual classification)		121.4	11.8		

**Project No:** 72185073  
**Project:** COG Arlington Blvd Pavements; Arlington Blvd; Greenville, NC  
**Location:** B-20  
**Sample Number:** 1      **Depth:** 0.5-5.0 ft  
**Date:** 9-5-18

**Test Description/Remarks:**  
 ASTM D1883; SOAKED  
  
 Proposed street soil subgrade












BEARING RATIO TEST REPORT  
**Terracon Consultants, Inc.**

Exhibit B-12

**APPENDIX C**  
**SUPPORTING DOCUMENTS**

# GENERAL NOTES

## DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

<b>SAMPLING</b>			<b>WATER LEVEL</b>		Water Initially Encountered	<b>FIELD TESTS</b>	(HP) Hand Penetrometer	
	<b>Auger</b>	<b>Split Spoon</b>			Water Level After a Specified Period of Time		(T) Torvane	
					Water Level After a Specified Period of Time		(b/f) Standard Penetration Test (blows per foot)	
	<b>Shelby Tube</b>	<b>Macro Core</b>		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.			(PID) Photo-Ionization Detector	
							(OVA) Organic Vapor Analyzer	
<b>Ring Sampler</b>	<b>Rock Core</b>							
								
<b>Grab Sample</b>	<b>No Recovery</b>							

## DESCRIPTIVE SOIL CLASSIFICATION

Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

## LOCATION AND ELEVATION NOTES

Unless otherwise noted, Latitude and Longitude are approximately determined using a hand-held GPS device. The accuracy of such devices is variable. 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 Includes gravels, sands and silts.			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			
	Descriptive Term (Density)	Standard Penetration or N-Value Blows/Ft.	Ring Sampler Blows/Ft.	Descriptive Term (Consistency)	Unconfined Compressive Strength, Qu, psf	Standard Penetration or N-Value Blows/Ft.	Ring Sampler Blows/Ft.
	Very Loose	0 - 3	0 - 6	Very Soft	less than 500	0 - 1	< 3
	Loose	4 - 9	7 - 18	Soft	500 to 1,000	2 - 4	3 - 4
	Medium Dense	10 - 29	19 - 58	Medium-Stiff	1,000 to 2,000	4 - 8	5 - 9
	Dense	30 - 50	59 - 98	Stiff	2,000 to 4,000	8 - 15	10 - 18
	Very Dense	> 50	≥ 99	Very Stiff	4,000 to 8,000	15 - 30	19 - 42
				Hard	> 8,000	> 30	> 42

## RELATIVE PROPORTIONS OF SAND AND GRAVEL

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 15
With	15 - 29
Modifier	> 30

## GRAIN SIZE TERMINOLOGY

Major Component of Sample	Particle Size
Boulders	Over 12 in. (300 mm)
Cobbles	12 in. to 3 in. (300mm to 75mm)
Gravel	3 in. to #4 sieve (75mm to 4.75 mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm)
Silt or Clay	Passing #200 sieve (0.075mm)

## RELATIVE PROPORTIONS OF FINES

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 5
With	5 - 12
Modifier	> 12

## PLASTICITY DESCRIPTION

Term	Plasticity Index
Non-plastic	0
Low	1 - 10
Medium	11 - 30
High	> 30



# UNIFIED SOIL CLASSIFICATION SYSTEM

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests <sup>A</sup>				Soil Classification		
				Group Symbol	Group Name <sup>B</sup>	
<b>Coarse Grained Soils:</b> More than 50% retained on No. 200 sieve	<b>Gravels:</b> More than 50% of coarse fraction retained on No. 4 sieve	<b>Clean Gravels:</b> Less than 5% fines <sup>C</sup>	$Cu \geq 4$ and $1 \leq Cc \leq 3$ <sup>E</sup>	GW	Well-graded gravel <sup>F</sup>	
		<b>Gravels with Fines:</b> More than 12% fines <sup>C</sup>	$Cu < 4$ and/or $1 > Cc > 3$ <sup>E</sup>	GP	Poorly graded gravel <sup>F</sup>	
		<b>Clean Sands:</b> Less than 5% fines <sup>D</sup>	Fines classify as ML or MH	GM	Silty gravel <sup>F,G,H</sup>	
		<b>Sands with Fines:</b> More than 12% fines <sup>D</sup>	Fines classify as CL or CH	GC	Clayey gravel <sup>F,G,H</sup>	
		<b>Sands:</b> 50% or more of coarse fraction passes No. 4 sieve	$Cu \geq 6$ and $1 \leq Cc \leq 3$ <sup>E</sup>	SW	Well-graded sand <sup>I</sup>	
	<b>Clean Sands:</b> Less than 5% fines <sup>D</sup>	$Cu < 6$ and/or $1 > Cc > 3$ <sup>E</sup>	SP	Poorly graded sand <sup>I</sup>		
	<b>Sands with Fines:</b> More than 12% fines <sup>D</sup>	Fines classify as ML or MH	SM	Silty sand <sup>G,H,I</sup>		
	<b>Sands with Fines:</b> More than 12% fines <sup>D</sup>	Fines classify as CL or CH	SC	Clayey sand <sup>G,H,I</sup>		
	<b>Fine-Grained Soils:</b> 50% or more passes the No. 200 sieve	<b>Silts and Clays:</b> Liquid limit less than 50	<b>Inorganic:</b> $PI > 7$ and plots on or above "A" line <sup>J</sup>	$PI < 4$ or plots below "A" line <sup>J</sup>	CL	Lean clay <sup>K,L,M</sup>
			<b>Organic:</b> Liquid limit - oven dried	$< 0.75$	OL	Organic clay <sup>K,L,M,N</sup>
<b>Organic:</b> Liquid limit - not dried			$< 0.75$	OH	Organic silt <sup>K,L,M,O</sup>	
<b>Inorganic:</b> $PI$ plots on or above "A" line			$PI$ plots below "A" line	CH	Fat clay <sup>K,L,M</sup>	
<b>Inorganic:</b> $PI$ plots on or above "A" line			$PI$ plots below "A" line	MH	Elastic silt <sup>K,L,M</sup>	
<b>Silts and Clays:</b> Liquid limit 50 or more		<b>Organic:</b> Liquid limit - oven dried	$< 0.75$	OH	Organic clay <sup>K,L,M,P</sup>	
		<b>Organic:</b> Liquid limit - not dried	$< 0.75$	OH	Organic silt <sup>K,L,M,Q</sup>	
		<b>Inorganic:</b> $PI$ plots on or above "A" line	$PI$ plots below "A" line	PT	Peat	
		<b>Highly organic soils:</b>	Primarily organic matter, dark in color, and organic odor	PT	Peat	

<sup>A</sup> Based on the material passing the 3-inch (75-mm) sieve

<sup>B</sup> If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

<sup>C</sup> 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.

<sup>D</sup> 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

$$^E Cu = D_{60}/D_{10} \quad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$$

<sup>F</sup> If soil contains  $\geq 15\%$  sand, add "with sand" to group name.

<sup>G</sup> If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

<sup>H</sup> If fines are organic, add "with organic fines" to group name.

<sup>I</sup> If soil contains  $\geq 15\%$  gravel, add "with gravel" to group name.

<sup>J</sup> If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

<sup>K</sup> If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

<sup>L</sup> If soil contains  $\geq 30\%$  plus No. 200 predominantly sand, add "sandy" to group name.

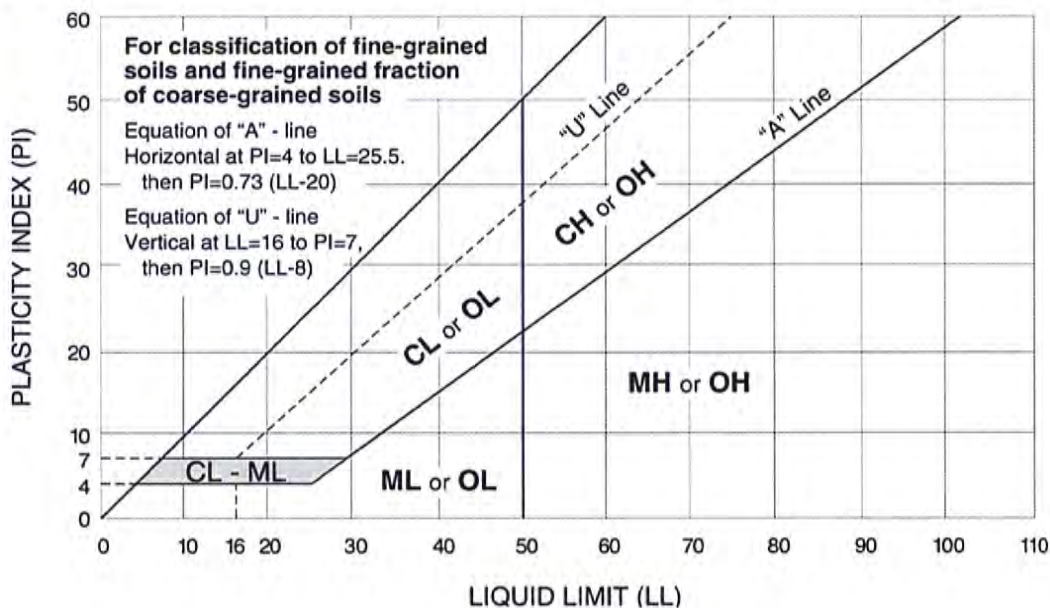
<sup>M</sup> If soil contains  $\geq 30\%$  plus No. 200, predominantly gravel, add "gravelly" to group name.

<sup>N</sup>  $PI \geq 4$  and plots on or above "A" line.

<sup>O</sup>  $PI < 4$  or plots below "A" line.

<sup>P</sup>  $PI$  plots on or above "A" line.

<sup>Q</sup>  $PI$  plots below "A" line.



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## **Attachment 2 – Technical Data**

A Subsurface Utility Report prepared by SEPI Engineering is attached as technical data per SC503.

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## Utility Test Hole Report

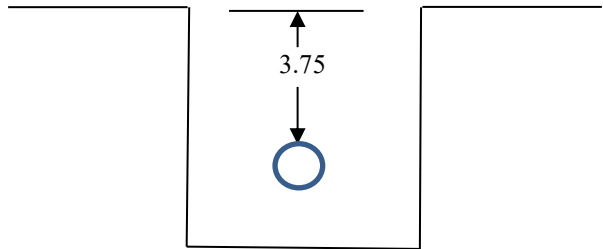
Project Number: SE19.007.00  
 Project Name: W. Arlington Blvd Improvements  
 Requested By: The East Group  
 Location: W. Arlington Blvd  
 Work Type: VACUUM EXCAVATION  
 Work Date: 02/21/2019  
 SEPI Crew: W. Little, A. Viglianco, J. Walsh

Test Hole Number: 1  
 Utility(s) Requested: 10" Water  
 Utility(s) Found: 10" Water  
 Material Type: AC  
 Size: 10"  
 Pavement Type: Concrete  
 Thickness:

### Elevation and Survey Information

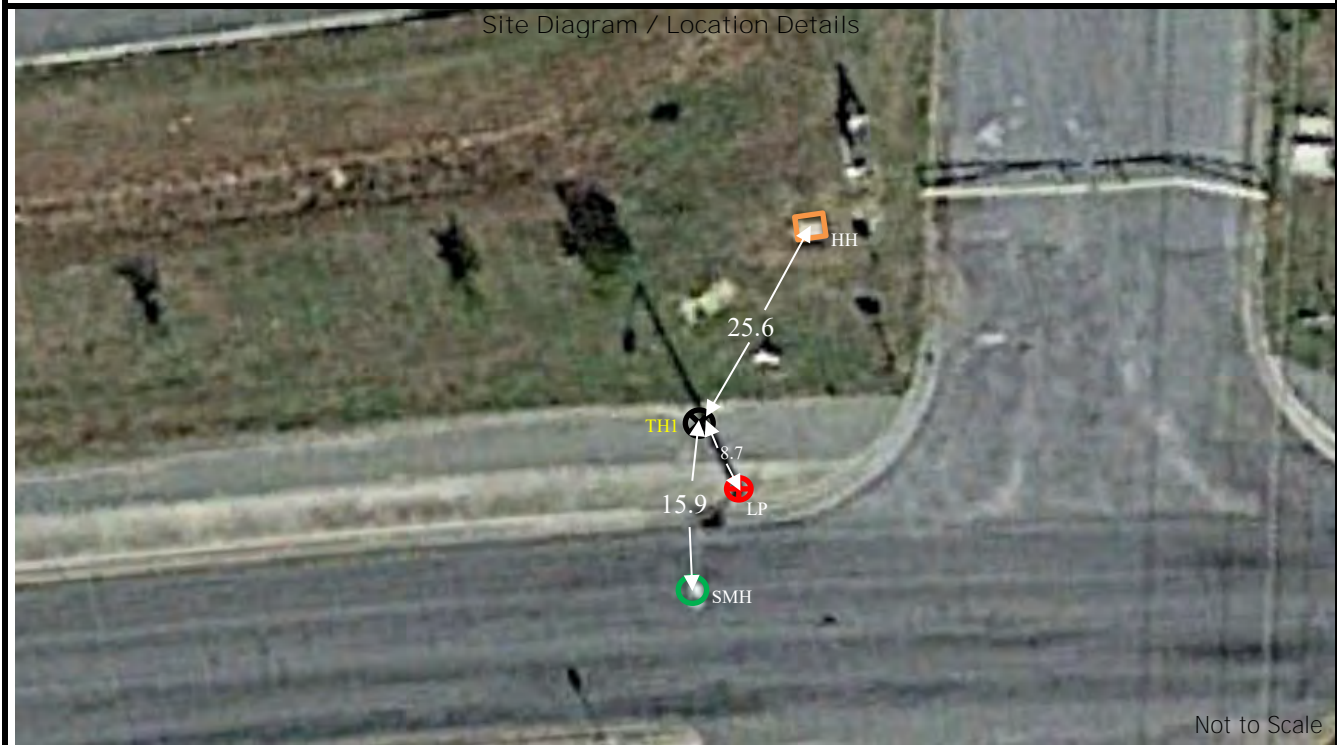
Baseline Control Point:  
 Northing: 674343.135  
 Easting: 248739.15  
 Notes:

Test Hole Information  
 Existing Ground Elevation: 52.48  
 Elevation at Top of Utility: 48.69



Markers Set: Indicate what type of marker was set  
 PK  HUB  Chiseled "X"   
 Set on West Side of Test Hole

### Site Diagram / Location Details



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CONSTRUCTION

OFFICE LOCATIONS ♦ RALEIGH ♦ CHARLOTTE ♦ WILMINGTON

## Utility Test Hole Report

Project Number: SE19.007.00  
 Project Name: W. Arlington Blvd Improvements  
 Requested By: The East Group  
 Location: W. Arlington Blvd  
 Work Type: VACUUM EXCAVATION  
 Work Date: 2.21.2019  
 SEPI Crew: W. Little / A. Viglianco / J. Walsh

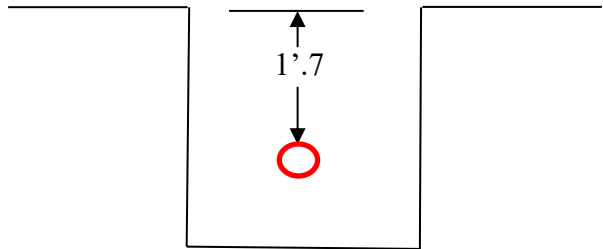
Test Hole Number: 2  
 Utility(s) Requested: Electric Line  
 Utility(s) Found: Electric Line  
 Material Type: N/A  
 Size: N/A  
 Pavement Type: Soil  
 Thickness:

### Elevation and Survey Information

Baseline Control Point:  
 Northing: 674348.275  
 Easting: 248738.589

Notes:  
 Electric Line

Test Hole Information  
 Existing Ground Elevation: 52.85  
 Elevation at Top of Utility: 51.17



Markers Set: Indicate what type of marker was set  
 PK  HUB  Chiseled "X"   
 Set on West Side of Test Hole

### Site Diagram / Location Details



1025 Wade Ave, Raleigh, NC 27605

♦ Phone – 919-789-9977 ♦ Fax – 919-789-9591 ♦ [www.sepiengineering.com](http://www.sepiengineering.com)

# SEPI

ENGINEERING &  
CONSTRUCTION

OFFICE LOCATIONS ♦ RALEIGH ♦ CHARLOTTE ♦ WILMINGTON

## Utility Test Hole Report

Project Number: SE19.007.00  
 Project Name: W. Arlington Blvd Improvements  
 Requested By: The East Group  
 Location: W. Arlington Blvd  
 Work Type: VACUUM EXCAVATION  
 Work Date: 2.21.2019  
 SEPI Crew: W. Little / A. Viglianco / J. Walsh

Test Hole Number: 3  
 Utility(s) Requested: Water Line  
 Utility(s) Found: Water Line  
 Material Type: AC  
 Size: 6"  
 Pavement Type: Concrete  
 Thickness:

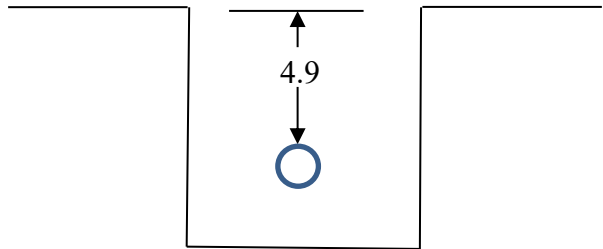
### Elevation and Survey Information

Baseline Control Point:  
 Northing: 674327.487  
 Easting: 2480678.461

Test Hole Information  
 Existing Ground Elevation: 52.85  
 Elevation at Top of Utility: 47.95

Notes:

6" Water Line, AC



Markers Set: Indicate what type of marker was set

PK  HUB  Chiseled "X"

Set on South Side of Test Hole

### Site Diagram / Location Details



1025 Wade Ave, Raleigh, NC 27605

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# SEPI

ENGINEERING &  
CONSTRUCTION

OFFICE LOCATIONS ♦ RALEIGH ♦ CHARLOTTE ♦ WILMINGTON

## Utility Test Hole Report

Project Number: SE19.007.00  
Project Name: W. Arlington Blvd Improvements  
Requested By: The East Group  
Location: W. Arlington Blvd  
Work Type: VACUUM EXCAVATION  
Work Date: 2.21.2019  
SEPI Crew: W. Little / A. Viglianco / J. Walsh

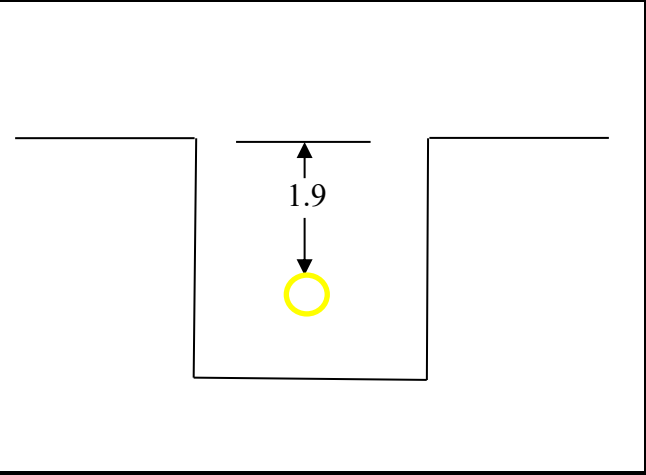
Test Hole Number: 4  
Utility(s) Requested: Gas Service  
Utility(s) Found: Gas Service  
Material Type: PVC  
Size: 1 1/2  
Pavement Type: Concrete  
Thickness:

### Elevation and Survey Information

Baseline Control Point:  
Northing: 674314.348  
Easting: 2480462.74

Test Hole Information  
Existing Ground Elevation: 54.45  
Elevation at Top of Utility: 52.55

Notes:  
1.5" Gas Service



Markers Set: Indicate what type of marker was set  
PK  HUB  Chiseled "X"   
Set on South Side of Test Hole

### Site Diagram / Location Details



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OFFICE LOCATIONS ♦ RALEIGH ♦ CHARLOTTE ♦ WILMINGTON

## Utility Test Hole Report

Project Number: SE19.007.00  
Project Name: W. Arlington Blvd Improvements  
Requested By: The East Group  
Location: W. Arlington Blvd  
Work Type: VACUUM EXCAVATION  
Work Date: 2.21.2019  
SEPI Crew: W.Little / A. Viglianco / J.Walsh

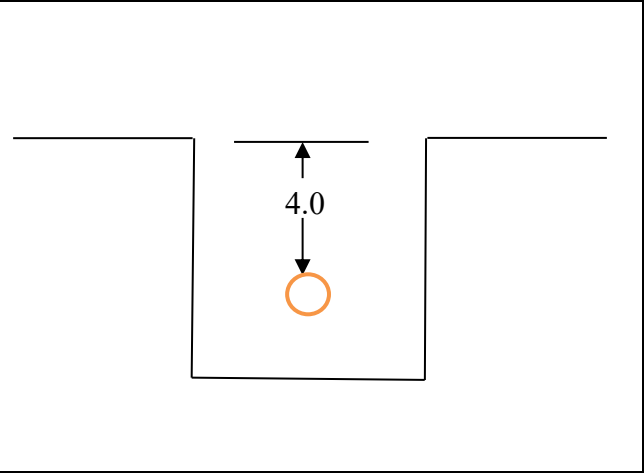
Test Hole Number: 5  
Utility(s) Requested: Fiber  
Utility(s) Found: Fiber  
Material Type: Metal Conduit  
Size: 6"  
Pavement Type: Concrete  
Thickness:

### Elevation and Survey Information

Baseline Control Point:  
Northing: 674310.851  
Easting: 2480427.887

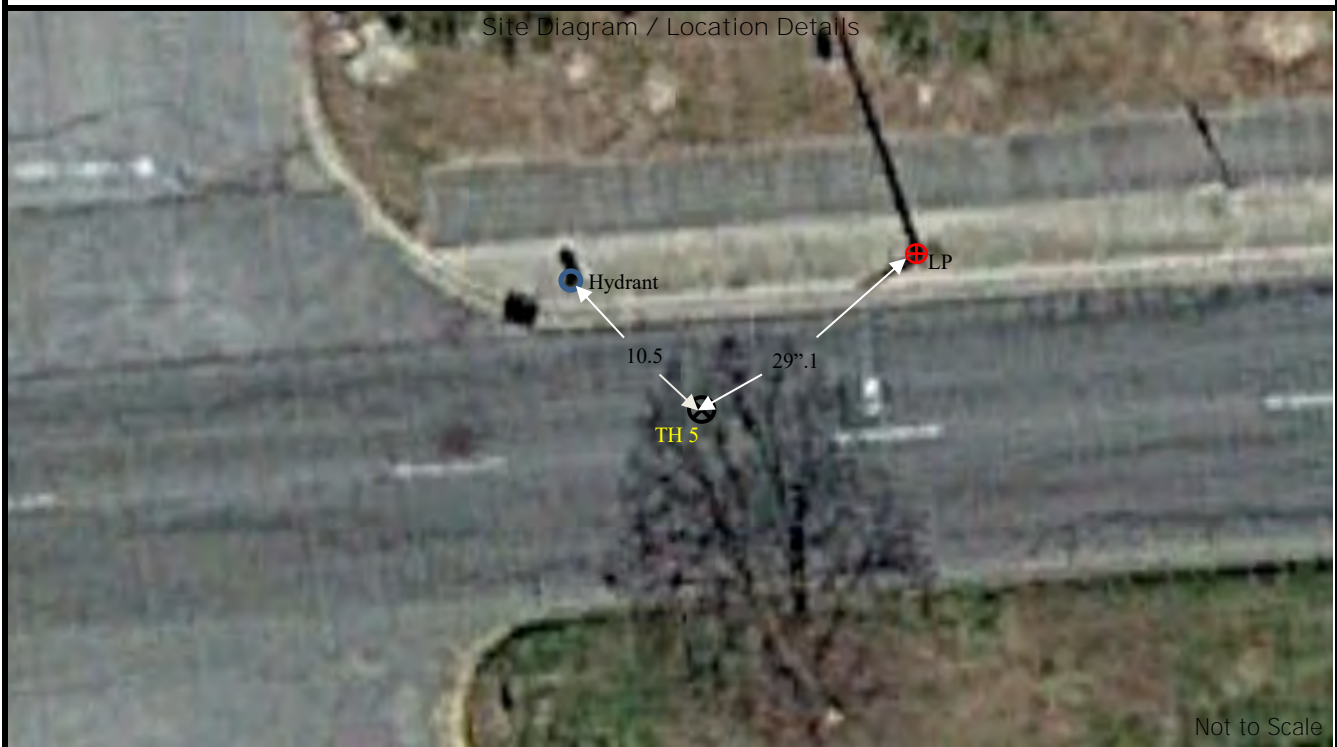
Test Hole Information  
Existing Ground Elevation: 54.17  
Elevation at Top of Utility: 50.17

Notes:  
Fiber 6" conduit



Markers Set: Indicate what type of marker was set  
PK  HUB  Chiseled "X"   
Set on South Side of Test Hole

### Site Diagram / Location Details



Not to Scale

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OFFICE LOCATIONS ♦ RALEIGH ♦ CHARLOTTE ♦ WILMINGTON

## Utility Test Hole Report

Project Number: SE19.007.00  
Project Name: W. Arlington Blvd Improvements  
Requested By: The East Group  
Location: W. Arlington Blvd.  
Work Type: VACUUM EXCAVATION  
Work Date: 2.22.2019  
SEPI Crew: W. Little / A. Viglianco / J. Walsh

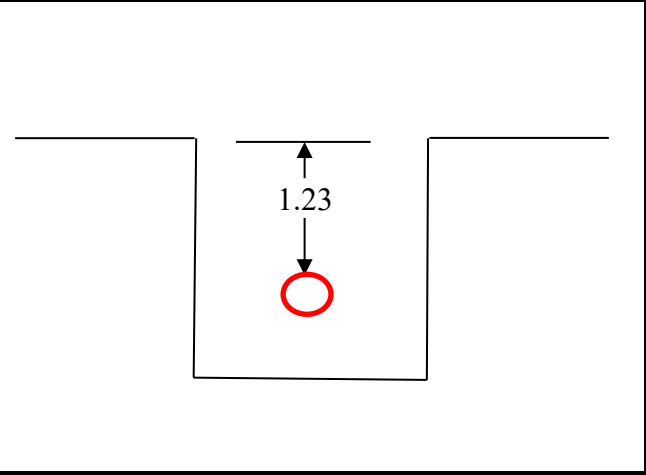
Test Hole Number: 6  
Utility(s) Requested: Electric Line  
Utility(s) Found: Electric Line  
Material Type: N/A  
Size: N/A  
Pavement Type: Concrete  
Thickness:

### Elevation and Survey Information

Baseline Control Point:  
Northing: 674204.617  
Easting: 2479736.018

Test Hole Information  
Existing Ground Elevation: 51.57  
Elevation at Top of Utility: 50.34

Notes:  
Electric Line



Markers Set: Indicate what type of marker was set  
PK  HUB  Chiseled "X"   
Set on East Side of Test Hole

### Site Diagram / Location Details



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CONSTRUCTION

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## Utility Test Hole Report

Project Number: SE19.007.00  
 Project Name: W. Arlington Blvd Improvements  
 Requested By: The East Group  
 Location: W. Arlington Blvd  
 Work Type: VACUUM EXCAVATION  
 Work Date: 2.22.2019  
 SEPI Crew: W. Little / A. Viglianco / J. Walsh

Test Hole Number: 7  
 Utility(s) Requested: Sanitary / Sewer Line  
 Utility(s) Found: Sanitary / Sewer Line  
 Material Type: CI  
 Size: 10"  
 Pavement Type: Concrete  
 Thickness:

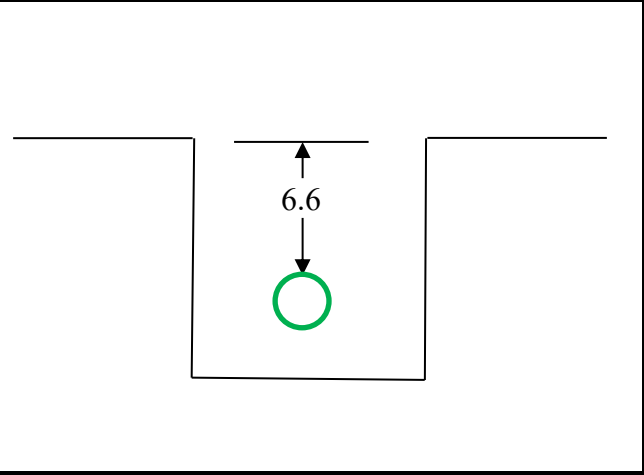
### Elevation and Survey Information

Baseline Control Point:  
 Northing: 674203.598  
 Easting: 2479763.049

Test Hole Information  
 Existing Ground Elevation: 57.99  
 Elevation at Top of Utility: 51.39

Notes:

10" Sanitary / Sewer Line, C1



Markers Set: Indicate what type of marker was set  
 PK  HUB  Chiseled "X"   
 Set on East Side of Test Hole

### Site Diagram / Location Details



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## Utility Test Hole Report

Project Number:	SE19.007.00
Project Name:	W. Arlington Blvd Improvements
Requested By:	The East Group
Location:	W. Arlington Blvd
Work Type:	VACUUM EXCAVATION
Work Date:	2.22.2019
SEPI Crew:	W. Little / A. Viglianco / J. Walsh

Test Hole Number:	8
Utility(s) Requested:	6" Water Line
Utility(s) Found:	6" Water Line
Material Type:	AC
Size:	6"
Pavement Type:	Concrete
Thickness:	

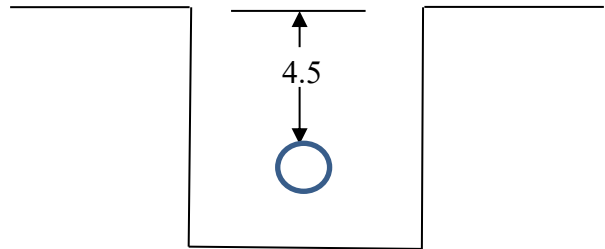
### Elevation and Survey Information

Baseline Control Point:	
Northing:	674201.004
Easting:	2479792.839

Notes:

6" Water Line, AC

Test Hole Information	
Existing Ground Elevation:	52.46
Elevation at Top of Utility:	47.96



Markers Set: Indicate what type of marker was set

PK  HUB  Chiseled "X"

Set on South Side of Test Hole

### Site Diagram / Location Details



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## Utility Test Hole Report

Project Number: SE19.007.00  
 Project Name: W. Arlington Blvd Improvements  
 Requested By: The East Group  
 Location: W. Arlington Blvd.  
 Work Type: VACUUM EXCAVATION  
 Work Date: 2.25.2019  
 SEPI Crew: W. Little / A. Viglianco / J. Walsh

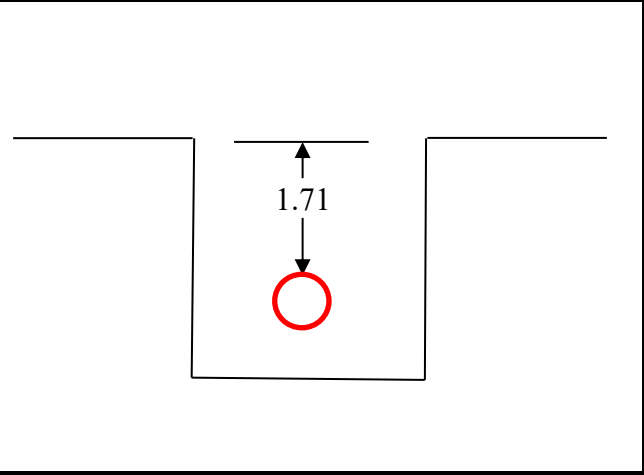
Test Hole Number: 9  
 Utility(s) Requested: Electric Line  
 Utility(s) Found: Electric Line  
 Material Type: N/A  
 Size: N/A  
 Pavement Type: Concrete  
 Thickness:

### Elevation and Survey Information

Baseline Control Point:  
 Northing: 674216.98  
 Easting: 2479971.91

Test Hole Information  
 Existing Ground Elevation: 53.34  
 Elevation at Top of Utility: 51.63

Notes:  
 Electric Line



Markers Set: Indicate what type of marker was set  
 PK  HUB  Chiseled "X"   
 Set on West Side of Test Hole

### Site Diagram / Location Details



Not to Scale

## Utility Test Hole Report

Project Number: SE19.007.00  
 Project Name: W. Arlington Blvd Improvements  
 Requested By: The East Group  
 Location: W. Arlington Blvd.  
 Work Type: VACUUM EXCAVATION  
 Work Date: 2.25.2019  
 SEPI Crew: W. Little / A. Viglianco / J. Walsh

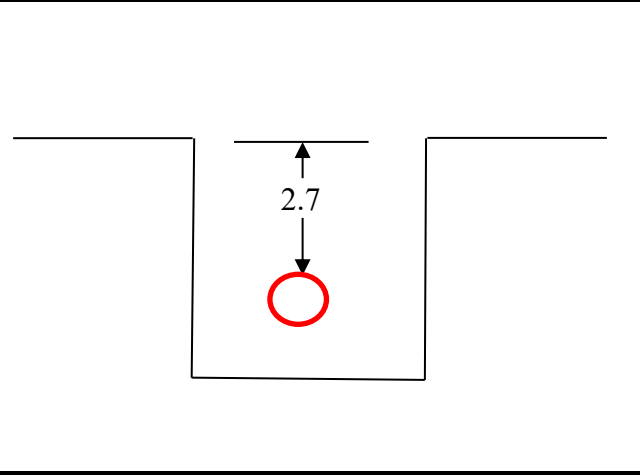
Test Hole Number: 10  
 Utility(s) Requested: Electric Conduit  
 Utility(s) Found: Electric conduit  
 Material Type: N/A  
 Size: 8"  
 Pavement Type: Soil  
 Thickness:

### Elevation and Survey Information

Baseline Control Point:  
 Northing: 674230.98  
 Easting: 2480155.75

Test Hole Information  
 Existing Ground Elevation: 53.72  
 Elevation at Top of Utility: 51.02

Notes:  
 8" Electric Conduit



Markers Set: Indicate what type of marker was set  
 PK  HUB  Chiseled "X"   
 Set on \_\_\_\_\_ Side of Test Hole

### Site Diagram / Location Details



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## Utility Test Hole Report

Project Number: SE19.007.00  
 Project Name: W. Arlington Blvd Improvements  
 Requested By: The East Group  
 Location: W. Arlington Blvd.  
 Work Type: VACUUM EXCAVATION  
 Work Date: 2.25.2019  
 SEPI Crew: W. Little / A. Viglianco / J. Walsh

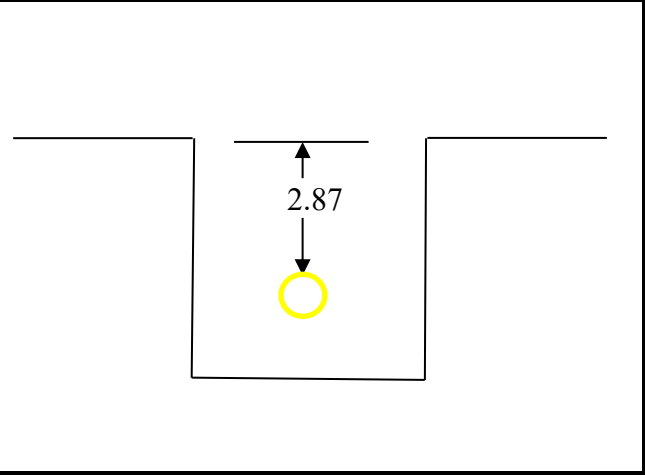
Test Hole Number: 11  
 Utility(s) Requested: Gas Line  
 Utility(s) Found: Gas Line  
 Material Type: PVC  
 Size: 3/4"  
 Pavement Type: Soil  
 Thickness:

### Elevation and Survey Information

Baseline Control Point:  
 Northing: 674243.60  
 Easting: 2480406.44

Test Hole Information  
 Existing Ground Elevation: 54.62  
 Elevation at Top of Utility: 51.75

Notes:  
 3/4" Gas Line



Markers Set: Indicate what type of marker was set  
 PK  HUB  Chiseled "X"   
 Set on South Side of Test Hole

### Site Diagram / Location Details



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## Utility Test Hole Report

Project Number: SE19.007.00  
 Project Name: W. Arlington Blvd Improvements  
 Requested By: The East Group  
 Location: W. Arlington Blvd.  
 Work Type: VACUUM EXCAVATION  
 Work Date: 2.25.2019  
 SEPI Crew: W. Little / A. Viglianco / J. Walsh

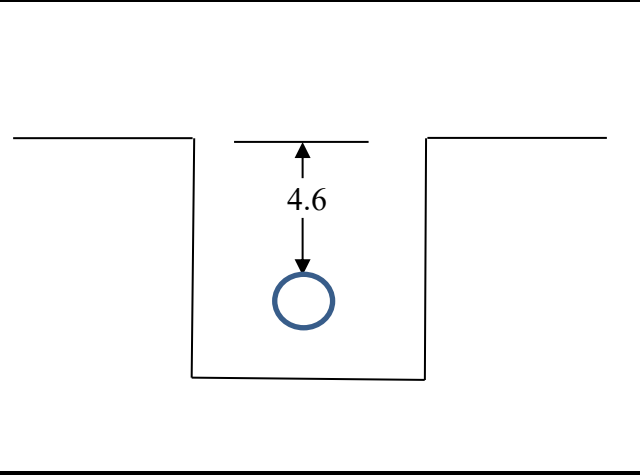
Test Hole Number: 12  
 Utility(s) Requested: Water Line, T  
 Utility(s) Found: Water Line, T  
 Material Type: AC  
 Size: 8"  
 Pavement Type: Concrete  
 Thickness:

### Elevation and Survey Information

Baseline Control Point:  
 Northing: 674286.96  
 Easting: 2479780.36

Test Hole Information  
 Existing Ground Elevation: 52.46  
 Elevation at Top of Utility: 47.86

Notes:  
 Water Line, T  
 AC



Markers Set: Indicate what type of marker was set  
 PK  HUB  Chiseled "X"   
 Set on South Side of Test Hole

### Site Diagram / Location Details





## Utility Test Hole Report

Project Number: SE19.007.00  
Project Name: W. Arlington Blvd Improvements  
Requested By: The East Group  
Location: W. Arlington Blvd  
Work Type: VACUUM EXCAVATION  
Work Date: 02-27-2019  
SEPI Crew: W. Little / A. Viglianco

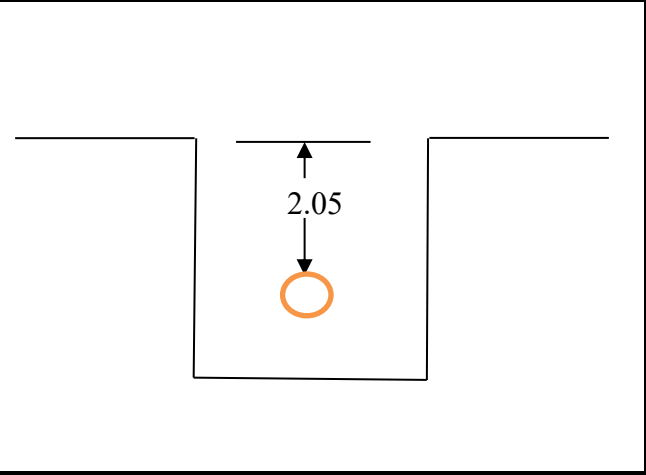
Test Hole Number: 13  
Utility(s) Requested: Fiber  
Utility(s) Found: Fiber  
Material Type: Conduit  
Size: 2"  
Pavement Type: Soil  
Thickness:

### Elevation and Survey Information

Baseline Control Point:  
Northing: 674359.44  
Easting: 2480738.07

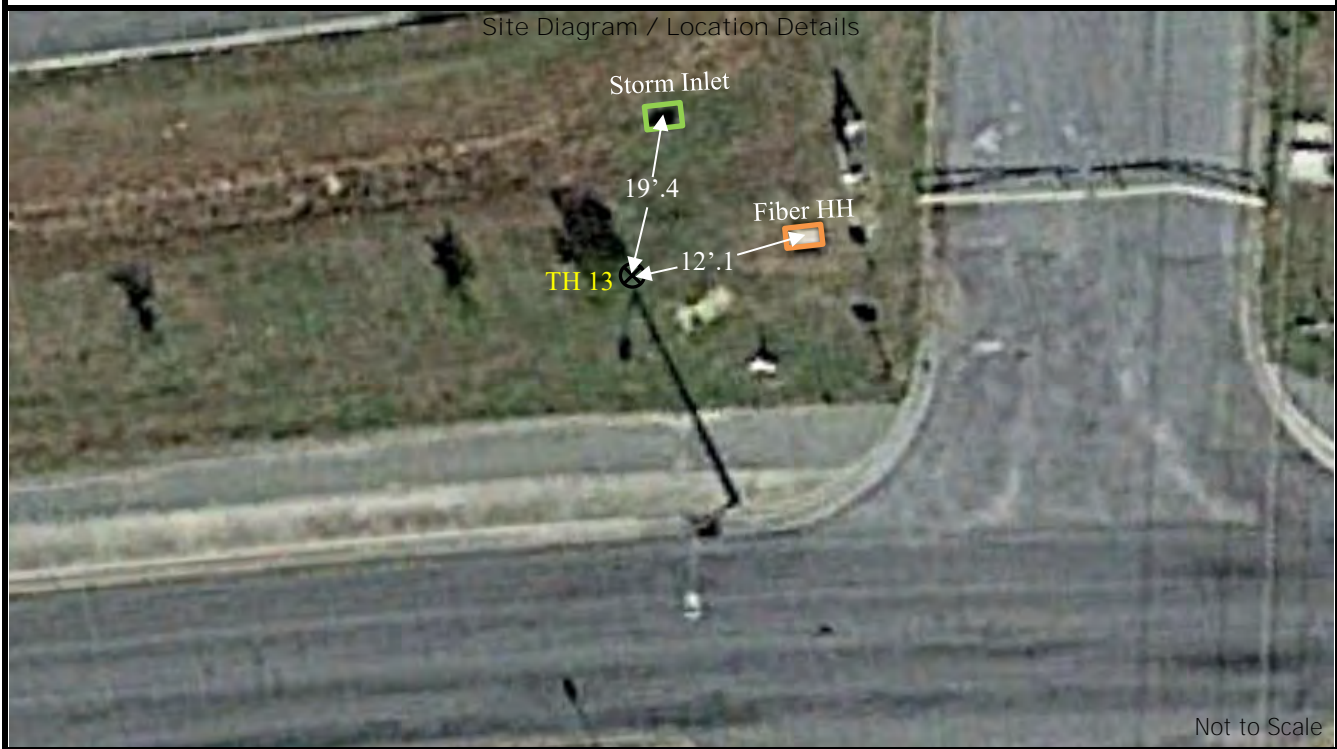
Test Hole Information  
Existing Ground Elevation: 53.02  
Elevation at Top of Utility: 50.97

Notes:  
2" Fiber conduit



Markers Set: Indicate what type of marker was set  
PK  HUB  Chiseled "X"   
Set on East Side of Test Hole

### Site Diagram / Location Details



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## Utility Test Hole Report

Project Number: SE19.007.00  
Project Name: W. Arlington Blvd Improvements  
Requested By: The East Group  
Location: W. Arlington Blvd  
Work Type: VACUUM EXCAVATION  
Work Date: 02-27-2019  
SEPI Crew: W. Little / A. Viglianco

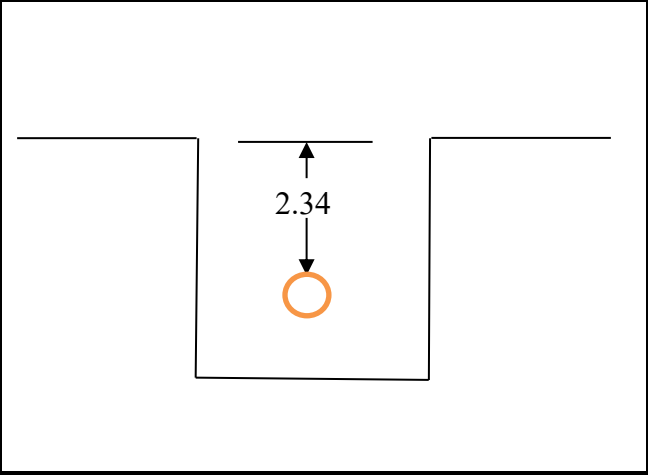
Test Hole Number: 14  
Utility(s) Requested: Fiber  
Utility(s) Found: Fiber  
Material Type: Direct Buried  
Size: 1/2"  
Pavement Type: Soil  
Thickness:

### Elevation and Survey Information

Baseline Control Point:  
Northing: 674353.62  
Easting: 2480739.05

Test Hole Information  
Existing Ground Elevation: 53.06  
Elevation at Top of Utility: 50.72

Notes:  
1/2" Fiber Line, DB



Markers Set: Indicate what type of marker was set  
PK  HUB  Chiseled "X"   
Set on East Side of Test Hole

### Site Diagram / Location Details



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## Utility Test Hole Report

Project Number: SE19.007.00  
Project Name: W. Arlington Blvd Improvements  
Requested By: The East Group  
Location: W. Arlington Blvd  
Work Type: VACUUM EXCAVATION  
Work Date: 2.27.2019  
SEPI Crew: W. Little / A. Viglianco / J. Walsh

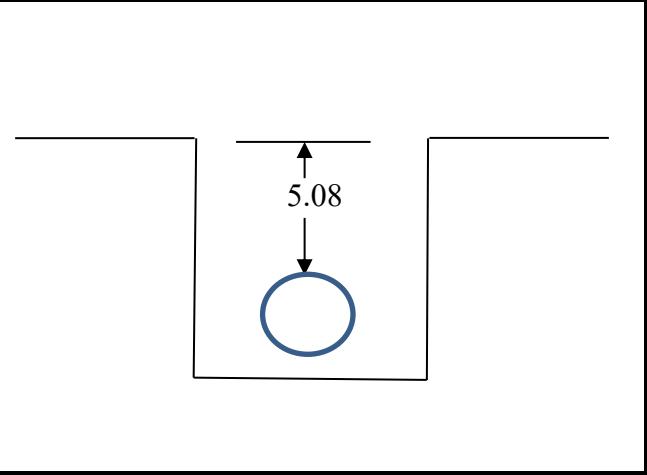
Test Hole Number: 15  
Utility(s) Requested: Water Line  
Utility(s) Found: Water Line  
Material Type: AC  
Size: 10"  
Pavement Type: Concrete  
Thickness:

### Elevation and Survey Information

Baseline Control Point:  
Northing: 674339.787  
Easting: 24800578.05

Test Hole Information  
Existing Ground Elevation: 54.62  
Elevation at Top of Utility: 49.54

Notes:  
10" Water Line, AC



Markers Set: Indicate what type of marker was set  
PK  HUB  Chiseled "X"   
Set on West Side of Test Hole

### Site Diagram / Location Details



Not to Scale

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## **Attachment 3 – US Army Corps of Engineers Nationwide Permit 3 - Maintenance**

The following permit pertains to constructing the pipe discharged shown on Plan Sheet C4.1 and Sheet C4.2. This construction has been deemed a “maintenance activity” by NCDEQ and the work must comply with the conditions of their general permit which follow. The Contract requires that Contractor conform his work to the applicable provisions of the General Permit pages 1-18.

For informational purposes, the General Permit Verification pages 1-3 is also attached and includes the name of the US Army Corps of Engineer’s contact should questions arise during construction.

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### Nationwide Permit 3 - Maintenance

Effective Date: March 19, 2017; Expiration Date: March 18, 2022  
(NWP Final Notice, 82 FR 1860)

**Nationwide Permit 3 - Maintenance.** (a) The repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3, provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or the most recently authorized modification. Minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, requirements of other regulatory agencies, or current construction codes or safety standards that are necessary to make the repair, rehabilitation, or replacement are authorized. This NWP also authorizes the removal of previously authorized structures or fills. Any stream channel modification is limited to the minimum necessary for the repair, rehabilitation, or replacement of the structure or fill; such modifications, including the removal of material from the stream channel, must be immediately adjacent to the project. This NWP also authorizes the removal of accumulated sediment and debris within, and in the immediate vicinity of, the structure or fill. This NWP also authorizes the repair, rehabilitation, or replacement of those structures or fills destroyed or damaged by storms, floods, fire or other discrete events, provided the repair, rehabilitation, or replacement is commenced, or is under contract to commence, within two years of the date of their destruction or damage. In cases of catastrophic events, such as hurricanes or tornadoes, this two-year limit may be waived by the district engineer, provided the permittee can demonstrate funding, contract, or other similar delays.

(b) This NWP also authorizes the removal of accumulated sediments and debris outside the immediate vicinity of existing structures (e.g., bridges, culverted road crossings, water intake structures, etc.). The removal of sediment is limited to the minimum necessary to restore the waterway in the vicinity of the structure to the approximate dimensions that existed when the structure was built, but cannot extend farther than 200 feet in any direction from the structure. This 200 foot limit does not apply to maintenance dredging to remove accumulated sediments blocking or restricting outfall and intake structures or to maintenance dredging to remove accumulated sediments from canals associated with outfall and intake structures. All dredged or excavated materials must be deposited and retained in an area that has no waters of the United States unless otherwise specifically approved by the district engineer under separate authorization.

(c) This NWP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to conduct the maintenance activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. After conducting the maintenance activity, temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

(d) This NWP does not authorize maintenance dredging for the primary purpose of navigation. This NWP does not authorize beach restoration. This NWP does not authorize new stream channelization or stream relocation projects.

**Notification:** For activities authorized by paragraph (b) of this NWP, the permittee must submit a pre-construction notification to the district engineer prior to commencing the activity (see general condition 32). The pre-construction notification must include information regarding the original design capacities and configurations of the outfalls, intakes, small impoundments, and canals. (Authorities: Section 10 of the Rivers and Harbors Act of 1899 and section 404 of the Clean Water Act (Sections 10 and 404))

**Note:** This NWP authorizes the repair, rehabilitation, or replacement of any previously authorized structure or fill that does not qualify for the Clean Water Act section 404(f) exemption for maintenance.

**Authority:** Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act

#### **A. Nationwide Permit General Conditions**

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/ or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. **Navigation.** (a) No activity may cause more than a minimal adverse effect on navigation. (b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States. (c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.
2. **Aquatic Life Movements.** No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.
3. **Spawning Areas.** Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.
4. **Migratory Bird Breeding Areas.** Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.
5. **Shellfish Beds.** No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.
6. **Suitable Material.** No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).
7. **Water Supply Intakes.** No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.
8. **Adverse Effects from Impoundments.** If the activity creates an impoundment of water, adverse effects



to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

**9. Management of Water Flows.** To the maximum extent practicable, the preconstruction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the preconstruction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

**10. Fills Within 100-Year Floodplains.** The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

**11. Equipment.** Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

**12. Soil Erosion and Sediment Controls.** Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

**13. Removal of Temporary Fills.** Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

**14. Proper Maintenance.** Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

**15. Single and Complete Project.** The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

**16. Wild and Scenic Rivers.**

(a) No NWP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

(b) If a proposed NWP activity will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the permittee must submit a pre-construction notification (see general condition 32). The district engineer will coordinate the PCN with the Federal agency with direct management responsibility for that river. The permittee shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status.

(c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: <http://www.rivers.gov/>.

17. **Tribal Rights.** No NWP activity may cause more than minimal adverse effects on tribal rights (including treaty rights), protected tribal resources, or tribal lands.

**18. Endangered Species.**

(a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless ESA section 7 consultation addressing the effects of the proposed activity has been completed. Direct effects are the immediate effects on listed species and critical habitat caused by the NWP activity. Indirect effects are those effects on listed species and critical habitat that are caused by the NWP activity and are later in time, but still are reasonably certain to occur.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. If preconstruction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed activity or that utilize the designated critical habitat that might be affected by the proposed activity. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have "no effect" on listed species or critical habitat, or until ESA section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific permit conditions to the NWPs.

(e) Authorization of an activity by an NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the FWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) If the non-federal permittee has a valid ESA section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed NWP activity, the non-federal applicant should provide a copy of that ESA section 10(a)(1)(B) permit with the PCN required by

paragraph (c) of this general condition. The district engineer will coordinate with the agency that issued the ESA section 10(a)(1)(B) permit to determine whether the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation conducted for the ESA section 10(a)(1)(B) permit. If that coordination results in concurrence from the agency that the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation for the ESA section 10(a)(1)(B) permit, the district engineer does not need to conduct a separate ESA section 7 consultation for the proposed NWP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete pre-construction notification whether the ESA section 10(a)(1)(B) permit covers the proposed NWP activity or whether additional ESA section 7 consultation is required.

(g) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the FWS and NMFS or their world wide Web pages at <http://www.fws.gov/> or <http://www.fws.gov/ipac> and <http://www.nmfs.noaa.gov/pr/species/esa/> respectively.

**19. Migratory Birds and Bald and Golden Eagles.** The permittee is responsible for ensuring their action complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting appropriate local office of the U.S. Fish and Wildlife Service to determine applicable measures to reduce impacts to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

**20. Historic Properties.** (a) In cases where the district engineer determines that the activity may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of section 106 of the National Historic Preservation Act. If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the preconstruction notification must state which historic properties might have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting

parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: no historic properties affected, no adverse effect, or adverse effect. Where the non-Federal applicant has identified historic properties on which the activity might have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed.

(d) For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

**21. Discovery of Previously Unknown Remains and Artifacts.** If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

**22. Designated Critical Resource Waters.** Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

**23. Mitigation.** The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects

are no more than minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require preconstruction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require preconstruction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation to ensure that the activity results in no more than minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult to-replace resources (see 33 CFR 332.3(e)(3)).

(e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. Restored riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(f) Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWPs, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the district engineer may approve the use of permittee-responsible mitigation.

(2) The amount of compensatory mitigation required by the district engineer must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f)).

(3) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option considered for permittee-responsible mitigation.

(4) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

(5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.

(6) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (see 33 CFR 332.4(c)(1)(ii)).

(g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any NWP activity resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an NWP activity already meeting the established acreage limits also satisfies the no more than minimal impact requirement for the NWPs.

(h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or permittee-responsible mitigation. When developing a compensatory mitigation proposal, the permittee must consider appropriate and practicable options consistent with the framework at 33 CFR 332.3(b). For activities resulting in the loss of marine or estuarine resources, permittee responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(i) Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the United States that will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

**24. Safety of Impoundment Structures.** To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

**25. Water Quality.** Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of

water quality.

**26. Coastal Zone Management.** In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

**27. Regional and Case-By-Case Conditions.** The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

**28. Use of Multiple Nationwide Permits.** Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3- acre.

**29. Transfer of Nationwide Permit Verifications.** If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

“When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.”

\_\_\_\_\_  
(Transferee)

\_\_\_\_\_  
(Date)

**30. Compliance Certification.** Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the activity and mitigation. The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

31. **Activities Affecting Structures or Works Built by the United States.** If an NWP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a "USACE project"), the prospective permittee must submit a preconstruction notification. See paragraph (b)(10) of general condition 32. An activity that requires section 408 permission is not authorized by NWP until the appropriate Corps office issues the section 408 permission to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

32. **Pre-Construction Notification.** (a) **Timing.** Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or are in the vicinity of the activity, or to notify the Corps pursuant to general condition 20 that the activity might have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) **Contents of Pre-Construction Notification:** The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;



(2) Location of the proposed activity;

(3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;

(4) A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures. For single and complete linear projects, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the activity and when provided results in a quicker decision. Sketches usually clarify the activity and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(5) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(7) For non-Federal permittees, if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed activity or utilize the designated critical habitat that might be affected by the proposed activity. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with the Endangered Species Act;

(8) For non-Federal permittees, if the NWP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic property. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with section 106 of the National Historic Preservation Act;

(9) For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the "study river" (see general condition 16); and

(10) For an activity that requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from the Corps office having jurisdiction over that USACE project.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is an NWP PCN and must include all of the applicable information required in paragraphs (b)(1) through (10) of this general condition. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the activity's adverse environmental effects so that they are no more than minimal.

(2) Agency coordination is required for: (i) All NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States; (ii) NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of stream bed; (iii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and (iv) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line in tidal waters or the ordinary high water mark in the Great Lakes.

(3) When agency coordination is required, the district engineer will immediately provide (e.g., via email, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (FWS, state natural resource or water quality agency, EPA, and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to notify the district engineer via telephone, facsimile transmission, or email that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse environmental effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the preconstruction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects of the proposed activity are no more than minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(4) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(5) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of

preconstruction notifications to expedite agency coordination.

## **B. District Engineer's Decision.**

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If a project proponent requests authorization by a specific NWP, the district engineer should issue the NWP verification for that activity if it meets the terms and conditions of that NWP, unless he or she determines, after considering mitigation, that the proposed activity will result in more than minimal individual and cumulative adverse effects on the aquatic environment and other aspects of the public interest and exercises discretionary authority to require an individual permit for the proposed activity. For a linear project, this determination will include an evaluation of the individual crossings of waters of the United States to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings authorized by NWP. If an applicant requests a waiver of the 300 linear foot limit on impacts to streams or of an otherwise applicable limit, as provided for in NWPs 13, 21, 29, 36, 39, 40, 42, 43, 44, 50, 51, 52, or 54, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in only minimal individual and cumulative adverse environmental effects. For those NWPs that have a waivable 300 linear foot limit for losses of intermittent and ephemeral stream bed and a 1/2-acre limit (i.e., NWPs 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52), the loss of intermittent and ephemeral stream bed, plus any other losses of jurisdictional waters and wetlands, cannot exceed 1/2- acre.

2. When making minimal adverse environmental effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. He or she will also consider the cumulative adverse environmental effects caused by activities authorized by NWP and whether those cumulative adverse environmental effects are no more than minimal. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional or condition assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse environmental effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

3. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for NWP activities with smaller impacts, or for impacts to other types of waters (e.g., streams). The district engineer will consider any proposed compensatory mitigation or other mitigation measures the applicant has included in the proposal in determining whether the net adverse environmental effects of the proposed activity are no more than minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse environmental effects are no more than minimal, after considering mitigation, the district engineer will notify the permittee and include any activity specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure the NWP activity results in no more than

minimal adverse environmental effects. If the net adverse environmental effects of the NWP activity (after consideration of the mitigation proposal) are determined by the district engineer to be no more than minimal, the district engineer will provide a timely written response to the applicant. The response will state that the NWP activity can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

4. If the district engineer determines that the adverse environmental effects of the proposed activity are more than minimal, then the district engineer will notify the applicant either: (a) That the activity does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the activity is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal; or (c) that the activity is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse environmental effects, the activity will be authorized within the 45-day PCN period (unless additional time is required to comply with general conditions 18, 20, and/or 31, or to evaluate PCNs for activities authorized by NWPs 21, 49, and 50), with activity specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation plan or a requirement that the applicant submit a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal. When compensatory mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

### C. Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project (see general condition 31).

### D. Definitions

**Best management practices (BMPs):** Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

**Compensatory mitigation:** The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

**Currently serviceable:** Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

**Direct effects:** Effects that are caused by the activity and occur at the same time and place.

**Discharge:** The term “discharge” means any discharge of dredged or fill material into waters of the United States.

**Ecological reference:** A model used to plan and design an aquatic habitat and riparian area restoration, enhancement, or establishment activity under NWP 27. An ecological reference may be based on the structure, functions, and dynamics of an aquatic habitat type or a riparian area type that currently exists in the region where the proposed NWP 27 activity is located. Alternatively, an ecological reference may be based on a conceptual model for the aquatic habitat type or riparian area type to be restored, enhanced, or established as a result of the proposed NWP 27 activity. An ecological reference takes into account the range of variation of the aquatic habitat type or riparian area type in the region.

**Enhancement:** The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

**Ephemeral stream:** An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

**Establishment (creation):** The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

**High Tide Line:** The line of intersection of the land with the water’s surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

**Historic Property:** Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

**Independent utility:** A test to determine what constitutes a single and complete non-linear project in the Corps Regulatory Program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

**Indirect effects:** Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.

**Intermittent stream:** An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from

rainfall is a supplemental source of water for stream flow.

**Loss of waters of the United States:** Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. The loss of stream bed includes the acres or linear feet of stream bed that are filled or excavated as a result of the regulated activity. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities that do not require Department of the Army authorization, such as activities eligible for exemptions under section 404(f) of the Clean Water Act, are not considered when calculating the loss of waters of the United States.

**Navigable waters:** Waters subject to section 10 of the Rivers and Harbors Act of 1899. These waters are defined at 33 CFR part 329.

**Non-tidal wetland:** A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

**Open water:** For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of flowing or standing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of "open waters" include rivers, streams, lakes, and ponds.

**Ordinary High Water Mark:** An ordinary high water mark is a line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas.

**Perennial stream:** A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

**Practicable:** Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

**Pre-construction notification:** A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Preconstruction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where preconstruction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

**Preservation:** The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

**Protected tribal resources:** Those natural resources and properties of traditional or customary religious or

cultural importance, either on or off Indian lands, retained by, or reserved by or for, Indian tribes through treaties, statutes, judicial decisions, or executive orders, including tribal trust resources.

**Re-establishment:** The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Reestablishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

**Rehabilitation:** The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

**Restoration:** The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: Reestablishment and rehabilitation.

**Riffle and pool complex:** Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

**Riparian areas:** Riparian areas are lands next to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, non-wetland waters, or uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 23.)

**Shellfish seeding:** The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

**Single and complete linear project:** A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term "single and complete project" is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

**Single and complete non-linear project:** For non-linear projects, the term "single and complete project" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of "independent utility"). Single and complete non-linear projects may not be "piecemealed" to avoid the limits in an NWP authorization. Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

**Stormwater management facilities:** Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

**Stream bed:** The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

**Stream channelization:** The manipulation of a stream's course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the United States.

**Structure:** An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

**Tidal wetland:** A tidal wetland is a jurisdictional wetland that is inundated by tidal waters. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line.

**Tribal lands:** Any lands title to which is either: (1) Held in trust by the United States for the benefit of any Indian tribe or individual; or (2) held by any Indian tribe or individual subject to restrictions by the United States against alienation.

**Tribal rights:** Those rights legally accruing to a tribe or tribes by virtue of inherent sovereign authority, unextinguished aboriginal title, treaty, statute, judicial decisions, executive order or agreement, and that give rise to legally enforceable remedies.

**Vegetated shallows:** Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

**Waterbody:** For purposes of the NWP's, a waterbody is a jurisdictional water of the United States. If a wetland is adjacent to a waterbody determined to be a water of the United States, that waterbody and any adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)). Examples of "waterbodies" include streams, rivers, lakes, ponds, and wetlands.

#### ADDITIONAL INFORMATION

Information about the U.S. Army Corps of Engineers regulatory program, including nationwide permits, may also be accessed at <http://www.swt.usace.army.mil/Missions/Regulatory.aspx> or <http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits.aspx>



**U.S. ARMY CORPS OF ENGINEERS  
WILMINGTON DISTRICT**

Action Id. SAW 2019-00307 County: Pitt U.S.G.S. Quad: Greenville SW

**GENERAL PERMIT (REGIONAL AND NATIONWIDE) VERIFICATION**

Permittee: City of Greenville-Public Works  
C/O Lisa Kirby  
Address: 1500 Beatty Street  
Greenville, North Carolina 27834

Telephone Number: (252) 329-4620

Size (acres) 24.4 acres                      Nearest Town Greenville  
Nearest Waterway Greens Mill Run                      River Basin Tar-Pamlico  
USGS HUC 03020103                      Coordinates Latitude: 35.592067  
Longitude: -77.383442

Location description: Project site is located at 625 West Arlington Boulevard, near Evans Park, adjacent to Greens Mill Run, in the City of Greenville, Pitt County, North Carolina.

Description of projects area and activity: Replacement of an existing 60-inch reinforced concrete pipe to alleviate upstream flooding issues.

Applicable Law:  Section 404 (Clean Water Act, 33 USC 1344)  
 Sections 10 (Rivers and Harbors Act, 33 USC 403)

Authorization:      Regional General Permit Number or Nationwide Permit Number: NWP 3 - Maintenance.

Your work is authorized by the above referenced permit provided it is accomplished in strict accordance with the attached conditions and your submitted application and attached information dated February 13, 2019. Any violation of the attached conditions or deviation from your submitted plans may subject the permittee to a stop work order, a restoration order, a Class I administrative penalty, and/or appropriate legal action.

This verification will remain valid until the expiration date identified below unless the nationwide authorization is modified, suspended or revoked. If, prior to the expiration date identified below, the nationwide permit authorization is reissued and/or modified, this verification will remain valid until the expiration date identified below, provided it complies with all requirements of the modified nationwide permit. If the nationwide permit authorization expires or is suspended, revoked, or is modified, such that the activity would no longer comply with the terms and conditions of the nationwide permit, activities which have commenced (i.e., are under construction) or are under contract to commence in reliance upon the nationwide permit, will remain authorized provided the activity is completed within twelve months of the date of the nationwide permit's expiration, modification or revocation, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend or revoke the authorization.

Activities subject to Section 404 (as indicated above) may also require an individual Section 401 Water Quality Certification. You should contact the NC Division of Water Resources (telephone 252-946-6481) to determine Section 401 requirements.

For activities occurring within the twenty coastal counties subject to regulation under the Coastal Area Management Act (CAMA), prior to beginning work you must contact the N.C. Division of Coastal Management in Washington, North Carolina at 252-946-6481.

This Department of the Army verification does not relieve the permittee of the responsibility to obtain any other required Federal, State or local approvals/permits.

If there are any questions regarding this verification, any of the conditions of the Permit, or the Corps of Engineers regulatory program, please contact Raleigh W. Bland, PWS at 910-251-4564.

Corps Regulatory Official: BLAND,RALEIGH,W.1229828750 Public Reports & Maps Available at [www.fws.gov](http://www.fws.gov)  
For more information on the permit process, visit [www.army.mil/permit](http://www.army.mil/permit)                      Date: March 11, 2019  
Expiration Date of Verification: March 18, 2022

### Determination of Jurisdiction:

- A.  There are waters, including wetlands, on the above described project area that may be subject to Section 404 of the Clean Water Act (CWA) (33 USC § 1344) and/or Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403). This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331). However, you may request an approved JD, which is an appealable action, by contacting the Corps district for further instruction. Please note, if work is authorized by either a general or nationwide permit, and you wish to request an appeal of an approved JD, the appeal must be received by the Corps and the appeal process concluded prior to the commencement of any work in waters of the United States and prior to any work that could alter the hydrology of waters of the United States.
- B.  There are Navigable Waters of the United States within the above described project area subject to the permit requirements of Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403) and Section 404 of the Clean Water Act (CWA) (33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.
- C.  There are waters, including wetlands, within the above described project area that are subject to the permit requirements of Section 404 of the Clean Water Act (CWA) (33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.
- D.  The jurisdictional areas within the above described project area have been identified under a previous action. Please reference jurisdictional determination issued . Action ID:

**Basis For Determination:** Greens Mill Run is a tributary to the Tar River and exhibits an OHWM.

**Remarks:** Project also includes replacement of 6400 LF of existing road way.

### E. Attention USDA Program Participants

This delineation/determination has been conducted to identify the limits of Corps' Clean Water Act jurisdiction for the particular site identified in this request. The delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA Program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

### F. Appeals Information (This information applies only to approved jurisdiction determinations as indicated in B and C above).

This correspondence constitutes an approved jurisdiction determination for the above described site. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and request for appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the following address:

US Army Corps of Engineers  
South Atlantic Division  
Attn: Jason Steele, Review Officer  
60 Forsyth Street SW, Room 10M15  
Atlanta, Georgia 30303-8801  
Phone: (404) 562-5137

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by N/A.

\*\*It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this correspondence.\*\*

Corps Regulatory Official: N/A

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete our Customer Satisfaction Survey, located online at [http://corpsmapu.usace.army.mil/cm\\_apex/f?p=136:4:0](http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0).

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CC: CESAW-RG-W/Bland

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**Attachment 4 – NCDWQ**  
**Water Quality General Certification No. 4132**

The following permit conditions pertain to the work within the riparian buffers at the pipe discharges shown on Sheets C4.1 and C4.2. The Contract requires the Contractor to conform with all applicable provisions of the general certification in the performance of the work.

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**STATE OF NORTH CAROLINA  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
DIVISION OF WATER RESOURCES**

**WATER QUALITY GENERAL CERTIFICATION NO. 4132**

**GENERAL CERTIFICATION FOR PROJECTS ELIGIBLE FOR US ARMY CORPS OF ENGINEERS**

- **NATIONWIDE PERMIT 3 (MAINTENANCE),**
- **NATIONWIDE PERMIT 4 (FISH AND WILDLIFE HARVESTING, ENHANCEMENT, AND ATTRACTION DEVICES AND ACTIVITIES),**
- **NATIONWIDE PERMIT 5 (SCIENTIFIC MEASUREMENT DEVICES),**
- **NATIONWIDE PERMIT 6 (SURVEY ACTIVITIES),**
- **NATIONWIDE PERMIT 7 (OUTFALL STRUCTURES AND ASSOCIATED INTAKE STRUCTURES),**
- **NATIONWIDE PERMIT 19 (MINOR DREDGING),**
- **NATIONWIDE PERMIT 20 (RESPONSE OPERATIONS FOR OIL OR HAZARDOUS SUBSTANCES),**
- **NATIONWIDE PERMIT 22 (REMOVAL OF VESSELS),**
- **NATIONWIDE PERMIT 25 (STRUCTURAL DISCHARGES),**
- **NATIONWIDE PERMIT 30 (MOIST SOIL MANAGEMENT FOR WILDLIFE),**
- **NATIONWIDE PERMIT 32 (COMPLETED ENFORCEMENT ACTIONS),**
- **NATIONWIDE PERMIT 36 (BOAT RAMPS),**
- **REGIONAL GENERAL PERMIT 197800056 (PIERS, DOCKS AND BOATHOUSES), AND**
- **REGIONAL GENERAL PERMIT 197800125 (BOAT RAMPS)**

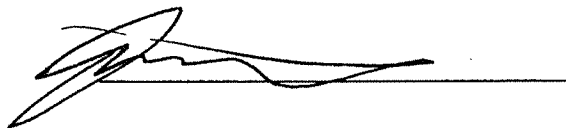
Water Quality Certification Number 4132 is issued in conformity with the requirements of Section 401, Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Regulations in 15A NCAC 02H .0500 and 15A NCAC 02B .0200 for the discharge of fill material to surface waters and wetland areas as described in 33 CFR 330 Appendix A (B) (3, 4, 5, 6, 7, 19, 20, 22, 25, 30, 32, and 36) of the US Army Corps of Engineers regulations and Regional General Permits 197800056 and 197800125.

The State of North Carolina certifies that the specified category of activity will not violate applicable portions of Sections 301, 302, 303, 306 and 307 of the Public Laws 92-500 and 95-217 if conducted in accordance with the conditions hereinafter set forth.

Effective date: December 1, 2017

Signed this day: December 1, 2017

By



*for* Linda Culpepper  
Interim Director

## GC4132

Activities meeting any one (1) of the following thresholds or circumstances require written approval for a 401 Water Quality Certification from the Division of Water Resources (DWR):

- a) If any of the conditions of this Certification (listed below) cannot be met; or
- b) Total additional permanent impacts to streams (including stream relocations or restorations) greater than 40 linear feet at an existing stream impact location; or
- c) Total temporary and permanent impacts to wetlands or open waters equal to or greater than one-tenth (1/10) of an acre; or
- d) Complete dewatering and drawdowns to a sediment layer related to pond/dam maintenance or removal; or
- e) Any impacts to streams from excavation or dredging other than excavation that is conducted as preparation for installing permanent fill or structures or projects qualifying for a Nationwide Permit 19; or
- f) Except for projects qualifying for a Nationwide permit 3, any permanent impacts to waters, or to wetlands adjacent to waters, designated as: ORW (including SAV), HQW (including PNA), SA, WS-I, WS-II, Trout, or North Carolina or National Wild and Scenic River; or
- g) Any high-density project, as defined in 15A NCAC 02H .1003(2)(a) and by the density thresholds specified in 15A NCAC 02H .1017, which:
  - i. Disturbs one acre or more of land (including a project that disturbs less than one acre of land that is part of a larger common plan of development or sale); and
  - ii. Has permanent wetland, stream or open water impacts; and
  - iii. Is proposing new built-upon area; and
  - iv. Does not have a stormwater management plan reviewed and approved under a state stormwater program<sup>1</sup> or a state-approved local government stormwater program<sup>2</sup>.

Projects that have vested rights, exemptions, or grandfathering from state or locally-implemented stormwater programs and projects that satisfy state or locally-implemented stormwater programs through use of community in-lieu programs **require written approval**; or

- h) Any permanent impacts to coastal wetlands [15A NCAC 07H .0205], or Unique Wetlands (UWL); or
- i) Any impact associated with a Notice of Violation or an enforcement action for violation(s) of NC Wetland Rules (15A NCAC 02H .0500), NC Isolated Wetland Rules (15A NCAC 02H .1300), NC Surface Water or Wetland Standards (15A NCAC 02B .0200), or State Regulated Riparian Buffer Rules (15A NCAC 02B .0200); or
- j) Any impacts to subject water bodies and/or state regulated riparian buffers along subject water bodies in the Neuse, Tar-Pamlico, or Catawba River Basins or in the Randleman Lake, Jordan Lake or Goose Creek Watersheds (or any other basin or watershed with State Regulated Riparian Area Protection Rules [Buffer Rules] in effect at the time of application) *unless*:

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<sup>1</sup> e.g. Coastal Counties, HQW, ORW, or state-implemented Phase II NPDES

<sup>2</sup> e.g. Delegated Phase II NPDES, Water Supply Watershed, Nutrient-Sensitive Waters, or Universal Stormwater Management Program



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- i. The activities are listed as “EXEMPT” from these rules; or
- ii. A Buffer Authorization Certificate is issued by the NC Division of Coastal Management (DCM); or
- iii. A Buffer Authorization Certificate or a Minor Variance is issued by a delegated or designated local government implementing a state riparian buffer program pursuant to 143-215.23.

**Activities included in this General Certification that do not meet one of the thresholds listed above do not require written approval.**

### **I. ACTIVITY SPECIFIC CONDITIONS:**

1. For all dam removal projects meeting the definition under G.S. 143-215.25 and requirements under G.S. 143-215.27 of a professionally supervised dam removal, the applicant shall provide documentation that any sediment that may be released has similar or lower level of contamination than sediment sampled from downstream of the dam in accordance with Session Law 2017-145.
2. For the North Carolina Department of Transportation, compliance with the NCDOT’s individual NPDES permit NCS000250 shall serve to satisfy this condition. All other high-density projects that trigger threshold item (g) above shall comply with one of the following requirements: [15A NCAC 02H .0506(b)(5) and (c)(5)]
  - a. Provide a completed Stormwater Management Plan (SMP) for review and approval, including all appropriate stormwater control measure (SCM) supplemental forms and associated items, that complies with the high-density development requirements of 15A NCAC 02H .1003. Stormwater management shall be provided throughout the entire project area in accordance with 15A NCAC 02H .1003. For the purposes of 15A NCAC 02H .1003(2)(a), density thresholds shall be determined in accordance with 15A NCAC 02H .1017.
  - b. Provide documentation (including calculations, photos, etc.) that the project will not cause degradation of downstream surface waters. Documentation shall include a detailed analysis of the hydrological impacts from stormwater runoff when considering the volume and velocity of stormwater runoff from the project built upon area and the size and existing condition of the receiving stream(s).

Exceptions to this condition require application to and written approval from DWR.

### **II. GENERAL CONDITIONS:**

1. When written authorization is required, the plans and specifications for the project are incorporated into the authorization by reference and are an enforceable part of the Certification. Any modifications to the project require notification to DWR and may require an application submittal to DWR with the appropriate fee. [15A NCAC 02H .0501 and .0502]

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2. No waste, spoil, solids, or fill of any kind shall occur in wetlands or waters beyond the footprint of the impacts (including temporary impacts) as authorized in the written approval from DWR; or beyond the thresholds established for use of this Certification without written authorization. [15A NCAC 02H .0501 and .0502]

No removal of vegetation or other impacts of any kind shall occur to state regulated riparian buffers beyond the footprint of impacts approved in a Buffer Authorization or Variance or as listed as an exempt activity in the applicable riparian buffer rules. [15A NCAC 02B .0200]

3. In accordance with 15A NCAC 02H .0506(h) and Session Law 2017-10, compensatory mitigation may be required for losses of greater than 300 linear feet of perennial streams and/or greater than one (1) acre of wetlands. Impacts associated with the removal of a dam shall not require mitigation when the removal complies with the requirements of Part 3 of Article 21 in Chapter 143 of the North Carolina General Statutes. Impacts to isolated and other non-404 jurisdictional wetlands shall not be combined with 404 jurisdictional wetlands for the purpose of determining when impact thresholds trigger a mitigation requirement. For linear publicly owned and maintained transportation projects that are not determined to be part of a larger common plan of development by the US Army Corps of Engineers, compensatory mitigation may be required for losses of greater than 300 linear feet per perennial stream.

Compensatory stream and/or wetland mitigation shall be proposed and completed in compliance with G.S. 143-214.11. For applicants proposing to conduct mitigation within a project site, a complete mitigation proposal developed in accordance with the most recent guidance issued by the US Army Corps of Engineers Wilmington District shall be submitted for review and approval with the application for impacts.

4. All activities shall be in compliance with any applicable State Regulated Riparian Buffer Rules in Chapter 2 of Title 15A.
5. When applicable, all construction activities shall be performed and maintained in full compliance with G.S. Chapter 113A Article 4 (Sediment and Pollution Control Act of 1973). Regardless of applicability of the Sediment and Pollution Control Act, all projects shall incorporate appropriate Best Management Practices for the control of sediment and erosion so that no violations of state water quality standards, statutes, or rules occur. [15A NCAC 02H .0506 (b)(3) and (c)(3) and 15A NCAC 02B .0200]

Design, installation, operation, and maintenance of all sediment and erosion control measures shall be equal to or exceed the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*, or for linear transportation projects, the *NCDOT Sediment and Erosion Control Manual*.

All devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) sites, including contractor-owned or leased borrow pits associated with the project. Sufficient materials required for stabilization and/or repair of erosion control measures and stormwater routing and treatment shall be on site at all times.

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For borrow pit sites, the erosion and sediment control measures shall be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*. Reclamation measures and implementation shall comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act and the Mining Act of 1971.

If the project occurs in waters or watersheds classified as Primary Nursery Areas (PNAs), SA, WS-I, WS-II, High Quality Waters (HQW), or Outstanding Resource Waters (ORW), then the sedimentation and erosion control designs shall comply with the requirements set forth in 15A NCAC 04B .0124, *Design Standards in Sensitive Watersheds*.

6. Sediment and erosion control measures shall not be placed in wetlands or waters except within the footprint of temporary or permanent impacts authorized under this Certification. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0501 and .0502]
7. Erosion control matting that incorporates plastic mesh and/or plastic twine shall not be used along streambanks or within wetlands. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02B .0201]
8. An NPDES Construction Stormwater Permit (NCG010000) is required for construction projects that disturb one (1) or more acres of land. The NCG010000 Permit allows stormwater to be discharged during land disturbing construction activities as stipulated in the conditions of the permit. If the project is covered by this permit, full compliance with permit conditions including the erosion & sedimentation control plan, inspections and maintenance, self-monitoring, record keeping and reporting requirements is required. [15A NCAC 02H .0506(b)(5) and (c)(5)]

The North Carolina Department of Transportation (NCDOT) shall be required to be in full compliance with the conditions related to construction activities within the most recent version of their individual NPDES (NCS000250) stormwater permit. [15A NCAC 02H .0506(b)(5) and (c)(5)]

9. All work in or adjacent to streams shall be conducted so that the flowing stream does not come in contact with the disturbed area. Approved best management practices from the most current version of the *NC Sediment and Erosion Control Manual*, or the *NC DOT Construction and Maintenance Activities Manual*, such as sandbags, rock berms, cofferdams, and other diversion structures shall be used to minimize excavation in flowing water. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506(b)(3) and (c)(3)]
10. If activities must occur during periods of high biological activity (e.g. sea turtle nesting, fish spawning, or bird nesting), then biological monitoring may be required at the request of other state or federal agencies and coordinated with these activities. [15A NCAC 02H .0506 (b)(2) and 15A NCAC 04B .0125]

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All moratoriums on construction activities established by the NC Wildlife Resources Commission (WRC), US Fish and Wildlife Service (USFWS), NC Division of Marine Fisheries (DMF), or National Marine Fisheries Service (NMFS) shall be implemented. Exceptions to this condition require written approval by the resource agency responsible for the given moratorium. A copy of the approval from the resource agency shall be forwarded to DWR.

Work within a designated trout watershed of North Carolina (as identified by the Wilmington District of the US Army Corps of Engineers), or identified state or federal endangered or threatened species habitat, shall be coordinated with the appropriate WRC, USFWS, NMFS, and/or DMF personnel.

11. Culverts shall be designed and installed in such a manner that the original stream profiles are not altered and allow for aquatic life movement during low flows. The dimension, pattern, and profile of the stream above and below a pipe or culvert shall not be modified by widening the stream channel or by reducing the depth of the stream in connection with the construction activity. The width, height, and gradient of a proposed culvert shall be such as to pass the average historical low flow and spring flow without adversely altering flow velocity. [15A NCAC 02H .0506(b)(2) and (c)(2)]

Placement of culverts and other structures in streams shall be below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20% of the culvert diameter for culverts having a diameter less than or equal to 48 inches, to allow low flow passage of water and aquatic life.

If multiple pipes or barrels are required, they shall be designed to mimic the existing stream cross section as closely as possible, including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel shall be avoided.

When topographic constraints indicate culvert slopes of greater than 5%, culvert burial is not required, provided that all alternative options for flattening the slope have been investigated and aquatic life movement/connectivity has been provided when possible (e.g. rock ladders, cross vanes, etc.). Notification, including supporting documentation to include a location map of the culvert, culvert profile drawings, and slope calculations, shall be provided to DWR 60 calendar days prior to the installation of the culvert.

When bedrock is present in culvert locations, culvert burial is not required provided that there is sufficient documentation of the presence of bedrock. Notification, including supporting documentation such as a location map of the culvert, geotechnical reports, photographs, etc. shall be provided to DWR a minimum of 60 calendar days prior to the installation of the culvert. If bedrock is discovered during construction, then DWR shall be notified by phone or email within 24 hours of discovery.

If other site-specific topographic constraints preclude the ability to bury the culverts as described above and/or it can be demonstrated that burying the culvert would result in destabilization of the channel, then exceptions to this condition require application to and written approval from DWR.

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Installation of culverts in wetlands shall ensure continuity of water movement and be designed to adequately accommodate high water or flood conditions. When roadways, causeways, or other fill projects are constructed across FEMA-designated floodways or wetlands, openings such as culverts or bridges shall be provided to maintain the natural hydrology of the system as well as prevent constriction of the floodway that may result in destabilization of streams or wetlands.

The establishment of native woody vegetation and other soft stream bank stabilization techniques shall be used where practicable instead of rip-rap or other bank hardening methods.

12. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means to the maximum extent practicable (e.g. grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506(b)(5)]
13. Application of fertilizer to establish planted/seeded vegetation within disturbed riparian areas and/or wetlands shall be conducted at agronomic rates and shall comply with all other Federal, State and Local regulations. Fertilizer application shall be accomplished in a manner that minimizes the risk of contact between the fertilizer and surface waters. [15A NCAC 02B .0200 and 15A NCAC 02B .0231]
14. If concrete is used during construction, then all necessary measures shall be taken to prevent direct contact between uncured or curing concrete and waters of the state. Water that inadvertently contacts uncured concrete shall not be discharged to waters of the state. [15A NCAC 02B .0200]
15. All proposed and approved temporary fill and culverts shall be removed and the impacted area shall be returned to natural conditions within 60 calendar days after the temporary impact is no longer necessary. The impacted areas shall be restored to original grade, including each stream's original cross sectional dimensions, planform pattern, and longitudinal bed profile. For projects that receive written approval, no temporary impacts are allowed beyond those included in the application and authorization. All temporarily impacted sites shall be restored and stabilized with native vegetation. [15A NCAC 02H .0506(b)(2) and (c)(2)]
16. All proposed and approved temporary pipes/culverts/rip-rap pads etc. in streams shall be installed as outlined in the most recent edition of the *North Carolina Sediment and Erosion Control Planning and Design Manual* or the *North Carolina Surface Mining Manual* or the *North Carolina Department of Transportation Best Management Practices for Construction and Maintenance Activities* so as not to restrict stream flow or cause dis-equilibrium during use of this Certification. [15A NCAC 02H .0506(b)(2) and (c)(2)]

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17. Any rip-rap required for proper culvert placement, stream stabilization, or restoration of temporarily disturbed areas shall be restricted to the area directly impacted by the approved construction activity. All rip-rap shall be placed such that the original stream elevation and streambank contours are restored and maintained. Placement of rip-rap or other approved materials shall not result in de-stabilization of the stream bed or banks upstream or downstream of the area or in a manner that precludes aquatic life passage. [15A NCAC 02H .0506(b)(2)]
18. Any rip-rap used for stream or shoreline stabilization shall be of a size and density to prevent movement by wave, current action, or stream flows and shall consist of clean rock or masonry material free of debris or toxic pollutants. Rip-rap shall not be installed in the streambed except in specific areas required for velocity control and to ensure structural integrity of bank stabilization measures. [15A NCAC 02H .0506(b)(2)]
19. Applications for rip-rap groins proposed in accordance with 15A NCAC 07H .1401 (NC Division of Coastal Management General Permit for construction of Wooden and Rip-rap Groins in Estuarine and Public Trust Waters) shall meet all the specific conditions for design and construction specified in 15A NCAC 07H .1405.
20. All mechanized equipment operated near surface waters should be inspected and maintained regularly to prevent contamination of surface waters from fuels, lubricants, hydraulic fluids, or other toxic materials. Construction shall be staged in order to minimize the exposure of equipment to surface waters to the maximum extent practicable. Fueling, lubrication and general equipment maintenance shall be performed in a manner to prevent, to the maximum extent practicable, contamination of surface waters by fuels and oils. [15A NCAC 02H .0506 (b)(3) and (c)(3) and 15A NCAC 02B .0211 (12)]
21. Heavy equipment working in wetlands shall be placed on mats or other measures shall be taken to minimize soil disturbance. [15A NCAC 02H .0506 (b)(3) and (c)(3)]
22. In accordance with 143-215.85(b), the applicant shall report any petroleum spill of 25 gallons or more; any spill regardless of amount that causes a sheen on surface waters; any petroleum spill regardless of amount occurring within 100 feet of surface waters; and any petroleum spill less than 25 gallons that cannot be cleaned up within 24 hours.
23. If an environmental document is required under the State Environmental Policy Act (SEPA), then this General Certification is not valid until a Finding of No Significant Impact (FONSI) or Record of Decision (ROD) is issued by the State Clearinghouse. If an environmental document is required under the National Environmental Policy Act (NEPA), then this General Certification is not valid until a Categorical Exclusion, the Final Environmental Assessment, or Final Environmental Impact Statement is published by the lead agency. [15A NCAC 01C .0107(a)]
24. This General Certification does not relieve the applicant of the responsibility to obtain all other required Federal, State, or Local approvals before proceeding with the project, including those required by, but not limited to, Sediment and Erosion Control, Non-Discharge, Water Supply Watershed, and Trout Buffer regulations.

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25. The applicant and their authorized agents shall conduct all activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act), and any other appropriate requirements of State and Federal Law. If DWR determines that such standards or laws are not being met, including failure to sustain a designated or achieved use, or that State or Federal law is being violated, or that further conditions are necessary to assure compliance, then DWR may revoke or modify a written authorization associated with this General Water Quality Certification. [15A NCAC 02H .0507(d)]
26. The permittee shall require its contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of this Certification. A copy of this Certification, including all conditions shall be available at the project site during the construction and maintenance of this project. [15A NCAC 02H .0507 (c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]
27. When written authorization is required for use of this Certification, upon completion of all permitted impacts included within the approval and any subsequent modifications, the applicant shall be required to return a certificate of completion (available on the DWR website <https://edocs.deq.nc.gov/Forms/Certificate-of-Completion>). [15A NCAC 02H .0502(f)]
28. Additional site-specific conditions, including monitoring and/or modeling requirements, may be added to the written approval letter for projects proposed under this Water Quality Certification in order to ensure compliance with all applicable water quality and effluent standards. [15A NCAC 02H .0507(c)]
29. If the property or project is sold or transferred, the new permittee shall be given a copy of this Certification (and written authorization if applicable) and is responsible for complying with all conditions. [15A NCAC 02H .0501 and .0502]

### III. GENERAL CERTIFICATION ADMINISTRATION:

1. In accordance with North Carolina General Statute 143-215.3D(e), written approval for a 401 Water Quality General Certification must include the appropriate fee. An applicant for a CAMA permit under Article 7 of Chapter 113A of the General Statutes for which a Water Quality Certification is required shall only make one payment to satisfy both agencies; the fee shall be as established by the Secretary in accordance with 143-215.3D(e)(7).
2. This Certification neither grants nor affirms any property right, license, or privilege in any waters, or any right of use in any waters. This Certification does not authorize any person to interfere with the riparian rights, littoral rights, or water use rights of any other person and this Certification does not create any prescriptive right or any right of priority regarding any usage of water. This Certification shall not be interposed as a defense in any action respecting the determination of riparian or littoral rights or other rights to water use. No consumptive user is deemed by virtue of this Certification to possess any prescriptive or

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other right of priority with respect to any other consumptive user regardless of the quantity of the withdrawal or the date on which the withdrawal was initiated or expanded.

3. This Certification grants permission to the Director, an authorized representative of the Director, or DWR staff, upon the presentation of proper credentials, to enter the property during normal business hours. [15A NCAC 02H .0502(e)]
4. This General Certification shall expire on the same day as the expiration date of the corresponding Nationwide Permit and/or Regional General Permit. The conditions in effect on the date of issuance of Certification for a specific project shall remain in effect for the life of the project, regardless of the expiration date of this Certification. This General Certification is rescinded when the US Army Corps of Engineers reauthorizes any of the corresponding Nationwide Permits and/or Regional General Permits or when deemed appropriate by the Director of the Division of Water Resources.
5. Non-compliance with or violation of the conditions herein set forth by a specific project may result in revocation of this General Certification for the project and may also result in criminal and/or civil penalties.
6. The Director of the North Carolina Division of Water Resources may require submission of a formal application for Individual Certification for any project in this category of activity if it is deemed in the public's best interest or determined that the project is likely to have a significant adverse effect upon water quality, including state or federally listed endangered or threatened aquatic species, or degrade the waters so that existing uses of the waters or downstream waters are precluded.

*History Note: Water Quality Certification (WQC) Number 4132 issued December 1, 2017 replaces WCQ 4085 issued March 3, 2017; WQC 3883 issued March 19, 2012; WQC Number 3687 issued November 1, 2007; WQC Number 3624 issued March 19, 2007; WQC Number 3494 issued December 31, 2004; and WQC Number 3376 issued March 18, 2002.*



**Attachment 5– NCDEQ  
Erosion and Sedimentation Control Plan Approval  
Project – Pitt-2019-016**

The Contractor is charged with conducting construction activities in accordance with the attached approval with modifications. Contractor shall maintain and check erosion control features as required in the approval, coordinate start of construction with the NCDEQ staff person listed in the approval and respond to NCDEQ comments and notices if any during construction to maintain the system in accordance with the plan approval. The cost of erosion and sedimentation control should be included in the bid price.

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NORTH CAROLINA  
Environmental Quality

ROY COOPER  
Governor

MICHAEL S. REGAN  
Secretary

S. DANIEL SMITH  
Interim Director

March 13, 2019

## LETTER OF APPROVAL WITH MODIFICATIONS

City of Greenville  
Attn: Mr. Scott Godefroy, City Engineer  
1500 Beatty Street  
Greenville, NC 27834

**RE: Erosion and Sedimentation Control Plan No. Pitt-2019-016**  
Project Name: Arlington Boulevard Improvements  
Location: Arlington Blvd County: Pitt  
River Basin: Tar-Pamlico  
Date Received by LQS: March 11, 2019  
Acres Approved: 11 Project Type: New  
Project Description: Grading plan associated with the road improvements, as shown on the plan received on March 11, 2019.

Dear Sir:

This office has reviewed the subject erosion and sedimentation control plan. We find the plan to be acceptable and hereby issue this Letter of Approval. (NOTE: Attached is a list of modifications for conducting this land disturbing activity) This plan approval shall expire three (3) years following the date of approval, if no land-disturbing activity has been undertaken, as required by 15A NCAC 4B.0129, unless modified by other legislation.

Please be advised that 15A NCAC 4B.0118(a) requires that a copy of the approved erosion and sedimentation control plan be on file at the job site. Also, you should consider this letter as giving 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 Program is performance oriented, requiring protection of existing natural resources and adjoining properties through the use of reasonable and appropriate Best Management Practices throughout the course of the project. If, following the commencement of this project, it is determined that the erosion and sedimentation control plan is inadequate to meet the requirements of the Sedimentation Pollution Control Act of 1973 (G.S. 113A-51 through 66), this office may require revisions to the plan and implementation of the revisions to ensure compliance with the Act.



North Carolina Department of Environmental Quality | Division of Energy, Mineral and Land Resources  
Washington Regional Office | 943 Washington Square Mall | Washington, North Carolina 27889  
252.946.6481

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/Ownership Form, which you have submitted. You are required to file an amended form if there is any change in the information included on the form. NOTE: Neither this approval nor the financial responsibility/liability cited in it automatically transfer with a change in project ownership. In addition, 15A NCAC 4B.0127(c) requires that you notify this office of the proposed starting date for this project (using the enclosed Project Information Sheet). Please notify us if you plan to have a preconstruction conference.

Please be advised that a rule to protect and maintain existing buffers along watercourses in the Tar-Pamlico River Basin became effective on January 1, 2000. The Tar-Pamlico River Riparian Area Protection and Maintenance Rule (15A NCAC 2B.0259) applies to a 50 (horizontal) foot wide zone along all perennial and intermittent streams, lakes, ponds and estuaries in the Tar-Pamlico River basin. For more information about the riparian area rule, please contact the Division of Water Quality's Wetland/401 Unit at 919-807-6300, or DWQ in our regional office at 252-946-6481.

Please be aware that your project will be covered by the enclosed NPDES General Stormwater Permit NCG010000 (Construction Activities). You should first become familiar with all of the requirements for compliance with the enclosed permit

Sincerely,



Samir Dumpor  
Regional Engineer

Enclosures

cc w/o enc: Lynn Raynor, PE, City of Greenville(email)  
Todd Tripp, PE, The East Group (email)  
WaRO Division of Water Resources

1. The developer is responsible for the control of sediment on-site. If the approved erosion and sedimentation control measures prove insufficient, the developer must take those additional steps necessary to stop sediment from leaving this site (NCGS 113A-57(3)). Each sediment storage device must be inspected after each storm event (NCGS 113A-54.1(e)). Maintenance and/or clean out is necessary anytime the device is at 50% capacity. All sediment storage measures will remain on site and functional until all grading and final landscaping of the project is complete (15A NCAC 04B .0113).
2. The developer is responsible for obtaining all permits and approvals necessary for the development of this project prior to the commencement of this land disturbing activity. This could include our agency's Stormwater regulations and the Division of Water Resources' enforcement requirements within Section 401 of the Clean Water Act, the U.S. Army Corps of Engineers' jurisdiction of Section 404 of the Clean Water Act, the Division of Coastal Management's CAMA requirements, the Division of Solid Waste Management's landfill regulations, the Environmental Protection Agency and/or The U.S. Army Corps of Engineers jurisdiction of the Clean Water Act, local County or Municipalities' ordinances, or others that may be required. This approval cannot supersede any other permit or approval.
3. Adequate and appropriate measures must be properly installed downstream, within the limits of disturbance, of any land disturbing activity to prevent sediment from leaving the limits of disturbance, entering existing drainage systems, impacting an on-site natural watercourse or adjoining property. (NCGS 113A-57)

## PROJECT INFORMATION SHEET

APPROVAL DATE: March 13, 2019

RESPONSIBLE PARTY: City of Greenville

PROJECT NAME: Arlington Boulevard Improvements

COUNTY: Pitt NO.: Pitt-2019-016

OFF-SITE BORROW  
AND/OR DISPOSAL SITE: \_\_\_\_\_ NO.: \_\_\_\_\_

START-UP DATE: \_\_\_\_\_

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

ON-SITE CONTACT: \_\_\_\_\_

ON-SITE PHONE NO.: \_\_\_\_\_

OFFICE PHONE NO.: \_\_\_\_\_

**COMPLETE & RETURN THIS FORM  
PRIOR TO THE START OF CONSTRUCTION TO:**

**N.C.D.E.N.R.  
LAND QUALITY SECTION  
ATTN: *James Edwards*  
943 WASHINGTON SQUARE MALL  
WASHINGTON, NORTH CAROLINA 27889  
[james.edwards@ncdenr.gov](mailto:james.edwards@ncdenr.gov)**

## STANDARD SPECIAL PROVISIONS

### 1. STANDARD SPECIFICATIONS

The 2018 edition of the Standard Specifications for Roads and Structures of the North Carolina Department of Transportation hereinafter referred to as the 'Standard Specifications' shall apply on all portions of the project unless otherwise specified herein and are made a part of this contract by reference. Copies of the Standard Specifications are available at the following website link: <https://connect.ncdot.gov/resources/Specifications/StandSpecLibrary/2018%20Standard%20Specifications%20for%20Roads%20and%20Structures.pdf>

Should the above link not work, the contractor is charged with seeking an online copy from NCDOT and informing the Engineer.

### 2. SUPERVISION BY THE CONTRACTOR

At the time work is actually performed, the contractor shall have present on the project one individual who has been authorized to act in a supervisory capacity over all work on the project including work subcontracted. The individual who has been so authorized shall be experienced in the type of work being performed and is to be fully capable of managing, directing, and coordinating the work; of reading and thoroughly understanding the contract and of receiving and carrying out directions from the Engineer or his authorized representatives. He shall be an employee of the contractor, unless otherwise approved by the Engineer.

### 3. DEFINITION OF TERMS:

Whenever the following terms are used in the Standard Specifications, in any of the contract documents, or in the plans, the intended meaning of such terms shall be as follows:

- a. "State" or "Department" shall be replaced by the words 'City of Greenville'.
- b. "Engineer" or "Resident Engineer" shall be replaced by the words "City Engineer or his duly authorized representative".
- c. "Sampling and Testing by Department" shall be replaced by the words "Sampling and Testing by City or its approved testing agency".
- d. "Inspection by Department" shall be replaced by the words "Inspection by the City or its duly authorized representative".
- e. "City Standard" shall refer to the "Greenville Manual of Standard Designs and Details".
- f. "City Water Main Standard" and "City Sanitary Sewer Standard" shall refer to the latest edition of the "Greenville Manual of Standard Designs and Details".
- g. "Landscape Construction Standards, shall refer to the Ground Cover Section of the "Manual of Standard Designs and Details" for construction with the jurisdiction of the City of Greenville.
- h. "Abnormal weather conditions" as mentioned in General Conditions Article 4.05(C) shall be defined as weather more severe than the average of the last ten (10) years as

established in Section 1250 of the specifications. The determination that “abnormal weather” has occurred shall be based upon a comparison of actual rain days above the precipitation threshold to the baseline established by NOAA Weather Data.

4. ADDENDA:

Addenda will be mailed to "Bidders of Record", and will be on file in the Office of the Engineer. It shall be the Bidder's responsibility to make inquiry as to the Addenda issued. All such Addenda shall become part of the contract and all Bidders shall be bound by such Addenda whether or not received or acknowledged by the Bidder.

5. SUBSURFACE INVESTIGATION:

The Contractor shall make his own subsurface investigations. Any information obtained by the City as a result of its own subsurface investigations will be made available upon request. This information (when available) is provided for informational purposes only and shall not relieve the Contractor of making his own investigations. The Contractor shall obtain all necessary permits prior to making any pavement cuts on existing streets.

6. AWARDING OF CONTRACT:

The City of Greenville will award the contract or contracts conditioned upon funds being available for construction and other governmental approvals as may be required. The contract will be awarded to the lowest responsible Bidder or Bidders, as required by North Carolina General Statutes. Consideration will be given only to proposals from Contractors who are properly licensed; bonded, experienced in the class of work proposed and who can refer to projects of similar magnitude and character as have been completed by them. The City also reserves the right to reject any and all proposals and to waive informalities or technicalities as it may deem to be in its best interest.

7. CONTRACT BONDS:

Failure of the Contractor to provide the required bonds, insurance, and executed contract within ten (10) days after he receives the notice of intent to award shall be just cause for the forfeiture of the bid bond or bid deposit and rescinding the award of the contract.

Award may then be made to the next responsible bidder or the work may be re-advertised and constructed under contract or otherwise as the City may decide.

Within ten days of notification of award of contracts equal to or exceeding \$100,000, the Contractor shall secure and post a Performance Bond and Labor and Material Payment Bond, each in the amount of 100% of the Total Contract Sum. All such bonds shall be issued by a surety acceptable to the City. The City shall be named as the beneficiary. Cash bonds will not be accepted

8. NOTICE TO PROCEED

A Notice to Proceed will be issued to the Contractor upon receipt of a fully executed contract, bonds, insurance certificates, receipt of approval by City or other governmental agencies (if required) and any other documentation required by the Engineer.



9. MATERIALS AND EQUIPMENT STORAGE:

The Contractor shall be responsible for locating and providing storage areas for construction materials and equipment. The material and equipment storage shall comply with the local and state ordinances throughout the construction period. The Contractor shall restore the storage area to its original condition upon completion of the project or upon such time as directed by the Engineer. Such restoration shall be at no additional cost to the City.

The Contractor shall be responsible for the safeguarding of materials and equipment against fire, theft and vandalism and shall not hold the City responsible in any way for occurrences of same. The Contractor shall furnish and erect, at no additional cost, whatever works as may be necessary for the protection of the public, including but not limited to barricades, fences, etc. Prior to final payment being made, the Contractor shall obtain a release from the property owner of the storage area utilized for the project.

10. EXISTING UTILITIES:

The City has contacted all involved utility owners of the effect of this project on their respective utility.

Construction plans and anticipated construction schedules have been provided to the utility owners. Each utility owner will be requested to attend the preconstruction conference to discuss potential conflicts and their schedule for relocation where required. All adjustments or relocations will be made by the utility owner unless otherwise indicated in the Contract Documents.

The owners of utilities in this project may include:

Greenville Utilities Commission  
Centurylink Communications  
Suddenlink Communications  
NCDOT

The Contractor shall adhere to the provisions of 1985 Underground Damage Prevention Act North Carolina General Statutes 887 Chapter 785 Senate Bill 168 Article 3. To assist the contractor and utility owners in meeting the requirements of this law, there is a "one call system" called "NC ONECALL". Most major utilities with underground facilities in the State subscribe to this service. For calls originating within North Carolina, The NC ONECALL telephone number is 1-800-632-4949. For calls originating outside of North Carolina, the number is (919) 855-5760. The Contractor shall include the cost of any coordination and cooperation of utilities in his bid. NCDOT is not a member of ONECALL. The number to call for NCDOT for wires at intersections is 830-4393. NCDOT requires 72 hours' notice.

No additional compensation shall be allowed for delays or inconveniences sustained by the Contractor due to utility relocation or adjustments. No additional payment will be made for re-

mobilization required by the utility's failure to relocate utility at the request of the Contractor. The Contractor should refer to Article 8 of the Standard Specifications.

Where changes to utility facilities are to be made solely for the convenience of the Contractor, it shall be the Contractor's responsibility to arrange for such changes, and the Contractor shall bear all costs of such changes.

11. CONSTRUCTION STAKES, LINES AND GRADES:

Construction stakes, lines and grades are the responsibility of the Contractor. This work is incidental to the project scope of work. The entire cost of this work to be distributed among the various other pay items. Refer to Article 4 of the Standard General Conditions.

12. TAXES & LICENSES:

North Carolina sales and/or use taxes are applicable to purchases of building materials and other tangible personal property by Contractors for use in performing City contracts. Use tax is also due on construction equipment brought into North Carolina for use in the performance of City contracts (N.C. Revenue Laws, G.S. 105-164.4 and G.S. 105-164.6). Contractors are liable for payment of applicable privilege licenses (N.C. Revenue Laws, G.S. 105-54). Contractors are also liable for payment of applicable franchise, corporate income, license and withholding taxes (N.C. Revenue Laws, G.S. 105-122, G.S. 105-123, G.S. 105-134 and G.S. 105-163.2).

13. EROSION AND SEDIMENTATION CONTROL MEASURES:

The Contractor shall install and maintain all erosion and sedimentation control measures and devices necessary to comply with the Erosion and Sedimentation Control Plan and applicable local and state ordinances and laws. All erosion and sedimentation control measures and devices shall be installed prior to beginning clearing or grading operations. Such devices shall be maintained in proper working condition from installation throughout the duration of the project.

The Contractor shall indemnify and hold harmless the City for any penalties imposed against the City by any local or state agency for the Contractor's failure to install and properly maintain erosion and sedimentation control devices. The Contractor shall immediately correct any deficiencies in erosion and sedimentation measures identified by the City or local or state agency. If the Contractor fails to correct the deficiencies within 24 hours after notification, the City will have such corrections performed and assess the cost of these corrections plus a 100% surcharge against the Contractor.

If any borrow or waste areas are to be utilized, it will be the responsibility of the Contractor to notify the property owner that the property owner is responsible for any damage occurring from the site, either as part of the agreement with the Contractor, or on his own. All work, sediment control structures, and seeding will be at the cost of the property owner or Contractor. The City will not participate in the cost of this work on the waste or borrow areas. Prior to final payment being made, the Contractor shall obtain a release from the property owner of the borrow or waste site utilized for the project.

14. HAZARDOUS MATERIALS:

If the Contractor encounters any materials considered or suspected of being hazardous, he shall immediately secure the area and contact the Greenville Fire Department at (252) 329-4397 for further instructions.

15. OSHA REQUIREMENTS

**GENERAL CONTRACTOR SAFETY REQUIREMENTS**

Supplement to OSHA parts 1910 and 1926.

PART 1 - GENERAL CONTRACTOR REQUIREMENTS

1.1 The Contractor shall comply with OSHA (Occupational Safety and Health Administration) Parts 1910 and 1926, Construction Industry Standards and Interpretations, and with this specification.

1.2 Requests for variances or waivers from this specification are to be made to the Engineer in writing supported by evidence that every reasonable effort has been made to comply with the contractual requirements. A written request for waiver or a variance shall include:

- a. Specific reference to the provision or standard in question;
- b. An explanation as to why the waiver is considered justified; and
- c. The Contractor's proposed alternative, including technical drawings, materials, or equipment specifications needed to enable the Engineer and City's Risk Manager to render a decision.

1.3 No waiver or variance will be approved if it endangers any person. The Contractor shall not proceed under any requested revision of a provision until the Engineer has given written approval. The Contractor is to hold and save harmless the City of Greenville, North Carolina free from any claims or causes of action whatsoever resulting from the Contractor of subcontractors proceeding under a waiver or approved variance.

1.4 Copies of OSHA Parts 1910 and 1926, Construction Industry Standards and Interpretations, may be obtained from:

Superintendent of Document  
U.S. Government Printing Office  
Washington, DC 20402

1.5 **SAFETY PROGRAM**

Each Contractor is to demonstrate that he or she has facilities for conducting a safety program commensurate with the work under contract. The Contractor is to submit in writing a proposed comprehensive safety program to the Contracting Officer for approval before the start of construction operations. The program is to specifically state what provisions the Contractor proposes to take for the health and safety of all employees, including details relevant to the work

to be done, the hazards associated with the work, and the actions that will be necessary to minimize the identified hazards.

#### 1.6 PRECONSTRUCTION SAFETY MEETING

Representatives for the Contractor are to meet with the Contracting Officer or the Contracting Officer's representative before the start of construction to discuss the safety program and the implementation of all health and safety standards pertinent to the work under this contract.

#### 1.7 JOINT SAFETY POLICY COMMITTEE

The Contractor, or designated onsite representative, is to participate in monthly meetings of a Joint Safety Policy Committee, composed of Contracting Local Organization and Contractor supervisory personnel. At these meetings, the Contractor's project manager and the Contracting Officer will review the effectiveness of the Contractor's safety effort, resolve current health and safety problems, and coordinate safety activities for upcoming work.

#### 1.8 SAFETY PERSONNEL

Each Contractor is to designate a competent supervisory employee satisfactory to the Contracting Officer to administer the safety program.

#### 1.9 SAFETY MEETINGS

A minimum of one on-the-job or toolbox safety meeting is to be conducted each week by all field supervisors or foremen and attended by mechanics and all construction personnel at the job site. The Contractor is to also conduct regularly scheduled supervisory safety meetings at least monthly for all levels of job supervision.

#### 1.10 SAFETY INSPECTION

The Contractor shall perform frequent and regular safety inspections of the job site, materials, and equipment, and shall correct deficiencies.

#### 1.11 FIRST AID TRAINING

Every Contractor foreman's work crew must include an employee who has a current first aid certificate from the Mine Safety and Health Administration, American Red Cross, or other state-approved organization.

#### 1.12 REPORTS

Each Contractor is to maintain an accurate record of all job-related deaths, diseases, or disabling injuries. The records shall be maintained in a manner approved the Engineer. A copy of all reports is to be provided to the Engineer. All fatal or serious injuries are to be reported immediately to the Engineer who will contact the City of Greenville's Risk Manager; and every assistance is to be given in the investigation of the incident, including submission of a comprehensive narrative report to the Engineer. Other occurrences with serious accident potential, such as equipment failures, slides, and cave-ins, must also be reported immediately. The Contractor is to assist and cooperate fully with the Engineer and City's Risk Manager in conducting accident investigations. The Engineer is to be furnished all information and data pertinent to investigation of an accident.

## PART 2 - FIRST AID AND MEDICAL FACILITIES

2.1 FIRST AID KITS. A 16-unit first aid kit approved by the American Red Cross is to be provided at accessible, well-identified, locations at the ratio of at least one kit for each 25 employees. The first aid kits are to be moisture-proof and dust-tight, and the contents of the kits are to be replenished as used or as they become ineffective or outdated.

2.2 EMERGENCY FIRST AID. At least one employee certified to administer emergency first aid must be available on each shift and duly designated by the Contractor to care for injured employees. The names of the certified employees shall be posted at the job site.

2.3 COMMUNICATION AND TRANSPORTATION. Prior to the start of work, the Contractor is to make necessary arrangements for prompt and dependable communications, transportation, and medical care for injured employees. At least one stretcher and two blankets shall be readily available for transporting injured employees.

2.4 FIRST AID AND MEDICAL REPORTS. The Contractor is to maintain a record system for first aid and medical treatment on the job site. Such records are to be readily available to the Contracting Officer and are to include--

- a. A daily treatment log listing chronologically all persons treated for occupational injuries and illnesses;
- b. Cumulative record of injury for each individual;
- c. Monthly statistical records of occupational injuries, classified by type and nature of injury; and
- d. Required records for worker's compensation.

2.5 SIGNS AND DIRECTIONAL MARKINGS. Adequate identification and directional markers are to be provided to readily denote the location of all first aid stations.

2.6 EMERGENCY LISTING. A listing of telephone numbers and addresses of doctor, rescue squad, hospital, police, and fire departments is to be provided at all first aid locations.

## PART 3 - PHYSICAL QUALIFICATION OF EMPLOYEES

3.1 GENERAL REQUIREMENTS. Persons employed throughout the contract are to be physically qualified to perform their assigned duties. Employees must not knowingly be permitted or required to work while their ability or alertness is impaired by fatigue, illness, or any other reason that may jeopardize themselves or others.

3.2 HOIST OPERATIONS. Operators of cranes, cableways, and other hoisting equipment shall be examined annually by a physician and provided with a certification stating that they are

physically qualified to safely operate hoisting equipment. The Contractor is to submit a copy of each certification to the Contracting Officer.

3.3 MOTOR VEHICLE OPERATORS. Operators of motor vehicles engaged primarily in the transportation of personnel are to be 18 years of age or older and have a valid state operator's permit or license for the equipment being operated. The operators must have passed a physical examination administered by a licensed physician within the past year showing that they are physically qualified to operate vehicles safely.

#### PART 4 - PERSONAL PROTECTIVE EQUIPMENT

4.1 HARDHAT AREAS. The entire job site, with the exception of offices, shall be considered a hardhat area. All persons entering the area are, without exception, required to wear hardhats.

The Contractor shall provide hardhats for visitors entering hardhat areas.

4.1.1 LABELS. Hardhats shall bear a manufacturer's label indicating design compliance with the appropriate ANSI (American National Standards Institute) standard.

4.2 POSTING. Signs, at least 3 by 4 feet, worded as follows, with red letters (minimum 6 inches high) and white background shall be erected at access points to designated hardhat area:

**CONSTRUCTION AREA  
HARDHATS REQUIRED  
BEYOND THIS POINT**

These signs are to be furnished and installed by the Contractor at entries to shops, construction yards, and job access points.

#### PART 5 - MACHINERY AND MECHANIZED EQUIPMENT

5.1 SAFE CONDITION. Before any machinery or mechanized equipment is initially used on the job, it must be inspected and tested by qualified personnel and determined to be in safe operating condition and appropriate for the intended use. Operators shall inspect their equipment prior to the beginning of each shift. Any deficiencies or defects shall be corrected prior to using the equipment. Safety equipment, such as seatbelts, installed on machinery, is to be used by equipment operators.

5.2 TAGGING AND LOCKING. The controls of power-driven equipment under repair are to be locked. An effective lockout and tagging procedure is to be established, prescribing specific responsibilities and safety procedures to be followed by the person or persons performing repair work.

5.3 OPERATIONS, RIDING ON EQUIPMENT, GETTING ON OR OFF EQUIPMENT,  
HOURS OF OPERATION

5.3.1 OPERATORS. Machinery and mechanized equipment shall be operated only by authorized qualified persons.

5.3.2 RIDING ON EQUIPMENT. Riding on equipment by unauthorized personnel is prohibited. Seating and safety belts shall be provided for the operator and all passengers.

5.3.3 GETTING ON OR OFF EQUIPMENT. Getting on or off equipment while the machinery is in motion is prohibited.

5.3.4 HOURS OF OPERATION. Except in emergencies, an equipment operator shall not operate any mobile or hoisting equipment for more than 12 hours without an 8-hour rest interval away from the job.

## 5.5 ROLLOVER PROTECTIVE STRUCTURES (ROPS)

5.5.1 ROLLOVER PROTECTIVE STRUCTURES. OSHA 1926, Subpart W, Overhead Protection, Sections 1000 and 1002, are applicable regardless of the year in which the equipment was manufactured and regardless of the stuck capacity of the equipment.

5.5.2 EQUIPMENT REQUIRING ROPS. The requirement for ROPS meeting 5.5.1 above applies to crawler and rubber-tired tractors such as dozers, push-and-pull tractors, winch tractors, tractors with backhoes, and mowers; off-highway, self-propelled, pneumatic-tired earthmovers, including scrapers, motor graders and loaders; and rollers, compactors, and water tankers (excluding trucks and cabs). These requirements shall also apply to agricultural and industrial tractors and similar equipment.

### 16. SUBLETTING:

The Engineer reserves the right to waive any subcontracting limits whenever it is deemed to be in the best interest of the City. The limits can be waived only upon written approval from the Engineer.

### 17. TERMINATION FOR CONVENIENCE:

The City may terminate the contract upon ten days written notice to the Contractor without cause. Any project assigned prior to the termination notice shall be completed and the Contractor will be paid in accordance with the terms of this contract.

### 18. CARE OF WORK:

The Contractor shall furnish and erect, at no additional cost to the City, whatever sidewalks, bridges and culverts, or other works as may be necessary for the protection of the public including but not limited to barricades, fences, etc. and for the safe and proper execution of other public utility lines so as not to interfere therewith or damage or cause damage thereto. The Contractor shall be responsible for all damages to persons or property that occur as a result of his fault, emission, or negligence in connection with the prosecution of the work and shall be responsible for the proper care and protection of all work performed hereunder until completion and final acceptance, whether or not the same has been covered in whole or in part by payments made by the City.

19. CLEANING UP:

Before acceptance of the project, or as directed by the Engineer, roadway, borrow sources, waste areas, and all ground occupied by the Contractor within the project limits in connection with the work shall be cleaned of all rubbish, excess materials, temporary structures, and equipment.

20. INDEMNIFICATION:

To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the City and its agents and employees, from and against all claims, damages, losses and expenses, including attorneys' fees, arising out of or resulting from the performance of the work, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting therefrom, and (2) is caused in whole or in part by any negligent act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this paragraph.

In any and all claims against the City or any of its agents or employees by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation under this paragraph shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts.

21. INSURANCE REQUIREMENTS:

**Contractor's Liability And Other Insurance:**

The Contractor shall purchase and maintain with a company acceptable to the City and authorized to do business with the State of North Carolina, such insurance as will protect him from claims under worker's compensation laws, disability benefit laws or other similar employee benefit laws; from claims for damages because of bodily injury, occupational sickness or disease, or death of his employees, and claims insured by usual personal injury liability coverage; from claims for damages because of bodily injury, sickness or disease, or death of any person other than his employees including claims insured by usual personal injury liability coverage; and from claims for injury to or destruction of tangible property, including loss of use resulting therefrom - any or all of which may arise out of or result from the contractors operations under the contract documents, whether such operations be by himself or any subcontractor or anyone directly or indirectly employed by any of them or for whose acts any of them may be legally liable. This insurance shall be written for not less than the limits of liability specified below.

**Automobile** - Bodily injury and property liability covering all owned, non-owned and hired automobiles for limits of not less than \$1,000,000 bodily injury each person, each accident and



\$1,000,000 property damage, or \$1,000,000 combined single limit - Bodily injury and property damage combined.

**Commercial General Liability** - Bodily injury and property damage liability as shall protect the contractor and any subcontractor performing work under this contract from claims of bodily injury or property damage which arise from operations of this contract whether such operations are performed by the contractor, any subcontractor or anyone directly or indirectly employed by either. The amounts of such insurance shall not be less than \$1,000,000 bodily injury each occurrence, \$2,000,000 general aggregate and \$1,000,000 property damage each occurrence/aggregate or \$1,000,000 bodily injury and property damage combined single limits each occurrence/aggregate. This insurance shall include coverage for products/completed operations, personal injury liability and contractual liability assumed under the indemnity provision of this contract and broad form property damage, explosion, collapse and underground property damage (XC&U). The coverage shall be on an occurrence basis.

**Worker's Compensation and Employers Liability** - Shall meet the statutory requirement of the State of North Carolina, in the amount of \$100,000 each accident and disease - each employee and \$500,000 disease policy limit.

**Excess or Umbrella Liability** – Contractor shall provide an Excess or Umbrella Liability coverage of not less than \$5,000,000 per occurrence and \$5,000,000 general aggregate.

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

The contractor is advised that if any part of the work under the contract is sublet, he shall require the subcontractor(s) to carry insurance as required above. However, this will in no way relieve the contractor from providing full insurance coverage on all phases of the projects, including any that are sublet.

When certain work is to be performed inside rights-of-way owned by railroads, North Carolina Department of Transportation or other agencies, both the contractor and any subcontractor may be required to furnish individual insurance certificates made in favor by the controlling agency, with limits established by that agency.

22. PRECONSTRUCTION CONFERENCE:

A preconstruction conference will be scheduled as soon as practical after the award of the contract. The Contractor shall attend the conference along with the prospective job superintendent; any anticipated major subcontractors and major material suppliers. A proposed progress schedule in a form satisfactory to the Engineer and a statement of the anticipated monthly progress payments showing the percent of progress each month shall be submitted. The Contractor shall also provide at least two (2) local telephone numbers which may be used to contact the Contractor or his authorized representative in the event of an emergency after normal business hours. Upon receipt of the required documentation, a Notice to Proceed will be issued by the Engineer.

23. SPECIFICATIONS PROVIDED:

The Contractor will be provided with three (3) sets of specifications. Additional sets may be obtained at the cost of printing.

24. PERIODIC PAYMENTS:

The City will make periodic payments based on the work progress estimates prepared by the Engineer and the payment request submitted by the Contractor on a monthly schedule established by the Engineer. Payment will be made within twenty (20) calendar days after receipt of a correct payment request.

For contracts less than \$50,000, partial payments may be made twice each month if in the judgment of the Engineer the amount of work performed is sufficient to warrant such payment. No partial payment will be made when the total value of the work performed since the last partial payment, excluding mobilization, amounts to less than \$1,000.00.

Partial payment requests submitted at the end of a quarter, fiscal year or final payment, shall be accompanied by a North Carolina Local Sales or Use Tax Statement for the prime contractor and all subcontractors. Payment requests and tax statements shall be submitted on an original "Application and Certificate for Payment", AIA Document G702, and "Continuation Sheet", AIA Document G703. A form is shown at the end of this section. The tax statement shall show the N.C. Sales Tax and Greenville County tax paid. It shall also list any payments made directly to the North Carolina Department of Revenue. If no tax has been paid during the pay request period, "NONE" shall be entered on the tax form. Each statement shall be signed by a company officer and certified by a Notary Public.

The Contractor shall have a copy of his current payment request on the job site, which may be reviewed by subcontractors upon request.

An amount equal to ten percent (10%) of the total amount due on payment requests will be deducted and retained until fifty percent (50%) of the work has been completed. At this time, the Engineer may reduce the amount of retainage, if, in his opinion, work has been progressing satisfactorily. Any reduction of retainage below five percent (5 %) will be strictly at the discretion of the Engineer. Any reduction of retainage below two percent (2 %) will be at the discretion of the Engineer, and will require consent of surety. The full contract retainage may be reinstated if the manner of completion of the work and its progress do not remain satisfactory to the Engineer, or for other good and sufficient reason.

Payment will be made on ninety percent (90%) of materials on hand stored on the project site or in a bonded warehouse. Requests for payment of materials on hand shall be accompanied by the original supplier's invoice and proof of insurance coverage of the storage facility.

The Contractor can use a form other than the AIA Document G702 as long as it has a statement that the Contractor certifies the application for payment or adds the following statement to each request for payment:

“I hereby certify that the labor and materials listed on this request for payment have been used in the construction of the Work, or that all materials included in this request for payment and not yet incorporated into the construction are now on the site; and that all lawful charges for labor, materials, etc., covered by previous Certificates for Payment have been paid and that all other lawful charges on which this request for payment is based have been paid for in full or will be paid for in full from the funds received in payment of this request within (10) calendar days from receipt of this partial payment from OWNER.”

25. GUARANTEE:

The Contractor shall guarantee all materials and workmanship for a period of one (1) year from the date of acceptance by the City and shall replace any portions that fail because of faulty materials or workmanship at no additional cost to the City. A six (6) month and eleven (11) month inspections will be held during the warranty period. The Contractor shall immediately repair all defective items upon notification. Items repaired under the provisions shall have an extended warranty period of twelve (12) months of repair of the item.

26. PROJECT CLOSEOUT DOCUMENTS:

**The Contractor shall provide the following documents with the final payment request:**

1. Consent of Surety to Final Payment (Contracts equal to or exceeding \$100,000)
2. Contractor's Release and Waiver of Claim
3. N.C. and Pitt Co. Sales or Use Tax Statements and Certifications
4. Itemized Statement of Payments Made to Minority and Women's Business Enterprises (Notarized)

No final payment will be authorized until these documents have been properly completed and submitted by the Contractor.

27. SALES TAX

Sales taxes may be listed on the proposal, but as a separate item. No charge will be allowed for Federal Excise and Transportation Tax from which the City is exempt.

The following procedure in handling the North Carolina Sales Tax is applicable to this project. Contractors shall comply fully with the requirements outlined hereinafter, in order that the Owner may recover the amount of the tax permitted under the law.

It shall be the Contractor's responsibility to furnish the Owner documentary evidence showing the materials used and sales tax paid by the Contractor and each of his Subcontractors. Such evidence shall be transmitted to the Owner.

The documentary evidence shall consist of a certified statement, by the Contractor and each of his subcontractors individually showing total purchases of materials for each separate vendor and total sales taxes paid each vendor. Certified statement must show the invoice number, or numbers, covered and inclusive dates of such invoices.

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Date of Issuance:

Effective Date:

Owner:

Owner's Contract No.:

Contractor:

Contractor's Project No.:

Engineer:

Engineer's Project No.:

Project:

Contract Name:

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

Description:

Attachments: *[List documents supporting change]*

CHANGE IN CONTRACT PRICE	CHANGE IN CONTRACT TIMES <i>[note changes in Milestones if applicable]</i>
Original Contract Price: \$ _____	Original Contract Times: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
[Increase] [Decrease] from previously approved Change Orders No. ___ to No. ___: \$ _____	[Increase] [Decrease] from previously approved Change Orders No. ___ to No. ___: Substantial Completion: _____ Ready for Final Payment: _____ days
Contract Price prior to this Change Order: \$ _____	Contract Times prior to this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
[Increase] [Decrease] of this Change Order: \$ _____	[Increase] [Decrease] of this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
Contract Price incorporating this Change Order: \$ _____	Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for Final Payment: _____ days or dates

RECOMMENDED:	ACCEPTED:	ACCEPTED:
By: _____ Engineer (if required)	By: _____ Owner (Authorized)	By: _____ Contractor (Authorized)
Title: _____	Title: _____	Title: _____
Date: _____	Date: _____	Date: _____

Approved by Funding Agency (if applicable)

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

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**CITY OF GREENVILLE  
ARLINGTON BOULEVARD IMPROVEMENTS  
HOOKER ROAD TO GREENVILLE BOULEVARD**

**SECTION 01250 - CONTRACT MODIFICATION PROCEDURES**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.
- B. This Section also describes the methodology for evaluating time extension requests particularly for delays caused by abnormal weather.

**1.2 MINOR CHANGES IN THE WORK**

- A. When appropriate, the Engineer may issue supplemental instructions authorizing changes in the Work by use of a Field Order (EJCDC Form C-942). Should Contractor believe that a change in price is required to implement a Field Order, present a Contractor Proposal Request per Article 11 of the General Conditions of the Contract.

**1.3 PROPOSAL REQUESTS**

- A. Owner-Initiated Proposal Requests: Engineer will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
  - 1. Proposal Requests issued by Engineer are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
  - 2. Within 20 days after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
    - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
    - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
    - c. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change.
  - 1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.

**CITY OF GREENVILLE  
ARLINGTON BOULEVARD IMPROVEMENTS  
HOOKER ROAD TO GREENVILLE BOULEVARD**

2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
5. Comply with requirements in Division 1 Section "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.

C. Proposal Request Form: Use AIA Document G709.

**1.4 CHANGE ORDER PROCEDURES**

- A. On Owner's approval of a Proposal Request, Engineer will issue a Change Order for signatures of Owner and Contractor on EJCDC Form C 941.

**1.5 EXTENSIONS OF CONTRACT TIME FOR ABNORMAL WEATHER**

A. If the basis exists for an extension of time in accordance with Article 4.05 of the Standard General Conditions of the Construction Contract, an extension of time on the basis of Abnormal Weather may be granted only for the number of Weather Delay Days in excess of the number of days listed as the Standard Baseline for the period of the contract.

B. In order to determine precipitation at the contract site the contractor shall maintain a rain gauge on site. The rain gauge should be read daily and documentation of Adverse Weather Days should be coordinated with the Engineer's Representative.

C. Standard Baseline for Average Climactic Range:

1. The Engineer has reviewed weather data available from the National Oceanic and Atmospheric Administration (NOAA) and determined a Standard Baseline of average climatic range for the Morehead City, North Carolina. In the event that the standard baseline for the construction site differs significantly from the Morehead City, North Carolina Standard Baseline it will be the Contractor's responsibility to provide documentation of said differences.
2. Standard Baseline shall be regarded as the normal and anticipatable number calendar days for each month during which construction activity shall be expected to be prevented and suspended by cause of adverse weather. Suspension of construction activity for the number of days each month as listed in the Standard Baseline is included in the Work and is not eligible for extension of Contract Time. Contractor should schedule these normal weather days into the work.
3. Standard Baseline is as follows: January, 5 days; February, 5 days; March, 5 days; April, 4 days; May, 5 days; June, 5 days; July, 6 days; August, 6 days; September, 6 days; October, 5 days; November, 5 days; December, 6 days.

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4. Adverse Weather and Rain Delay Days: Adverse Weather is defined as the occurrence of one or more of the following conditions which prevents exterior construction activity or access to the site within twenty-four (24) hours:
  - a. Precipitation (rain, snow, and/or ice) in excess of two-tenths inch (0.20") liquid measure.
  - b. Standing snow in excess of one inch (1.00").
  - c. Adverse Weather may include, if appropriate, "dry-out" or "mud" days. For dry out days above the standard baseline,
    - i. Only if there is a hindrance to site access or site work such as excavation, backfill, footings; and,
    - ii. At a rate no greater than 1 make-up day for each day or consecutive days of rain beyond the standard baseline that total 1.0 inch or more, liquid measure, unless specifically recommended otherwise by the Engineer
  
5. A Weather Delay Day may be counted if adverse weather prevents work on the project for fifty percent (50%) or more of the Contractor's scheduled work day, including a weekend day or holiday if the Contractor has scheduled construction activity for that day. Such weather delays are subject to the limitations and baseline deductions given above.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**END OF SECTION 01250**

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**SECTION 01270 - UNIT PRICES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Delineation of measurement and payment criteria applicable to Work performed under Contract by the unit price payment method.
- B. Items become payable only after completed in conformance with the requirements of the contract documents.

**1.02 FIELD MEASUREMENT**

- A. Take measurements and compute quantities for submittal of the monthly pay request unless specified otherwise in the measurement paragraphs as indicated in this Section.
- B. Horizontal measurements where required for pay items shall be to the nearest ½ - foot unless directed otherwise.

**1.03 CHANGE IN QUANTITIES**

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

**1.04 GENERAL**

- A. Items that include demolition or disposal shall be priced to include any disposal fees or disposal costs as well as all costs called out or reasonably required to complete the work.
- B. Method of measurement for the individual Bid Items shall be as specified below.
- C. Payment for each item shall be in accordance with the Contract Unit Price times the number of units installed in accordance with the Contract Documents.
- D. Work for each bid item shall include, but not be limited to, the work listed below and the labor, materials, equipment, and services required and reasonably implied by the Contract Documents for a complete installation.

**1.05 ITEMS 1 AND 46- MOBILIZATION**

- A. This item is used to for mobilization of the Contractor, equipment, materials and supporting facilities (if any) to the project site. This item also includes any security fencing, materials storage or related items required by Contractor to perform the work. Coordination of contract efforts is the responsibility of the contractor and mobilization will be paid only once.
- B. Separate Mobilization Charges are set up in the bid form, for the roadway improvements and for the drainage improvements. Costs between these items should be balanced to represent the actual split in costs between the two portions of the Contract.
- C. Measurement – This item will be paid for at the lump sum bid price for the item subject to the requirements given in this article.
- D. Partial payments for Mobilization will be made with the first and second partial pay estimates paid on the contract and will be made at the rate of 50% unit bid price of this item (i.e. 2.5% of the contract price as a maximum) on each of these first two partial pay estimates, for Mobilization that does not exceed 5% of the total amount bid for the contract (as required).

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- E. Such price and payment includes, but is not limited to, the movement of personnel, equipment, supplies and incidentals to the project site, for the establishment of offices (if required), buildings and other facilities necessary for work on the project; the removal and disbandment of those personnel, equipment, supplies, incidentals or other facilities that were established for the prosecution of work on the project; and for all other work and operations that shall be performed for costs incurred before beginning work on the various items on the project site.

**1.06 ITEMS 2 AND 47 – EROSION AND SEDIMENTATION CONTROL**

- A. Measurement: This item shall be paid for at the lump sum bid price for erosion control. Payment shall be made monthly with the pay requests. The monthly allowance shall be based upon the pro-rata elapse of the contract time except in the case that erosion control is noted as in non-compliance. An equitable portion of the work in non-compliance shall be deducted from pay requests until the subject portion noted as non-compliant is brought into compliance with a local government follow up inspection noted the adequacy of the erosion control measures.
- B. Erosion Control shall include the full width of the disturbed area for the cleanup and seeding along the site of construction. Erosion control devices shall include, but not be limited to, the following if shown on the plans:
1. Silt fence.
  2. Sedimentation basins.
  3. Rock Check Dams
  4. Temporary and permanent swales.
  5. Riprap for Bank Stabilization.
  6. Inlet protection.
  7. Temporary construction entrances.
  8. Temporary ditch liner.
- C. Work shall include, but not be limited to, the following:
1. Removal and proper disposal of debris and excess material.
  2. Grade disturbed areas to original surface profile prior to trench excavation.
  3. Cleaning of paved surfaces.
  4. Repair to asphalt and concrete paved surfaces including curb and gutter. Repair to gravel drives.
  5. Proper seeding of disturbed area including mulching.
  6. Obtain approval of cleanup from owner of right-of-way.
  7. Provision of erosion control materials, seed, fertilizer, tack, and all items as required in the specifications as necessary to establish cover and prevent erosion and offsite sedimentation.
  8. Establish erosion control features as shown on the erosion control plan.
  9. Maintenance of Erosion Control Measures in compliance with the plans, the NCDENR E&S Control Plan, and the NC Sedimentation Pollution Control Act of 1973 and efforts to bring the project in compliance in the event of failure to comply due to actions of the Contractor.
- D. Final Payment:
1. Final Payment shall be made for this item when the portion of the project for which payment is sought has been cleaned up, dressed and seeded and is in readiness for acceptance by the owner. Full establishment of grass cover is not required for acceptance for payment but the areas included for payment must exhibit grass sprouting on 95% of the disturbed area. Repairs to seeded areas if necessary, shall be made at no additional cost to the Owner.



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**1.07 ITEMS 3 AND 48 – TRAFFIC CONTROL**

- A. Measurement: This item shall be paid for at the lump sum bid price for traffic control. Payment shall be made monthly with the pay requests. The monthly allowance shall be based upon the pro-rata elapse of the contract time.
- B. Payment for this item shall include all items noted in the Traffic Control Plan, maintenance of these items, the fielding of forces required for compliance with the plan, signage and marking and all items required for an operating detour and traffic control system. Refer to the Traffic Management Plan prepared by Davenport for additional details of what must be included in this item.
- C. Contractor shall meet work zone traffic control requirements per NCDOT Standard Specifications for Roads and Structures (January 2018), Section 1101.
- D. Traffic Control as provided in the Traffic Management Plan is a performance-based pay item. Should additional measures be required to complete the project in a safe and ordered manner as required by the City of Greenville and NCDOT, the measures will be provided. As a general guide of the quantities that may be required, the following estimated list of items is provided. The Contractor is charged with making his or her own estimate of the work and the materials required to implement the Traffic Management Plan and including the cost in the unit bid price for this item. The Owner may request a schedule of values for this item.
- E. Note: The traffic control includes the requirement for temporary paint pavement markings, temporary paint markings are not included in this pay item and shall be paid for in the unit bid price under separate pay items (refer to the Bid Form). Cold applied markings and their subsequent removal is included in this lump sum item for traffic control.

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<b>NCDOT Master Pay List Item #</b>	<b>Relevant NCDOT Standard Specifications</b>	<b>Item Description</b>	<b>Estimated Quantity- Actual Required Quantity May Vary</b>
4400000000-E	Articles 1110-1 to 1110-3; Articles 1089-1 to 1089-3	WORK ZONE SIGNS (STAT)	1,160
4405000000-E	Articles 1110-1 to 1110-3; Articles 1089-1 to 1089-3	WORK ZONE SIGNS (PORT)	309
4410000000-E	Articles 1110-1 to 1110-3; Articles 1089-1 to 1089-3	WORK ZONE SIGNS (BARR)	72
4770000000-E	Articles 1205-1 to 1205-3; Article 1205-6; Article 1205-9; Articles 1087;	4" COLD APPL PLSTIC LINES TYPE **	4,480
4780000000-E	Articles 1205-1 to 1205-3; Article 1205-6; Article 1205-9; Articles 1087;	8" COLD APPL PLSTIC LINES TYPE **	3,860
4805000000-N	Articles 1205-1 to 1205-3; Article 1205-6; Article 1205-9; Articles 1087;	COLD APPL PLASTIC SYM TYPE **	12
4850000000-E	Article 1205-3	LINE REMOVAL 4" WIDE	13,831
4860000000-E	Article 1205-3	LINE REMOVAL 8" WIDE	1,630
4870000000-E	Article 1205-3	LINE REMOVAL 24" WIDE	94
4430000000-N	Articles 1130-1 to 1145-3; Article 1089-3	DRUMS	342
4445000000-E	Articles 1145-1 to 1145-4; Article 1089-3	BARRICADES (TYPE III)	510
4415000000-N	Articles 1115-1 to 1115-3; Article 1089-6	FLASHING ARROW BOARD	5
4422000000-N	Articles 1120-1 to 1120-3; Article 1089-7	PORT CHANGE MSG SIGN (SHORT TERM)	120
4455000000-N	Articles 1150-1 to 1150-3; Article 1089-10	FLAGGER	25
4400000000-E	Articles 1110-1 to 1110-3; Articles 1089-1 to 1089-3	WORK ZONE SIGNS (STAT)	1,160
4405000000-E	Articles 1110-1 to 1110-3; Articles 1089-1 to 1089-3	<b>WORK ZONE SIGNS (PORT)</b>	309

**1.08 ITEMS 4 AND 5 – UNCLASSIFIED EXCAVATION**

- A. Measurement: This item shall be paid for at the lump sum bid price for unclassified earthwork. Payment shall be made monthly with the pay requests. The monthly payments shall be based upon the percentage completion of the excavation task based upon area (footprint) of the roadway excavated in readiness for the CABC to be placed.
- B. Payment for this item shall include demolition, removal, and legal disposal of pavements, stone, rubble, and debris within the confines of the excavation required to reach subgrade

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elevation as shown in the pavement typical sections. The excavation depth is determined by the required finished surface elevation, as required to match existing gutters to the base surface at the foot of the new aggregate base course.

- C. The quantity of excavation required in this unclassified excavation bid item shall be determined by the depth of excavation required times the area of excavation. Refer to the details on Sheet C5.1 for this determination. For example, the excavation required for Section 1 according to Detail 1 on C5.1 is a total of 14 inches of excavation (2-inches for the surface course, 4 inches for the binder, and 8 inches for the aggregate base course).
- D. Provide and include the costs in this item for all equipment, labor, and services required to excavate, load, haul, dump, and dispose of the materials created.
- E. Contractor shall procure adequate and legal sites for the wasting of debris. The Contractor shall insure that the site is properly permitted to receive the material. Contractor shall provide the delivery location and a property owner's release to receive the material if requested. Disposal shall comply with the applicable NCDEQ Land Quality Section rules.
- F. Provide and include the costs in this item for the grading, compaction and preparation required to provide a subgrade for the stone except such portions of the work included in the ABC stone pay item(s).
- G. Provide and include the costs in this item for all equipment, labor, and services required to maintain the subgrade and dewater it if required due to weather or surface runoff.
- H. Refer to the Geotechnical Report included in these documents for information regarding subsurface conditions. Twenty-four bores were obtained and the results of the work are provided in the report for information purposes; however, Contractor is charged with making his or her own investigations as Contractor deems necessary to price the Contract work.

**1.09 ITEMS 6 AND 7 – AGGREGATE BASE COURSE**

- A. Measurement: This item shall be paid for at the unit bid price per ton of CABC placed. Payment at the ton price will be subject to review and measurement of the pavement section times the thickness for agreement with the stone tickets.
- B. The excavation to reach the subgrade is covered by the unclassified excavation items described above.
- C. The Contractor through his or her stone vendor shall furnish platform scales or other weighing devices that have been certified by the N.C. Department of Agriculture. The scales may be constructed and operated to provide automatic weighing, recording and printing of tickets for the load being weighed. The Owner may deny or withhold any portion of payment for any load of materials weighed if in relation to such load of materials, the Contractor falsifies any weighing. All scales shall be operated by a public weighmaster licensed in accordance with NCGS § 81A. A certified weight certificate shall be issued by a North Carolina public weighmaster for each load. The certificate shall be in the form of a ticket furnished by the Contractor and shall contain the following information:

- (A) Project number: 20180161.
- (B) Date
- (C) Time issued, if for bituminous plant mix
- (D) Type of material
- (E) Gross weight
- (F) Tare weight
- (G) Net weight of material
- (H) Quarry or plant location

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- (I) Department's Job Mix Formula Number, if ticket is for asphalt plant mix
- (J) Department's Asphalt Plant Certification Number, if ticket is for asphalt plant mix
- (K) Truck number
- (L) Contractor's name
- (M) Public weighmaster's stamp or number
- (N) Public weighmaster's signature or initials

Provide and include the costs in this item for all equipment, labor, and services required to excavate, load, haul, dump, and dispose of the materials created.

Provide and include the costs in this item for the required grading, compaction and preparation required to provide a subgrade for the stone unless such work is included in the ABC stone quantity.

Provide and include the costs in this item for all equipment, labor, and services required to maintain the subgrade and dewater it if required due to weather or surface runoff.

Refer to the Geotechnical Report included in these documents for information regarding subsurface conditions. Twenty-four bores were obtained and are provided for information purposes; however, Contractor is charged with making his or her own investigations.

**1.10 ITEMS 8 THROUGH 10 – ASPHALT BINDER AND SURFACE COURSES**

Payment for this item shall be for the actual tons of asphalt material provided and placed in accordance with this Project Manual and the applicable provisions of the NCDOT Standard Specifications. The measurement for payment shall be in accordance with and subject to the same requirements as for items 6 and 7 as described above.

**1.11 ITEM 11 – UNDERCUT SOFT & YIELDING SUBGRADE WHERE SHOWN ON THE PLANS AND REFILL WITH SATISFACTORY SOILS**

- A. Measurement: Undercut shall be paid for at the unit bid price per Cubic Yard provided and measured in place. Where undercut is required, the section to be undercut will be identified and measured and verified by the geotechnical engineer that the work is required. Payment shall be based upon measurement of the excavation to the nearest ½-foot for the calculated volume. Contractor shall document undercut sufficiently to established where select fill was placed on the record drawings.
- B. Satisfactory Soils: If onsite excavated ABC or other satisfactory soils are available, they should be used and the Contractor shall coordinate with Owner's geotechnical consultant to obtain the maximum dry density and optimum moisture content (Proctor tests) for field compaction testing as directed in the specifications.
- C. The unit bid price shall include coordination, measurement, excavation, hauling, disposal, safety measures and all costs to remove the unsatisfactory existing soils and replace them with Satisfactory Soils compacted in lifts (as specified) to the required compactive effort.
- D. Separate line items are provided Undercut and for Select Fill in the event that existing unclassified excavation provides existing ABC base materials and other "Satisfactory Soils" as defined by Section 2300 which may be used to refill undercut areas. Satisfactory soils if available are to be used prior to authorizing Select Fill.

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**1.12 ITEM 12 – PROVIDE SELECT FILL IMPORT MATERIAL**

- A. Measurement: Select Fill shall be paid for at the unit bid price per Cubic Yard provided and measured in place. Where undercut is required, the section to be undercut will be identified and measured and verified by the geotechnical engineer that the work is required. Payment shall be based upon the measurements of undercut for the volume actually installed.
- B. Select Fill: Where select fill is required include such costs as required to coordinate with the geotechnical consultant to obtain proctor tests to determine the required density and moisture content to perform field compaction testing directed in the specifications.
- C. The unit bid price shall include coordination, measurement, provision, hauling, and all costs to provide select fill to replace unsatisfactory existing soils. The actual placement and compaction of the select fill is covered under Item 11 which covers filling and compaction with onsite Satisfactory Soils or Select Fill Import Material.
- D. Select fill may be authorized for use by Engineer when Satisfactory Soils are not available on site to refill undercut areas, when soils that would be satisfactory are too wet for use to refill undercut areas, and when storage room available for on-site materials will not provide a feasible means of temporarily storing satisfactory soils for use in refilling undercut areas.

**1.13 ITEM 13 – ABC FOR STABILIZATION AND LEVELLING OF SUBGRADE WHERE AUTHORIZED BY ENGINEER**

Payment for this item shall be for the actual tons of ABC stone provided and placed in accordance with this Project Manual and the applicable provisions of the NCDOT Standard Specifications. The measurement for payment shall be in accordance with and subject to the same requirements as for items 6 and 7 as described above. This Item shall be used only where directed by Engineer to replace soft and yielding subgrades that are undercut or to refill areas excavated to remove dilapidated structures or foreign objects revealed by excavations that may affect the pavement subgrade. This item is for limited locations where required and authorized by Engineer.

**1.14 ITEM 14 – GEOTEXTILE STONE SUBGRADE UNDERLAYMENT, NCDOT TABLE 1056, TYPE 5, WHERE REQUESTED BY ENGINEER**

Payment for this item shall be for the actual square yards placed in accordance with this Project Manual and the applicable provisions of the NCDOT Standard Specifications. The geotextile may be requested to address marginal soil subgrades and provide additional drainage and separation between soft saturated soils and the stone base course. The measurement for payment shall be taken on the horizontal at the actual locations installed as requested and shall be based upon measurements to the nearest whole foot as installed. This is a contingency item which may or may not be used at the discretion of the Engineer.

**1.15 ITEMS 15 AND 16 – VALLEY GUTTER – 3-FOOT AND 4-FOOT WIDTHS, REMOVE EXISTING AND REPLACE WITH REINFORCED CONCRETE**

- A. Measurement: This item shall be paid for at the unit bid price per linear foot of concrete valley gutter placed. Measurement shall be taken on the horizontal by measuring the width and length of each valley gutter placed in accordance with the specifications.
- B. Payment for this item shall include the demolition of the existing gutter, hauling and disposal of same, fine grading, aggregate base course, dewatering, compaction, formwork, steel tying, concrete, finishing and remedial work as required for a finished item as shown on the details, plans and in the specifications.

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**1.16 ITEM 17 – MILL PAVEMENT TO A 1.5-INCH DEPTH TO TRANSITION TO EXISTING PAVEMENTS**

- A. Measurement: Payment for this item shall be for the actual square yards milled in accordance with this Project Manual and the applicable provisions of the NCDOT Standard Specifications. Area of milling will be measured to the nearest ½-foot on the horizontal with the horizontal square yards calculated from the length and width measurements.
- B. Payment for this item shall include the milling, hauling and disposal of ground asphalt, sweeping, tack coat or other treatments as required to meet NCDOT specifications for a finished item as shown.
- C. Surface course to complete the transition to existing pavement shall be measured in the appropriate item for surface course.

**1.17 ITEM 18 – NEW ADA COMPLIANT RAMP FOR SIDEWALK DRIVEWAY CROSSINGS AND GREENWAY TRAIL DRIVEWAY CROSSINGS**

- A. Measurement: This item shall be paid for at the unit bid price per square yard of concrete placed. Measurement shall be taken on the horizontal by measuring the width and length of each section of concrete placed in accordance with the specifications.
- B. Payment for this item shall include the demolition of the existing walkway, curb, and gutter, hauling and disposal of same, fine grading, dewatering, compaction, formwork, concrete, truncated domes, finishing, joint filler and sealant and remedial work as required for a finished item as shown on the details, plans and in the specifications.
- C. The sidewalk ramps for the ADA Compliant pedestrian crossing at Station 8+50 shall not be measured nor included in the measurement for payment of this item as those ramps are included in Item 23.
- D. The existing greenway trail from Evans to Hooker Road is shown to be replaced if Bid Alternate 1 is selected. Even if the existing trail is not replaced (Bid Alternate not selected), the Owner desires to upgrade the ramps for the trail which at present are only the width of the sidewalk. The new replacement ramps which will be the full width of the trail (10 feet) instead of the existing width (5 feet) are to be paid for in this bid item. The work includes removing the existing ramp and all items described above in paragraph 1.17B.

**1.18 ITEM 19 – 24-INCH CURB AND GUTTER – NON-REINFORCED**

- A. Measurement: This item shall be paid for at the unit bid price per linear foot of concrete placed. Measurement shall be taken on the horizontal by measuring the width and length of each valley gutter placed in accordance with the specifications.
- B. Payment for this item shall include the demolition of the existing gutter, hauling and disposal of same, fine grading, aggregate base course, dewatering, compaction, formwork, steel tying, concrete, finishing and remedial work as required for a finished item as shown on the details, plans and in the specifications.

**1.19 ITEM 20 – 4-INCH THICK SIDEWALK REMOVE AND REPLACE & ITEM 21 4-INCH SIDEWALK NEW WALKWAY FROM EVANS PARK TO HOOKER ROAD**

- A. Measurement: This item shall be paid for at the unit bid price per square yard of concrete placed. Measurement shall be taken on the horizontal by measuring the width and length of each section of concrete placed in accordance with the specifications.
- B. Payment for these items shall include the demolition of the existing concrete, hauling and disposal of same (Item 20), fine grading, dewatering, compaction, formwork, concrete, finishing and remedial work as required for a finished item as shown on the details, plans and in the specifications.

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- C. Item 20 is the removal and replacement of existing sidewalk with new sidewalk. Item 21 is the provision of a new sidewalk where none exists now and includes unclassified excavation as required to provide an adequate subgrade for the new sidewalk.

**1.20 ITEM 22 - MEDIAN CONCRETE 6-INCH THICKNESS**

- A. Measurement: This item shall be paid for at the unit bid price per square yard of concrete placed. Measurement shall be taken on the horizontal by measuring the width and length of each section of concrete placed in accordance with the specifications.
- B. Payment for this item shall include the demolition of the existing concrete or asphalt as required, hauling and disposal of same, fine grading, dewatering, compaction, formwork, concrete, finishing and remedial work as required for a finished item as shown on the details, plans and in the specifications.

**1.21 ITEM 23 – NEW ADA COMPLIANT PEDESTRIAN CROSSING STATION 8+50**

- A. Measurement: This item shall be paid for at the lump sum bid price for the crossing as shown on Sheet C1.1, on the details and in the striping plan. Payment shall be for a completed crossing placed in accordance with the Project Manual including the median crossing and including the walkway and curb ramps on the north and south side of the roadway as shown at approximate station 8+50 on the plans.
- B. Payment for this item shall include the demolition of the existing concrete, hauling and disposal of same, fine grading, dewatering, compaction, formwork, steel reinforcement, truncated domes, concrete, finishing, joint filler and sealant and remedial work as required for a finished item as shown on the details, plans and in the specifications.

**1.22 ITEM 24 GREENWAY TRAIL- UNCLASSIFIED EXCAVATION – STATION 8+50R – STATION 11+50R ON SHEET C1.1**

- A. The basis for payment shall be the same as for bid items 4 and 5.
- B. Unclassified for the retrofit of ADA Compliant curb ramps are included in the curb ramp bid item rather than in this item.

**1.23 ITEM 25 PROVIDE NEW 6-INCH THICK CRUSHED AGGREGATE BASE COURSE FOR 10-FOOT WIDE GREENWAY TRAIL– STATION 8+50R – STATION 11+50R ON SHEET C1.1**

- A. The basis for payment shall be the same as for bid items 6 and 7.

**1.24 ITEM 26 TWO-INCH S9.5-B ASPHALT SURFACE FOR GREENWAY TRAIL– STATION 8+50R – STATION 11+50R ON SHEET C1.1**

- A. The basis for payment shall be the same as for bid items 8 through 10.

**1.25 ITEMS 27 AND 28 – RESET WATER VALVE BOXES AND MANHOLE RING AND COVER WITHIN NEW PAVEMENTS**

- A. Measurement: This item shall be paid for at the unit bid price for each top that is adjusted.
- B. Payment for this item shall include excavation where required, adjustment of the valve box or installation of grade rings if needed for the manhole, provision of the concrete doughnut for the valve, provision of a new rope seal for the manhole flange, backfill, grouting if required and all items necessary to restore the unit flush with the new pavement surface.

**1.26 ITEM 29- TREE REMOVALS**

- A. Measurement: This item shall be paid for at the lump sum bid price for the tree removals shown on the plans. Payment shall be on the basis of the percentage complete.

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- B. Payment for this item shall include excavation where required, cutting, root ball removal, grubbing as necessary for an approvable concrete subgrade, hauling and disposal.

**1.27 ITEMS 30 THROUGH 45 - THERMOPLASTIC PAVEMENT MARKINGS PER NCDOT 1205-4 AND TEMPORARY PAINT PAVEMENT MARKINGS**

- A. Payment for markings shall be at the unit bid price per for pavement markings compliant with Section 1087 Section 1205 of the NCDOT Standard Specifications and this Project Manual and any remedial work for a completed striping project in accordance with NCDOT requirements.
- B. Payment at the unit price includes the labor, equipment and materials required to construct the striping as called for in the plan.
- C. Temporary paint markings shall be full sized and not reduced sized and not reduced thickness. They also shall not be reduced in mil thickness but shall be to the same dimensions and thicknesses as would be required for a permanent paint marking.
- D. Thermoplastic and temporary paint striping shall be paid for at the unit bid price per linear foot of striping for each given width installed whether 4-inch wide, 12-inch wide, or 24 inches wide. Minimum thickness shall be as given on the pay item in the bid form and for paint as directed in Section 1205 of NCDOT specifications. Measurement shall be taken on the horizontal to the nearest ½ foot. Measurement along a stripe line shall be continuous and ignore the skipped sections. Measure from the beginning to the end of a particular segment of striping and from intersection to intersection (i.e. measure skip patterns as if continuous but hold out median crossovers and intersections). A double stripe is counted as two stripes.
- E. Thermoplastic and temporary paint markings or symbols shall be paid for at the unit bid price for each. Each arrow or combination arrow shall be an individual pay item. The "School" item and "RR" items are for the entire word spelled out to the dimensions shown installed per the NCDOT approved details and specifications.
- F. Temporary paint pavement markings are for temporary traffic control and are also contingency bid items in the event that thermoplastic markings cannot be placed in the time allowed. Temporary marking will be placed when requested by the Engineer due to the need to restore a section of roadway to service. Contractor shall follow up with the permanent thermoplastic markings as soon as practicable. Payment at the unit price includes the preparation, painting, and later removal or masking if not covered by permanent marking except that cold applied (See Traffic Control) striping and removal is included in Traffic Control. All costs to place temporary markings on the pavement as required above shall be included in the unit bid price.

**1.28 ITEM A1-1 BID ALTERNATE FOR THE GREENWAY TRAIL- UNCLASSIFIED EXCAVATION**

- A. The basis for payment shall be the same as for bid items 4 and 5.

**1.29 ITEM A1-2 PROVIDE NEW 6-INCH THICK CRUSHED AGGREGATE BASE COURSE FOR 10-FOOT WIDE GREENWAY TRAIL**

- A. The basis for payment shall be the same as for bid items 6 and 7.

**1.30 ITEM A1-3 TWO-INCH S9.5-B ASPHALT SURFACE FOR GREENWAY TRAIL**

- A. The basis for payment shall be the same as for bid items 8 through 10.



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**1.31 ITEMS A2-1 AND A2-2 – 4-INCH ASPHALT BASE COURSE B-25.0C–SECTION 1, AND 4.5-INCH ASPHAL BASE COURSE–SECTION 2**

Payment for these items shall be for the actual tons of asphalt material provided and placed in accordance with this Project Manual and the applicable provisions of the NCDOT Standard Specifications. The measurement for payment shall be in accordance with and subject to the same requirements as for items 6 and 7 as described above.

**1.32 ITEMS A2-3 AND A2-4 – DEDUCT ITEM 6- 8-INCH AGGREGATE BASE COURSE-SECTION 1, & DEDUCT ITEM 7- 9-INCH AGGREGATE BASE COURSE-SECTION 2**

These items are used to deduct the aggregate base course from the bid so that the items can be replaced with an asphaltic base course instead. The value of these two items must be the exact same dollar amounts as Items 6 and 7 respectively such that Bid Alternate 2 is the cost to construct an asphaltic base course instead of the aggregate base course.

**1.33 ITEMS A2-5 AND A2-6 – DEDUCT FROM ITEM 4 FOR LESSER DEPTH OF EXCAVATION ASPHALT BASE VERSUS AGGREGATE BASE COURSE-SECTION 1, & DEDUCT FROM ITEM 5 FOR LESSER DEPTH OF EXCAVATION ASPHALT BASE VERSUS AGGREGATE BASE COURSE-SECTION 2**

These items are used to deduct the depth of unclassified excavation from the base bid that will not be necessary to install the thinner asphalt base course section. The value of these two items must be the difference in cost of excavating to make way for a thinner asphalt base course rather than the thicker ABC course.

**1.34 ITEMS 49 THROUGH 55 -CLASS III REINFORCED CONCRETE DRAINAGE PIPING 15-INCH THROUGH 60-INCH SIZES**

- A. This item shall be paid for at the unit bid price per linear foot of piping supplied and constructed in place as shown on the plans and details and specified in this project manual.
- B. Payment at the unit bid price shall include the labor, equipment, supplies services and other items necessary to provide an installation as shown on the plans and specified in this project manual. The piping shall comply with all applicable provisions of the 2018 NCDOT Standard Specifications for Roads and Structures. Include the costs of excavation, dewatering, demolition (except for demolition that is provided with a separate line item), earthwork, compaction, hauling, disposal, pipe hauling, storage, stringing, laying, joining, testing, backfilling and all other costs required for compliance with the Contract Documents for the pipe installation.
- C. Where new pipe is to be installed along the line of an old pipe, the removal of the old pipe and its inlets or structures is to be considered incidental to the new pipe excavation and construction scope and the costs for this removal is to be included in the unit bid price for the new pipe.
- D. If new pipe is to connect to existing structures, payment at the unit bid price of the pipe includes the new pipe connection to the existing structure including providing a new penetration if necessary, enlarging a penetration, grouting, and sealing to comply with the specifications including NCDOT Section 840 Minor Drainage Structures.
- E. Refer the details and to the definitions in Section 2300 of the specifications. The provision of Satisfactory Soils at the pipe spring-line (mid-point) and above, as well as the Select Materials from trench wall to trench wall on the horizontal and vertically from the pipe midline, around the pipe haunches to a point below the pipe to the depth shown on the details for the pipe foundation. The required select materials as shown on the detail shall be included in the unit bid price for the pipe. Should additional select materials beyond what is shown in the details be required, then this additional material shall be paid for at the unit bid price provided under separate items.

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**1.35 ITEMS 56,57, 58, AND 59 – NEW CATCH BASINS, GRATE INLETS, AND JUNCTION BOXES**

- A. These items shall be paid for at the unit bid price for each catch basin, inlet or junction box constructed.
- B. The price for the standard junction box is for the price of a junction box that is located on 36-inch diameter and smaller storm drain pipes. The large junction box is for 42-inch and larger diameter storm drain pipes.
- C. Payment at the unit bid price shall include the costs of providing and constructing or installing the structure. Include the costs of the concrete, precast units, iron castings, steps where required, remedial grouting and patching as required to meet City of Greenville standards, excavation, lifting, backfilling, compacting the subgrade and backfill and all costs which would be reasonably incurred in installing these units in accordance with the Contract Documents.

**1.36 ITEM 60- NEW HEADWALL WITH RIP RAP OUTLET**

- A. This item shall be paid for at the lump sum bid price for a new headwall as specified and shown in the contract documents.
- B. Payment at the lump sum price includes all materials, labor, excavation, disposal costs and fees, hauling and other work or items as necessary to provide a finished headwall in compliance with the Contract Documents.
- C. The bid price includes the excavation, filter fabric, rip rap, grading and related work to construct the rip rap outlet protection device shown on the plans and details.

**1.37 ITEM 61 - TRENCH STABILIZATION STONE- CONTINGENCY ITEM FOR YIELDING SOILS**

- A. This item shall be paid for at the unit bid price per ton for stone used to stabilize pipe installations in yielding soils. This item is intended to cover the cost of NCDOT No. 57 or No. 67 stone in pipe trenches where warranted by soil conditions. This item cannot be used as a substitute for dewatering. Prior to using this item Contractor should consult with the Engineer.
- B. Payment at the unit bid price includes the excavation of poor soils, disposal, hauling provision of stone, placement and compaction and all items required to complete the stone stabilized pipe subgrade.

**1.38 ITEM 62 - EXCAVATE YIELDING PIPE FOUNDATION SOILS UP TO TWO FEET DEEP BELOW PROPOSED PIPE SUBGRADE ELEVATION**

- A. This item shall be paid for at the unit bid price per cubic yard of material excavated. The quantity shall be determined by measuring the length, width, and depth of the excavation as authorized by the Engineer and calculating the volume based upon those dimensions.
- B. Payment at the unit bid price includes the excavation of poor soils, disposal, hauling provision satisfactory soils, placement and compaction and all items required to complete the stone stabilized pipe subgrade. Should satisfactory soils not be available onsite at the time of this required undercut, select material shall be provided at the unit bid price. See Bid Item 46 below.

**1.39 ITEM 63- PROVIDE SELECT MATERIAL IN ADDITION TO THAT SHOWN ON THE DETAILS WHEN REQUESTED BY ENGINEER**

- A. This item shall be paid for at the unit bid price per cubic yard of material placed. The quantity shall be determined by measuring the length, width, and depth of the excavation as authorized by the Engineer and calculating the volume based upon those dimensions.

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- B. Payment at the unit bid price includes the purchase, hauling and delivery of Select Materials (See definitions in Section 2300). Note that placement and compaction and is covered in the undercut excavations or in the pipe excavation as applicable.

**1.40 ITEM 64- REMOVE 24-INCH AND 30-INCH CMP**

- A. This item shall be paid for at the unit bid price of pipe removed and disposed of.
- B. Note that there are other pipes that must be removed to install the new RCP replacement pipe. At those locations, which are evident on the plans, the removal of existing pipe is part of the cost of the new pipe and the excavation for the installation of the new pipe and must be included in the unit bid price of the new pipe. This pay item is intended for those locations that would not be excavated were it not for the need to remove old pipe. This removal is not incidental to new pipe construction but it is required to avoid future voids in the roadway subgrade.
- C. Payment at the unit bid price shall include excavating the pipe, pulling it, lifting and loading, hauling, and disposal. Payment at the unit price also includes filling the void in lifts with Suitable Soils as defined in the Section 2300 in the specifications.

**1.41 ITEM 65- REMOVE 48-INCH AND 54-INCH CMP**

- A. This item shall be paid for at the unit bid price of pipe removed and disposed of.
- B. Note that there are other pipes that must be removed to install the new RCP replacement pipe. At those locations, which are evident on the plans, the removal of existing pipe is part of the cost of the new pipe and the excavation for the installation of the new pipe and must be included in the unit bid price of the new pipe. This pay item is intended for those locations that would not be excavated were it not for the need to remove old pipe. This removal is not incidental to new pipe construction but it is required to avoid future voids in the roadway subgrade.
- C. Payment at the unit bid price shall include excavating the pipe, pulling it, lifting and loading, hauling, and disposal. Payment at the unit price also includes filling the void in lifts with Suitable Soils as defined in the Section 2300 in the specifications.

**1.42 ITEM 66 WATER LINE RELOCATION**

- A. This item shall be paid for at the lump sum bid price for completion of the water line relocation in accordance with the Greenville Utilities Commission requirements as given in their "Manual for the Design and Construction of Water and Wastewater System Extensions."
- B. Payment at the unit bid price shall include constructing the new water line crossing of the new storm drain line, testing, chlorinating and coordinating inspections and all costs associated with completing the relocation as specified.

**PART 2 – PRODUCTS (Not Applicable)**

**PART 3 – EXECUTION (Not Applicable)**

**END OF SECTION 1270**

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**SECTION 01290 - PAYMENT PROCEDURES**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

**1.2 SCHEDULE OF VALUES**

- A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.
1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including Application for Payment forms with Continuation Sheets.
  2. Submit the Schedule of Values to Engineer at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
- B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.
1. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
    - a. Related Specification Section or Division.
    - b. Description of the Work.
    - c. Dollar value.
      - 1) Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
  2. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate.
  3. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
  4. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
  5. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
  6. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
    - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.

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7. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

**1.3 APPLICATIONS FOR PAYMENT**

- A. Each Application for Payment shall be consistent with previous applications and payments as recommended by Engineer and paid for by Owner.
  1. Stating that Surety agrees to payment of the sum requested, that the value of the work stated in the Contractor's request is a true statement, and that the sums requested for stored materials (if any) are correct.
  2. Provide Certified Sales Tax Report.
  3. Lien waivers.
  4. Proof of Payment Certification form (in accordance with section 00102).
  5. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements: See related sections below.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.
- C. Payment Application Forms: Use AIA Document G702 and AIA Document G703 Continuation Sheets as form for Applications for Payment.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Engineer will return incomplete applications without action.
  1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
  2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- E. Transmittal: Submit 3 signed and notarized original copies of each Application for Payment to Engineer by a method ensuring receipt within 48 hours. One copy shall include waivers of lien and similar attachments if required.
  1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- F. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
  1. List of subcontractors.
  2. Schedule of Values.
  3. Contractor's Construction Schedule (preliminary if not final).
  4. Submittals Schedule (preliminary if not final).

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5. Certificates of insurance and insurance policies before construction starts.
  6. Performance and payment bonds before construction starts.
- G. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
  2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- H. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
  2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
  3. Updated final statement, accounting for final changes to the Contract Sum.
  4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
  5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
  6. AIA Document G707, "Consent of Surety to Final Payment." - **Not Applicable.**
  7. Evidence that claims have been settled.
  8. Final meter readings for utilities. - **Not Applicable.**

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**END OF SECTION 01290**

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**SECTION 01315 - PROJECT MEETINGS**

**PART 1 - GENERAL**

**1.1 DESCRIPTION OF WORK**

A. Work Included This Section:

1. This Section specifies administrative and procedural requirements for project meetings including but not limited to:
  - a) Pre-Construction Conference.
  - b) Coordination Meetings.
  - c) Progress Meetings.

**1.2 PRE-CONSTRUCTION CONFERENCE**

A. A pre-construction conference shall be scheduled by the Engineer and held at the Project site or other convenient location after execution of the Agreement or Notice to Proceed, whichever comes first and prior to commencement of construction activities.

B. Attendees:

1. The Owner, Engineer, the Contractor(s) and its superintendent(s) shall each be represented at the conference by persons authorized to conclude matters relating to the Work.

C. Agenda:

1. Discuss items of significance that could affect progress including such topics as:
  - a) Work sequencing.
  - b) Tentative construction schedule.
  - c) Designation of responsible personnel.
  - d) Procedures for processing Change Proposal Requests and Change orders.
  - e) Procedures for processing Applications for Payment.
  - f) Submittal of Shop Drawings, Product Data and Samples.
  - g) Preparation of record documents.
  - h) Use of the premises.
  - i) Staging areas.
  - j) Security.
  - k) Housekeeping.

**1.3 COORDINATION MEETINGS**

A. The General Contractor shall conduct project coordination meetings at regularly scheduled times convenient for all parties involved. Project coordination meetings are in addition to specific meetings held for other purposes, such as regular progress meetings and special Pre-installation meetings.

B. Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting, such as the Owner and Engineer.

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C. Monthly Progress Meetings:

1. To enable orderly review of progress during construction and to provide for systematic discussion of problems, weekly project meetings shall be held throughout the construction period.
2. Persons designated by each Subcontractor shall attend and participate in weekly project meetings shall have all required authority to commit the Contractor or Subcontractor to decisions agreed upon in the project meetings.
3. The General Contractor shall conduct the meetings, compile minutes of each meeting and will distribute copies to the Owner and the Engineer. The General Contractor shall distribute such other copies as he wishes. Each Contractor shall, to the maximum extent practicable, assign the same person or persons to represent the Contractor or Subcontractor at project meetings throughout the construction period.

D. Owner, Engineer, Contractor Progress Meetings:

1. To enable orderly review of progress during construction and to provide for systematic discussion of problems, project meetings shall be held throughout the construction period at intervals determined prior to construction.
2. The General Contractor shall attend and participate in the Progress meetings and shall have all required authority to commit the Contractor and Subcontractor(s) to decisions agreed upon in the project meetings.
3. The Engineer will conduct the Progress Meetings and compile minutes of each meeting and will distribute copies to the Owner and Contractor. The Contractor shall distribute such other copies as required. The General Contractor shall, to the maximum extent practicable, assign the same person or persons to represent the Contractor at project meetings throughout the construction period.

**PART 2 - PRODUCTS** (Not Applicable)

**PART 3 - EXECUTION** (Not Applicable)

**END OF SECTION 01315**

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**SECTION 01330 - SUBMITTAL PROCEDURES**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.
- B. See Division 1 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's Construction Schedule and the Submittals Schedule.
- C. See Division 1 Section "Closeout Procedures" for submitting warranties Project Record Documents and operation and maintenance manuals.

**1.2 DEFINITIONS**

- A. Action Submittals: Written and graphic information that requires Engineer's responsive action.
- B. Informational Submittals: Written information that does not require Engineer's approval. Submittals may be rejected for not complying with requirements.

**1.3 SUBMITTAL PROCEDURES**

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
  - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
    - a. Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
  - 3. Submittals shall be made in digital (pdf) form via email to the Engineer. Paper copies of submittals are not required or desired and will not be acted upon.
- B. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Engineer's receipt of submittal.
  - 1. If intermediate submittal is necessary, process it in same manner as initial submittal.
  - 2. Allow 14 days for processing each resubmittal.
  - 3. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing.
- C. Identification: Include the following information with each submittal for identification.
  - 1. Indicate name of firm or entity that prepared each submittal.
  - 2. Include the following information for processing and recording action taken:

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- a. Project name.
  - b. Date.
  - c. Name and address of supplier.
  - d. Name of manufacturer.
  - e. Unique identifier, including revision number.
  - f. Number and title of appropriate Specification Section.
  - g. Drawing number and detail references, as appropriate.
  - h. Other necessary identification.
- D. Deviations: Highlight, encircle, or otherwise identify deviations from the Contract Documents on submittals.
- E. Transmittal: Send each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a digital transmittal form.
- F. Engineer will not review submittals received from sources other than Contractor.
- G. Include Contractor's certification stating that information submitted complies with requirements of the Contract Documents.
- H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- I. Use for Construction: Use only final submittals with mark indicating action taken by Engineer in connection with construction.

**PART 2 - PRODUCTS**

**2.1 ACTION SUBMITTALS**

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
- 1. Number of Copies: Submit 1 digital copy in pdf format via email. Engineer will return a digital copy via email.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
- 1. Mark each copy of each submittal to show which products and options are applicable.
  - 2. Include the following information, as applicable:
    - a. Manufacturer's written recommendations.
    - b. Manufacturer's product specifications.
    - c. Manufacturer's installation instructions.
    - d. Manufacturer's catalog cuts.
    - e. Wiring diagrams showing factory-installed wiring.
    - f. Printed performance curves.
    - g. Operational range diagrams.
    - h. Compliance with recognized trade association standards.
    - i. Compliance with recognized testing agency standards.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

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1. Preparation: Include the following information, as applicable:
    - a. Dimensions.
    - b. Identification of products.
    - c. Fabrication and installation drawings.
    - d. Roughing-in and setting diagrams.
    - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
    - f. Shopwork manufacturing instructions.
    - g. Templates and patterns.
    - h. Schedules.
    - i. Notation of coordination requirements.
    - j. Notation of dimensions established by field measurement.
  2. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
- D. Samples: Not Applicable.

## **2.2 INFORMATIONAL SUBMITTALS**

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
1. Number of Copies: Submit 1 digital submittal in pdf format via email.
  2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
  3. Test and Inspection Reports: Comply with requirements in Division 1 Section "Quality Requirements."
- B. Contractor's Construction Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation."
- C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of Engineers and owners, and other information specified.
- D. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements.
- E. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements and, where required, is authorized for this specific Project.
- F. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements.
- G. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.
- H. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

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- I. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements in Division 1 Section "Closeout Procedures."
- J. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
- K. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of the manufacturer.
- L. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections.
- M. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

**PART 3 - EXECUTION**

**3.1 CONTRACTOR'S REVIEW**

- A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

**3.2 ENGINEER'S ACTION**

- A. General: Engineer will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Engineer will review each submittal, make marks to indicate corrections or modifications required, and return it. Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken:
- C. Informational Submittals: Engineer will review each submittal and will not return it, or will reject and return it if it does not comply with requirements. Engineer will forward each submittal to appropriate party.
- D. Submittals not required by the Contract Documents will not be reviewed and may be discarded.

**END OF SECTION 01330**

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**SECTION 01631 - PRODUCT SUBSTITUTIONS**

**PART 1 - GENERAL**

**1.1 DESCRIPTION OF WORK**

A. Work Specified This Section:

1. This Section specifies administrative and procedural requirements for handling requests as a substitution request made after the Notice to Proceed or award of the Contract as a CPR.
2. All requests for substitution shall be made no later than 15 days after Notice to Proceed in order to be considered.

**1.2 SUBMITTALS**

A. Substitution Request Submittal:

1. Submit 1 digital copy of each request for substitution for consideration.
2. Submit each request on the attached form and in accordance with procedures required for Change Proposal Requests (CPR). See Section 01250 for additional information.
3. Identify the product, or the fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers.
4. Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:
  - a) Original copies of Product Data, including Drawings and descriptions of products, fabrication and installation procedures.
  - b) Samples, where applicable or requested.
  - c) A detailed point by point comparison of the proposed substitution and the specified product detailing the significant qualities of both products.
    - 1) Significant qualities may include elements such as size, weight, durability, performance and visual effect.
  - d) Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate Contractors that will become necessary to accommodate the proposed substitution.
  - e) A statement indicating the substitutions effect on the Contractor's Construction Schedule.
  - f) Cost information, including a proposal of the net deduct change in the Contract Sum.
  - g) Certification by the Contractor that the substitution proposed is equal-to or better in every significant respect to that required by the Contract Documents, and that the product/assembly will perform adequately in the application indicated.
    - 1) Include the Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of the failure of the substitution to perform adequately.

B. Engineer's Action:

1. After receipt of the request for substitution, the Engineer may request additional information or documentation necessary for evaluation of the request.
2. If a decision on use of a proposed substitute is not made or obtained within sufficient time to have no adverse impact on the construction schedule, the Contractor shall use the product specified in the Contract Documents.

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**PART 2 - PRODUCTS (NOT APPLICABLE)**

**PART 3 - EXECUTION**

**3.1 SUBSTITUTIONS:**

A. Conditions:

1. No substitution will be considered unless such request include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitution including drawings, performance and test data, and other information necessary for a complete comparison with the specified products or materials and an evaluation of the proposed products or materials.
  2. A statement setting forth changes in other materials, equipment or other portions of the Work including changes in the work of other contracts that incorporation of the proposed substitution would require shall be included.
  3. Savings or Credit to Owner for accepting substitution
  4. The burden of proof of the merit of the proposed substitution is upon the proposer.
  5. In addition to the requirements in the Supplemental General Conditions, the following items will apply:
    - a) The substitution is in compliance with subsequent interpretations of code or insurance requirements.
    - b) The manufacturer or fabricator shall certify or guarantee the specified product as required by the Contract Documents.
    - c) Product shall perform properly and fit in the designated space.
- B. The Contractor shall bear all expenses resulting from substitutions including the cost of work in general, structural, plumbing, mechanical and electrical trades required due to the substitution and the cost of any Engineer's services made necessary by the substitution.
- C. The Engineer's decision of approval or disapproval of a proposed substitution shall be final.

**3.2 SUBMITTAL FORMS:**

- A. All proposed substitutions shall use the following form.



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**SUBSTITUTION  
REQUEST**

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Project: \_\_\_\_\_ Substitution Request No. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ CPR No. (After Bid) \_\_\_\_\_  
\_\_\_\_\_ From: \_\_\_\_\_  
To: \_\_\_\_\_ Date: \_\_\_\_\_  
\_\_\_\_\_ A/E Project No. \_\_\_\_\_  
Re: \_\_\_\_\_ Contract For: \_\_\_\_\_

---

Specification Title/or Drawing Sheet: \_\_\_\_\_

Section No.: \_\_\_\_\_ Page No.: \_\_\_\_\_ Article/Paragraph: \_\_\_\_\_

---

Proposed Substitution: \_\_\_\_\_

Manufacturer: \_\_\_\_\_ Address: \_\_\_\_\_ Phone #: \_\_\_\_\_

Trade Name: \_\_\_\_\_ Model #: \_\_\_\_\_

Installer: \_\_\_\_\_ Address: \_\_\_\_\_ Phone #: \_\_\_\_\_

History: New Product:            2 -5 years old            5-10 years old            More than ten years old

Briefly explain differences between proposed substitution and specified product \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Point-by-Point comparative data attached - REQUIRED BY A/E

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Reason for not providing specified item: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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**Similar Installation:**

Project: \_\_\_\_\_ Engineer: \_\_\_\_\_

Address: \_\_\_\_\_ Owner: \_\_\_\_\_

Telephone: \_\_\_\_\_ Owner Representative: \_\_\_\_\_

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

Proposed substitution affects other parts of Work: No Yes; explain \_\_\_\_\_

Savings or Credit to Owner for accepting substitution: \_\_\_\_\_ (\$ \_\_\_\_\_)

**(MUST BE FILLED OUT TO RECEIVE REVIEW.)**

Proposed substitution changes Contract Time: No Yes; Add/Deduct \_\_\_\_\_ days.

Supporting Data Attached:

Product Data Drawings Tests Reports Samples \_\_\_\_\_

Fire Tests Acoustical Tests

ASTM Tests UL, FM or WHI listed: provide copy of test reports.

Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same or better warranty will be furnished for proposed substitution as for specified product.
- Same or better maintenance service and source of replacement parts, as applicable is available.
- Proposed substitution will not affect or delay Progress Schedule.
- Cost data as stated above is complete. Contractor (s) claims for additional costs related to accepted substitution, which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for A/E changes to building design, including engineering design, detailing, and construction costs caused by the requested substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

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

Signature: \_\_\_\_\_

Firm: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_ Approved By: \_\_\_\_\_

General Contractor

Date

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Attachments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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**ENGINEER'S REVIEW AND ACTION**

Substitution approved - Make submittals in accordance with Division One.

Substitution approved as noted - Make submittals in accordance with Division One.

Substitution rejected - Use specified materials.

Signed by: \_\_\_\_\_ Date: \_\_\_\_\_

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Additional Comments	Contractor	Subcontractor	Supplier	Manufacturer	A/E	_____
_____						
_____						
_____						

**END OF SECTION 01631**

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**SECTION 01700 - EXECUTION REQUIREMENTS**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
  - 1. Construction layout.
  - 2. Field engineering and surveying.
  - 3. General installation of products.
  - 4. Progress cleaning.
  - 5. Starting and adjusting.
  - 6. Protection of installed construction.
  - 7. Correction of the Work.
  
- B. See Division 1 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

**1.2 QUALITY ASSURANCE**

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION**

**3.1 EXAMINATION**

- A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.
  - 1. Before construction, verify the location and points of connection of utility services.
  
- B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning site work, investigate and verify the existence and location of underground utilities and other construction affecting the Work.
  - 1. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

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- C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
1. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
  2. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
  3. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

**3.2 PREPARATION**

- A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
1. Notify Owner not less than 7 days in advance of proposed utility interruptions.
  2. Do not proceed with utility interruptions without Owner's written permission.
- C. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- D. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- E. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Engineer. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

**3.3 INSTALLATION**

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
- B. Contractor to provide construction stakeout for all significant components of the system including grade hubs and offsets or slope stakes for any of the following if included in the construction scope of work: Drainage structures, new curb and gutter, ditches, new street alignments, new roadways, gravity piping including drainage and sewer lines, manholes, junction boxes, pipe outlets, building pads, slabs, mechanical systems, control racks, or other similar facilities which require grading to drain or a gravity connection to existing facilities. Such staking is to be performed by the Contractor's PLS and field notes and cut sheets are to be available to the Engineer in the event of questions of grades and lines.

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- C. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- D. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- E. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- F. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
  - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Engineer.
  - 2. Allow for building movement, including thermal expansion and contraction.
- G. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- H. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

**3.4 PROTECTION OF INSTALLED CONSTRUCTION**

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

**3.5 CORRECTION OF THE WORK**

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 1 Section "Cutting and Patching."
  - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

**END OF SECTION 01700**

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**SECTION 01731 - CUTTING AND PATCHING**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. This Section includes procedural requirements for cutting and patching.
- B. See Divisions 2 through 16 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
- C. Requirements in this Section apply to mechanical and electrical installations. See Divisions 15 and 16 Sections for other requirements and limitations applicable to cutting and patching mechanical and electrical installations.

**1.2 SUBMITTALS**

**1.3 QUALITY ASSURANCE**

- A. Structural Elements: Do not cut and patch structural elements.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
- C. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Engineer's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

**1.4 WARRANTY**

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

**PART 2 - PRODUCTS**

**2.1 MATERIALS**

- A. General: Comply with requirements specified in other Sections of these Specifications.
- B. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.

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1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.

**PART 3 - EXECUTION**

**3.1 EXAMINATION**

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
  1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
  2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

**3.2 PREPARATION**

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Services: Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to avoid interruption of services to occupied areas.

**3.3 PERFORMANCE**

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
  1. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
  1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  2. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.

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3. Concrete: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
  4. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
  2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
  3. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

**END OF SECTION 01731**

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**SECTION 01732 - SELECTIVE DEMOLITION**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. This Section includes the following:
  - 1. Demolition and removal of selected portions of building or structure.

**1.2 DEFINITIONS**

- A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
- B. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

**1.3 QUALITY ASSURANCE**

Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

- A. Standards: Comply with ANSI A10.6 and NFPA 241.

**1.4 PROJECT CONDITIONS**

- A. Notify Engineer of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- B. Hazardous Materials: It is unknown whether hazardous materials will be encountered in the Work.
  - 1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Engineer and Owner. Owner will remove hazardous materials under a separate contract.
- C. Hazardous Materials: The owner will identify and remove all hazardous materials requiring removal.
- D. Storage or sale of removed items or materials on-site is not permitted.
- E. Utility Service: Maintain existing utilities that are incorporated in new work and protect them against damage during selective demolition operations.

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**1.5 WARRANTY**

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION**

**3.1 EXAMINATION**

- A. Verify that utilities have been disconnected and capped.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.
- D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Engineer.
- E. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

**3.2 PREPARATION**

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
  - 1. Comply with requirements for access and protection specified in Division 1 Section "Temporary Facilities and Controls."
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
- C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

**3.3 SELECTIVE DEMOLITION**

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

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1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
  2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
  3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
  4. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
  5. Dispose of demolished items and materials promptly.
- B. Reuse of Building Elements: Do not demolish building elements beyond what is indicated on Drawings without Engineer's approval.
- C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Engineer, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

**3.4 DISPOSAL OF DEMOLISHED MATERIALS**

- A. General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
1. Comply with requirements specified in Division 1 Section "Construction Waste Management."
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

**3.5 CLEANING**

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

**END OF SECTION 01732**

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**SECTION 01770 - CLOSEOUT PROCEDURES**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
  - 1. Inspection procedures.
  - 2. Project Record Documents.
  - 3. Operation and maintenance manuals.
  - 4. Warranties.
  - 5. Instruction of Owner's personnel.
  - 6. Final cleaning.
- B. See Division 1 Section "Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.
- C. See Division 1 Section "Construction Progress Documentation" for submitting Final Completion construction photographs and negatives.
- D. See Divisions 2 through 16 Sections for specific closeout and special cleaning requirements for products of those Sections.

**1.2 SUBSTANTIAL COMPLETION**

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
  - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
  - 2. Advise Owner of pending insurance changeover requirements.
  - 3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
  - 4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
  - 5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs, damage or settlement surveys, property surveys, and similar final record information.
  - 6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
  - 7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
  - 8. Complete startup testing of systems.
  - 9. Submit test/adjust/balance records.
  - 10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
  - 11. Advise Owner of changeover in heat and other utilities.

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12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
13. Complete final cleaning requirements, including touchup painting.
14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Engineer, that must be completed or corrected before certificate will be issued.

1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for Final Completion.

**1.3 FINAL COMPLETION**

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:

1. Submit a final Application for Payment according to Division 1 Section "Payment Procedures."
2. Submit certified copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Engineer. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Submit pest-control final inspection report and warranty.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.

**1.4 LIST OF INCOMPLETE ITEMS (PUNCH LIST)**

A. Preparation: Submit one digital copy of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

**1.5 PROJECT RECORD DOCUMENTS**

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- A. General: Do not use Project Record Documents for construction purposes. Protect Project Record Documents from deterioration and loss. Provide access to Project Record Documents for Engineer's reference during normal working hours.
- B. Record Drawings: Maintain and submit one set of blue- or black-line white prints of Contract Drawings and Shop Drawings.
  - 1. Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
    - a. Give particular attention to information on concealed elements that cannot be readily identified and recorded later.
    - b. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
  - 2. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
  - 3. Note Construction Change Directive numbers, Change Order numbers, alternate numbers, and similar identification where applicable.
  - 4. Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location. Organize into manageable sets; bind each set with durable paper cover sheets. Include identification on cover sheets.
- C. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications. Mark copy to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
  - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  - 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
  - 3. Note related Change Orders and Record Drawings, where applicable.
- D. Miscellaneous Record Submittals: Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

**1.6 OPERATION AND MAINTENANCE MANUALS**

- A. Assemble a complete set of operation and maintenance data indicating the operation and maintenance of each system, subsystem, and piece of equipment not part of a system. Include operation and maintenance data required in individual Specification Sections and as follows:
  - 1. Operation Data: Include emergency instructions and procedures, system and equipment descriptions, operating procedures, and sequence of operations.
  - 2. Maintenance Data: Include manufacturer's information, list of spare parts, maintenance procedures, maintenance and service schedules for preventive and routine maintenance, and copies of warranties and bonds.

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- B. Organize operation and maintenance manuals into digital files for each system or assembly and digitally submit to Engineer with a transmittal describing contents.

**1.7 WARRANTIES**

- A. Submittal Time: Submit written warranties on request of Engineer for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual and submit digital files of each warranty.

**PART 2 - PRODUCTS**

**2.1 MATERIALS**

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

**PART 3 - EXECUTION**

**3.1 DEMONSTRATION AND TRAINING**

- A. Instruction: Instruct Owner's personnel to maintain systems, and subsystems.
  - 1. Provide instructors experienced in operation and maintenance procedures.
  - 2. Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide similar instruction at the start of each season.
  - 3. Schedule training with Owner, through Engineer, with at least 21 days' advance notice.
  - 4. Coordinate instructors, including providing notification of dates, times, length of instruction, and course content.

**3.2 FINAL CLEANING**

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

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1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
  - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
  - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
  - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
  - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
  - e. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
  - f. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
  - g. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
  - h. Leave Project clean
  
- C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

**END OF SECTION 01770**

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**PART 2 - PRODUCTS**

**2.1 SILT FENCES**

- A. Posts: Steel posts shall be 5' in height and be of self-fastener angle steel type.
- B. Posts shall be spaced at 8' maximum when silt fence is backed with wire mesh, and 6' when no wire mesh is used or as required by the Engineer.
- C. Woven Wire: Woven wire fencing shall conform to ASTM A116 for Class 3 galvanizing. Fabric shall be a minimum of 32" in width and shall have a minimum of 6 line wires with 12" stay spacing. The top and bottom wires shall be 10 gauge while the intermediate wires shall be 12-1/2 gauge. Wire fabric shall be fastened to wood posts with not less than 9 wire staples 1-1/2" long.
- D. Fabric: Provide woven synthetic fiber designed specifically for silt fence conforming to NCDOT specifications.

**2.2 STONE & RIP RAP**

- A. Drainage Stone: Class I material NCDOT No. 57.
- B. Rip Rap: Class B with a median size of 8-inches meeting the requirements of Section 1042 Rip Rap Materials in the NCDOT Standard Specifications for Roads and Structures.

**2.3 TEMPORARY SEEDING:**

- A. Temporary seeding, when required, shall be performed in accordance with the recommendations contained in "Guide for Sediment Control on Construction Sites in North Carolina", published by the Soil Conservation Service and Section 02228 of these specifications.

**PART 3 - EXECUTION**

**3.1 GENERAL**

The Contractor shall take whatever measures are necessary to minimize soil erosion and siltation, and water, air, and noise pollution caused by his operations. The Contractor shall also comply with the applicable regulations of all legally constituted authorities relating to pollution prevention and control. The Contractor shall keep himself fully informed of all such regulations which in any way affect the conduct of the work, and shall at all times observe and comply with all such regulations. In the event of conflict between such regulations and the requirements of the specifications, the more restrictive requirements shall apply.

**3.2 EROSIONS AND SILTATION CONTROL**

- A. The Contractor shall exercise every reasonable precaution throughout the life of the project to prevent the eroding of soil and the silting of rivers, streams, lakes, reservoirs, other water impoundments, ground surfaces, or other property.
- B. Prior to suspension of operations on the project or any portion thereof, the Contractor shall take all necessary measures to protect the construction area, including but not limited to borrow sources, soil type base course sources, and waste areas, from erosion during the period of suspension.
- C. Provide diversion ditches and berms as necessary to prevent concentrated flow of water across disturbed areas.
- D. Stockpile excavated material on the opposite side of the utility trenches from the watercourses to the extent that is possible.



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- E. In the event that stockpiles are placed on the watercourse side of the trench, provide silt fence or silt berms with stone filter outlets along the entire length of the stockpile that is on the watercourse side of the trench. Upon the completion of backfilling, the measures shall be removed and the site graded to its natural grade or as shown on plans.
- F. Maintain natural buffer zones along all watercourses sufficient to retain all visible siltation within the first 25 percent of the buffer width.
- G. Provide a settling basin with a gravel filter outlet for all water pumped from trenches or dewatering equipment. Pumping of that water directly into any stream, pond, or watercourse is prohibited.
- H. Temp, fertilize, seed and mulch the disturbed areas as soon as practicable after line is installed and, in all cases, no later than 21 days after completion of the line segment or work at a particular site.
- I. When construction operations are suspended for more than 21 days, provide temporary seeding and mulching of all disturbed areas including those areas in which further construction is necessary.
- J. Erosion control measures installed by the Contractor shall be acceptably maintained by the Contractor.
- K. Silt fences shall be provided where shown on the drawings and/or as necessary to prevent erosion.
- L. Catch basins shall be protected from silt by placing straw bales or silt fence around the opening until vegetative cover is established.

**3.3 WATER AND AIR POLLUTION**

- A. The Contractor shall exercise every reasonable precaution throughout the life of the project to prevent pollution of rivers, streams, and water impoundments. Pollutions such as chemicals, fuels, lubricants, bitumens, raw sewage, and other harmful waste shall not be discharged into or alongside of rivers, streams, or impoundments, or into natural or manmade channels leading thereto.

**3.4 DUST CONTROL**

- A. The Contractor shall control dust throughout the life of the project within the project area and at all other areas affected by the construction of the project, including, but not specifically limited to, unpaved secondary roads, haul roads, access roads, disposal sites, borrow and material sources, and production sites. Dust control shall not be considered effective where the amount of dust creates a potential or actual unsafe condition, public nuisance, or condition endangering the value, utility, or appearance of any property.

**3.5 NOISE CONTROL**

- A. The Contractor shall exercise every reasonable precaution throughout the life of the project to prevent excessive and unnecessary noise. The Contractor shall choose his methods so as to minimize the disturbance of area residents.

**END OF SECTION 02120**

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**SECTION 02228 - CLEAN-UP AND SEEDING**

**PART 1 - GENERAL**

**1.1 RELATED WORK SPECIFIED ELSEWHERE**

- A. Erosion Control: Section 02120

**1.2 DESCRIPTION**

- A. The work covered by this section consists of disposal of waste and debris, preparing seedbeds, furnishing, placing, and covering limestone, fertilizer, and seed; compacting seedbeds; furnishing, placing, and securing mulch; and other operations necessary for the permanent establishment of grasses from seed; all in accordance with these specifications and drawings.
- B. Waste will be considered to be all excavated materials which are not utilized in the construction of the project.
- C. Debris will be considered to be all undesirable material encountered or left on the project site.
- D. Permanent Seeding is required for all areas disturbed by construction, except for areas covered by structures, pavements, etc.
- E. Temporary Seeding of disturbed areas shall be performed whenever one or more of the following conditions exist.
  - 1. The Engineer determines that temporary seeding is necessary to prevent or stop erosion of disturbed areas.
  - 2. Work is suspended or delayed on any portion of the project for 15 calendar days (10 calendar days within NCDOT right of way) and the potential for erosion exists.
  - 3. Whenever permanent seeding is delayed beyond that required by the Contract Documents.
- F. The Contractor shall adapt his operations to variations in weather or soil conditions as necessary for the successful establishment and growth of the grasses.
- G. In all operations covered by this section, care shall be taken to preserve the required line, grade, and cross section of the work area.

**1.3 QUALITY ASSURANCE**

- A. All work done in this section shall be performed in accordance with all applicable Sections and Provisions of the North Carolina State Department of Transportation Standard Specifications for Roads and Structures, latest revision.
- B. All materials required in this section shall meet or exceed the requirements of Division X: Section 1060 of the North Carolina State Department of Transportation Standard Specifications for Roads and Structures, latest revision.

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**PART 2 - PRODUCTS**

**2.1 MATERIALS**

A. Fertilizer:

1. Provide commercial fertilizer conforming to statutory requirements and all rules and regulations adopted by the North Carolina Board of Agriculture for all seeding/sodding.

B. Limestone: Provide agricultural limestone conforming to all statutory requirements and all rules and regulations adopted by the North Carolina Board of Agriculture.

C. Seed: Provide seed conforming to all statutory requirement and all rules and regulations adopted by the North Carolina Board of Agriculture.

1. Provide seed in accordance with requirements shown below. Deliver to site in original containers, labeled to show that the requirements of the N.C. Seed Law are met.

2. Quality of seed shall conform to the following:

<u>Common Name</u>	<u>Minimum Seed Purity</u> %	<u>Minimum Germination</u> %	<u>Maximum Weed Seed</u> %
<u>Grasses</u>			
Fescue Tall (KY.-31)	98	90	1.00
Common Bermudagrass	98	90	1.00

3. Seed containing prohibited noxious weed seed shall not be accepted. Seed shall be in conformance with state seed law restrictions for restricted noxious weeds.

4. If seed of the accepted quality cannot be bought, secure prior approval before making changes or exceptions.

D. Mulch:

1. Mulch for erosion control shall consist of grain straw or other acceptable material, and shall have been approved by the Architect/Engineer before being used. All mulch shall be reasonably free from mature seedbearing stalks, roots, or bulblets of Johnson Grass, Nutgrass, Sandbur, Wild Garlic, Wild Onion, Bermuda Grass, Cortalaria, and Witch weed, and free of excessive amount of restricted noxious weeds as defined by the North Carolina Board of Agriculture at the time of use of the mulch. Also there shall be compliance with all applicable State and Federal domestic plant quarantines. Straw mulch that is matted or lumpy shall be loosened and separated before being used.

2. Material for holding mulch in place shall be asphalt or other approved binding material applied in accordance with this section.

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**PART 3 – EXECUTION**

**3.1 GENERAL**

- A. Follow procedures set forth in the publication “Guide for Sediment Control on Construction Sites in North Carolina” by the United States Department of Agriculture, Soil Conservation Service, and as specified herein.
- B. Scarify soil to a depth of three (3) inches and work into a satisfactory seed bed by disking, use of cultipackers, harrows, drags and other approved means.
- C. Preparation outlined above shall not be done when the soil is frozen, wet or otherwise in an unfavorable condition.
- D. Begin and complete seeding operations as outlined below as soon as possible after final grading is completed, but in no event later than 15 calendar days after completion of final grading.
- E. Disturbed areas within the right of way of the North Carolina Department of Transportation shall be graded, dressed, seeded, mulched, and tacked with liquid asphalt or other approved means within 10 calendar days of completion of work in any area.
- F. Seeding and mulching operations shall not begin until electrical service has been installed within the project, unless directed by the Engineer.
- G. Distribute lime and fertilizer, uniformly over seed bed and harrow, rake, or otherwise work same into seed beds.
- H. Distribute seed uniformly over seed bed. Cover seed lightly after seeding.
- I. No lime, fertilizer, or seed shall be applied during a strong wind, when soil is wet or otherwise unworkable. Should rain follow seeding before rolling is begun, the bed shall not be rolled.
- J. The kinds of seed and the rates of application of seed, fertilizer, and limestone shall be as stated below.
  - 1. Seeding Schedule: See L2.1

**3.2 WASTE MATERIAL DISPOSAL**

- A. Waste material not utilized in the construction of the project shall be removed from the project site and disposed of by the Contractor in areas provided by him.
- B. The Contractor shall hold the Owner harmless of any damages which might occur through the disposal of the waste and debris.
- C. Construction debris and all broken concrete, masonry, etc. shall be removed from the project as soon as possible.
- D. Where the Owner has granted permission to dispose of waste and debris within the project area, the Owner will have authority to establish whatever additional requirements that may be necessary to insure the satisfactory appearance of the area.

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**3.3 SEEDING AND MULCHING**

- A. Seeding and mulching shall be performed in accordance with all applicable provisions of Section 1660 of the North Carolina State Department of Transportation's Standard Specifications for Roads and Structures, latest revision.
- B. Seeding and mulching shall be done on all earth areas disturbed by construction not destined for construction of structures or paving.
- C. Apply mulch immediately after permanent seeding at a uniform rate sufficient to achieve approximately 80% coverage of ground surface. Care must be taken to prevent the mulch from being applied too thickly and smothering the seedlings. Mulch for temporary seeding should be applied based upon the recommendations of the Soil Conservation Service for the particular type of seed to be used.
- D. Denuded slopes must be seeded within 21 calendar days (10 calendar days within NCDOT right of way) following completion of any phase of development.

**3.4 TEMPORARY SEEDING**

- A. Temporary seeding shall be performed in accordance with the requirements of Section 01620 of the North Carolina State Department of Transportation's Standard Specifications for Roads and Structures, latest revisions and with Soil Conservation Service recommendations with regard to seed type, rate of application, fertilizer, etc.
- B. The kinds of seed and the rates of application of seed and fertilizer shall be as stated below.

1. Seeding Schedule

<u>Date</u>			
Apr 15 – Aug 14	German Millet		50 lbs./Acre
Aug 15 - Apr 14	Rye (Grain)		120 lbs./Acre

2. Year Round Fertilizer 10-10-10 Analysis 1000 lbs./acre

**3.5 TEMPORARY MULCHING**

- A. Temporary mulch may be used for the prevention of excessive soil erosion during construction operations where it is impossible or impractical to perform permanent seeding and mulching.
- B. Temporary much shall be placed promptly at the location and times directed by the Engineer.
- C. The temporary mulch may be required on previously seeded areas or on areas which have not been seeded.
- D. Temporary mulches may be straw, fiber mats, netting or other suitable material acceptable to the Engineer and shall be reasonably clean and free of noxious weeds and deleterious material. Mulch shall be spread uniformly over the area by hand or by means of approximate mechanical spreaders or blowers to obtain an application satisfactory to the Engineer. On seeded areas, satisfactory application of temporary mulch shall allow some sunlight to penetrate and air to circulate, but also partially shade the ground, reduce erosion and conserve soil moisture.

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- E. When temporary mulching is being performed in connection with temporary seeding, no seeded areas shall be allowed to remain more than 24 hours without mulching having been completed.
- F. If seeding has been performed previously, care shall be exercised to prevent displacement of soil or seed, or other damage to the seeded area during temporary mulching operations.
- G. The Contractor shall take sufficient precautions to prevent temporary mulch from entering pipe lines and drainage structures through displacement by wind, water or other causes.
- H. The Contractor shall apply a sufficient amount of asphalt or other type material to assure that the temporary mulch is properly held in place.
- I. In the application of asphalt materials during temporary mulching operations, adequate precautions shall be taken to prevent damage to traffic; and to any private or public property. Such property shall be adequately covered, or application methods changed, so as to avoid damage. Where any damage occurs as a result of the Contractor's failure to take adequate precautions, the Contractor will be required to repair such damage, including any cleaning that may be necessary, before final acceptance of the work will be made.

**3.6 REPAIR SEEDING & MAINTENANCE**

- A. Maintain the grass on the areas for a period of 90 days after the grass growth appears. Reseed bare areas and repair all eroded areas during that period.
- B. Inspect all seeded areas and make necessary repairs or reseedings within the planting season, if possible. If stand should be over 60% damaged, reestablish following original lime, fertilizer and seeding recommendations.
- C. All areas which do not exhibit satisfactory ground cover within 45 days of seed application shall be replanted.
- D. Repair seeding shall be performed in accordance with the requirements of Section 1661 of the North Carolina State Department of Transportation's Standard Specifications for Roads and Structures, latest revision.
- E. The kinds of seed and fertilizer shall be the same as specified for permanent "seeding and mulching". The rates of application of the various kinds of seed specified for "seeding and mulching" may vary as directed by the Engineer, however the total rate shall be substantially the same as for "seeding and mulching", but in no case will the total rate of seed and fertilizer vary more or less than twenty-five (25%) percent of that specified for "seeding and mulching".

**3.7 SUPPLEMENTAL SEEDING**

- A. The work covered by this section consists of the application of additional seed to an area already seeded with permanent seed but on which there is not a satisfactory cover of grass.
- B. The work of supplemental seeding does not include seedbed preparation, fertilizer, limestone, or mulch, and is intended only to provide an additional amount of seed to the Fertilizer Top dressing operation on projects that do not have a stand of grass thick enough to cover the ground in a reasonable length of time. This work does not conflict with nor replace repair seeding as its purpose is entirely different.

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- C. The kinds of seed shall be the same as for "seeding and mulching", and the rate of application may vary from 25 pounds to 75 pounds per acre. The final rate per acre; if needed, will be determined by the Engineer prior to the time of top dressing and the Contractor will be notified in writing of the rate per acre, total quantity needed and areas on which to apply the supplemental seed.

**3.8 FERTILIZER TOP DRESSING:**

- A. Fertilizer top dressing shall be performed in accordance with the requirements of Section 1665 of the North Carolina State Department of Transportation's Standard Specifications for Roads and Structures, latest revision.

**END OF SECTION 02228**



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**SECTION 02300 - EARTHWORK**

**PART 1 - GENERAL**

**1.1 SUMMARY**

A. This Section includes the following:

1. Preparing subgrades for slabs-on-grade, walks, pavements, accessible pedestrian pathways and for storm drainage facilities.
2. Excavating and backfilling for structures.
3. Excavating and backfilling trenches for buried mechanical and electrical utilities and pits for buried utility structures.

B. Related Sections include the following:

1. Division 2 Section "Erosion and Pollution Control, Clean-up and Seeding, Asphalt Paving, Concrete, and Storm Drainage.
2. Refer to the Section in this Project Manual entitled, "Unit Prices" for the basis for payment of all items. It shall be understood that references to the NCDOT Standard Specifications for Roads and Structures are for technical requirements for materials and construction practices and any references to payment in the NCDOT document are superseded by this Project Manual's Unit Prices Section in Division 1 of this Project Manual.

**1.2 DEFINITIONS**

A. Backfill: Soil materials used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Layer placed between the subgrade course and asphalt paving.

C. Bedding Course: Layer placed over the excavated subgrade in a trench before laying pipe.

D. Borrow: Satisfactory soil imported from off-site for use as fill or backfill.

E. Excavation: Removal of material encountered above subgrade elevations.

F. Additional Excavation: Excavation below subgrade elevations as specifically directed by Engineer.

G. Additional excavation and replacement material will be paid for according to Contract provisions. Refer to the line items for undercut and select backfill.

1. Bulk Excavation: Excavations more than 10 feet (3 m) in width and pits more than 30 feet (9 m) in either length or width.

H. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated

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dimensions without direction by Engineer. Unauthorized excavation, as well as remedial work directed by Engineer, shall be without additional compensation.

- I. Fill: Soil materials used to raise existing grades.
  
- J. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
  
- K. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below base, drainage fill, or topsoil materials.
  
- L. Utilities include on-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.
  
- M. Competent Person: Competent Person means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

**1.3 SUBMITTALS**

- A. Product Data: For the following:
  - 1. Geotextile stone subgrade underlayment.
  - 2. Drainage fabric.
  - 3. Warning Tape
  
- B. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated:
  - 1. Classification according to ASTM D 2487 of each on-site or borrow soil material proposed for fill, backfill, and embankment fill.
  - 2. Laboratory compaction curve according to ASTM D 698 for each on-site or borrow soil material proposed for fill, backfill, and embankment fill.

**1.4 QUALITY ASSURANCE**

- A. Geotechnical Testing Agency Qualifications: An independent testing agency qualified according to ASTM E 329 to conduct soil materials testing, as documented according to ASTM D 3740 and ASTM E 548. Owner will provide a geotechnical testing agency to provide independent testing of soils, subgrades, concrete, and asphalt for the project.
  
- B. Competent Person: Contractor shall provide a Competent Person as defined above to direct safety operations to protect worker and public safety for all construction operations. A Contractor designated Competent Person shall be present during all Contractor and Subcontractor operations on the site. Also refer to Article 7 of the General Conditions for additional safety requirements including the requirement for a Safety Representative and a requirement that Contractor manage overall project safety for the project site.
  
- C. Quality Standards: Except where specifically called out otherwise, all work and materials shall comply with NCDOT requirements as set forth in the latest edition of the NC Department of

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Transportation Standard Specifications for Roads and Structures which are a part of the Contract Documents by reference in the Standard Special Provisions.

- D. Pre-excavation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Meetings."

**1.5 PROJECT CONDITIONS**

- A. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted in writing by Engineer and then only after arranging to provide temporary utility services according to requirements indicated:
1. Notify Engineer not less than two days in advance of proposed utility interruptions.
  2. Do not proceed with utility interruptions without Engineer's written permission.
  3. Contact utility-locator service for area where Project is located before excavating.
- B. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shut off services if lines are active.
- C. Contractor shall be familiar with the provisions of the traffic control plan and the notification requirements for NCDOT and for City Public Works prior to impacting traffic flow on City and NCDOT roadways. Work must comply with the provisions of the traffic control plan and the provisions of the NCDOT Encroachment Agreement and other permits. Include cost of compliance and coordination in the appropriate bid items.

**PART 2 – PRODUCTS**

**2.1 SOIL MATERIALS**

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- B. Satisfactory Soils: ASTM D 2487 soil classification groups GW, GP, GM, SW, SP, and SM, (AASHTO M 145 soil classification groups A-1, A-2-4, A-2-5, AND A-3) or a combination of these group symbols; free of rock or gravel larger than 3 inches (75 mm) in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
- C. Where Select Fill for Undercut Areas is called out it shall be "Satisfactory Soils" as defined above. Select Fill is offsite "Satisfactory Soils" imported for use in refilling undercut areas. Select Materials for storm drain pipes is defined below.
- D. Unsatisfactory Soils: ASTM D 2487 soil classification groups A-2-6, A-2-7, A-4, A-5, A-6, AND A-7, or a combination of these group symbols. Unsatisfactory soils shall not be used as import backfill material and shall not be reincorporated into the project if excavated as part of the unclassified excavation. Unsatisfactory Soils are to be disposed of legally offsite or may upon evaluation be used for planted areas if suitable for such purpose as determined by the Engineer.
- E. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- F. Backfill and Fill: Satisfactory soil materials.

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- G. Trench Stabilization Stone: Stone used at the direction of the Engineer for foundation stabilization shall be NCDOT No. 57 or No. 67 stone as defined in Table 1005-1 of the NCDOT Standard Specifications. This is stone used to refill undercut excavations and unauthorized excavations. Unauthorized use of trench stabilization for drainage purposes is not a pay item and shall receive no separate payment. Where a pay item is provided for trench stabilization it shall be used only for authorized locations which, in the opinion of the Engineer, require undercut.
- H. Select Materials for Storm Drains: Soil materials meeting the definition of Class II, Type 1 or Class III materials as defined in Section 1016-3 Classifications in the NCDOT Standard Specifications for Roads and Structures.
- I. Base: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 95 percent passing a 1-1/2-inch (38-mm) sieve and not more than 8 percent passing a No. 200 (0.075-mm) sieve.
- J. Storm Drainage Pipe Backfill Material:
1. Materials placed above the pipe spring line (mid-point) or higher may be on-site trench excavated soils and road subgrade soils meeting the definition of Satisfactory Soils or other material evaluated by the Geotechnical Consultant as satisfactory for that purpose.
  2. Materials placed below the pipe spring line shall be Class II, Type 1 or Class III material as defined by the current edition of NCDOT's Standard Specifications Section 1016 – Select Materials. Refer to the details for specific storm drain pipe bedding requirements.
  3. Undercut and Select Fill: Where, in the opinion of the Engineer, in-situ material is not satisfactory soil material for backfill, the Engineer may call for Undercut and use of Select Materials or for Trench Foundation Stabilization Stone to be placed at the unit price set forth in the bid.
  4. Select Materials and other trench materials specifically called out in the details for storm drainage pipe are to be included in the unit bid price of the pipe. Additional undercut and select fill where they are, in the opinion of the Engineer, required are to be paid for at the unit bid price. Refer to the details and the specification section entitled, "Unit Prices."

**2.2 ACCESSORIES**

- A. Detectable Warning Tape: Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, minimum 6 inches (150 mm) wide and 4 mils (0.1 mm) thick, continuously inscribed with a description of utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches (750 mm) deep; colored as follows:
1. Red: Electric.
  2. Yellow: Gas, oil, steam, and dangerous materials.
  3. Orange: Telephone and other communications.
  4. Blue: Water systems.
  5. Green: Sewer systems.

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- B. Drainage Fabric: Nonwoven geotextile, specifically manufactured as a drainage geotextile; made from polyolefins, polyesters, or polyamides; and with the following minimum properties determined according to ASTM D 4759 and referenced standard test methods:
  - 1. Grab Tensile Strength: 120 lbf (534 N); ASTM D 4632.
  - 2. Trapezoidal Tear Strength: 50 lbf (223 N); ASTM D 4533.
  - 3. CBR Puncture Resistance: 310 lb. (1380 N); ASTM D 6241.
  - 4. Water Flow Rate: 130 gpm per sq. ft. (92 L/s per sq. m); ASTM D 4491.
  - 5. Apparent Opening Size: No. 50 (0.3 mm); ASTM D 4751.
- C. Geotextile Stone Subgrade Underlayment: Provide a Type 5 Geotextile per Table 1056-1 of the NCDOT Standard Specifications for Roads and Structures. Provide a fabric on the NCDOT Approved Products List. Fabric will be used only when directed by Engineer.

**PART 3 - EXECUTION**

**3.1 PREPARATION**

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- B. Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.
- C. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
- D. Note the Safety provisions provided in the General Conditions, Special Conditions, and Standard Special Conditions of the Contract. These requirements must be adhered to and are paramount to the performance of this work. Contractor is directed to OSHA Part Number 1926 Safety and Health Regulations for Construction and in addition specifically to 1926 Subpart P regarding Excavations. All facets of excavation, utility work, and earthwork for this project shall comply with the applicable OSHA rules at all times.

**3.2 DEWATERING**

- A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.
- C. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.
- D. Install a dewatering system to keep subgrades dry and convey ground water away from excavations. Maintain until dewatering is no longer required. Foundation stabilization stone

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and select backfill shall not be used as an alternate to adequate trench or subgrade dewatering and stormwater runoff control.

- E. Do not install pipes, structures, pavements or base courses in standing water and do not place them in weak saturated subgrades. Consult with Engineer if soft, yielding subgrades are encountered prior to installing improvements.

**3.4 EXPLOSIVES**

- A. Explosives: Do not use explosives.

**3.5 EXCAVATION, GENERAL**

- A. Unclassified Excavation: All excavation to subgrade elevations regardless of the character of surface and subsurface conditions encountered, including rock, soil materials, pavements and obstructions.
  - 1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.
  - 2. Unclassified excavation includes the demolition of existing surfaces and pavements where applicable, loading, hauling, and disposal of spoils created by the excavation and all incidental work required to achieve a subgrade that when replaced with the proposed stone and pavement thicknesses achieves the proposed intended finished elevations.

**3.6 EXCAVATIONS**

- A. For Structures: Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch (25 mm). Extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections. Do not disturb bottom of excavations intended for bearing surface.
- B. For Walkways: Excavate surfaces under walks and pavements to indicated cross sections, elevations, and grades. Excavate to a depth which allows the new walkway section, when completed, to match proposed grades with adequate drainage and cross- slopes.
- C. For Pavements: Provide Roadway Excavation meeting the requirements of Section 225-1 through 225-6 of the NCDOT Standard Specifications for Roads and Structures. Payment shall be as described in the "Unit Prices" Section of this Project Manual and Section 225-7 of the NCDOT Standard Specifications does not apply. Excavate as necessary to provide the new additional thickness stone or asphalt base and pavement sections such that they will match existing curb lines and tie-in grades and lines with an adequate crown as specified. Take care to avoid over-excavation. Unauthorized excavations shall be refilled as directed by the Engineer. Review finished subgrade surfaces for rutting, yielding or wet locations and consult with Engineer on the correction required. Coordinate demolition and excavation to control the maximum surface areas to that which can be handled by available forces without prolonged exposure to potential rainfall events and without exposure to repeated saturation which could soften the existing subgrades.
- D. For removal of existing storm drains called out for removal: Excavation of existing piping on the same approximate horizontal alignment of new replacement pipe is incidental to the the pipe installation. Excavation of a pipe not lying partially or wholly within the confines of the

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trench for a new pipe is set up in the bid schedule when removal is necessary. Requirements include:

1. All trench safety practices that apply to pipe laying apply to this demolition excavation.
2. Control excavation widths to the extent feasible.
3. Overhanging ledges prevent adequate compaction and shall be laid back as required to allow compaction of backfill.
4. Compact backfill in lifts.
5. As a minimum, Satisfactory Soils shall be used to backfill demolition excavations.

**3.8 EXCAVATION FOR UTILITY TRENCHES**

- A. Excavate trenches to indicated gradients, lines, depths, and elevations.
  1. Excavate trenches to allow installation of top of pipe below frost line.
- B. Excavate trenches to uniform widths to provide a working clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches (300 mm) higher than top of pipe or conduit, unless otherwise indicated.
- C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes. Remove projecting stones, rubble, and sharp objects along trench subgrade.
6. Pipe bedding shall be Select Materials of a thickness equal to or greater than that shown on the detail.
7. Except where noted otherwise, the minimum compaction required for pipe bedding and backfill is 95% ASTM D698 Standard Proctor Density.

**3.9 APPROVAL OF SUBGRADE**

- A. Notify Engineer when excavations have reached required subgrade.
- B. If Engineer determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
  1. Additional excavation and replacement material will be paid for according to Contract Pay items set up for that purpose.
- C. Proof roll subgrade with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof roll wet or saturated subgrades. Contractor shall contact the Engineer 48 hours prior to performing proof roll to coordinate time. Proof Rolling shall be considered a part of Unclassified Excavation and will receive no separate payment.
- E. Equipment: Roller for proof rolling shall meet the following requirements:
  1. Four rubber-tired wheels mounted on a rigid steel frame,
  2. Wheels evenly spaced in one line across the width of the roller and arranged so that all wheels will carry approximately equal loads when operated over an uneven surface,
  3. Maximum center to center spacing between adjacent wheels is 32 inches,
  4. Load capacity from 48 to 50 tons unless otherwise permitted in writing,
  5. Cover or construct the loaded roller to not trap water that will add weight to the ballast,
  6. Other equipment of equal or better effectiveness may be substituted with written permission, and

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7. Tire pressures shall be between 68 and 72 lb./sq.in. unless otherwise permitted in writing. Inflate tires with air only; use no liquid.
- F. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Engineer.

**3.10 UNAUTHORIZED EXCAVATION**

- A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill may be used when approved by Engineer.
- B. Fill unauthorized excavations under other construction or utility pipe as directed by Engineer. Select Materials, ABC, or other suitable granular materials may be used.

**3.11 STORAGE OF SOIL MATERIALS**

- A. Stockpile borrow materials and satisfactory excavated soil materials. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
  1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

**3.12 BACKFILL**

- A. Place and compact backfill in excavations promptly, but not before completing the following:
  1. Construction below finish grade.
  2. Surveying locations of underground utilities for record documents.
  3. Inspecting and testing underground utilities.
  4. Removing concrete formwork.
  5. Removing trash and debris.
  6. Removing temporary shoring and bracing, and sheeting.
  7. Installing permanent or temporary horizontal bracing on horizontally supported walls.

**3.13 UTILITY TRENCH BACKFILL**

- A. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- B. Backfill trenches excavated under footings and within 18 inches (450 mm) of bottom of footings; fill with concrete to elevation of bottom of footings.
- C. Place and compact initial backfill of base material, free of particles larger than 1 inch (25 mm), to a height of 12 inches (300 mm) over the utility pipe or conduit.



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1. Carefully compact material under pipe haunches and bring backfill evenly up on both sides and along the full length of utility piping or conduit to avoid damage or displacement of utility system.
- D. Coordinate backfilling with utilities testing.
- E. Fill voids with approved backfill materials while shoring and bracing, and as sheeting is removed.
- F. Place and compact final backfill of satisfactory soil material to final subgrade.
- G. Install warning tape directly above utilities, 12 inches (300 mm) below finished grade, except 6 inches (150 mm) below subgrade under pavements and slabs.

**3.14 FILL**

- A. Preparation: Remove vegetation, topsoil, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface before placing fills.
- B. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- C. Place and compact fill material in layers to required elevations as follows:
  1. Under grass and planted areas, use satisfactory soil material.
  2. Under walks and pavements, use satisfactory soil material.

**3.15 MOISTURE CONTROL**

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill layer before compaction to within 2 percent of optimum moisture content.
  1. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
  2. Remove and replace, or scarify and air-dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

**3.16 COMPACTION OF BACKFILLS AND FILLS**

- A. Place backfill and fill materials in layers not more than 8 inches (200 mm) in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches (100 mm) in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.
- C. Compact soil to not less than the following percentages of maximum dry unit weight. Except where specifically noted otherwise, percentages are given according to AASHTO T99/ASTM D 698 Standard Proctor Density:
  1. Under pavements, scarify and recompact top 12 inches (300 mm) of existing subgrade and each layer of backfill or fill material at 100 percent per Section 500 of NCDOT Standard Specifications.

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2. Under walkways, scarify and recompact top 6 inches (150 mm) below subgrade and compact each layer of backfill or fill material at 95 percent.
3. Under lawn or unpaved areas, scarify and recompact top 6 inches (150 mm) below subgrade and compact each layer of backfill or fill material at 85 percent.

**3.17 GRADING**

- A. General: Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
  1. Provide a smooth transition between adjacent existing grades and new grades.
  2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
  1. Lawn or Unpaved Areas: Plus or minus 1 inch (25 mm).
  2. Walks: Plus or minus 1 inch (25 mm).
  3. Pavements: Plus or minus 1/2 inch (13 mm).

**3.18 BASE COURSES**

- A. Under pavements, place base course on prepared subgrade and as follows:
  1. Place base course material over subgrade.
  2. Compact base courses at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 100 percent of maximum dry unit weight according to AASHTO T 99 / ASTM D 698 Standard Proctor Density per Section 500 of NCDOT Standard Specifications for Roads and Structures.
  3. Shape base to required crown elevations and cross-slope grades.
  4. When thickness of compacted base course is 6 inches (150 mm) or less, place materials in a single layer.
  5. When thickness of compacted base course exceeds 6 inches (150 mm), place materials in equal layers, with no layer more than 6 inches (150 mm) thick or less than 3 inches (75 mm) thick when compacted.
- B. Pavement Shoulders: Place shoulders along edges of base course to prevent lateral movement. Construct shoulders, at least 12 inches (300 mm) wide, of satisfactory soil materials and compact simultaneously with each base layer to not less than 95 percent of maximum dry unit weight according to AASHTO T 99/ ASTM D 698 per Section 235 of the NCDOT Standard Specifications for Roads and Structures for "Embankment Compaction."

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**3.19 FIELD QUALITY CONTROL**

- A. Testing Agency: Owner will engage a qualified independent geotechnical engineering testing agency to perform field quality control testing.
- B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earthwork only after test results for previously completed work comply with requirements.
- C. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Tests will be performed at the following locations and frequencies:
  - 1. Roadways: At subgrade and at each compacted fill and backfill layer, at least one test for every 2,000 sq. yd. (1,673 sq. m) or less of paved area, but in no case fewer than one test per 1000 linear feet of roadway and in no case less than 3 tests.
  - 2. Hardscapes and Parking Lots: At subgrade and at each compacted fill and backfill layer, at least one test for every 2000 sq. ft. (186 sq. m) or less of paved area, but in no case fewer than three tests.
  - 3. Building Pads: At subgrade and at each compacted fill and backfill layer, at least one test for every 2000 sq. ft. (186 sq. m) or less of paved area, but in no case fewer than three tests.
  - 4. Trench Backfill: At each compacted initial and final backfill layer, at least one test for each 150 feet (46 m) or less of trench length, but no fewer than two tests.
- D. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil to depth required; recompact and retest until specified compaction is obtained.

**3.20 PROTECTION**

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
  - 1. Scarify or remove and replace soil material to depth as directed by Engineer; reshape and recompact.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
  - 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible.

**3.21 DISPOSAL OF SURPLUS AND WASTE MATERIALS**

- A. Disposal: If temporary storage of soil materials is required, Contractor shall obtain his or her own storage sites.

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1. Remove waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Owner's property. Provide a written permission to dump waste soils and debris from receiving property owner when requested. All soils washing and disposal and construction and demolition debris disposal shall be carried out in accordance with applicable NCDEQ regulations.

**END OF SECTION 02300**

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**SECTION 02630 - STORM DRAINAGE**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes gravity-flow, non-pressure storm drainage outside the building, with the following components:
  - 1. Special fittings for expansion and deflection.
  - 2. Cleanouts.
  - 3. Drains.
  - 4. Corrosion-protection piping encasement.
  - 5. Catch Basins, Drop Inlets and Junction Boxes.

**1.3 DEFINITIONS**

- A. CPP: Corrugated Plastic Pipe.
- B. RCP: Reinforced concrete pipe.
- C. PVC: Polyvinyl chloride

**1.4 QUALITY ASSURANCE AND GENERAL REQUIREMENTS**

- A. Gravity-Flow, Non-pressure, Drainage-Piping Pressure Rating. Pipe joints shall be at least silt-tight, unless otherwise indicated.
- B. Unless in conflict with these specifications, all materials and practices shall conform with the applicable provisions of the NCDOT Standard Specifications for Roads and Structures. As a general guide but not as an all-inclusive list the following requirements are listed for reference from the NCDOT Standard Specifications and apply to the structures for this project:
  - 1. Pipe Culverts – Section 300 – All pipe handling and pipe laying shall comply with Section 300. Also refer to the details and the Section of this Project Manual entitled, “Unit Prices.”
  - 2. Converting Existing Catch Basins, Drop Inlets, and Junction Boxes – Section 859
  - 3. Incidental Concrete Construction – Section 825.
  - 4. Brick Masonry Construction – Section 830
  - 5. Block Masonry Construction – Section 834
  - 6. Minor Drainage Structures – Section 840
  - 7. Concrete Curb and Gutter – Section 846
  - 8. Concrete Culvert Pipe- Section 1032 – All concrete pipe used on this project shall comply with the requirements of this section.

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**1.5 SUBMITTALS**

- C. Product Data: For the following:
  - 1. Special pipe fittings.
  - 2. Drains.
  - 3. Piping.
  
- D. Shop Drawings: For the following:
  - 1. Drop Inlets and Junction Boxes: Include plans, elevations, sections, details, and frames and covers.
  - 2. Catch Basins and Inlets. Include plans, elevations, sections, details, and frames, covers, and grates.
  
- E. Coordination Drawings: Show pipe sizes, locations, and elevations. Show other piping in same trench and clearances from storm drainage system piping. Indicate interface and spatial relationship between manholes, piping, and proximate structures.
  
- F. Field quality-control test reports.

**1.6 DELIVERY, STORAGE, AND HANDLING**

- G. Do not store plastic pipe, and fittings in direct sunlight.
  
- H. Protect pipe, pipe fittings, and seals from dirt and damage.
  
- I. Handle catch basins and drop inlets, junction boxes according to manufacturer's written rigging instructions.

**1.7 PROJECT CONDITIONS**

- J. Interruption of Existing Storm Drainage Service: Do not interrupt service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary service according to requirements indicated:
  - 1. Notify Engineer no fewer than two days in advance of proposed interruption of service.
  - 2. Do not proceed with interruption of service without Engineer's written permission.
  - 3. To the extent feasible, where new pipelines are to replace existing on a new alignment, provide the new piping prior to taking the existing pipeline out of service.

**PART 2 - PRODUCTS**

**2.1 MANUFACTURERS**

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

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1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.

**2.3 PIPE AND FITTINGS**

- A. Reinforced-Concrete Sewer Pipe and Fittings: ASTM C 76, with bell-and-spigot sealant joints with ASTM C 990, bitumen or butyl-rubber sealant.
- B. PVC storm drainage pipe 8" in diameter or smaller shall be ASTM D1785 Schedule 40. Pipe requiring threaded adapters shall be Schedule 80. In lieu of Schedule 40 pipe ASTM D2241 SDR-21 PVC pipe is also acceptable.
- C. In special conditions, particularly low cover, ductile iron may be specified. Ductile Iron shall be Class 350 or thicker meeting ANSI 21.51 with slip joints.
- D. Corrugated PE Drainage Pipe and Fittings NPS 3 to NPS 10 (DN 80 to DN 250): AASHTO M 252M, Type S, with smooth waterway for coupling joints.
  1. Silt tight Couplings: PE sleeve with ASTM D 1056, Type 2, Class A, Grade 2 gasket material that mates with tube and fittings.
  2. Soil tight Couplings: AASHTO M 252M, corrugated, matching tube and fittings.

**2.4 DROP INLETS, JUNCTION BOXES AND YARD INLETS**

- A. Standard Precast Concrete Basins: ASTM C 478, precast, reinforced concrete, of depth indicated, with provision for sealant joints.
  1. Base Section: 6-inch minimum thickness for floor slab and 4-inch minimum thickness for walls and base riser section, and having separate base slab or base section with integral floor.
  2. Riser Sections: 4-inch minimum thickness, 48-inch diameter, and lengths to provide depth indicated.
  3. Top Section: Eccentric-cone type unless concentric-cone or flat-slab-top type is indicated. Top of cone of size that matches grade rings.
  4. Joint Sealant: ASTM C 990, bitumen or butyl rubber.
  5. Grade Rings: Include 2 or 3 reinforced-concrete risers, of 6- to 9-inch total thickness, that match frame and grate.
  6. Steps: Individual FRP steps, FRP ladder, or ASTM A 615, deformed, 1/2-inch steel reinforcing rods encased in ASTM D 4101, PP wide enough to allow worker to place both feet on 1 step and designed to prevent lateral slippage off of step. Cast or anchor steps into sidewalls at 12- to 16-inch intervals. Omit steps if total depth from floor of catch basin to finished grade is less than 60 inches.
  7. Pipe Connectors: ASTM C 923, resilient, of size required, for each pipe connecting to base section.
- B. Designed Precast Concrete Catch Basins: ASTM C 913, precast, reinforced concrete; designed according to ASTM C 890 for A-16 (ASSHTO HS20-44), heavy-traffic, structural loading; of depth, shape, and dimensions indicated, with provision for sealant joints.
  1. Joint Sealants: ASTM C 990, bitumen or butyl rubber.

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2. Grade Rings: Include 2 or 3 reinforced-concrete risers, of 6- to 9-inch total thickness, that match frame and grate.
  3. Steps: Individual FRP steps or FRP ladder, Individual FRP steps, FRP ladder, or ASTM A 615, deformed, 1/2-inch steel reinforcing rods encased in ASTM D 4101, PP, ASTM A 615, deformed, 1/2-inch steel reinforcing rods encased in ASTM D 4101, PP, wide enough to allow worker to place both feet on 1 step and designed to prevent lateral slippage off of step. Cast or anchor steps into sidewalls at 12- to 16-inch intervals. Omit steps if total depth from floor of catch basin to finished grade is less than 60 inches.
  4. Pipe Connectors: ASTM C 923, resilient, of size required, for each pipe connecting to base section.
- C. Frames and Grates: ASTM A 536, Grade 60-40-18, ductile iron designed for A-16, structural loading. Include flat grate with small square or short-slotted drainage openings.
1. Size: 24 by 24 inches minimum, unless otherwise indicated.
  2. Grate Free Area: Approximately 50 percent, unless otherwise indicated.
  3. Provide standard asphaltic coating.

Cast in Place Concrete: Drop inlets or structures shall meet applicable NCDOT specifications. Concrete shall comply with section 1077 of the NCDOT Standard Specification for Roads and Structures.

### **PART 3 - EXECUTION**

#### **3.1 EARTHWORK**

- A. Excavation, trenching, and backfilling are specified in Division 2 Section "Earthwork."

#### **3.2 PIPING APPLICATIONS**

- A. Pipe couplings and special pipe fittings with pressure ratings at least equal to piping rating may be used in applications below, unless otherwise indicated.
- B. Gravity-Flow, Non-pressure Piping: Use any of the following pipe materials for each size range:
1. NPS 15 to NPS 60 : Reinforced-concrete sewer pipe and fittings, gaskets, and gasketed joints. Do not use nonreinforced pipe instead of reinforced concrete pipe.

#### **3.3 PIPING INSTALLATION**

- A. General Locations and Arrangements: Drawing plans and details indicate general location and arrangement of underground storm drainage piping. Location and arrangement of piping layout take design considerations into account. Install piping as indicated, to extent practical. Where specific installation is not indicated, follow piping manufacturer's written instructions.
- B. Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements. All non-metallic pipe shall have a tracer wire installed along the length of the pipe.



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- C. Install inlets for changes in direction unless fittings are indicated. Use fittings for branch connections unless direct tap into existing sewer is indicated.
- D. Install gravity-flow, non-pressure drainage piping according to the following:
  - 1. Install piping pitched down in direction of flow, at minimum slope of 1 percent, unless otherwise indicated.
  - 2. Install piping per plans.
  - 3. Install piping below frost line.
  - 4. Install reinforced-concrete sewer piping according to ASTM C 1479 and ACPA's "Concrete Pipe Installation Manual."
  - 5. Install PE corrugated sewer piping according to ASTM D 2321

**3.4 PIPE JOINT CONSTRUCTION**

- E. Basic pipe joint construction is specified in Division 2 Section "Piped Utilities - Basic Materials and Methods." Where specific joint construction is not indicated, follow piping manufacturer's written instructions.
- F. Join gravity-flow, non-pressure drainage piping according to the following:
  - 1. Join reinforced-concrete sewer piping according to ACPA's "Concrete Pipe Installation Manual" for rubber-gasket joints.
  - 2. Join dissimilar pipe materials with non-pressure-type flexible couplings.

**3.5 CATCH BASIN, JUNCTION BOX AND DROP INLET INSTALLATION**

- A. Construct catch basins to sizes and shapes indicated.
- B. Set frames and grates to elevations indicated.

**3.6 CONCRETE PLACEMENT**

- A. Place cast-in-place concrete according to ACI 318/318R.

**3.6 IDENTIFICATION**

- A. Materials and their installation are specified in division 2 Section "Earthwork." Arrange for installation of green warning tape directly over piping and at outside edge of underground structures.
  - 1. Use warning tape or detectable warning tape over ferrous piping.
  - 2. Use detectable warning tape over nonferrous piping and over edges of underground structures.

**3.7 FIELD QUALITY CONTROL**

- A. Inspect interior of piping to determine whether line displacement or other damage has occurred. Inspect after approximately 24 inches of backfill is in place, and again at completion of Project.

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1. Submit separate reports for each system inspection.
  2. Defects requiring correction include the following:
    - a. Alignment: Less than full diameter of inside of pipe is visible between structures.
    - b. Deflection: Flexible piping with deflection that prevents passage of ball or cylinder of size not less than 92.5 percent of piping diameter.
    - c. Crushed, broken, cracked, or otherwise damaged piping.
    - d. Infiltration: Water leakage into piping.
    - e. Exfiltration: Water leakage from or around piping.
  3. Replace defective piping using new materials, and repeat inspections until defects are within allowances specified.
  4. Reinspect and repeat procedure until results are satisfactory.
- B. Test new piping systems, and parts of existing systems that have been altered, extended, or repaired, for leaks and defects.
1. Do not enclose, cover, or put into service before inspection and approval.
  2. Test completed piping systems according to authorities having jurisdiction.
  3. Schedule tests and inspections by authorities having jurisdiction with at least 24 hours' advance notice.
  4. Submit separate report for each test.
  5. Gravity-Flow Storm Drainage Piping: Test according to requirements of authorities having jurisdiction, UNI-B-6, and the following:
    - a. Exception: Piping with soil-tight joints unless required by authorities having jurisdiction.
    - b. Option: Test concrete piping according to ASTM C 924.
- C. Leaks constitute defects that must be repaired.
- D. Replace leaking piping using new materials, and repeat testing until leakage is within allowances specified.

**3.8 CLEANING**

- A. Clean interior of piping of dirt and superfluous materials. Flush with potable water.

**END OF SECTION 02630**

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**SECTION 02750 - HOT-MIX ASPHALT PAVING**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. This Section includes the following:
  - 1. Hot-mix asphalt paving.
  - 2. Hot-mix asphalt patching.
  - 3. Pavement-marking paint.
- B. Related Sections include the following:
- C. Section "Earthwork" for aggregate base courses and aggregate pavement shoulders.

**1.2 SYSTEM DESCRIPTION**

- A. Provide hot-mix asphalt pavement according to the materials, workmanship, and other applicable requirements of the standard specifications of the state or of authorities having jurisdiction.
- B. Standard Specification: NCDOT Standard Specifications for Roads and Structures, Current edition.
- C. Measurement and payment provisions and safety program submittals included in standard specifications do not apply to this Section.

**1.3 SUBMITTALS**

- A. Product Data: For each product specified. Include technical data and tested physical and performance properties.
- B. Job-Mix Designs: For each job mix proposed for the Work.
- C. Shop Drawings: Indicate pavement markings and lane separations.
- D. Material Test Reports: Indicate and interpret test results for compliance of materials with requirements indicated.
- E. Material Certificates: Certificates signed by manufacturers certifying that each material complies with requirements.

**1.4 QUALITY ASSURANCE**

- A. Quality assurance shall be in accordance with the most current version NCDOT Standard Specifications for Roads and Structures, Section 609.

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**1.5 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver pavement-marking materials to Project site in original packages with seals unbroken and bearing manufacturer's labels containing brand name and type of material, date of manufacture, and directions for storage.
- B. Store pavement-marking materials in a clean, dry, protected location and within temperature range required by manufacturer. Protect stored materials from direct sunlight.

**1.6 PROJECT CONDITIONS**

- A. Environmental Limitations: Do not apply asphalt materials if substrate is wet or excessively damp or if the following conditions are not met:
  - 1. Prime and Tack Coats: Minimum surface temperature of 60 deg F.
  - 2. Asphalt Base Course: Minimum surface temperature of 40 deg F and rising at time of placement.
  - 3. Asphalt Surface Course: Minimum surface temperature of 60 deg F at time of placement.
- B. Pavement-Marking Paint: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 40 deg F for oil-based materials, 50 deg F for water-based materials, and not exceeding 95 deg F.

**PART 2 - PRODUCTS**

**2.1 AGGREGATES**

- A. General: Use materials and gradations that have performed satisfactorily in previous installations.
- B. Coarse Aggregate: As specified in NC DOT Standard Specifications for Roads and Structures, Section 1005
- C. Fine Aggregate: As specified in NC DOT Standard Specifications for Roads and Structures, Section 1012.
- D. Mineral Filler: As specified in NC DOT Standard Specification for Roads and Structures, Section 610.

**2.2 ASPHALT MATERIALS**

- A. Asphalt Cement: As specified in NC DOT Standard Specifications for Roads and Structures, Section 600.
- B. Asphalt Concrete Plant Mix Pavements including the asphalt base course (if selected), binder, and surface courses, Section 610.
- B. Prime Coat: As specified in NC DOT Standard Specifications for Roads and Structures, Section 600.
- C. Tack Coat: As specified in NC DOT Standard Specifications for Roads and Structures, Section 605.

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- C. Water: Potable.

**2.3 AUXILIARY MATERIALS**

- A. Herbicide: Commercial chemical for weed control, registered by Environmental Protection Agency (EPA). Provide granular, liquid, or wettable powder form.
- B. Sand: In accordance with NC DOT Standard Specifications for Roads and Structures, latest edition.
- C. Paving Geotextile: Nonwoven polypropylene, specifically designed for paving applications, resistant to chemical attack, rot, and mildew.
- D. Pavement Markings: In accordance with the most current version NCDOT Standard Specifications for Roads and Structures.
  - 1. Color: As indicated on the plans.
  - 2. Permanent Markings: Shall be Thermoplastic (Alkyd/Maleic) per NCDOT Standard Specifications Section 1087-2(C).
  - 3. Temporary Markings: Paint shall conform to Federal Specification TTP 1952F with spraying consistency suitable for use as retroreflective pavement marking. Paint shall conform with NCDOT Standard Specification 1087. Provide material certifications required in NCDOT Section 1087-8.

**2.4 MIXES**

- A. Asphalt Concrete Surface Course: Provide in accordance with NC DOT Standard Specifications for Roads and Structures, Section 645, Type SF 9.5B, unless otherwise noted on drawings.
- B. Asphalt Concrete Binder Course: Provide in accordance with NC DOT Standard Specifications for Roads and Structures, Section 640, Type I 19.5C. Binder course required only if indicated on drawings.

**PART 3 - EXECUTION**

**3.1 EXAMINATION**

- A. Verify that subgrade is dry and in suitable condition to support paving and imposed loads.
- B. Proof-roll sub-base using heavy, pneumatic-tired rollers to locate areas that are unstable or that require further compaction. The Engineer shall witness and approve the proof-rolling prior to paving.
- C. Notify Engineer in writing of any unsatisfactory conditions. Do not begin paving installation until these conditions have been satisfactorily corrected and approved by the Engineer.

**3.2 PATCHING AND REPAIRS**

- A. Patching: Saw cut perimeter of patch and excavate existing pavement section to sound base. Recompile new subgrade. Excavate rectangular or trapezoidal patches, extending 12 inches

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(300 mm) into adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically.

1. Tack coat faces of excavation and allow to cure before paving.
  2. Fill excavation with dense-graded, hot-mix asphalt base mix and, while still hot, compact flush with adjacent surface.
  3. Partially fill excavation with dense-graded, hot-mix asphalt base mix and compact while still hot. Cover asphalt base course with compacted, hot-mix surface layer finished flush with adjacent surfaces.
- B. Leveling Course: Install and compact leveling course consisting of dense-graded, hot-mix asphalt surface course to level sags and fill depressions deeper than 1 inch in existing pavements.
1. Install leveling wedges in compacted lifts not exceeding 3 inches thick.
- C. Crack and Joint Filling: Remove existing filler material from cracks or joints to a depth of 1/4 inch. Refill with asphalt joint-filling material to restore watertight condition. Remove excess filler that has accumulated near cracks or joints.
- D. Tack Coat: Apply uniformly to existing surfaces of previously constructed asphalt or portland cement concrete paving and to surfaces abutting or projecting into new, hot-mix asphalt pavement. Apply at a uniform rate of 0.05 to 0.15 gal./sq. yd. of surface.
1. Allow tack coat to cure undisturbed before paving.
  2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

### **3.3 SURFACE PREPARATION**

- A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.
1. Sweep loose granular particles from surface of unbound-aggregate base course. Do not dislodge or disturb aggregate embedded in compacted surface of base course.
- B. Herbicide Treatment: Apply herbicide according to manufacturer's recommended rates and written application instructions. Apply to dry, prepared subgrade or surface of compacted-aggregate base before applying paving materials.
1. Mix herbicide with prime coat when formulated by manufacturer for that purpose.
- C. Prime Coat: Apply uniformly over surface of compacted-aggregate base at a rate of 0.15 to 0.50 gal./sq. yd. Apply enough material to penetrate and seal, but not flood, surface. Allow prime coat to cure for 72 hours minimum.
1. If prime coat is not entirely absorbed within 24 hours after application, spread sand over surface to blot excess asphalt. Use just enough sand to prevent pickup under traffic. Remove loose sand by sweeping before pavement is placed and after volatiles have evaporated.
  2. Protect primed substrate from damage until ready to receive paving.

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3. If surface course can be applied less than 30 days following aggregate base installation, the prime coat is not required.

**3.4 HOT-MIX ASPHALT PLACING**

- A. Machine place hot-mix asphalt mix on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand to areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness, when compacted.
  1. Place hot-mix asphalt base course in number of lifts and thicknesses indicated.
  2. Place hot-mix asphalt surface course in number of lifts and thicknesses indicated.
  3. Spread mix at minimum temperature of 250 deg F.
  4. Begin applying mix along centerline of crown for crowned sections and on high side of one-way slopes, unless otherwise indicated.
  5. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.
- B. Place paving in consecutive strips not less than 10 feet wide, except where infill edge strips of a lesser width are required.
  1. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Complete asphalt base course for a section before placing asphalt surface course.
- C. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

**3.5 JOINTS**

- A. Construct joints to ensure continuous bond between adjoining paving sections. Construct joints free of depressions with same texture and smoothness as other sections of hot-mix asphalt course.
  1. Clean contact surfaces and apply tack coat.
  2. Offset longitudinal joints in successive courses a minimum of 6 inches.
  3. Offset transverse joints in successive courses a minimum of 24 inches.
  4. Construct transverse joints by bulkhead method or sawed vertical face method as described in Asphalt Institute's "The Asphalt Handbook."
  5. Compact joints as soon as hot-mix asphalt will bear roller weight without excessive displacement.
  6. Compact asphalt at joints to a density within 2 percent of specified course density.

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**3.6 COMPACTION**

- A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or vibratory-plate compactors in areas inaccessible to rollers.
  - 1. Complete compaction before mix temperature cools to 185 deg F.
- B. Breakdown Rolling: Accomplish breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Repair surfaces by loosening displaced material, filling with hot-mix asphalt, and rerolling to required elevations.
- C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling, while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:
  - 1. Average Density: 96 percent of reference laboratory density according to ASTM D 1559, but not less than 94 percent nor greater than 100 percent.
  - 2. Average Density: 92 percent of reference maximum theoretical density according to ASTM D 2041, but not less than 90 percent nor greater than 96 percent.
- D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.
- E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while still hot, with back of rake or smooth iron. Compact thoroughly using tamper or other satisfactory method.
- F. Repairs: Remove paved areas that are defective or contaminated with foreign materials. Remove paving course over area affected and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.
- G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.
- H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

**3.7 INSTALLATION TOLERANCES**

- A. Thickness: Compact each course to produce the thickness indicated within the following tolerances:
  - 1. Base Course: Plus or minus 1/2 inch.
  - 2. Surface Course: Plus 1/4 inch, no minus.
- B. Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas:
  - 1. Base Course: 1/4 inch.



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2. Surface Course: 1/8 inch.

4. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.

**3.8 PAVEMENT MARKING**

- A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Engineer.
- B. Allow paving to cure for 30 days before starting pavement marking.
- D. Sweep and clean surface to eliminate loose material and dust.
- E. Permanent Markings: Shall be Thermoplastic (Alkyd/Maleic) applied per NCDOT Standard Specifications Section 1205-4.
- F. Temporary Markings: Where temporary markings are requested they shall be paint applied in conformance with NCDOT Standard Specifications Section 1205-8. Apply paint with mechanical equipment to produce pavement markings of dimensions indicated with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils.

**3.9 FIELD QUALITY CONTROL**

- A. Testing Agency: Owner will engage a qualified independent testing agency to perform field inspections and tests and to prepare test reports.
  - 1. Testing agency will conduct and interpret tests and state in each report whether tested Work complies with or deviates from specified requirements.
- B. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected Work with specified requirements.
- C. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined according to ASTM D 3549.
- D. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.
- E. In-Place Density: Samples of uncompacted paving mixtures and compacted pavement will be secured by testing agency according to ASTM D 979.
  - 1. Reference laboratory density will be determined by averaging results from 4 samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to ASTM D 1559, and compacted according to job-mix specifications.
  - 2. Reference maximum theoretical density will be determined by averaging results from 4 samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to ASTM D 2041, and compacted according to job-mix specifications.
  - 3. In-place density of compacted pavement will be determined by testing core samples according to ASTM D 1188 or ASTM D 2726.

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- a. One core sample will be taken for every 1000 sq. yd. or less of installed pavement, but in no case will fewer than 3 cores be taken.
  - b. Field density of in-place compacted pavement may also be determined by nuclear method according to ASTM D 2950 and correlated with ASTM D 1188 or ASTM D 2726.
- F. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

**3.10 DISPOSAL**

- A. Except for material indicated to be recycled, remove excavated materials from Project site and legally dispose of them in an EPA-approved landfill.
  - 1. Do not allow excavated materials to accumulate on-site.

**END OF SECTION 02750**

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**SECTION 02751 - CEMENT CONCRETE PAVEMENT**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. This Section includes exterior cement concrete pavement for the following:
  - 1. Curbs and gutters, valley gutters, and sidewalk.
  - 2. Concrete Pavements
  
- B. Related Sections include the following:
  - 1. Division 2 Section "Earthwork" for subgrade preparation, grading, and subbase course.
  
- C. Accessibility – Except where specifically required otherwise, whenever walkways or pedestrian pathways are demolished and replaced, and whenever new pathways are constructed, they shall comply with the accessibility standards given in ANSI/ICC A117.1 Accessible and Usable Buildings and Facilities. Refer to specific notes given on the plans regarding accessibility and comply with these requirements for all new walkways, curb ramps and other accessible routes. Provide detectable warning domes for the visually impaired on all accessible pathways prior to crossings and after crossings of any vehicular way.

**1.2 DEFINITIONS**

- A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, expansive hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume.

**1.3 SUBMITTALS**

- A. Design Mixes: For each concrete pavement mix. Include alternate mix designs when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.
  
- B. Material Certificates: Signed by manufacturers certifying that each of the following materials complies with requirements:
  - 1. Cementitious materials and aggregates.
  - 2. Admixtures.
  - 3. Curing compounds.
  - 4. Applied finish materials.
  - 5. Bonding agent or adhesive.
  - 6. Joint fillers.

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**1.4 QUALITY ASSURANCE AND GENERAL REQUIREMENTS**

- A. Installer Qualifications: An experienced installer who has completed pavement work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Unless in conflict with these specifications, all materials and practices shall conform with the applicable provisions of the NCDOT Standard Specifications for Roads and Structures. As a general guide but not as an all-inclusive list the following requirements are listed for reference from the NCDOT Standard Specifications and apply to the structures for this project:
  - 1. Incidental Concrete Construction – Section 825.
  - 2. Concrete Curb and Gutter – Section 846
  - 3. Concrete Sidewalks Driveways and Curb Ramps – Section 848
- C. Concrete Paving and Surfaces including walkways, slabs, and concrete pads if required shall comply with the applicable requirements of ACI 330.
- D. Concrete joint filler shall comply with Section 1028 of the NC Department of Transportation Standard Specifications for Roads and Structures Section 1028.
- E. Manufacturer Qualifications: Manufacturer of ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.
  - 1. Manufacturer must be certified according to the National Ready-Mix Concrete Association's Plant Certification Program.
- F. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 to conduct the testing indicated, as documented according to ASTM E 548.
- G. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant and each aggregate from one source.
- H. ACI Publications: Comply with ACI 301, "Specification for Structural Concrete," unless modified by the requirements of the Contract Documents.
- I. Concrete Testing Service: Owner shall engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixes.

**1.5 PROJECT CONDITIONS**

- A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

**PART 2 – PRODUCTS**

**2.1 FORMS**

- A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces.

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1. Use flexible or curved forms for curves of a radius 100 feet (30.5 m) or less.
- B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

**2.2 CONCRETE MATERIALS**

- A. General: Use the same brand and type of cementitious material from the same manufacturer throughout the Project.
- B. Portland Cement: ASTM C 150, Type I or II.
  1. Fly Ash: ASTM C 618, Class F or C.
  2. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
- C. Aggregate: ASTM C 33, uniformly graded, from a single source, with coarse aggregate as follows:
  1. Class: 4S.
  2. Maximum Aggregate Size: 3/4-inch (19 mm) nominal.
  3. Do not use fine or coarse aggregates containing substances that cause spalling.
- D. General: Admixtures certified by manufacturer to contain not more than 0.1 percent water-soluble chloride ions by mass of cement and to be compatible with other admixtures.
- E. Air-Entraining Admixture: ASTM C 260.
- F. Water-Reducing Admixture: ASTM C 494, Type A.
- G. High-Range, Water-Reducing Admixture: ASTM C 494, Type F.
- H. Water-Reducing and Accelerating Admixture: ASTM C 494, Type E.
- I. Water-Reducing and Retarding Admixture: ASTM C 494, Type D.

**2.3 CURING MATERIALS**

- A. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) dry.
- B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- C. Water: Potable.
- D. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
- E. Clear Solvent-Borne Liquid-Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B.
- F. Clear Waterborne Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B.

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- G. White Waterborne Membrane-Forming Curing Compound: ASTM C 309, Type 2, Class B.
- H. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
- I. Products: Subject to compliance with requirements, provide one of the following:
  - 1. Evaporation Retarder:
    - a. Cimfilm; Axim Concrete Technologies.
    - b. Finishing Aid Concentrate; Burke Group, LLC (The).
    - c. Spray-Film; ChemMasters.
    - d. Aquafilm; Conspec Marketing & Manufacturing Co., Inc.
    - e. Sure Film; Dayton Superior Corporation.
    - f. Eucobar; Euclid Chemical Co.
    - g. Vapor Aid; Kaufman Products, Inc.
    - h. Lambco Skin; Lambert Corporation.
    - i. E-Con; L&M Construction Chemicals, Inc.
    - j. Confilm; Master Builders, Inc.
    - k. Waterhold; Metalcrete Industries.
    - l. Rich Film; Richmond Screw Anchor Co.
    - m. SikaFilm; Sika Corporation.
    - n. Finishing Aid; Symons Corporation.
    - o. Certi-Vex EnvioAssist; Vexcon Chemicals, Inc.
  - 2. Clear Solvent-Borne Liquid-Membrane-Forming Curing Compound:
    - a. AH Curing Compound #2 DR; Anti-Hydro International, Inc.
    - b. Res-X Cure All Resin; Burke Group, LLC (The).
    - c. RX Cure; Conspec Marketing & Manufacturing Co., Inc.
    - d. Day-Chem Rez Cure; Dayton Superior Corporation.
    - e. Kurez DR; Euclid Chemical Co.
    - f. Nitocure S; Fosroc.
    - g. #64 Resin Cure; Lambert Corporation.
    - h. L&M Cure DR; L&M Construction Chemicals, Inc.
    - i. 3100-Clear; W. R. Meadows, Inc.
    - j. Seal N Kure FDR; Metalcrete Industries.
    - k. Rich Cure; Richmond Screw Anchor Co.
    - l. Resi-Chem C309; Symons Corporation.
    - m. Horncure 30; Tamms Industries Co., Div. of LaPorte Construction Chemicals North America, Inc.
    - n. Uni Res 150; Unitex.
    - o. Certi-Vex RC; Vexcon Chemicals, Inc.
  - 3. Clear Waterborne Membrane-Forming Curing Compound:
    - a. AH Curing Compound #2 DR WB; Anti-Hydro International, Inc.
    - b. Aqua Resin Cure; Burke Group, LLC (The).
    - c. Safe-Cure Clear; ChemMasters.
    - d. W.B. Resin Cure; Conspec Marketing & Manufacturing Co., Inc.
    - e. Day Chem Rez Cure (J-11-W); Dayton Superior Corporation.
    - f. Nitocure S; Fosroc.
    - g. Aqua Kure-Clear; Lambert Corporation.
    - h. L&M Cure R; L&M Construction Chemicals, Inc.
    - i. 1100 Clear; W. R. Meadows, Inc.

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- j. Resin Cure E; Nox-Crete Products Group, Kinsman Corporation.
  - k. Rich Cure E; Richmond Screw Anchor Co.
  - l. Resi-Chem Clear Cure; Symons Corporation.
  - m. Horncure 100; Tamms Industries Co., Div. of LaPorte Construction Chemicals North America, Inc.
  - n. Hydro Cure; Unitex.
  - o. Certi-Vex Enviocure; Vexcon Chemicals, Inc.
4. White Waterborne Membrane-Forming Curing Compound:
- a. AH Curing Compound #2 WB WP; Anti-Hydro International, Inc.
  - b. Aqua Resin Cure; Burke Group, LLC (The).
  - c. W.B. Resin Cure; Conspec Marketing & Manufacturing Co., Inc.
  - d. Thinfilm 450; Kaufman Products, Inc.
  - e. Aqua Kure-White; Lambert Corporation.
  - f. L&M Cure R-2; L&M Construction Chemicals, Inc.
  - g. 1200-White; W. R. Meadows, Inc.
  - h. White Pigmented Resin Cure E; Nox-Crete Products Group, Kinsman Corporation.
  - i. Rich Cure White E; Richmond Screw Anchor Co.
  - j. Resi-Chem High Cure; Symons Corporation.
  - k. Horncure 200-W; Tamms Industries Co., Div. of LaPorte Construction Chemicals North America, Inc.
  - l. Hydro White 309; Unitex.

**2.4 RELATED MATERIALS**

- A. Joint Sealants – All contraction joints and saw cut joints are to receive a non-bituminous sealer meeting the requirements of Section 1028 of the NCDOT Standard Specifications for Roads and Structures.
- B. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber, or ASTM D 1752, cork or self-expanding cork.
- C. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.
- D. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class and grade to suit requirements, and as follows:
  - 1. Type II, non-load bearing, for bonding freshly mixed concrete to hardened concrete.
  - 2. Types I and II, non-load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.
  - 3. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

**2.5 CONCRETE MIXES**

- A. Prepare design mixes, proportioned according to ACI 211.1 and ACI 301, for each type and strength of normal-weight concrete determined by either laboratory trial mixes or field experience.

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- B. Use a qualified independent testing agency for preparing and reporting proposed mix designs for the trial batch method.
  - 1. Do not use Owner's field quality-control testing agency as the independent testing agency.
- C. Proportion mixes to provide concrete with the following properties:
  - 1. Compressive Strength (28 Days): 4500 psi (30.0 MPa) unless otherwise noted on plans.
  - 2. Maximum Water-Cementitious Materials Ratio: 0.4-0.5.
  - 3. Slump Limit: 3-4 inches (75 mm).
    - a. Slump Limit for Concrete Containing High-Range Water-Reducing Admixture: Not more than 8 inches (200 mm) after adding admixture to plant- or site-verified, 2- to 3-inch (50- to 75-mm) slump.
- D. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement according to ACI 301 requirements for concrete exposed to deicing chemicals.
- E. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content of 4.5 to 6.5 percent.

**2.6 CONCRETE MIXING**

- A. Ready-Mixed Concrete: Comply with requirements and with ASTM C 94.
  - 1. When air temperature is between 85 deg F (30 deg C) and 90 deg F (32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

**PART 3 - EXECUTION**

**3.1 PREPARATION**

- A. Proof-roll prepared subbase surface to check for unstable areas and verify need for additional compaction. Proceed with pavement only after nonconforming conditions have been corrected and subgrade is ready to receive pavement.
- B. Remove loose material from compacted subbase surface immediately before placing concrete.

**3.2 EDGE FORMS AND SCREED CONSTRICTION**

- A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for pavement to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
- B. Clean forms after each use and coat with form release agent to ensure separation from concrete without damage.



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**3.3 JOINTS**

- A. General: Construct construction, isolation, and contraction joints and tool edgings true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline, unless otherwise indicated.
  - 1. When joining existing pavement, place transverse joints to align with previously placed joints, unless otherwise indicated.
  
- B. Construction Joints: Set construction joints at side and end terminations of pavement and at locations where pavement operations are stopped for more than one-half hour, unless pavement terminates at isolation joints.
  
- C. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows:
  - 1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with groover tool to the following radius. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover marks on concrete surfaces.
    - a. Radius: 1/4 inch (6 mm).
  - 2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- (3-mm-) wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.
  - 3. Frequency and Spacing of Contraction Joints: Joints shall be as shown on the details but in no case shall they be more than 15 feet spacing. Care shall be taken to make resulting concrete panels from joint construction as square as possible and in no case shall the width to length ratio be greater than 3:1 or less than 1:3. Triangular panels shall be avoided to avoid subsequent breakage.
  
- D. Edging: Tool edges of pavement, gutters, curbs, and joints in concrete after initial floating with an edging tool to the following radius. Repeat tooling of edges after applying surface finishes. Eliminate tool marks on concrete surfaces.
  - 1. Radius: 1/4 inch (6 mm).
  - 2. Radius: 3/8 inch (10 mm).

**3.4 CONCRETE PLACEMENT**

- A. Inspection: Before placing concrete, inspect and complete formwork installation, reinforcement steel, and items to be embedded or cast in. Notify other trades to permit installation of their work.
  
- B. Remove snow, ice, or frost from subgrade surface before placing concrete. Do not place concrete on frozen surfaces.

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- C. Moisten subgrade to provide a uniform dampened condition at the time concrete is placed. Do not place concrete around manholes or other structures until they are at the required finish elevation and alignment.
- D. Comply with requirements and with recommendations in ACI 304R for measuring, mixing, transporting, and placing concrete.
- E. Do not add water to concrete during delivery, at Project site, or during placement.
- F. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- G. Consolidate concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures to consolidate concrete according to recommendations in ACI 309R.
  - 1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand-spreading and consolidation. Consolidate with care to prevent dislocating reinforcement, dowels, and joint devices.
- H. Screed pavement surfaces with a straightedge and strike off. Commence initial floating using bull floats or darbies to form an open textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading dry-shake surface treatments.
- I. Curbs and Gutters: When automatic machine placement is used for curb and gutter placement, submit revised mix design and laboratory test results that meet or exceed requirements. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing as specified for formed concrete. If results are not approved, remove and replace with formed concrete.
- J. When adjoining pavement lanes are placed in separate pours, do not operate equipment on concrete until pavement has attained 85 percent of its 28-day compressive strength.
- K. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
  - 1. When air temperature has fallen to or is expected to fall below 40 deg F (4.4 deg C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F (10 deg C) and not more than 80 deg F (27 deg C) at point of placement.
  - 2. Do not use frozen materials or materials containing ice or snow.
  - 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators, unless otherwise specified and approved in mix designs.
- L. Hot-Weather Placement: Place concrete according to recommendations in ACI 305R and as follows when hot-weather conditions exist:
  - 1. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 deg F (32 deg C). Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.

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2. Cover reinforcement steel with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms, reinforcement steel, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

**3.5 CONCRETE FINISHING**

- A. General: Wetting of concrete surfaces during screeding, initial floating, or finishing operations is prohibited.
- B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared and the concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats, or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots, and fill low spots. Refloat surface immediately to uniform granular texture.
  1. Medium-to-Fine-Textured Broom Finish: Draw a soft bristle broom across float-finished concrete surface perpendicular to line of traffic to provide a uniform, fine-line texture.
  2. Broom finish unless directed otherwise.

**3.6 CONCRETE PROTECTION AND CURING**

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and follow recommendations in ACI 305R for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Begin curing after finishing concrete, but not before free water has disappeared from concrete surface.
- D. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound, or a combination of these as follows:
  1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
    - a. Water.
    - b. Continuous water-fog spray.
    - c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.
  2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
  3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to

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heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

**3.7 PAVEMENT TOLERANCES**

- A. Comply with tolerances of ACI 117 and as follows:
1. Elevation: 1/4 inch (6 mm).
  2. Thickness: Plus 3/8 inch (9 mm), minus 1/4 inch (6 mm).
  3. Surface: Gap below 10-foot- (3-m-) long, unlevelled straightedge not to exceed 1/4 inch (6 mm).
  4. Joint Spacing: 3 inches (75 mm).
  5. Contraction Joint Depth: Plus 1/4 inch (6 mm), no minus.
  6. Joint Width: Plus 1/8 inch (3 mm), no minus.

**3.8 FIELD QUALITY CONTROL**

- A. Testing Agency: Owner will engage a qualified testing and inspection agency to sample materials, perform tests, and submit test reports during concrete placement. Sampling and testing for quality control may include those specified in this Article.
- B. Test results shall be reported in writing to Engineer, concrete manufacturer, and Contractor within 24 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing agency, concrete type and class, location of concrete batch in pavement, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
- C. Additional Tests: Testing agency shall make additional tests of the concrete when test results indicate slump, air entrainment, concrete strengths, or other requirements have not been met, as directed by Engineer. Testing agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed.

**3.9 REPAIRS AND PROTECTION**

- A. Remove and replace concrete pavement that is broken, damaged, or defective, or does not meet requirements in this Section.
- B. Drill test cores where directed by Engineer when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with portland cement concrete bonded to pavement with epoxy adhesive.
- C. Protect concrete from damage. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.
- D. Maintain concrete pavement free of stains, discoloration, dirt, and other foreign material. Sweep concrete pavement not more than two days before date scheduled for Substantial Completion inspections.

**END OF SECTION 02751**