

**BIDDING DOCUMENTS**

**JONATHAN CREEK  
SOIL RECLAMATION SITE &  
DENNIS FARM BORROW  
AREA PROJECT**

**HAYWOOD COUNTY, NORTH CAROLINA**



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**CONSULTING ENGINEERS  
ASHEVILLE, NORTH CAROLINA**



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SOIL RECLAMATION SITE &  
DENNIS FARM BORROW  
AREA PROJECT**

**HAYWOOD COUNTY, NORTH CAROLINA**

**SCOTT E. BURWELL, PE**



Engineering • Planning • Finance  
*Post Office Box 2259  
Asheville, North Carolina 28802*

**MAY 2019**

**18.00162**





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**ADVERTISEMENT FOR BID**

**Jonathan Creek Soil Reclamation Site & Dennis Farm Borrow Area Project  
Haywood County**

Sealed bids for the project entitled **Jonathan Creek Soil Reclamation Site & Dennis Farm Borrow Area Project** will be received by **Haywood County** until **2:00 pm** local time **June 6, 2019** at the Haywood County Courtroom of the Historic Courthouse, 215 North Main Street, Waynesville, North Carolina, 28746 and then publicly opened and read aloud.

THE PROJECT GENERALLY CONSISTS OF *excavation and hauling of fill from borrow site (Dennis Farm) to be placed and compacted at fill site (Jonathan Creek), as well as the required erosion control and fine grading at both locations.*

Digital copies of Bid Documents are available for purchase at [www.mcgillassociates.com](http://www.mcgillassociates.com) for a fee of \$50.00 per set on May 13, 2019 at 2:00 pm. These documents may be downloaded by selecting this project from the "Bids" link and by entering **Quest Project Number 6343120**. **For assistance and free membership registration, contact QuestCDN at (952) 233-1632 or info@questcdn.com.**

Each bid shall be accompanied with a cash deposit or certified check drawn on a bank or trust company insured by the FDIC or a Bid Bond prepared on the form of Bid Bond contained in the Bidding Documents or a Surety Company's standard form and properly executed by a corporate surety licensed under the laws of North Carolina to execute such bonds. The amount of the bid bond shall be equal to **five (5) percent** of the total of the bid. The bid deposit shall be retained by the Owner if the successful bidder fails to execute the contract or fails to provide the required bonds, as stated above, within ten (10) days after the proper notice of award of the contract.

The successful bidder shall be required to furnish separate, 100 percent Performance and Payment Bonds in compliance with North Carolina General Statutes Chapter 44A Section 143-129, and with Article 3 of Chapter 44A of the North Carolina General Statutes. The Performance Bond shall be in full force and effect for one (1) year after the date of final acceptance of the project by the Owner.

Bidders must comply with the requirements of the State of North Carolina and be appropriately licensed as a Contractor as provided in General Statutes Chapter 87. Each bidder shall make positive efforts to use small and minority owned business enterprises on this project.

Neither the Owner nor the Engineer will be responsible for full or partial sets of Bidding Documents, including any Addenda, obtained from any source other than the Owner's representative, McGill Associates, P.A. Each Bidder shall be responsible for the review of all addenda for the project and shall acknowledge the addenda on the bid form.

The Owner reserves the right to reject any and all Bids, to waive informalities, or to reject non-conforming, non-responsive, or conditional bids. The Owner reserves the right to award a contract to the bidder of their choosing, regardless of price.

A conditional or qualified Bid will not be accepted.

**David Francis  
Haywood County**



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.

## **MODIFIED INSTRUCTIONS TO BIDDERS FOR CONSTRUCTION CONTRACTS**

Prepared by

**ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE**

and

Issued and Published Jointly by



AMERICAN COUNCIL OF ENGINEERING COMPANIES

ASSOCIATED GENERAL CONTRACTORS OF AMERICA

AMERICAN SOCIETY OF CIVIL ENGINEERS

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE  
*A Practice Division of the*  
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## **ARTICLE 1 – DEFINED TERMS**

- 1.01 Terms used in these Instructions to Bidders have the meanings indicated in the Modified General Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:
- A. *Issuing Office* – The office from which the Contract Documents are to be issued and where the bidding procedures are to be administered.
  - B. *Unbalanced Bid* - An unbalanced bid is one that meets the following criteria:
    - 1. A mathematically unbalanced Bid is one that contains lump sum or unit bid items that do not appear to reflect reasonable actual costs. Those reasonable actual costs would include a reasonable proportionate share of the Bidder’s anticipated profit, overhead costs, and other indirect costs that the Bidder anticipates for the performance of the items in question.
    - 2. A materially unbalanced Bid is one that produces a reasonable doubt that Award to the low Bidder, who submitted the mathematically unbalanced Bid, would result in the lowest ultimate cost to the Owner.
  - C. *Responsible Bidder* - A bidder who has demonstrated the attribute of trustworthiness, as well as quality, fitness, capacity, and experience to satisfactorily perform the work described in the Contract Documents.

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

- 2.01 Complete sets of the Bidding Documents may be obtained from the Issuing Office upon payment of the fee stated in the advertisement or invitation to bid. The fee is non-refundable.
- 2.02 Complete sets of Bidding Documents shall be used in preparing Bids. Neither the Owner nor the Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.03 Owner and Engineer, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license for any other use.

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

- 3.01 The Owner may make such investigations as he deems necessary to determine the qualifications of the Bidder to perform the work and the Bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any Bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner that such Bidder is properly qualified to carry out the obligations of the contract, and to complete the work contemplated therein. Conditional bids will not be accepted.
- 3.02 Bidders shall comply with all applicable laws regulating the practice of General Contracting as provided in Chapter 87 of the General Statutes of the State of North Carolina and be properly licensed as a contractor.



- 3.03 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.
- 3.04 Bidder must hold a current contractor's license appropriate for the type and magnitude of the work.

#### **ARTICLE 4 – EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE CONDITIONS**

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

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

##### 4.02 *Existing Site Conditions*

###### A. Subsurface and Physical Conditions; Hazardous Environmental Conditions

1. The Bidding Documents identify:
  - a. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site.
  - b. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).
  - c. reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.
  - d. Technical Data contained in such reports and drawings.
2. Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the Modified General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.
3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the Modified General Conditions will apply.
4. Geotechnical Report: The Bidding Documents may contain a Geotechnical Report. If included, the Geotechnical Report describes certain select subsurface conditions that are anticipated to be encountered by Contractor during construction in specified locations. The Geotechnical Report is a Contract Document.

- a. The conditions described in the Geotechnical Report are intended to reduce uncertainty and the degree of contingency in submitted Bids. However, Bidders cannot rely solely on the conditions described. Bids should be based on a comprehensive approach that includes an independent review and analysis of the Geotechnical Report, all other Contract Documents, Technical Data, other available information, and observable surface conditions. Not all potential subsurface conditions are described in the Geotechnical Report.
  - b. Nothing in the Geotechnical Report is intended to relieve Bidders of the responsibility to make their own determinations regarding construction costs, bidding strategies, and Bid prices, nor of the responsibility to select and be responsible for the means, methods, techniques, sequences, and procedures of construction, and for safety precautions and programs incident thereto.
- B. Underground Facilities: Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site are set forth in the Contract Documents and are based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.
- C. Adequacy of Data: Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 4.02, 4.03, and 4.04 of the Modified General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work, appear in Paragraph 4.03 of the Modified General Conditions.

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

- A. Bidder shall conduct Site visits during normal working hours, and shall not disturb any ongoing operations at the Site. The Owner may require site visits by the Bidder to be scheduled with the Owner in advance.
- B. The Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions. However, on request, and to the extent the Owner has control over the Site, and schedule permitting, the Owner will provide Bidder access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site.
- C. Bidder shall comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.

- D. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

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

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

- A. examine and carefully study the Bidding Documents, and the other related data identified in the Bidding Documents;
- B. visit the Site and become familiar with and satisfy itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. become familiar with and satisfy itself as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work;
- D. carefully study all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site including Underground Facilities that may be made available by the Owner and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in the Contract Documents.
- E. consider the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder’s safety precautions and programs;
- F. agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price(s) bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;
- G. become aware of the general nature of any work that may be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
- H. promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder; and
- I. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.

5.02 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, that without exception the Bid is premised

upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by Engineer are acceptable to Bidder, and that the Bidding Documents are sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

- 5.03 No verbal agreement or conversation with any officer, agent or employee of the Owner, either before or after the execution of the Contract, shall affect or modify any of the terms or obligations therein.

#### **ARTICLE 6 – PRE-BID CONFERENCE**

- 6.01 There will not be a pre-bid conference.

#### **ARTICLE 7 – SITE AND OTHER AREAS**

- 7.01 The Site is identified in the Contract Documents. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by Owner unless otherwise provided in the Bidding 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 Contractor.

#### **ARTICLE 8 – INTERPRETATIONS AND ADDENDA**

- 8.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to the Engineer in writing. Interpretations or clarifications considered necessary by the Engineer in response to such questions will be issued by Addenda delivered by either mail or approved electronic means to all parties recorded by the Engineer as having received the Bidding Documents. Questions received less than five (5) days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect. Contractor waives the right to rely on information provided by the Engineer which is not provided in writing and in the form of a formal Addendum.
- 8.02 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by Owner or Engineer.
- 8.03 Failure of any Bidder to receive any such Addenda shall not relieve said Bidder from any obligation under his Bid as submitted.
- 8.04 All Addenda so issued shall become a part of the Contract Documents.
- 8.05 Prospective Bidders are cautioned concerning the use of a Post Office Box address as Addenda cannot be sent via overnight carrier to Post Office Boxes.

## **ARTICLE 9 – BID SECURITY**

- 9.01 A Bid must be accompanied by Bid security made payable to the Owner in an amount of **five percent (5%)** of Bidder's maximum Bid price and in the form of a certified check, bank money order, or a Bid bond (on the form included or the standard form of the surety company) issued by a surety meeting the requirements of Paragraphs 5.01 and 5.02 of the Modified General Conditions.
- 9.02 The Bid security of the apparent Successful Bidder will be retained until such Bidder has executed the Contract Documents, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned as necessary. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within ten (10) days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults. The Bid security of all other Bidders may be retained by Owner until the earlier of ten (10) days after the Effective Date of the Agreement or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be returned as necessary.

## **ARTICLE 10 – CONTRACT TIMES**

- 10.01 The number of calendar days within which, Milestones are to be achieved and the Work is to be substantially completed and ready for final payment are set forth in the Agreement.

## **ARTICLE 11 – LIQUIDATED DAMAGES**

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

## **ARTICLE 12 – SUBSTITUTE AND “OR-EQUAL” ITEMS**

- 12.01 The Contract for the Work, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration of possible substitute or “or-equal” items. Whenever it is specified or described in the Bidding Documents that a substitute or “or-equal” item of 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.
- 12.02 All prices that Bidder sets forth in its Bid shall be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of “or-equal” or substitution requests are made at Bidder's sole risk.

## **ARTICLE 13 – SUBCONTRACTORS, SUPPLIERS AND OTHERS**

- 13.01 The Contract Documents may require the identification of certain Subcontractors, Suppliers, individuals, or entities to be submitted to Owner in advance of a specified date prior to the

Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five (5) days after Bid opening, submit to Owner a list of all such Subcontractors, Suppliers, individuals, or entities 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, individual, or entity if requested by Owner. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute. In which case apparent Successful Bidder shall submit an acceptable substitute, Bidder's Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.

- 13.02 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, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to revocation of such acceptance after the Effective Date of the Agreement as provided in the Modified General Conditions.
- 13.03 Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.

#### **ARTICLE 14 – PREPARATION OF BID**

- 14.01 The Bid Form included with the Bidding Documents shall be used and shall not be altered, contain any unauthorized additions, deletions, or conditional bids.
- 14.02 The Bidder shall not add any provision reserving the right to accept or reject an award, or to enter into a Contract pursuant to an award.
- 14.03 The Bid shall not contain irregularities of any kind which make the Bid incomplete, indefinite, or ambiguous as to its meaning.
- 14.04 All blanks on the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each section, Bid item, alternate, and unit price item listed therein. Alternative Bids will not be considered unless specifically shown on the Bid Form. In the case of optional alternatives the words “No Bid,” “No Change,” or “Not Applicable” may be entered.
- 14.05 A Bid by a corporation shall be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown.

- 14.06 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown.
- 14.07 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown.
- 14.08 A Bid by an individual shall show the Bidder's name and official address and shall be signed by the individual.
- 14.09 A Bid by a joint venture shall be executed by each of the joint venturers in the manner indicated on the Bid Form. The official address of the joint venture shall be shown.
- 14.10 All names shall be printed in ink below the signatures.
- 14.11 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
- 14.12 Street, postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.
- 14.13 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located, or Bidder shall covenant in writing to obtain such authority and qualification prior to award of the Contract and attach such covenant to the Bid.
- 14.14 Bidder's state contractor license number shall be shown on the Bid Form.
- 14.15 All attachments, certifications or acknowledgements attached to the Bid shall be executed in the same manner as the Bid.

## **ARTICLE 15 – BASIS OF BID; COMPARISON OF BIDS**

### 15.01 *Lump Sum*

- A. Bidders shall submit a Bid on a lump sum basis as set forth in the Bid Form.

### 15.02 *Unit Price*

- A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the Bid Schedule.
- B. The total of all estimated prices will be the sum of the products of the estimated quantity of each item and the corresponding unit price. The final quantities and Contract Price will be determined in accordance with the Modified General Conditions.
- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

- 15.03 Bids will be compared on the basis of the totals of the lump sum and/or unit prices bid. The resulting Total Contract Bid Price will be compared which will include and cover the furnishing of all materials, and the performance of all labor requisite for proper completion of all the work called for under the accompanying Contract, and in the manner set forth and described in the Contract Documents.
- 15.04 The lowest Bidder will be that Bidder whose Bid totals the lowest number of dollars as determined above.

#### **ARTICLE 16 – SUBMITTAL OF BID**

- 16.01 The Bid Form in the Bidding Documents is to be completed and submitted with the Bid security. A completed E-Verify Affidavit and Iran Divestment Certification shall be submitted with the bid in order to be considered a responsible and responsive Bidder.
- 16.02 A sealed Bid shall be received no later than the time and date prescribed and at the place indicated in the advertisement or invitation for bids. The bid shall be submitted in a single (one (1)) envelope system. The envelope shall be plainly marked with the Project title, Owners name and address in the middle of the envelope and the name, address, license number, limitation and classification of Bidder in the upper left hand corner of the envelope. The envelope shall contain the Bid security, the Bid and any other required information as defined in the advertisement or invitation for bid or bid documents.
- 16.03 If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation “**BID ENCLOSED.**” A mailed Bid shall be addressed to:

**David Francis**  
**Haywood County**  
**215 North Main Street**  
**Waynesville, North Carolina 28746**

- 16.04 If received prior to the designated time of opening, bids will be securely kept, sealed. Mailed bids will be treated in every respect as though filed in person and will be subject to the same requirements. Bids received subsequent to the designated time of opening will be returned to the Bidder unopened.



## **ARTICLE 17 – MODIFICATION AND WITHDRAWAL OF BID**

- 17.01 A Bid may be withdrawn prior to the Bid opening by the Bidder by providing an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.
- 17.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 17.01 and submit a new Bid prior to the date and time for the opening of Bids.
- 17.03 No Bid may be withdrawn for a period of 90 days after Bids have been opened pending the execution of a Contract with the successful bidder except as provided for in Section 143-129.1 of the North Carolina General Statutes. A Bidder must file a duly signed written notice within the time frame allowed under applicable General Statutes with the Owner and Engineer promptly after the time set for the opening of bids that demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, and that the Bidder desires to withdraw its Bid. The Owner and Engineer will review the request and if approved the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

## **ARTICLE 18 – OPENING OF BIDS**

- 18.01 Bids will be opened privately at the time and place indicated in the invitation to bid. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

## **ARTICLE 19 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE**

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

## **ARTICLE 20 – EVALUATION OF BIDS AND AWARD OF CONTRACT**

- 20.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids if there is a reasonable doubt that the bid will result in the lowest overall cost to the Owner even though it may be the low evaluated bid, or if it is so unbalanced as to be tantamount to allowing an advanced payment.
- 20.02 Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible. If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, then the Owner will reject the Bid as nonresponsive; provided that Owner also reserves the right to waive all minor informalities not involving price, time, or changes in the Work.

- 20.03 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.
- 20.04 In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.
- 20.05 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.
- 20.06 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work in accordance with the Contract Documents.
- 20.07 If Owner awards the contract for the Work, such award shall be made at the Owner's discretion, regardless of price.

#### **ARTICLE 21 – CONTRACT SECURITY AND INSURANCE**

- 21.01 The Modified General Conditions, and as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it shall be accompanied by such bonds and insurance documentation.

#### **ARTICLE 22 – SIGNING OF AGREEMENT**

- 22.01 When Owner issues a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement along with the other Contract Documents which are identified in the Agreement as attached thereto. Within 10 days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to Owner. The Owner shall thereafter set a time and place for a Preconstruction conference. One fully signed counterpart of the Contract Documents shall be provided to the Contractor following review from the Owner's legal counsel.

#### **ARTICLE 23 – RETAINAGE**

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

#### **ARTICLE 24 – COMMENCEMENT OF WORK**

- 24.01 Upon execution and delivery of the Contract and the delivery of the required Performance and Payment Bonds and insurance certificates and policies by the Contractor to the Owner, the Contractor will be notified to proceed with the work of the Contract. The work of the Contract

shall be commenced within ten (10) days following such notification or as otherwise specified in the Notice to Proceed.

24.02 The Contractor shall notify the Engineer, in writing, of his intention to enter upon the site of the work at least three (3) days in advance of such entrance.



# BID FORM

## Jonathan Creek Soil Reclamation Site & Dennis Farm Borrow Area Project Haywood County

McGill Project No. 18.00162

### TABLE OF ARTICLES

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**ARTICLE 1 – BID RECIPIENT**

This Bid is submitted to:

**David Francis - Haywood County  
Historic Court Room at  
215 North Main Street  
Waynesville, North Carolina 28746  
Re: Jonathan Creek Soil Reclamation Site & Dennis Farm Borrow Area Project**

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

**ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS**

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for **90** days after the date of the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

**ARTICLE 3 – BIDDER'S REPRESENTATIONS**

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged.

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

B. Bidder has visited the Project Site and has 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. Bidder is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress and performance of the Work.

D. Bidder has carefully studied all: (1) 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, including Underground Facilities, at or contiguous to the Site which have been included as a part of the Contract Documents.

E. Bidder has obtained and carefully studied (or accepts the consequences for not doing so) all additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying

the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.

- F. Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.
- I. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder or, if no written response was made by Engineer, that Bidder has resolved the issue to its satisfaction prior to the submittal of its Bid.
- J. The Bidding Documents are sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.
- K. Bidder will submit written evidence of its authority to do business in the state where the Project is located not later than the date of its execution of the Agreement.
- L. Bidder has not relied upon any information provided by the Engineer except information which is part of the Bidding Documents and is in writing and in the form of a formal addendum.
- M. The submission of a Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of the Bid Documents and the Instructions to Bidders, and that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents.

#### **ARTICLE 4 – FURTHER REPRESENTATIONS**

4.01 Bidder further represents that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over Owner.

## **ARTICLE 5 – BASIS OF BID**

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

### **UNIT PRICE BID - *See Attached Bid Schedule***

Unit Prices have been computed in accordance with Paragraph 11.03.B of the Modified General Conditions.

Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities, determined as provided in the Contract Documents.



**BID SCHEDULE**

ITEM #	DESCRIPTION	UNIT	QTY	UNIT COST	TOTAL AMOUNT
<b>Section 1 - Earthwork</b>					
1	Mobilization/General Requirements	LS	1		
2	Earthwork	CY	33500		
3	Additional 15,000 CY Earthwork	CY	15000		
4	Erosion Control Cash Allowance	LS	1	\$10,000.00	\$10,000.00
<b>Section 2 - Dennis Farm Site</b>					
5	Clearing and Grubbing	LS	1		
6	Erosion Control Measures	LS	1		
7	SC250 Slope Matting	SY	5650		
8	Seeding	LS	1		
<b>Section 3 - Jonathan Creek Site</b>					
9	Clearing and Grubbing	LS	1		
10	Demolition	LS	1		
11	Erosion Control Measures	LS	1		
12	Undercut Excavation, Remain Onsite	CY	1500		
13	Select Backfill	CY	750		
14	Washed Stone for Base Stabilization	TON	1215		
15	Geogrid for Base Stabilization	SY	2250		
16	Seeding	LS	1		
<b>TOTAL BID PRICE</b>					

## **ARTICLE 6 – TIME OF COMPLETION**

- 6.01** Bidder agrees that the Work will be substantially complete within 90 calendar days after the date when the Contract Times commence to run as provided in the Modified General Conditions, and will be completed and ready for final payment in accordance with the Modified General Conditions within 110 calendar days after the date when the Contract Times commence to run.
- 6.02** Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the Contract Times.

## **ARTICLE 7 – ATTACHMENTS TO THIS BID**

- 7.01** The following documents are attached to and made a condition of this Bid:
- A. Required Bid security in the form of a certified check, money order, or Bid Bond.
  - B. Completed Bid Schedule
  - C. E-Verify Affidavit
  - D. Iran Divestment Certification

**ARTICLE 8 – BID SUBMITTAL**

**8.01** This Bid submitted by:

If Bidder is:

An Individual

Name (typed or printed): \_\_\_\_\_

By: \_\_\_\_\_ (SEAL)  
*(Individual's signature)*

Doing business as: \_\_\_\_\_

A Partnership

Partnership Name: \_\_\_\_\_ (SEAL)

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

Name (typed or printed): \_\_\_\_\_

A Corporation

Corporation Name: \_\_\_\_\_ (SEAL)

State of Incorporation: \_\_\_\_\_  
Type (General Business, Professional, Service, Limited Liability): \_\_\_\_\_

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

Name (typed or printed): \_\_\_\_\_

Title: \_\_\_\_\_ (CORPORATE SEAL)

Attest \_\_\_\_\_

Date of Authorization to do business in *North Carolina* is \_\_\_\_/\_\_\_\_/\_\_\_\_

A Joint Venture

Name of Joint Venture: \_\_\_\_\_

First Joint Venturer Name: \_\_\_\_\_ (SEAL)

By: \_\_\_\_\_  
(Signature of first joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): \_\_\_\_\_

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

Second Joint Venturer Name: \_\_\_\_\_ (SEAL)

By: \_\_\_\_\_  
(Signature of second joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): \_\_\_\_\_

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

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

Bidder's Business Address \_\_\_\_\_  
\_\_\_\_\_

Phone No. \_\_\_\_\_ Fax No. \_\_\_\_\_

SUBMITTED on \_\_\_\_\_, 2015.

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

**HAYWOOD COUNTY  
E-VERIFY AFFIDAVIT**

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

\*\*\*\*\*

I, \_\_\_\_\_ (the individual attesting below), being duly authorized by and on behalf of  
\_\_\_\_\_ (the entity doing business with Haywood County hereinafter "Employer")

after first being duly sworn hereby swears or affirms as follows:

1. Employer understands that E-Verify is the federal E-Verify program operated by the United States Department of Homeland Security and other federal agencies, or any successor or equivalent program used to verify the work authorization of newly hired employees pursuant to federal law in accordance with NCGS §64-25(5).
2. Employer understands that Employer as defined herein, must use E-Verify. Each Employer, after hiring an employee to work in the United States, shall verify the work authorization of the employee through E-Verify in accordance with NCGS§64-26(a).
3. Employer is a person, business entity, or other organization that transacts business in North Carolina and that employs 25 or more employees in this State. (mark Yes or No)
  - a. YES \_\_\_\_\_, or
  - b. NO \_\_\_\_\_
4. Employer's subcontractors comply with E-Verify, and if Employer is contracted with the Haywood County, Employer will ensure compliance with E-Verify by any subcontractors subsequently hired by Employer.

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

\_\_\_\_\_  
Signature of Affiant

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

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

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

Signed and sworn to (or affirmed) before me, this the \_\_\_\_

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

\_\_\_\_\_  
Notary Public  
Print Name: \_\_\_\_\_

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

||  
||  
(Affix Official/Notarial Seal)



## Iran Divestment Act Certification Form

Bid/RFP/RFQ Number: \_\_\_\_\_

Contract Number: \_\_\_\_\_

Name of Vendor, Bidder or Contractor: \_\_\_\_\_

### **IRAN DIVESTMENT ACT CERTIFICATION REQUIRED BY N.C.G.S. 143C-6A-5(a)**

As of the date listed below, the vendor, bidder or contractor listed above hereby certifies that he/she/it is not listed on the Final Divestment List created by the State Treasurer pursuant to N.C.G.S. 143C-6A-4.

Additionally, the vendor, bidder or contractor acknowledges and certifies that subcontractors utilized for this contract or purchase shall not be on the aforementioned Final Divestment List pursuant to N.C. G.S 143C-6A-5(b).

The undersigned hereby certifies that he or she is authorized by the vendor or bidder listed above to make the foregoing statements.

---

Signature

Date

---

Printed Name

Title

*Notes to persons signing this form:*

N.C.G.S. 143C-6A-5(a) requires this certification for bids or contracts with the State of North Carolina, a North Carolina local government, or any other political subdivision of the State of North Carolina. The certification is required at the following times:

- When a bid is submitted
- When a contract is entered into (if the certification was not already made when the vendor made its bid)
- When a contract is renewed or assigned

N.C.G.S. 143C-6A-5(b) requires that contractors with the State, a North Carolina local government, or any other political subdivision of the State of North Carolina must not utilize any subcontractor found on the State Treasurer's Final Divestment List.

The State Treasurer's Final Divestment List can be found on the State Treasurer's website at the address [www.nctreasurer.com/Iran](http://www.nctreasurer.com/Iran) and will be updated every 180 days.





# BID BOND

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

---

BIDDER (*Name and Address*):

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

OWNER (*Name and Address*):

David Francis  
Haywood County  
215 North Main Street  
Waynesville, North Carolina 28746

BID

Bid Due Date: June 6, 2019  
Description: Jonathan Creek Soil Reclamation Site & Dennis Farm Borrow Area Project

BOND

Bond Number:

Date:

Penal sum \_\_\_\_\_ \$ \_\_\_\_\_  
(Words) (Figures)

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

**BIDDER**

**SURETY**

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

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

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

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

11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.



**Notice of Award**

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

Project: Jonathan Creek Soil Reclamation Site & Dennis Farm Borrow Area Project	
Owner: Haywood County	Owner's Contract No.:
Contract:	Engineer's Project No.: 18.00162
Bidder:	
Bidder's Address:	

You are notified that your Bid dated June 6, 2019 for the above Contract has been considered. You are the Successful Bidder and are awarded a Contract for \_\_\_\_\_

The Contract Price of your Contract is \_\_\_\_\_ Dollars (\$\_\_\_\_\_).

3 copies of the proposed Contract Documents (except Drawings) accompany this Notice of Award.

You must comply with the following conditions precedent within ten (10) days of the date you receive this Notice of Award.

1. Deliver to the Owner [3] fully executed counterparts of the Contract Documents.
2. Deliver with the executed Contract Documents the Contract security [Bonds] and other documents as specified.

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

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Contract Documents.

\_\_\_\_\_  
Owner  
By: \_\_\_\_\_  
Authorized Signature  
\_\_\_\_\_  
Title

**ACCEPTED**

\_\_\_\_\_  
Contractor  
By: \_\_\_\_\_  
Authorized Signature  
\_\_\_\_\_  
Title



# **MODIFIED AGREEMENT** **BETWEEN OWNER AND CONTRACTOR**

Prepared by

**ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE**

and

Issued and Published Jointly by



AMERICAN COUNCIL OF ENGINEERING COMPANIES

ASSOCIATED GENERAL CONTRACTORS OF AMERICA

AMERICAN SOCIETY OF CIVIL ENGINEERS

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE  
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**MODIFIED AGREEMENT  
BETWEEN OWNER AND CONTRACTOR  
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)**

THIS AGREEMENT is by and between \_\_\_\_\_ Haywood County \_\_\_\_\_ (“Owner”) and  
\_\_\_\_\_  
\_\_\_\_\_ (“Contractor”).

Effective Date of Agreement: \_\_\_\_\_

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:
- 1.02 Construction includes *excavation and hauling of fill from borrow site (Dennis Farm) to be placed and compacted at fill site (Jonathan Creek), as well as the required erosion control and fine grading at both locations.*

**ARTICLE 2 – ENGINEER**

- 2.01 The Project has been designed by McGill Associates, P.A. (Engineer), which is 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 3 – CONTRACT TIMES**

- 3.01 *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.
- 3.02 *Dates for Substantial Completion and Final Payment*
- A. The Work will be substantially completed within 90 calendar days, and completed and ready for final payment in accordance with the Modified General Conditions within 110 calendar days.

### 3.03 *Liquidated Damages*

- A. Contractor and Owner recognize that time is of the essence and that Owner will suffer financial loss if the Work is not completed within the times specified in Paragraph 3.02 above, plus any extensions thereof allowed in accordance with Article 12 of the Modified General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty), Contractor shall pay Owner **\$100.00** for each calendar day that expires after the time specified in Paragraph 3.02 above for Substantial Completion until the Work is substantially complete. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by Owner, Contractor shall pay Owner **\$100.00** for each calendar day that expires after the time specified in Paragraph 3.02 above for completion and readiness for final payment until the Work is completed and ready for final payment.

## **ARTICLE 4 – CONTRACT PRICE**

- 4.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents an amount equal to the sum of the amounts determined pursuant to Paragraphs 4.01.A, and 4.01.B below:
- A. For lump sum work an amount equal to the percentage completed of specific items of work provided by the Contractor as a schedule of values for the Lump Sum work, or as a lump sum pay item on the Bid Schedule.
- B. For all Unit Price Work, an amount equal to the sum of the established unit price for each separately identified item of Unit Price Work times the actual quantity of that item. The unit price for each item is as supplied on the Bid Schedule for the project.

## **ARTICLE 5 – PAYMENT PROCEDURES**

### 5.01 *Submittal and Processing of Payments*

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

### 5.02 *Progress Payments; Retainage*

- A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the 25th day of each month during performance of the Work as provided in Paragraph 5.02.A.1 below. All such payments will be measured by the schedule of values established as provided in Paragraph 2.07.A of the Modified General Conditions (and in the case of Unit Price Work based on the number of units completed).

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Engineer may determine or Owner may withhold, including but not limited to liquidated damages, in accordance with Paragraph 14.02 of the Modified General Conditions.
  - 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. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 97.5 percent of the Work completed, less such amounts as Engineer shall determine in accordance with Paragraph 14.02.B.5 of the Modified General Conditions and less 250 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the tentative list of items to be completed or corrected attached to the certificate of Substantial Completion.

### 5.03 *Final Payment*

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

## **ARTICLE 6 – CONTRACTOR'S REPRESENTATIONS**

- 6.01 In order to induce Owner to enter into this Agreement, Contractor makes the following representations and covenants unto Owner as part of this Agreement:
  - A. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
  - B. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
  - C. Contractor is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
  - D. Contractor has reviewed all General and Supplementary Conditions applicable to the Work.
  - E. Contractor has considered the information known to Contractor; 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, including any specific means,

methods, techniques, sequences, and procedures of construction expressly required by the Contract Documents; and (3) Contractor's safety precautions and programs.

- F. Based on the information and observations referred to in Paragraph 6.01.E above, Contractor does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
- 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 sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- J. Contractor shall ensure that the project will be constructed in accordance with Governmental Permits issued in connection with the project.
- K. Contractor shall be duly licensed at all times during the performance of the work as required by the Contract.
- L. Contractor is hereby required to be in compliance with the requirements of Article 2 of Chapter 64 of the North Carolina General Statutes concerning e-verification at the time of entering the Contract and at all times during the performance of this Contract. All subcontractors utilized by Contractor are likewise required to comply with the requirements of Article 2 of Chapter 64 of the North Carolina General Statutes concerning e-verification at the time of entering this Contract and at all times during the performance of this Contract. Contractor shall take necessary steps to include this provision in all contracts with its subcontractors who will perform any portion of the work covered by this Contract.
- M. Contractor is not listed on the Final Divestment List created by the State Treasurer pursuant to North Carolina General Statutes 143-6A-4 and certifies compliance with North Carolina General Statute 143C-6A-5(a). Contractor shall not utilize any subcontractor found on the State Treasurer's Final Divestment List in accordance with North Carolina General Statute 143C-6A-5(b).

## **ARTICLE 7 – MISCELLANEOUS**

### **7.01 Terms**

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

7.02 *Assignment of Contract*

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

7.03 *Successors and Assigns*

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

7.04 *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.

7.05 *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 7.05:
  - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
  - 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
  - 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
  - 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

7.06 *Hold Harmless Clause*

- A. The Contractor agrees to indemnify, hold harmless, and defend the County, its present and future affiliates, officers, members, employees, and agents from and against any and all third-party liabilities, claims, penalties, forfeitures, suits, and the costs and expenses related thereto including costs of defense, settlement, and reasonable attorney fees, which the County may hereafter incur, become responsible for or pay out as a result of death or bodily injuries to any person, destruction or damage to any property or any violation of governmental laws, regulations, or orders caused by the negligent or willful act or omission of Contractor, its employees, agents, or servants in the performance of the Work under this Agreement. However, the Contractor shall not be required to indemnify the County for any matter to the extent that it is due in whole, or in part, to the negligence, willful misconduct or wrongful act of the County.
  
- B. The Contractor agrees to indemnify and hold harmless the County, its present and future officers, agents, servants, and employees from and against any and all suits, sections, legal proceedings, claims, demands, damages, costs, orders (including consent and clean-up orders) and expenses (including engineer and attorney fees) arising from third-party claims for personal injury, including death or disease, and property damage, including environmental contamination, to the extent resulting from willful misconduct, negligent acts, or omissions of the Contractor, its officers, agents, servants and employees related to or arising from Contractor's performance under this Contract.

7.07 *Governing Law*

- A. This Agreement will be governed by and construed according to the laws of the State of North Carolina. The venue of any action by either party to this Agreement to enforce their respective rights hereunder against the other party shall be the General Court of Justice, Superior Court Division for Haywood County, North Carolina.

## ARTICLE 8 – CONTRACT DOCUMENTS

### 8.01 Contents

#### A. The Contract Documents consist of the following:

1. This Agreement
2. Performance bond
3. Payment bond
4. Other bonds
5. Notice of Award
6. Modified General Conditions
7. Specifications as identified in the table of contents of the bound Project Manual.
8. Drawings consisting of sheets with each sheet bearing the following general title:  
Jonathan Creek Soil Reclamation Site & Dennis Farm Borrow Area Project dated April 2019.
9. Addenda.
10. Exhibits to this Agreement (enumerated as follows):
  - a. Contractor's Bid
  - b. Contractor's Bid Schedule
11. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
  - a. Notice to Proceed
  - b. Work Change Directives
  - c. Change Orders

- B. The documents listed in Paragraph 8.01.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 8.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in Paragraph 3.04 of the Modified General Conditions.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement. Counterparts have been delivered to Owner and Contractor. All portions of the Contract Documents have been signed or have been identified by Owner and Contractor or on their behalf.

OWNER:

Haywood County \_\_\_\_\_

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

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

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

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

Address for giving notices:

215 North Main Street \_\_\_\_\_

Waynesville, North Carolina 28746 \_\_\_\_\_

\_\_\_\_\_

CONTRACTOR

\_\_\_\_\_

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

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

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

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

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

Address for giving notices:

\_\_\_\_\_

\_\_\_\_\_

License No.: \_\_\_\_\_



# PERFORMANCE BOND

CONTRACTOR *(name and address)*:

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

OWNER *(name and address)*: David Francis  
Haywood County  
215 North Main Street  
Waynesville, North Carolina 28746

## CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description: Jonathan Creek Soil Reclamation Site & Dennis Farm Borrow Area Project

## BOND

Bond Number:

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

Amount:

Modifications to this Bond Form:  None  See Paragraph 16

---

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

## CONTRACTOR AS PRINCIPAL

## SURETY

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

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

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

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

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

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

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

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

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

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

14. Definitions

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

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

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

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

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

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

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

16. Modifications to this Bond are as follows:



# PAYMENT BOND

CONTRACTOR *(name and address)*:

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

OWNER *(name and address)*: David Francis  
Haywood County  
215 North Main Street  
Waynesville, North Carolina 28746

## CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location)*: Jonathan Creek Soil Reclamation Site & Dennis Farm Borrow Area Project

## BOND

Bond Number:

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

Amount:

Modifications to this Bond Form:  None  See Paragraph 18

---

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

### CONTRACTOR AS PRINCIPAL

### SURETY

\_\_\_\_\_  
Contractor's Name and Corporate Seal

\_\_\_\_\_  
Surety's Name and Corporate Seal

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

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

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

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

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

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

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

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

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

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

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

13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

## 16. Definitions

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

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

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

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

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

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

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

18. Modifications to this Bond are as follows:





**ATTACH INSURANCE CERTIFICATES HERE**



Notice to Proceed

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

Project: Jonathan Creek Soil Reclamation Site & Dennis Farm Borrow Area Project

Owner: Haywood County

Owner's Contract No.:

Contract:

Engineer's Project No.: 18.00162

Contractor:

Contractor's Address:

You are notified that the Contract Times under the above Contract will commence to run on \_\_\_\_\_ . On or before the 10<sup>th</sup> day following this date, you are to commence work and start performing your obligations under the Contract Documents. In accordance with the Agreement, the date of Substantial Completion is \_\_\_\_\_, and the date of Final Completion is \_\_\_\_\_.

Contractor

Owner

Given by:

Authorized Signature

Authorized Signature

Title

Title

Date

Date



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.

**MODIFIED STANDARD  
GENERAL CONDITIONS  
OF THE CONSTRUCTION CONTRACT**

Prepared by

**ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE**

and

Issued and Published Jointly by



AMERICAN COUNCIL OF ENGINEERING COMPANIES

ASSOCIATED GENERAL CONTRACTORS OF AMERICA

AMERICAN SOCIETY OF CIVIL ENGINEERS

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE  
*A Practice Division of the*  
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

Endorsed by



CONSTRUCTION SPECIFICATIONS INSTITUTE

These Modified General Conditions have been prepared for use with the Suggested Forms of Agreement Between Owner and Contractor (EJCDC C-520 or C-525, 2007 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the Narrative Guide to the EJCDC Construction Documents (EJCDC C-001, 2007 Edition). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (EJCDC C-800, 2007 Edition).

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**MODIFIED STANDARD GENERAL CONDITIONS OF THE  
CONSTRUCTION CONTRACT**

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## ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

### 1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
  2. *Agreement*—The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.
  3. *Application for Payment*—The form provided in the Contract Documents is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
  4. *Asbestos*—Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.
  5. *Bid*—the offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
  6. *Bidder*—the individual or entity who submits a Bid directly to Owner.
  7. *Bidding Documents*—The Bidding Requirements and the proposed Contract Documents (including all Addenda).
  8. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and the Bid Form with any supplements.
  9. *Change Order*—A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.
  10. *Claim*—A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.
  11. *Construction Field Representative (CFR)*—The authorized representative of Engineer who may be assigned to the Site or any part thereof.

12. *Contract*—the entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.
13. *Contract Documents*—those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.
14. *Contract Price*—the Monies payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).
15. *Contract Times*—The number of calendar days or the dates stated in the Agreement to: (i) achieve Milestones, if any; (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer’s written recommendation of final payment.
16. *Contractor*—the individual or entity with whom Owner has entered into the Agreement.
17. *Cost of the Work*—See Paragraph 11.01 for definition.
18. *Drawings*—That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.
19. *Effective Date of the Agreement*—the date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.
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 which does not involve a change in the Contract Price or the Contract Times.
22. *General Requirements*—Sections of Division 1 of the Specifications.
23. *Hazardous Environmental Condition*—The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto.
24. *Hazardous Waste*—the term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.
25. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

26. *Liens*—Charges, security interests, or encumbrances upon Project funds, real property, or personal property.
27. *Milestone*—a principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.
28. *Notice of Award*—the written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement. The Notice of Award shall not be construed as an agreement or contract. Contractor has no rights or remedies against Owner until the Notice to Proceed has been issued.
29. *Notice to Proceed*—a written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.
30. *Owner*—the individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.
31. *PCBs*—Polychlorinated biphenyls.
32. *Petroleum*—Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.
33. *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.
34. *Project*—The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.
35. *Project Manual*—the bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents. The Project Manual contains any and all addenda issued, documents executed by the Owner and Contractor or Engineer after bidding, and all attachments and exhibits thereto, up to and including the executed copy of the Notice to Proceed.
36. *Radioactive Material*—Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time
37. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

38. *Schedule of Submittals*—a schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.
39. *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.
40. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
41. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.
42. *Specifications*—That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.
43. *Subcontractor*—an individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.
44. *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 fully utilized for the purposes for which it is intended. As a precedent condition to Substantial Completion the Owner shall have received all certificates of occupancy and any other necessary permits for beneficial occupancy. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.
45. *Successful Bidder*—the Bidder submitting a responsive Bid to whom Owner makes an award.
46. *Supplementary Conditions*—that part of the Contract Documents which amends or supplements these Modified General Conditions.
47. *Supplier*—A manufacturer, fabricator, supplier, distributor, material man, 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 Subcontractor.
48. *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.

49. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
50. *Unit Price Work*—Work to be paid for on the basis of unit prices.
51. *Work*—the entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.
52. *Work Change Directive*—A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

## 1.02 *Terminology*

A. The words and terms discussed in Paragraph 1.02.B through F 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 Paragraph 9.09 or any other provision of the Contract Documents.

C. *Day:*

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

D. *Defective:*

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
  - a. does not conform to the Contract Documents or general standards of workmanlike construction or published authorities which govern the proper use and application of a particular material or component, including but not limited to literature published by manufacturers and trade organizations; or
  - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
  - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

E. *Furnish, Install, Perform, Provide:*

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.

- F. Unless stated otherwise in the Contract Documents, words or phrases 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. 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. The Owner shall have authority to review and reject any bonds as nonconforming.
- B. Within fifteen (15) calendar days after the Effective Date of the Agreement, but before any Work at the Site is started, Contractor shall deliver to Owner, with a copy to Engineer, certificates and other evidence of insurance requested by Owner which Contractor is required to purchase and maintain in accordance with paragraphs Article 5 of these Modified General Conditions. The Owner shall have the authority to review and reject any insurance as nonconforming.

### 2.02 *Copies of Document*

- A. Engineer shall furnish to the successful Contractor up to three (3) sets of the Project Manual. Additional sets will be made available by the Engineer to the Contractor at the cost set forth in the Advertisement for Bids for this project or the actual cost for reproduction whichever is greater.

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

- A. The Contractor shall complete all of the work contracted herein, in an acceptable manner and within the established Contract Time. The Contract Time shall commence on the start date given in the Notice to Proceed, and shall run continuously each and every calendar day following, except as herein provided, and in accordance with paragraph 17.02. Times shall be of the essence of this Agreement.

### 2.04 *Starting the Work*

- A. The Contractor shall commence work on or before the tenth (10<sup>th</sup>) calendar day after the date of the Notice to Proceed or as may be differently stated in the Notice to Proceed. Contractor shall not start work prior to the date set in the Notice to Proceed.

### 2.05 (Intentionally Deleted)

### 2.06 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a Preconstruction 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 Contractor's schedule for completion of the work, policies and procedures for submittal of Shop Drawings and other submittals, presentation and processing of Applications for Payment, and maintaining records required by the Contract Documents. If agreed between Owner and Contractor, the Preconstruction Conference may be held prior to the commencement of the Contract Times.
- 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 instructions, receive information, render decisions relative to the Contract, and otherwise act on behalf of, and legally bind each respective party.

## 2.07 *Submission and Acceptance of Schedules*

- A. Prior to presentation of the first Application for Payment, the Contractor shall submit the following schedules. No progress payment shall be made to Contractor until acceptable Schedules are submitted to Engineer. All schedules shall be coordinated and shall be logically related in time and value for the various stages of work.
1. The Progress Schedule. The Progress Schedule shall be computer generated, utilizing the critical path method (CPM), indicating the dates and duration for completing the various stages of the Work, including any milestones. The level of detail a number of tasks shown in the Progress Schedule shall be commensurate with the complexity of the work. The Progress Schedule shall be acceptable to Engineer if at a minimum it clearly and accurately demonstrates an orderly progression and completion of the work within the contract times. Contractor shall be solely responsible for scheduling and completing the work within the contract time. Any approval or acceptance of the schedule shall 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 for completion within the contract time.
  2. The Schedule of Submittals. The Schedule of Submittals shall provide a workable arrangement for the, engineer to timely review and process the required submittals. The Schedule of Submittals shall also include a list of manufacturers and suppliers. Approval of any schedule by Engineer shall not receive the Contractor from its obligations under the Contract.
  3. The Schedule of Values. The Contractors Schedule of Values shall provide a reasonable allocation of the Contract Price to component parts of the Work. Contractor's Schedule of Values for all of the Work shall include quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail, commensurate with the complexity of the Work, to serve as the basis for progress payments during performance of the Work. The Schedule of Values shall have line items for project closeout including, demobilization, record drawings, completion of the punch list and project restoration and final cleanup. Approval of any Schedule by Engineer shall not relieve the Contractor from its obligations under the Contract.
  4. Cash Flow Schedule. Contractor's Cash Flow Schedule shall be a scheduled and forecasted value of the anticipated payment requests for the Work. The amounts shown shall be considered an estimate which may differ from the actual amounts requested.

## **ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE**

### 3.01 *Intent*

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

- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that reasonably may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result will be provided whether or not specifically called for, at no additional cost to Owner.
- C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

### 3.02 *Reference Standards*

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

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect as of the date Engineer sealed, signed, and dated the Contract Documents, except as may be otherwise specifically stated in the Contract Documents.
2. The Contract Documents shall be deemed to include applicable building codes, laws and regulations, relevant published industry and trade organization standards, as well as the published requirements of any product manufacturer. However, 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 Contract Documents.

### 3.03 *Reporting and Resolving Discrepancies*

#### A. *Reporting Discrepancies:*

1. *Contractor's Review of Contract Documents before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor discovers, or has actual knowledge of, and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby. Contractor's failure to notify Engineer of any such discrepancy prior to commencement of Work shall constitute a waiver of Contractor's right to seek additional compensation or damages for any alleged discrepancy later discovered by Contractor.
  - a. Contractor (and any Subcontractor responsible for the performance of all or any part of such Work) shall field verify the accuracy of all grades, elevations, dimensions, locations, orientation and measurements. This shall include locations of any underground utilities or other features which may be shown generally on the drawings for informational purposes only. The Engineer shall be promptly notified in writing of any discrepancies. Contractor's failure to notify Engineer of any such discrepancy prior to

commencement of Work shall constitute a waiver of Contractor's right to seek additional compensation or damages for any alleged discrepancy later discovered by Contractor.

2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) any standard, specification, manual, or code, or (c) 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 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04. Contractor's failure to notify Engineer of any such discrepancy prior to commencement of Work shall constitute a waiver of Contractor's right to seek additional compensation or damages for any alleged discrepancy later discovered by Contractor.
  - a. In the event Contractor determines that some aspect of the Contract Documents require clarification or interpretation by Engineer, Contractor shall submit a Request for Information (RFI) in writing to Engineer in a format provided by Engineer. RFIs may only be submitted by the Contractor and shall be in the form required by Engineer. Verbal RFI or a RFI presented on an unapproved form shall be rejected. Any delay caused by Engineer's refusal to accept a verbal RFI or a RFI presented on an unapproved form will be attributed solely to Contractor. Each RFI shall be limited to a single issue. Information that is discernible from the Contract Documents as well as issues concerning construction means, methods, techniques, sequences or safety will not be addressed by Engineer.
  - b. Contractor shall clearly and concisely state the issue for which clarification or interpretation is sought and why a clarification or interpretation is needed. The RFI process shall not be used by Contractor to seek approval for proposed "or-equal" or substitute materials or equipment.
  - c. Engineer's review of or responses to RFIs shall not constitute an approval, direction, or procedure related to the construction means, methods, techniques, sequences, or safety.
  - d. Responses to Contractor RFIs will not change any requirement of the Contract Documents. In the event Contractor believes that a response to an RFI will cause a change in the Contract Price or Contract Time, Contractor shall give written notice of the Claim to Engineer.
  - e. If Contractor wishes to make Claim for an adjustment of the Contract Price or an extension of the Contract Times, or both, written notice as provided in Paragraph 10.05 shall be given before proceeding to execute the Work. Failure to give such written notice shall waive Contractor's right to seek an adjustment of the Contract Price or an extension of the Contract Times.

B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:
  - a. the provisions of any standard, specification, manual, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference in the Contract Documents); or
  - b. The provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.
- B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:
  1. A Field Order;
  2. Engineer's approval of a Shop Drawing or Sample (subject to the provisions of Paragraph 6.17.D.3); or
  3. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

- A. Contractor and any Subcontractor or Supplier 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
  2. 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 of such documents by Engineer.
- 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 ordinary record keeping purposes.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify, defend, and hold harmless Engineer, and the Owner and their employees, principals, agents, successors, insurers, sureties and assigns, from and against any and all liabilities, claims, causes of actions, suits of any nature, fines, penalties, expenses, 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, resulting from, or relating to the unauthorized use, reuse, or modification of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or Engineer's consultants, including electronic media editions, by Contractor, its employees, agents, or any other person or entity for whom Contractor is legally liable.

### 3.06 *Electronic Data*

- A. Unless otherwise stated in the Supplementary Conditions, the data furnished by Owner or Engineer to Contractor, or by Contractor to Owner or Engineer, that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, surveys, graphics, or other types are furnished, if at all, only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. To the extent that any discrepancy exists between the electronic files and the hard copies, the hard copies shall govern.
1. The Engineer may, but shall not be obligated to, make copies of requested Drawings in electronic format for the Contractor's convenience and to facilitate the Contractor's administration of the Project. Because information presented on electronic files can be modified, unintentionally or otherwise, the Engineer reserves the right to remove all indications of ownership from each electronic display. Notwithstanding the removal of indicia of ownership, the Engineer's copyright interest in such files and the information contained therein shall not be abridged or abated by such action. The use of electronic files prepared by the Engineer shall not in any way relieve the contractor of its duty to fully comply with the Contract Documents nor negate the Contractor's responsibility for coordination of other trades, and taking field measurements.
- B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. To the extent that any errors are detected, the receiving party shall provide written notice to the transferring party, which party shall correct such errors identified within the 60 day acceptance period.
- C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

## **ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS**

### 4.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are

unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefore as provided in Paragraph 10.05.

- B. In the event the Project involves private land, upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

#### 4.02 *Subsurface and Physical Conditions*

##### A. *Reports and Drawings*: The Contract Documents identify:

1. If during the preparation of these Contract Documents, subsurface or geotechnical explorations were conducted which are relevant in the discretion of the Engineer to the scope of the work, the findings of such will be included in the Appendix of the Specifications. The Contractor shall be responsible for obtaining such reports and explorations it deems necessary and advisable for the performing of the Work in accordance with the Contract Documents.
2. Information and data reflected in the Contract Documents with respect to existing structures and facilities at or contiguous to the Site are based upon information obtained from varying sources which may include reports, drawings or other data of those facilities presently on file with the Owner. The Owner and Engineer do not guarantee the accuracy of any such information. The Contractor shall be responsible for field verifying all conditions and measurements and for determining the suitability of the site for the proposed Work.

##### B. *Limited Reliance by Contractor on Technical Data Authorized*: any reports and drawings which have been identified in Article 4.02 A 1 are not Contract Documents. However, in the event the Engineer specifically calls out and designates certain information in such reports and drawings as "Technical Data" than Contractor shall have a limited right to rely upon the accuracy of the designated Technical Data. Other than the designated Technical Data, any information provided and depicted on the Drawings is merely intended to be a general representation of the physical conditions likely be encountered during the Work and shall not constitute a guarantee or warranty by the Engineer or Owner that actual conditions will not vary from that which is depicted. Except for the Contractor's right to rely on the designated technical data, which is limited as more specifically shown below, 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.
4. The information provided herein and depicted on the project drawings are not guaranteed by the Owner or Engineer to be more than a general representation of the physical conditions likely to be encountered during the Work.

#### 4.03 *Differing Subsurface or Physical Conditions*

- A. *Notice:* If Contractor discovers or should reasonably have discovered, or otherwise reasonably believes that any subsurface or physical condition that is uncovered or revealed either:
1. is of such a nature as to establish that any “Technical Data” on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or
  2. is of such a nature as to require a change in the Contract Documents; or
  3. differs materially from that shown or indicated in the Contract Documents; or
  4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents; and is not in the area of the project bid as Unclassified Excavation;

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

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

C. *Possible Price and Times Adjustments:*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor’s cost of, or time required for, performance of the Work; subject, however, to the following:
  - a. such circumstance must meet the conditions of Paragraph 4.03. A; and
  - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.



2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:
  - a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or
  - b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or
  - c. Contractor failed to give the written notice as required by Paragraph 4.03.A.
3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, neither Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall be liable to Contractor for any consequential damages, including but not limited to claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project, and Contractor expressly and specifically releases any and all damages related thereto. Any damages for suspension or idle time shall be limited to the Contractor's actual cost of labor or equipment costs, including a reasonable markup for overhead but shall not include a markup for profit.

#### 4.04 *Underground Facilities*

- A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Contract Documents:
1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data provided; and
  2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
    - a. reviewing and checking all such information and data;
    - b. locating all Underground Facilities shown or indicated in the Contract Documents;
    - c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction; and

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

*B. Not Shown or Indicated:*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefore as provided in Paragraph 10.05.
3. Generally, service connections are not indicated on the project drawings. Contractor shall be responsible for locating all existing underground utility installations in advance of excavation.

*C. Underground Utility Damage Prevention Act:*

1. Contractor shall be required and agrees to comply with all the provisions of any applicable underground utility damage prevention act (however titled) and hereby agrees, to the fullest extent permitted by Laws and Regulations, to indemnify, defend, and hold harmless Owner, Engineer, and their employees, principals, agents, successors, sureties, insurers and assigns, including any of their Related Entities, if any, 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 Contractor's failure, or the failure of anyone for whom Contractor is responsible, to so comply with the requirements of said act, except the Contractor shall not be required to indemnify any person or entity for acts attributable to the sole negligence of such person or entity.

#### 4.05 *Reference Points*

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

#### 4.06 *Hazardous Environmental Condition at Site*

- A. *Reports and Drawings:* Reference is made to the Contract Documents for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the Engineer in the preparation of the Contract Documents.
- B. *Limited Reliance by Contractor on designated Technical Data Authorized:* Contractor may rely upon the accuracy of any designated "Technical Data" contained in such reports and drawings, but such reports and drawings are not Contract Documents, and Contractor's reliance on the designated Technical Data is limited to the extent specifically described in set forth in Article 4.02 B. Except for such reliance on such "Technical Data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their 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 any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.
- D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for

Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. 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 4.06.E.

- E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered written notice to Contractor: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefore as provided in Paragraph 10.05.
- F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefore as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.
- G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, 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: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, 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 created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

## ARTICLE 5 – BONDS AND INSURANCE

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

- A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents. The Owner shall be solely responsible for determining the adequacy and sufficiency of the bonds for the Project.
- B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent 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 each bond.
- C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

### 5.02 *Licensed Sureties and Insurers*

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

### 5.03 *Certificates of Insurance*

- A. Contractor shall deliver to Owner, with copies to each additional insured and loss payee identified in the Contract Documents, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain. The Owner shall be solely responsible for determining the adequacy and sufficiency of the insurance requested under the Contract Documents and any certificates of insurance which are furnished hereunder.

- B. Owner shall deliver to Contractor, with copies to each additional insured and loss payee identified in the Contract Documents, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.
- C. Failure of Owner to demand such certificates or other evidence of Contractor's full compliance with these insurance requirements or failure of Owner to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.
- D. Neither Owner nor Engineer represents that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor.
- E. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the cap contract documents, including under the indemnities granted in the Contract Documents.

#### 5.04 *Contractor's Insurance*

- A. Contractor shall purchase and maintain such insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:
  - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
  - 2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;
  - 3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;
  - 4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:
    - a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or
    - b. by any other person for any other reason;
  - 5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting there from; and
  - 6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle; and

7. claims for damages arising out of Contractor's performance or providing of professional architectural or engineering services in accordance with Paragraph 6.21.B.

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

1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, be written on an occurrence basis, include as additional insured's (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Contract Documents, all of whom shall be listed as additional insured's, and include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insured's, and the insurance afforded to these additional insured's shall provide primary coverage for all claims covered thereby;
2. include the specific coverages herein required or required by Laws or Regulations, whichever is greater;
3. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;
4. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 60 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Contract Documents to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);
5. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and
6. include completed operations coverage:
  - a. Such insurance shall remain in effect for two years after final payment.
  - b. Contractor shall furnish Owner and each other additional insured identified in the Contract Documents to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

C. Satisfactory certificates of insurance shall be submitted and attached to the executed Agreement for Construction between the Owner and Contractor. In connection with the provisions set forth in the Modified General Conditions, the Notice to Proceed will not be issued until satisfactory certificates of insurance are filed.

D. Specified Limits of Insurance Required to be Carried by Contractor

1. Worker's Compensation and Employer's Liability

This insurance shall protect the Contractor and Owner and the Engineer against all claims under applicable state workmen's compensation laws. The Contractor and Owner shall also be protected against claims for injury, disease, or death of employees that, for any reason, may not fall within the provisions of a workmen's compensation law. This policy shall include an "all states" endorsement.

The liability limits shall be not less than:

Worker's Compensation.....Statutory  
Employer's Liability .....\$500,000 each occurrence

## 2. Comprehensive Automobile Liability

This insurance shall be written in comprehensive form and shall protect the Contractor and Owner and engineer against all claims for injuries to members of the public and damage to property of others arising from the use of motor vehicles, and shall cover operation on or off the site of all motor vehicles licensed for highway use, whether they are owned, non-owned, or hired.

The liability limits shall be not less than:

Bodily Injury           \$1,000,000 each person  
                                  \$1,000,000 each occurrence  
Property Damage       \$1,000,000 each occurrence  
                                  \$1,000,000 aggregate

## 3. Comprehensive General Liability

This insurance shall be written in comprehensive form and shall protect the Contractor and Owner against all claims arising from injuries to persons other than his employees or damage to property of the Owner or others arising out of any act or omission of Contractor or his agents, employees, or Subcontractors. The policy shall also include protection against claims insured by usual personal injury liability coverage and shall include a "protective liability" endorsement to insure the contractual liability assumed by the Contractor under the indemnification provisions in the Modified General Conditions, and "Completed Operations and Products Liability" coverage (to remain in force during the correction or warranty period required under this Agreement).

To the extent that the Contractor's work, or work under his direction, may require blasting, explosive conditions, or underground operations, the comprehensive general liability coverage shall contain no exclusion relative to blasting, explosion, collapse of building, or damage to underground property.

Bodily Injury           \$1,000,000 each person  
                                  \$1,000,000 each occurrence  
Property Damage       \$1,000,000 each occurrence  
                                  \$2,000,000 aggregate

## 4. Umbrella Liability Policy



This insurance shall protect the Contractor against all claims in excess of the limits provided under the workmen's compensation and employer's liability, comprehensive automobile liability, and general liability policies. The liability limits of the umbrella liability policy shall not be less than \$5,000,000.

- E. Contractor covenants and agrees that the insurance coverage and limits required by the Contract Documents shall in no way be considered or used in any manner as a limit or cap of any kind on any liability or obligation that Contractor may otherwise have, including, without limitation, liability under the indemnification provisions contained herein.
1. by requiring such insurance and insurance limits, neither Owner nor Engineer represents that such coverage and limits will necessarily be adequate to protect Contractor.
  2. Contractor shall be responsible for any deductible or self-insured retention.

#### 5.05 *Owner's Liability Insurance*

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

#### 5.06 *Property Insurance*

- A. Contractor shall purchase and maintain Builder's Risk insurance for the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Contract Documents or required by law). Contractor shall be responsible for all associated costs for such insurance. This insurance shall:
1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Contract Documents, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee;
  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, false work, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than that caused by flood), and such other perils or causes of loss as may be specifically required by the Contract Documents.
  3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);
  4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials

and equipment have been included in an Application for Payment recommended by Engineer;

5. allow for partial utilization of the Work by Owner;
  6. include testing and startup; and
  7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other loss payee to whom a certificate of insurance has been issued. The Owner shall be solely responsible for determining the adequacy and sufficiency of such Builders Risk insurance.
- B. Unless otherwise provided in the Contract Documents, Contractor shall purchase and maintain such boiler and machinery insurance or any other additional property insurance required by the Contract Documents or Laws and Regulations, which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Contract Documents, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them, each of whom is deemed to have an insurable interest in the project and shall be listed as an insured or additional insured.
- C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 60 days prior written notice has been given to Owner and Contractor and to each other loss payee to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.
- D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Contract Documents. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.
- E. (Intentionally deleted)

#### 5.07 *Waiver of Rights*

- A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or loss payees there under. Owner and Contractor waive all rights against each other and their 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 Subcontractors and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (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 as trustee or otherwise payable under any policy so issued. This Waiver of Subrogation shall survive the completion or termination of this Agreement.

- B. Owner, and Contractor waive all rights against each other, 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, or any other loss of profits or other consequential damages; and
  2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them. This provision shall survive the completion and/or termination of the Agreement.

#### 5.08 *Receipt and Application of Insurance Proceeds*

- A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the loss payees, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the Monies so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order.
- B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall

adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

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

A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party fails to purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

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

**ARTICLE 6 – CONTRACTOR'S RESPONSIBILITIES**

6.01 *Supervision and Superintendence*

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. The Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. The 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 provide competent, qualified, on-site, supervision at all times during construction activities including supervision of the activities of the sub-contractor(s), vendors and suppliers through a Resident Superintendent. The Resident Superintendent shall be on-site at any time that work is ongoing at the project. Sub-contractors shall not work independently on the project without on-site supervision provided Resident Superintendent. A resume for the Resident Superintendent shall be submitted to the Engineer for approval prior to commencing work. Such resumes shall include projects that they were in responsible charge of, that are of similar work in scope and value with owner's references. Contractor shall not change the

Resident Superintendent without written approval from the Engineer. However, the approval of any supervisor by the Engineer shall not relieve the Contractor of its obligation to properly supervise and perform the Work.

- B. If at any point during the progress of the Work the Owner determines, in its sole discretion, that the Resident Superintendent is inadequately performing its services, the Owner may direct in writing the Contractor to replace the Resident Superintendent within thirty (30) days of such notification. The resumes of any proposed new Resident Superintendent shall be submitted to the Engineer for approval prior to their commencement of work on the project.
1. The Resident Superintendent shall provide Owner and Engineer with a written daily field report containing, as a minimum, the following information:
    - a. the number of personnel on site, identified by craft or trade, employer and work activity, and the number of hours worked during the workday;
    - b. the types and numbers of equipment on site and the time each piece of equipment was used or stood idle during the workday;
    - c. any materials or equipment received on site during the workday; and
    - d. the identification and quantity of any unit price work, if any, installed during the day.

Said daily field reports shall be submitted to Owner and Engineer not less than weekly.

- C. For purposes of giving or receiving notices, directives, Change Orders, or any other information from Owner or Engineer to Contractor, Contractor shall designate a specific individual as Project Manager to receive such notices, directives, Change Orders, or other information. If the person so designated by Contractor is not available, Contractor shall (in writing addressed to Owner and Engineer) identify the individual who is acting as his authorized representative.
- D. Contractor acknowledges that its obligation to complete the Work in accordance with the Contract Documents shall not be affected or amended as a result of any act by Engineer or any other Owner's consultant, or as a consequence of any field inspections or observations or approval of any Application for Payment, or in regard to any other duty performed by Engineer or other Owner's consultant for the benefit of Owner, unless Owner and Engineer shall expressly approve Contractor's action in advance in writing specifically identifying the action approved. Furthermore, Contractor shall not be relieved of any responsibility to complete the Work in conformity with the contract Documents as a consequence of any knowledge of non-conformity obtained by an Owner's representative, including Engineer, whether or not such representative acts or fails to act on such knowledge. Contractor acknowledges and agrees that any representative retained by Owner to act for Owner's benefit, including Engineer, shall have no duty or responsibility to Contractor, except where specifically stated herein, and no act or failure to act by such Owner's representative shall relieve Contractor of its obligations to perform all requirements under this Contract, except as specifically approved in writing otherwise.

## 6.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner's written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.
- C. No Work shall be done between 6 p.m. and 7 a.m. without permission of Owner. However, emergency work may be accomplished without prior permission. No Night Work may be undertaken without permission of Owner.
- D. Each occasion Contractor works in excess of 45 hours per week, or outside of the hours of 7:00 am and 6:00 pm, or on weekends or holidays, the Contractor shall reimburse Owner for any and all costs and expenses (including, but not limited to, Engineer's fees and expenses associated with additional Observation and Contract Administration) incurred by Owner as a result of such schedule. Contractor covenants and agrees that Owner may retain, deduct, and/or offset monies due to Owner pursuant to this Paragraph from monies due to Contractor under the Agreement. Contractor further covenants and agrees that Owner retains the right to make such deduction or offset at any time prior to and including final payment and that the imposition and the deduction and/or offset of such monies shall not be subject to any notice or claim provisions of the Contract Documents.

## 6.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.
- B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
  - 1. To the extent possible, all warranties shall run to and be enforceable by Owner. Contractor agrees to assign to Owner at the time of final completion of the Work, or as otherwise required by the Contract Documents, any and all Subcontractor and Supplier warranties relating to materials and labor used in the Work and Contractor further agrees to perform the Work in such a manner to preserve any and all Subcontractors' and Suppliers' warranties. Contractor shall provide Owner assistance, throughout the duration of such warranties, in enforcing the obligations of Subcontractors and Suppliers. If necessary as a matter of law, Contractor may retain the right to enforce directly any such Subcontractors' and Suppliers'

warranties during the one-year period following the date of Substantial Completion established by Paragraph 14.04. Contractor includes in this warranty materials and equipment specified by Engineer by brand name. The warranty provided in this Paragraph 6.03 shall be in addition to and not in limitation of any other warranty required by the Contract Documents or otherwise prescribed by law and shall be in addition to all other rights and remedies available to Owner. All warranty obligations are cumulative to and in addition to all remedies available to Owner pursuant to the Contract Documents and applicable law.

- 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.
- D. Materials and equipment stored off site shall be stored in a bonded, secure warehouse. Any such materials and equipment stored off site shall be available for review by Engineer's representative. Material and equipment shall be stored and maintained while in storage in a manner consistent with the manufacturer's recommendations. Such maintenance during storage, or prior to startup shall be documented and presented to the Engineer. Risk of loss of stored materials and equipment shall be on Contractor, whether titled in the name of the Contractor or whether title previously passed to the Owner as a result of payment for the stored materials and equipment.
- E. The Contractor shall have responsibility for the care of all equipment and materials, including those furnished by the Owner, if any, and shall bear the risk of injury, loss, or damage to any part thereof by action of the elements or from any other cause, until final completion. Contractor shall rebuild, repair, restore, and make good all injuries, losses, or damages to any portion of the Work or the equipment or materials occasioned by any cause before completion and acceptance of the Work and shall bear the expense therefore. Contractor shall, at no additional cost to Owner, provide temporary measures and suitable structures as they might be necessary to protect the Work or any portion thereof from damage.
- F. Suspension of the Work or the granting of an extension of time for any cause whatever shall not relieve Contractor of his responsibilities for the Work as specified herein including the continuing care and maintenance of stored materials and equipment as well as work accomplished to date.
- G. If the equipment furnished by the Contractor differs in dimension, orientation, horsepower requirements, pipe connection sizes, or is otherwise non-conforming to the Contract Documents, the Contractor shall be responsible for the furnishing of all properly-sized connecting piping, motor starters, motor controls, and electrical wiring and connections, and all other work required to properly install the equipment in complete operating condition. Further, such non-conforming equipment or materials shall be submitted as a "Substitute" in accordance with Section 6.05 of the Modified General Conditions, including and subject to Paragraph 6.05. E. *Engineer's Cost Reimbursement*. No additional compensation by the Owner to the Contractor will be made with respect to such "Substitutes".

#### 6.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.
1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.
  2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.
  3. Contractor shall submit to the Engineer an adjusted Progress Schedule whenever the progress of the Work is behind the current, approved Progress Schedule as defined in paragraph 2.07 A.1 of the Modified General Conditions, or upon the Engineer's request and whenever the Engineer determines in its discretion that the Work cannot be substantially complete in the time remaining. The adjusted Progress Schedule must be submitted within ten (10) days of Engineer's written request and prior to the Contractor's next application for payment.
  4. Owner shall have the right to direct a postponement or rescheduling of any date or time for the performance of any part of the Work that may interfere with the operation of Owner's premises or any tenants or invitees thereof. Contractor shall, upon Owner's request, reschedule any portion of the Work affecting operation of the premises during hours when the premises are not in operation. Any postponement, rescheduling, or performance of the Work under this Paragraph 6.04.A.3 may be grounds for an extension of the Contract Times, if permitted under Article 12, and an equitable adjustment in the Contract Price, if permitted under Article 12 and (i) the performance of the Work was properly scheduled by the Contractor in compliance with the requirements of the Contract Documents and (ii) such rescheduling or postponement is required for the convenience of the Owner.

#### 6.05 *Substitutes and "Or-Equals"*

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the Contract Documents contain a description followed by words reading "or an approved equivalent" or "or approved equal" item or "substitution is permitted," other items of material or equipment or material or equipment of other suppliers may not be submitted to Engineer for review. If the description contains or is followed by words reading "or an approved equivalent" or "or approved equal" item or "substitution is permitted," other items of material or equipment or material or equipment of other suppliers may be substituted to Engineer for review under the circumstances described below.
1. "*Or-Equal*" Items: If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that



no change in related Work will be required, it may be considered by Engineer as an “or-equal” item, in which case review and approval of the proposed item may, in Engineer’s sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

- a. in the exercise of reasonable judgment Engineer determines that:
  - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics; and
  - 2) it will reliably perform at least equally well the function and achieve the results intended by the design concept of the completed Project as a functioning whole; and
  - 3) it has a proven record of performance and availability of responsive service; and
  - 4) it is equal or better in form, features, operation and maintenance cost and general configuration; and
  - 5) it conforms to the requirements of the Contract Documents in all respects, except for make and manufacturer or supplier and minor details of specified equipment; and
- b. Contractor certifies in writing that, if approved and incorporated into the Work:
  - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
  - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. *Substitute Items:*

- a. If in Engineer’s sole discretion an item of material or equipment proposed by Contractor does not qualify as an “or-equal” item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.
- b. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefore. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.
- c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented by the General Requirements, and as Engineer may decide is appropriate under the circumstances. Applications for approval of substitute items of material or equipment will not be accepted by the Engineer if made as part of a Shop drawing submittal. The application for use of substitute material or equipment must be made prior to the submission of a shop drawing by a written communication clearly labeled "Request for Substitution". Substitute items proposed by Shop Drawings for materials or

equipment will be rejected by the Engineer unless previously approved in a separate application.

- d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
  - 1) shall certify that the proposed substitute item will:
    - a) perform adequately the functions and achieve the results called for by the general design,
    - b) be similar in substance to that specified, and
    - c) be suited to the same use as that specified; and
    - d) Contractor accepts the installation instructions, warranty and correction obligations contained in the product manufacturer's literature in connection with the proposed substitution as if such, information pertaining to the new product was originally specified in the Contract Documents; and
  - 2) will state:
    - a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time,
    - b) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
    - c) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty; and
  - 3) will identify:
    - a) all variations of the proposed substitute item from that specified, and
    - b) available engineering, sales, maintenance, repair, and replacement services; and
  - 4) And shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.
- e. If a proposed substitution affects a correlated function, adjacent construction, or the work of other contractors, then the necessary changes and modifications to the affected work are considered an essential part of the proposed substitution, to be accomplished by Contractor as a part of the Work, if and when approved.

- B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.
- C. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by a Change Order in the case of a substitute and an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.
1. Proposed substitutions may be rejected without explanation and will not be considered unless one or more of the following conditions exists:
    - a. Required for compliance with interpretation of code requirements or insurance regulations then existing.
    - b. Unavailability of specified products, through no fault of Contractor.
    - c. Subsequent information discloses inability of specified products to perform properly or to fit in designated space.
    - d. Manufacturer/fabricator refuses to certify or guarantee performance or specified product as required.
    - e. When in the judgment of Owner or Engineer, that a substitution would be substantially to Owner's best interests, in terms of cost, time, or other considerations.
- D. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- E. *Engineer's Cost Reimbursement:* Contractor shall be liable to Owner for any and all costs and expenses (including, but not limited to, Engineer's fees and expenses) incurred by Owner as a result of evaluating a substitute proposed or submitted by the Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B, and reflecting changes in the Contract Documents, whether or not Engineer approves a substitute so proposed or submitted by Contractor. Contractor covenants and agrees that Owner may retain, deduct, and/or offset monies due to Owner pursuant to this Paragraph 6.17.D.4 from monies due to Contractor under the Agreement. Contractor further covenants and agrees that Owner retains the right to make such deduction or offset at any time prior to and including final payment and that the imposition and the deduction and/or offset of such monies shall not be subject to any notice or claim provisions of the Contract Documents. Such payment is an obligation separate and apart from the Contractor's obligation to pay liquidated damages for delay, if any.

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

6.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.
- B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.
- B. As part of the Bid or the Proposal, the Owner may require the identity of the Contractor's proposed Subcontractors and Suppliers of Equipment or Materials in order to better evaluate the Proposal or Bid. In the instance where identification of Suppliers is required, supply only one name per equipment or material item.
- C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Owner or Engineer may furnish to any such Subcontractor, Supplier, or other individual, entity, or organization, to the extent practicable, information about amounts paid to Contractor for Work performed. 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 Monies due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.
- D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.

- E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.
- F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade. Owner and Engineer assume no responsibility for the overlapping or omission of parts of the Work by various Subcontractors or Suppliers in their subcontracts with the Contractor, as this is solely the Contractor's responsibility.
- G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as a loss payee on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insured's or loss payees (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 such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same. This Waiver of Subrogation provision shall survive the completion and/or termination of this Agreement.
- H. As soon as possible, but in no case more than 30 days after receipt of the Notice of Award, and prior to the first application for payment, the Contractor shall provide the Engineer with a list of sub-contractors along with the division of their work.

#### 6.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others.
- B. 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.

#### 6.08 *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 opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

#### 6.09 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefore as provided in Paragraph 10.05.

#### 6.10 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.
- B. A certified sales tax statement shall be provided with each and every pay application, even if there were no sales tax during that period.

#### 6.11 *Use of Site and Other Areas*

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

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.
2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, 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 claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.
  4. Only materials and equipment that are to be used directly in the Work shall be brought to and stored on the Project site by Contractor. After equipment is no longer required for the Work, it shall be promptly removed from the Project site. If Contractor uses any portion of the new Work prior to the date of Substantial Completion of the entire Work, such items shall be restored to their new condition.
- B. *Removal of Debris during Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

#### 6.12 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction including, but not necessarily limited to, (i) deviations from the Drawings and Specifications made during construction; (ii) details in the Work not previously shown; (iii) changes to existing conditions or existing conditions found to differ from those shown on the Drawings; (iv) the actual installed position of all mechanical, electrical equipment, piping, ductwork, access panels, valves, drains, stub outs, etc.; and (v) such other information as Owner or Engineer may reasonably request. These record documents together with all approved samples and a counterpart of all approved Shop Drawings will be available to Engineer and Owner for reference. Contractor's Record Documents shall be available for review by Engineer as part of the pay application process. A pay application will not be considered until the Record Documents are shown complete through that application period. Upon completion of the Work, these Record Documents, Samples, and Shop Drawings will be delivered to Engineer for Owner. Final payment and any retainage shall not be due and owing to Contractor until the Record Documents, marked by Contractor, as required above are delivered as required above.

### 6.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. 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, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.
- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any.
- 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 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of 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 for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
- G. Nothing contained in the Contract Documents shall be construed to require or authorize Engineer or Owner to supervise or be in any way responsible for Contractor's compliance with any applicable safety regulations, codes, or procedures. Engineer and Owner shall have no duty to



inform the Contractor of any safety violations, and should Engineer or Owner voluntarily point out safety violations, such actions shall not be construed to mean that Engineer or Owner has assumed any responsibility for Contractor's compliance with any applicable safety regulations, codes, or procedures. Contractor is solely responsible for Project safety.

- H. Contractor shall promptly report in writing to Owner and Engineer all accidents arising out of or in connection with the Work that cause death, personal injury, or property damage, giving full details and statements of any witnesses.

#### 6.14 *Safety Representative*

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

#### 6.15 *Hazard Communication Programs*

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

#### 6.16 *Emergencies*

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

#### 6.17 *Shop Drawings and Samples*

- A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals (as required by Paragraph 2.07) and the submittal procedures described elsewhere in these Contract Documents. In the event of any conflict between the submittal procedures noted above and this Paragraph 6.17, the more stringent requirements shall control. Each submittal will be identified as Engineer may require. Contractor represents and warrants that all Shop Drawings shall be prepared by persons and entities possessing expertise and experience in the trade for which the Shop Drawing is prepared and, if required by the Contract Documents or applicable Laws or Regulations, be a licensed architect or engineer, as appropriate.

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

- a. Submit number of copies specified in the General Requirements.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to

show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples:*

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

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

C. *Submittal Procedures:*

1. Before submitting each Shop Drawing or Sample, Contractor shall have:
  - a. reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
  - 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 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 and approval of that submittal.
3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawings or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. *Engineer's Review:*

1. Engineer will provide timely review of Shop Drawings and Samples. Engineer's review and approval will be only to determine if the items covered by the submittals will, after

installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. Engineer's review is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance responsibility of Contractor as required by the Contract Documents. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
3. Except as otherwise expressly provided herein, Engineer's approval of any submittal shall not in any way be deemed to release Contractor from full responsibility for complete and accurate performance of the Work in accordance with the Contract Documents; neither shall such approval release Contractor from any liability imposed upon Contractor by any provision of the Contract Documents. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.
4. Contractor acknowledges that the processing of Shop Drawings and other submittals often requires extensive and time-consuming reviews by many individuals and that the time required for such reviews are directly related to the clarity, completeness, and accuracy of such submittals. Contractor covenants and agrees that Contractor's responsibilities include, but are not limited to, reviewing and coordinating each submittal with all other related or affected work and approving each submittal before submitting same to Engineer for approval. As a part of its Basic services to Owner, Engineer will review up to two submissions of all Contractor submittals required by the Contract Documents. However, if Engineer is required to:
  - a. review a third or subsequent submission of any submittal, or
  - b. review more than the number of copies of each submittal specified in the Contract Documents, or
  - c. review submittals in addition to those required by the Contract Documents, or
  - d. review submittals for proposed substitutions for previously approved items, then

Contractor shall be liable to Owner for any and all costs and expenses (including, but not limited to, Engineer's fees and expenses) incurred by Owner as a result thereof. Contractor covenants and agrees that Owner may retain, deduct, and/or offset Monies due to Owner pursuant to this Paragraph 6.17.D.4 from monies due to Contractor under the Agreement.

Contractor further covenants and agrees that Owner retains the right to make such deduction or offset at any time prior to and including final payment and that the imposition and the deduction and/or offset of such monies shall not be subject to any notice or claim provisions of the Contract Documents. Contractor acknowledges that this obligation is separate and apart from the obligation to pay liquidated damages for delay, if any.

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.

F. *Professional Certification:*

1. When professional certification of performance criteria of materials, systems, or equipment is required by the Contract Documents, Contractor shall provide the person or party providing the certification with full information on the relevant performance requirements and on the materials, systems, or equipment that are expected to operate at the Project site. The certification shall be based on performance under the operating conditions generally prevailing or expected at the Project site. Engineer shall be entitled to rely upon the accuracy and completeness of such certification.

6.18 *Continuing the Work*

- A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing. Contractor's refusal or failure to continue with the Work in a timely manner as a result of any dispute that arises will constitute a material breach of the Agreement. Owner shall be entitled to specific performance of provisions requiring delivery of warranties and other required documentation.

6.19 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on representation of Contractor's warranty and guarantee. Unless otherwise stipulated elsewhere within the Contract Documents, the Contractor's warranty period will begin at Owner's acceptance and remain in effect for a period of 12 months. If an equipment or material failure occurs during the Contractor's warranty period, the Contractor's warranty period shall be extended by a period of time, equal to the down time of the equipment, or time until the material failure was corrected to the Owner's satisfaction.
- 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 which is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
1. observations by Engineer;
  2. recommendation by Engineer or payment by Owner of any progress or final payment;
  3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
  4. use or occupancy of the Work or any part thereof by Owner;
  5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;
  6. any inspection, test, or approval by others; or
  7. any correction of defective Work by Owner.

## 6.20 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, Contractor and Subcontractor(s) (the "Indemnitors") shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, insurers, agents, consultants and subcontractors of each and any of them (the "Indemnitees") 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, resulting from, or relating to the Contractor's or its employees', agents' or Subcontractors' (or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable) actions, activities or omissions, negligent or otherwise, or breach or failure to perform this Agreement on or near Owner's property or easement, or arising in any way out of, resulting from, or relating to any of the Work to be performed under this Contract, including, without limitation, claim for bodily injuries, sickness, disease, or death, or to injury to or destruction of tangible property, or other economic damages such as fines, penalties, or other losses, including the loss of use resulting therefrom, except such obligation shall not require indemnity in favor of any party whose negligence solely call such loss. To the extent that any portion of this provision is deemed contrary to law or to otherwise be unenforceable, the parties agree that such offending portion or portions shall be severed from this provision and the remaining provisions shall be enforceable to the maximum extent permitted at law. In the event of any conflict in the construction of this provision, the parties agree that the interpretation requiring the fullest obligation and indemnity shall prevail.

- 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 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, and Contractor expressly waives any right to any such limitation. Contractor shall include in any and all subcontracts a provision requiring each Subcontractor to likewise waive any limitation on amount or type of damages, compensation, or benefits payable for or to the Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. Contractor's indemnity obligations under this Paragraph 6.20 shall also specifically include, without limitation, all fines, penalties, damages, liability, costs, expenses (including, but not limited to, reasonable fees and charges of engineers, architects, attorneys, and other professionals, and all court or mediation or other dispute resolution costs), and punitive damages (if any) arising out of, or in connection with, any (i) violation of or failure to comply with any law, statute, ordinance, rule, regulation, code, or requirement of a public authority that bears upon the performance of the Work by Contractor, a Subcontractor, or any person or entity for whom either is responsible, specifically including, but not limited to, any violations of the federal Occupational Safety and Health Act (as applied in the state in which the Project is located or any of the Work is performed) or the safety requirements under Article 6 of these Modified General Conditions; (ii) means, methods, procedures, techniques, or sequences of execution or performance of the Work; and (iii) failure to secure and pay for permits, fees, approvals, licenses, and inspections as required under the Contract Documents, or any violation of any permit or other approval of a public authority applicable to the Work, by Contractor, Subcontractor, or any person or entity for whom either is responsible.
- D. Contractor shall indemnify and hold harmless all of the Indemnities from and against any and all costs and expenses (including, but not limited to, reasonable fees and charges of attorneys) incurred by any of the Indemnities in enforcing any of Contractor's defense, indemnity, and hold-harmless obligations under this Contract.
- E. No contention by Contractor that a certain claim is beyond its indemnity obligations herein required shall relieve Contractor of the obligation to provide indemnity until final judgment by a court of competent jurisdiction holding that there exists no duty on the part of Contractor to undertake any indemnity obligation under the circumstances of any particular claim.

#### 6.21 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures or safety precautions and programs in connection with the Work.
- 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 of which the Owner and Engineer have knowledge that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional, whom shall comply with reasonable requirements of the Owner regarding qualifications and insurance. 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 of which the Owner and Engineer have knowledge that such services must satisfy.
- D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.
- E. (Intentionally deleted)

#### 6.22 *Owner-Purchased Material and Equipment*

- A. Contractor accepts assignment of, and liability for, all purchase orders and other agreements for procurement of Owner-purchased materials and equipment that are identified as part of the Contract Documents, if any. Contractor shall be responsible for any such pre-purchased items as if Contractor were the original purchaser. The Contract Price shall include, without limitation, all costs and expenses in connection with delivery, handling, storage, insurance, installation, and testing of items covered in any assigned purchase orders or agreements. All warranty and correction of the Work obligations under the contract documents shall also apply to any pre-purchased items, unless the Contract Documents specifically provide otherwise.

### **ARTICLE 7 – OTHER WORK AT THE SITE**

#### 7.01 *Related Work at Site*

- A. Owner may perform other work related to the Project at the Site with Owner's employees, or through other direct contracts therefore, or have other work performed by utility owners that does not unreasonably interfere with Contractor's Work.
- B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or

otherwise altering 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.

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

#### 7.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Contract Documents:
  - 1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
  - 2. the specific matters to be covered by such authority and responsibility will be itemized; and
  - 3. The extent of such authority and responsibilities will be provided.
- B. Unless otherwise provided in the Contract Documents, Owner shall have sole authority and responsibility for such coordination.

#### 7.03 *Legal Relationships*

- A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.
- B. (Intentionally deleted)
- C. Contractor shall be liable to Owner and any other contractor under direct contract to Owner for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's wrongful action or inactions.

#### 7.04 *Claims between Contractors*

- A. Should Contractor cause damage to the Work or property of any other contractor at the Site, or should any claim arising out of Contractor's performance of the Work at the Site be made by any other contractor against Contractor, Owner, Engineer, or the construction coordinator, Contractor shall promptly attempt to settle with such other contractor by agreement, or to otherwise resolve the dispute by arbitration or at law.
- B. Contractor shall, to the fullest extent permitted by Laws and Regulations, indemnify, defend, and hold harmless Owner and its officers, directors, partners, employees, agents, consultants, and subcontractors from and against all liabilities, claims, causes of action, suits of any nature, fines, penalties, expenses, costs, losses, and damages (including, but not limited to, fees and charges of engineers, architects, attorneys, and other professionals and court and arbitration costs) arising directly, or, indirectly, out of any controversy arising between Contractor any other contractor



oversight, including, without limitation, any action, legal or equitable, brought by any other contractor against Owner to the extent said claim is based on or arises out of Contractor's performance of the Work. Should the presence of another contractor at the Site give rise to any other Claim, Contractor agrees its sole remedy with respect to such claim shall be against the of the contractor and Contractor agrees it shall not institute any action, legal or equitable, against owner or its officers, directors, partners, employees, agents, consultants, and subcontracts, or permit any action against any of them to be maintained and continued in its name or for its benefit in any court or before any arbiter, which seeks to impose liability on or to recover damages from Owner or its officers, directors, partners, employees, agents, consultants, and subcontractors on account of any such damage or Claim.

## **ARTICLE 8 – OWNER'S RESPONSIBILITIES**

### **8.01 *Communications to Contractor***

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

### **8.02 *Replacement of Engineer***

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

### **8.03 *Furnish Data***

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

### **8.04 *Pay When Due***

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

### **8.05 *Lands and Easements; Reports and Tests***

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

### **8.06 *(Intentionally deleted)***

### **8.07 *Change Orders***

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

8.08 *Inspections, Tests, and Approvals*

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

8.09 *Limitations on Owner's Responsibilities*

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

8.10 *Undisclosed Hazardous Environmental Condition*

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

8.11 *(Intentionally deleted)*

8.12 *(Intentionally deleted)*

**ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION**

9.01 *Owner's Representative*

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents and will not be changed without written consent of Owner and Engineer. Except for those responsibilities of the Engineer to decide matters in dispute between the Owner and contractor, the Engineer's services are being performed solely for Owner's benefit, and no other party or entity shall have any claim against Engineer because of the performance or non-performance of such services.

9.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work. No act or omission of the Engineer and performing observation of the Work shall relieve the Contractor of its primary obligation to perform Work in strict accordance with the Contract Documents. No deviation from the

Contract Documents shall be deemed to be conforming Work and unless documented in a written Change Order signed by all Parties, except as provided for minor deviations which may be addressed by Field Orders as set forth below.

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

### 9.03 *Construction Field Representative (CFR)*

- A. Engineer may furnish a CFR to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such CFR and assistants will be as provided in the Contract Documents, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Contract Documents.
- B. **Limitations of Authority:** Contractor shall have no right to rely on the CFR in performing any of the following unless Contractor first receives a written instructions of the Engineer and otherwise the CFR shall not:
  - 1. shall not undertake any of the responsibilities of the Contractor, the Subcontractors, or the Contractor's superintendent;
  - 2. shall not authorize any deviation from the Contract Documents;
  - 3. shall not stop Work;
  - 4. shall not expedite the work for the Contractor;
  - 5. shall not advise on or issue directions relative to any aspect of the means, methods, techniques, safety, sequences, or procedures of construction;
  - 6. shall not authorize the Owner to occupy the Project in whole or in part;
  - 7. shall not participate in the performance of specialized field or laboratory tests.

### 9.04 *Authorized Variations in Work*

- A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If

Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefore as provided in Paragraph 10.05.

9.05 *Rejecting Defective Work*

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

9.06 *Shop Drawings, Change Orders and Payments*

- A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.
- B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.
- C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.
- D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

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

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

- A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work there under. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 21 days of the event giving rise to the question in accordance with the provisions of Paragraph 10.5 with a request for formal decision.
  - 1. In connection with Contractor's responsibilities with respect to requests for information (RFIs), see Paragraph 3.03.A.2.a and 3.03.A.2.b.

- B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believes that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.
- C. Engineer's written decision with respect to any such Claim will be a condition precedent to any exercise of rights or remedies a party may have under law.
- D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision unless either party proves, by the preponderance of the evidence, that Engineer's decision was made arbitrarily and capriciously, with no evidence whatsoever to support Engineer's decision.

9.09 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them. As a condition of the Contractor accepting the right to perform the Work required under this Agreement, the Contractor on behalf of itself, its subcontractors, employees, sureties, and assigns does prospectively release any such claim as to Engineer and Contractor agrees its sole remedy shall be under the Contract to request additional time and compensation from the Owner in strict accordance with the provisions of this Agreement.
- 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. Neither the professional activities of Engineer, nor the presence of Engineer or its employees or consultants at the Project site, shall relieve Contractor of its obligations, duties, and responsibilities under the Contract Documents.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.

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

9.10 *(Intentionally deleted)*

**ARTICLE 10 – CHANGES IN THE WORK; CLAIMS**

10.01 *Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided). A change in the Contract Price or the Contract Times shall be accomplished only by a written Amendment, a written Change Order, or a written Work Change Directive. Contractor waives the right to additional compensation or time unless it first obtains such documents, properly executed by the appropriate parties, prior to performing any additional Work. No course of conduct or dealings between the parties, no expressed or implied acceptance of alterations or additions to the Work, and no claim that Owner has been unjustly enriched by any alterations or additions to the Work shall be the basis of any claim for an increase in any amount due under the Contract Documents or a change in any time period provided for in the Contract Documents unless such written documentation is obtained, as such written documentation is a condition precedent to the Contractor's recovery of additional money or time.
- B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefore as provided in Paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

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

10.03 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:
  - 1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A, or otherwise nonconforming work or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and
  3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.
- B. Agreement on any Change Order shall constitute a full and final settlement of all matters relating to the change in the Work that is the subject of the Change Order, including, but not limited to, all direct and indirect (including without limitation delay, disruption, impact, loss of efficiency, and extended overhead) costs associated with such change, or the cumulative effect of changes through the date of the subject Change Order, and any and all adjustments to the Contract Price and the Contract Times. Implied in every Change Order, unless expressly reserved by Owner or Contractor, is a waiver of all known and unknown claims arising out of or otherwise associated with the Change Order, including a waiver of an applicable federal or state anti-claim waiver statute or common law principal of similar effect. In the event a Change Order increases the Contract Price, Contractor shall include the Work covered by such change Order in Applications for Payments as if such Work were originally part of the contract Documents.

#### 10.04 *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. Owner shall be charged with responsibility for enforcing this provision.
- B. Contractor shall keep the surety informed of the progress of the Work, and, where necessary, obtain the surety's consent to, or waiver of, (i) notice of changes in the Work; (ii) request for reduction or release of retention; (iii) request for final payment; and/or (iv) any other item required by the surety. Owner shall be notified by Contractor and shall be carbon copied, in writing, with all communications between the Contractor and the surety. Owner may, in Owner's sole discretion, inform the surety of the quality and progress of the Work and obtain consents as necessary to protect Owner rights, interest, privileges, and benefits under and pursuant to any bond issued in connection with the Work.

#### 10.05 *Claims*

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

- B. *Notice:* Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 21 days) after the start of the event giving rise thereto; provided, however, that the claimant shall use its best efforts to furnish Engineer and the other party, as expeditiously as possible, with notice of any Claim including, without limitation, those in connection with concealed or unknown conditions, once such Claim is recognized, and shall cooperate with Engineer and the party against whom the Claim is made in any effort to mitigate the alleged or potential damages, delay, or other adverse consequences arising out of the condition that is the cause of such a Claim. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Times shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).
- C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:
1. Deny the Claim in whole or in part;
  2. Approve the Claim; or
  3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.
- D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.
- E. Engineer's written action under Paragraph 10.05. C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.
- F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.
1. The notice required by Paragraph 10.05.B is a condition precedent to the assertion of any claim by Contractor. The right of Owner to receive written notice of claims under Paragraph 10.05.B may not be waived or modified by Owner or Engineer except in writing signed by Owner, and Contractor waives the right to rely on any purported waiver of this written notice by verbal instructions or other conduct of Owner or Engineer.



2. Contractor's written notice of a Claim shall be made by written request seeking a Change Order and specifying the grounds therefore and the relief sought. Contractor shall attach to each Application for Payment a schedule of outstanding and unresolved Contractor Claims. By attaching and submitting such schedule with its Application for Payment, Contractor shall be deemed to have certified that the only outstanding and unresolved Claims of which it has notice at the time of the Application for Payment are those identified in the schedule attached to its Application for Payment. A schedule of outstanding and unresolved requests for change orders and claims shall be required of each Subcontractor submitting an application for payment to Contractor that is to be included in Contractor's Application for Payment to Owner. Owner and Engineer shall each rely upon Contractor's schedule of outstanding and unresolved Claims as inclusive of any and all Claims Contractor is then on notice of, and Contractor's acceptance of payment in response to an Application for Payment shall constitute a waiver and release of any and all Claims not identified in Contractor's schedule of outstanding and unresolved Claims not identified in Contractor's schedule accompanying such Application for Payment. Contractor shall require that each Subcontractor waive and release any and all requests for change orders and claims the Subcontractor is on notice of at the time it submits its application for payment to Contractor and which is not identified in its application for payment by acceptance of payment from Contractor.

## **ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK**

### *11.01 Cost of the Work*

- A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 11.01.B, 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, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.
  2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits

funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work, but only to the extent authorized and approved by Owner in writing before such charges and expenses are incurred.
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 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for

whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance Contractor are required by the Contract Documents to purchase and maintain.

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

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.
- 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
- 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A.

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

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

## 11.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
- B. *Cash Allowances:*
  - 1. Contractor agrees that:
    - a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
    - b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. *Contingency Allowance:*
  - 1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

## 11.03 Unit Price Work

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Unless otherwise stipulated in the Contract Documents, for Unit Price Work, Contractor shall be paid an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the actual quantity of each item as determined by the Engineer pursuant to paragraph 9.07. Variations between the actual quantity and the estimated quantity for items of Unit Price Work, including increases and decreases in quantities, as a result of any Change Orders, shall not serve as a basis for an adjustment in the unit price of the item.

## ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

### 12.01 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
1. If Owner is entitled to reimbursement or payment from Contractor under or pursuant to the Contract Documents, such payment shall be made promptly upon demand of Owner. Notwithstanding anything contained in the Contract Documents to the contrary, if Contractor fails to promptly make any payment due Owner, or Owner incurs any costs and expenses to cure any default of Contractor or to correct defective Work, Owner shall have an absolute right to offset such amount against the Contract Price and may, in Owner's sole discretion, elect either to (1) deduct an amount equal to that which Owner is entitled from any payment then or thereafter due Contractor from Owner, including payment of retainage, or (2) issue a written notice to Contractor reducing the Contract Price by an amount equal to that which Owner is entitled.
- B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:
1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or
  2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or
  3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to new unit prices or a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).
- C. *Contractor's Fee:* The Contractor's fee for overhead and profit shall be determined as follows:
1. a mutually acceptable fixed fee; or
  2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
    - a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;
    - b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;

- c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 12.01.C.2.a and 12.01.C.2.b is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;
- d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;
- e. where Work is deleted from the Contract prior to commencement of that Work without substitution of other similar Work, one hundred percent (100%) of the Contract cost attributable to the Work, plus a Contractor's markup of ten percent (10%) on the amount of deleted cost, shall be deducted from the Contract Price. However, in the event that material submittals have been approved and orders placed for said materials, a lesser amount equal to the greater of (i) one hundred percent (100%) of the Contract cost attributable to the deleted Work, minus reasonable order cancellation, material restocking, and similar fees, plus a Contractor's fee of five percent (5%) on the amount of deleted cost, or (ii) eighty percent (80%) of the Contract Price shall be deducted from the Contract Price. The credit to the Owner as a result of deletions in the work which results in a for reduced premiums on labor and material bonds, payment and performance bonds shall in all cases be one hundred percent (100%) of the reduction in premium. When both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.
- f. To the extent the Owner performs work as a result of any omission or breach of the Contractor, the Owner shall be entitled to an overhead mark-up consistent with the provisions set forth in this section.

## 12.02 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

## 12.03 *Delays*

- A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times may be extended in an amount equal to the time lost due to such delay if a Claim is made therefore as provided in Paragraph 12.02.A and if the performance of the Work is not, was not, or would not have been delayed by any other cause for which the Contractor is not entitled to an extension of the Contract Times under the Contract Documents. Delays beyond the control of Contractor shall include, but not be

limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God. Contractor acknowledges and agrees that adjustments in the Contract Times will be permitted for a delay only to the extent such delay (i) is not caused, or could not have been anticipated, by Contractor; (ii) could not be limited or avoided by the Contractor's timely notice to Owner of the delay or reasonable likelihood that a delay will occur; and (iii) is of a duration not less than one day. In no event will claims for delay be allowed where alleged delays do not impact the critical path of the Contractor as demonstrated on the relevant schedule provided by the Contractor for the period of time in which the delay allegedly occurred.

- B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.
  - 1. If a claim is made as provided in Paragraph 12.03.A and this Paragraph 12.03.C for delay due to abnormal weather conditions, the time extension to be awarded to Contractor, if any, shall be calculated using the following standard baseline ("standard Baseline") of monthly anticipated adverse weather delay days for the project location, and extensions shall only be granted for days lost in any given month in excess of the number of days shown in the Standard Baseline for the same given month. The Standard baseline shall be regarded as the established normal and anticipatable number of 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 shall be included in the Contractor' scheduling of weather-dependent activities and shall not be eligible for extension of Contract Time.

Monthly Contract Allowance (MCA) in days												
Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Days	8	6	6	7	5	8	7	5	6	3	5	7

- 2. 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”)
  - 3. Adverse Weather may include, as deemed by Engineer, “dry-out” or “mud” days:
    - a. For rain days above the standard baseline,
    - b. Only if there is a hindrance to site access or site work such as earthwork; and,
    - c. At a rate no greater than one (1) make-up day for each day or consecutive days of rain beyond the standard baseline that total one inch (1.00”) or more, liquid measure, unless specifically recommended otherwise by Engineer.
  - 4. Actual adverse weather delay days must prevent work on critical exterior activities for fifty percent (50%) or more of Contractor’s scheduled workday. The number of actual adverse weather delay days shall be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather days exceeds the number of days anticipated by the Standard Baseline in Paragraph 12.03.C.1, and providing that all other contractually-required conditions are met, qualifying delays will be converted to calendar days and additional calendar days will be added to the Contract times for each qualifying delay in excess of the Standard Baseline.
  - 5. Upon commencement of on-site activities and continuing throughout construction, Contractor shall be responsible for accurately measuring and recording the daily the occurrence of adverse weather on-site.
  - 6. Within 30 days of the last day of any month (hereinafter referred to as the “Reporting Month”), Contractor shall submit a written Adverse Weather Report, including copies of Contractor’s daily weather reports and applicable climatological data from the National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location, unless Engineer allows an additional period of time for submission of said report. Notwithstanding any other provisions, failure to submit the required written report within the time specified above shall be deemed to be and shall constitute a waiver by Contractor of any and all claims for delay due to adverse weather conditions occurring during said Reporting Month.
- D. Owner, Engineer, and their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project. Time extensions due to weather delay shall not entitle Contractor to any claim, compensation, or recovery for extended overhead.
- E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.
- F. Contractor shall be liable to Owner and shall pay Owner for a percentage of all costs incurred by Owner and Engineer in investigating, analyzing, negotiating, arbitrating, and litigating any claim



against Owner or Engineer for costs or damages due to any alleged delaying or Contractor in the performance of the Work, which percentage shall be equal to the percentage of Contractor's total delay claim which is determined to be false or to have no basis in law or in fact.

- G. To the fullest extent permitted by law, and notwithstanding anything to the contrary in the Contract Documents, an extension of the Contract Time, to the extent permitted under Paragraph 12.02, shall be the sole remedy of Contractor for any (1) delay in the commencement, prosecution, or completion of the Work, (ii) hindrance or obstruction in the performance of the Work, (iii) loss of productivity, or (iv) other similar claims (collectively referred to in this Paragraph 12.03.G as "Delays" whether or not such Delays are foreseeable, unless a Delay is caused by acts of Owner constituting active interference with Contractor's performance of the Work, and only to the extent such acts continue after Contractor furnishes Owner with notice of such interference. In no event shall Contractor be entitled to any compensation with any Delay, including, without limitation, consequential damages, lost opportunity costs, impact damages, or other similar remuneration. Owner's exercise of any of its rights under the Contract Documents (including, without limitation, ordering changes in the Work, or directing suspension, rescheduling, or correction of the Work), regardless of the extent or frequency of Owner's exercise of such rights or remedies, shall not be construed as active interference with Contractor's performance of the Work.

## **ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK**

### *13.01 Notice of Defects*

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

### *13.02 Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, 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.

### *13.03 Tests and Inspections*

- A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.
- B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:
1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;

2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in Paragraph 13.04.C; and
  3. as otherwise specifically provided in the Contract Documents.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.
- E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation.
- F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.
- G. Contractor shall be responsible for inspection of portions of the work already performed to determine that such portions are in proper condition to receive subsequent Work. Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the Work conforms strictly to the Contract requirements. Contractor shall keep full and detailed inspection records and Owner and Owner's authorized representatives shall be afforded access to, and shall be permitted to audit and copy, Contractor's inspection records relating to the Project., and Contractor shall preserve these records for a period of five years after final payment or for such longer period of time as may be required by law.

#### 13.04 *Uncovering Work*

- A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.
- B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.
- C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory

replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefore as provided in Paragraph 10.05.

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

### 13.05 *Owner May Stop the Work*

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

### 13.06 *Correction or Removal of Defective Work*

- A. Promptly after receipt of written notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others). Retesting which is necessary as a result of failed testing or defective work shall be at the Contractor's expense.
- B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- C. At any time during the progress of the Work and up to the date of final acceptance, the Engineer shall have the right to reject any Work that does not conform to the requirements of the Contract Documents, even though such Work has been previously inspected and paid for. Any omissions or failure on the part of the Engineer to disapprove or reject any Work or materials at the time of inspection shall not be construed as an acceptance of any defective Work or materials.

### 13.07 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use

by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. repair such defective land or areas; or
  2. correct such defective Work; or
  3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
  4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

### 13.08 *Acceptance of Defective Work*

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

If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefore as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

### 13.09 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct, or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.
- C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefore as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work and the Owner's expenses and compensation for the Engineer's additional services made necessary by Contractor's default, neglect, or failure. Contractor covenants and agrees that Owner may retain, deduct, or offset Monies due to Owner pursuant to this Paragraph 13.09.C from Monies due to Contractor under the Contract Documents. Contractor further covenants and agrees that Owner retains the right to make such reduction or offset at any time prior to and including final payment and that the imposition and the deduction and/or offset of such Monies shall not be subject to any notice or Claim provisions of the Contract Documents.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

## ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

### 14.01 *Schedule of Values*

- A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.
- B. Detail Breakdown of Contract Amount: except in cases where unit prices form the basis for payment under the Contract, the Contractor shall, in accordance with Paragraph 2.07.3, submit a complete itemization of the Contract Amount showing the value assigned to each part of the work, including an allowance for profit and overhead. Upon approval of the itemization of the Contract Amount by the Engineer, it shall be used as the basis for all Applications for Payment.

### 14.02 *Progress Payments*

#### A. *Applications for Payments:*

- 1. At the date established for each progress payment (but not more often than once a month), Contractor shall submit to the Engineer an Application for Payment for Work done and materials delivered and stored on the Site. Each Application for Payment shall be computed on the basis of Work completed on all items listed in the Detail Breakdown of Contract Amount (or on unit prices), less retainage. The Contractor shall furnish the Engineer and Owner all reasonable information required for obtaining the necessary data relative to the progress and execution of the Work. 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 another location agreed to in writing, the Application for Payment shall be accompanied by evidence that the materials and equipment are covered by appropriate property insurance, all of which must be satisfactory to the 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 shall be governed by N.C. General Statute Section 143-134.1.
- 4. Payment for Stored Materials and Equipment: The following conditions apply to payment for stored materials and equipment allowed by Article 14.02.A.1.:
  - a. Except in the instance of a material or equipment item that involves little or no installation cost, payment for stored materials or equipment shall not exceed fifty percent (50%) of the value of the item on the Schedule of Values (for lump sum contracts) or fifty percent (50%) of the value the pay item (for unit price contracts) that covers the materials or equipment being claimed. For material or equipment items that involve little or no installation cost, the percentage of the value of the item that will be paid for stored materials will be as agreed upon by the Engineer, Owner, and Contractor.

- b. Contractor shall submit paid invoices or releases of Lien from the e materials and equipment suppliers with each Application for Payment containing a request for payment for that particular item of stored materials or equipment.
  - c. Payment for stored materials and equipment is generally intended to apply only to major materials and equipment items, as determined by the Engineer.
5. Each Application for Payment shall be accompanied by the following, all in form and substance in accordance with the Contract Documents and satisfactory to Owner:
- a. In accordance with Paragraph 10.05.F.2, a current schedule of outstanding and unresolved Contractor Claims;
  - b. A current Contractor's lien waiver and duly executed and acknowledged sworn statement showing all Subcontractors and Suppliers with whom contractor has entered into subcontracts, the amount of each such subcontract, the amount requested for an Subcontractor and Supplier in the requested progress payment, and the amount to be paid to Contractor from such progress payment, together with similar sworn statements from all Subcontractors and Suppliers;
  - c. Duly executed waivers of mechanic's and material man's liens from all Subcontractors and, when appropriate, from Suppliers and lower tier subcontractors establishing payment or satisfaction of payment of all amounts requested by Contractor on behalf of such entities or persons in any previous Application for Payment; and
  - d. All information and materials required to comply with the requirements of the Contract Documents or reasonably requested by Owner or Engineer.
  - e. Contractor's social security number (if an independent contractor) or federal employer identification number (if a corporation, partnership, or proprietorship), as appropriate.
  - f. Contractor shall annotate the record copy of the Drawings to show all changes made each period as a condition for Engineer's recommendation of payment.
  - g. Contractor shall provide a certified sales tax statement with its pay application.
6. Contractor shall also comply with the following specific requirements:
- a. Title to all materials and equipment purchased by the Contractor for the Work shall pass to the Owner at the time Owner makes payment for such materials and equipment. The Contractor shall comply with any procedures established by the Owner to secure, evidence, or establish the Owner's title to such materials and equipment.
  - b. With each application for payment, Contractor shall submit to Owner a written list identifying each location where materials are stored off the Project site and the value of materials at each location. Contractor shall procure insurance satisfactory to Owner for materials stored off the Project site in an amount not less than the total value thereof.

- c. The consent of any surety shall be obtained to the extent required prior to payment for any materials stored off the Project site.
- d. Representatives of Owner and Owner's lender, if any, shall have the right to make inspections of the storage areas at any time.
- e. Such materials shall be: (1) protected from diversion, destruction, theft, and damage to the satisfaction of Owner and Owner's lender, if any; (2) specifically marked for use on the Project; and (3) segregated from other materials at the storage facility.

*B. Review of Applications:*

1. Engineer will, within 10 days after receipt of each complete Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations 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 9.07, 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 Documents; or
  - b. That Engineer is legally liable or responsible for any defects in the Work performed by the Contractor; or
  - c. 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 Monies paid on account of the Contract Price, or
  - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:
  - a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
  - b. the Contract Price has been reduced by Change Orders;
  - c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
  - d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.
  - e. there are other items warranting a set-off against the amount requested by Contractor, including, but not by way of limitation, errors or overpayments on prior payments to Contractor.

*C. Payment Becomes Due:*

1. Within thirty (30) days after receipt of a Contractor's Request for Payment with Engineer's recommendation, the Owner shall:
  - a. Pay the Application for Payment as recommended by the Engineer.
  - b. Pay such other amount as Owner decides is due the Contractor, informing the Contractor and Engineer in writing stating the reasons for paying the amended amount.

- c. Withhold payment informing the Contractor and the Engineer of his reasons for withholding payment.

D. *Reduction in Payment:*

1. Owner may refuse to make payment of the full amount recommended by Engineer because:
  - a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;
  - b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
  - c. there are other items entitling Owner to a set-off against the amount recommended; or
  - d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.
  - e. Failure of the Contractor to make payments due to Subcontractors, material suppliers, or employees.
  - f. Damage to another Contractor or any allegations of damage caused to another Contractor
  - g. The Owner reasonably believes that the Contractor cannot complete the Work within the Contract Price.
2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor remedies the reasons for such action.
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 14.02.C.1 and subject to interest as provided in the Agreement.

E. Other Payment to Contractor Provisions

1. Credit for Uncorrected Work: Should the Owner direct the Contractor to leave uncorrected Work that has been damaged or that was not performed in accordance with the Contract Documents, an equitable deduction from the Contract Amount shall be made to compensate the Owner for the Uncorrected Work.
2. Payment for Removal of Rejected Work and Materials: The removal of Work and materials rejected in accordance with paragraph 13.06.A of the Modified General Conditions and the re-execution of acceptable work by the Contractor shall be at the expense of the Contractor, and he shall pay the cost of replacing the Work of other contractors destroyed or damaged by

the removal of the rejected Work or materials and the subsequent replacement of acceptable Work.

- a. Removal by Owner: Removal of rejected Work or materials and storage of materials by the Owner, in accordance with paragraph 13.09.A of the Modified General Conditions, shall be paid by the Contractor within thirty (30) days after written notice to pay is given by the Owner. If the Contractor does not pay the expenses of such removal and after ten (10) days written notice being given by the Owner of his intent to sell the materials, the Owner may sell the materials at auction or at private sale and will pay the Contractor the net proceeds therefrom after deducting all the costs and expenses that should have been borne by the Contractor.

#### 14.03 *Contractor's Warranty of Title*

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

#### 14.04 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall review 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 therefore.
  1. If after the performance of such Substantial Completion Review, Engineer determines that the Work is not substantially complete, Contractor shall be liable to Owner for any and all costs and expenses (including, but not limited to, Engineers fees and expenses) incurred by the Owner as a result of each such failed review thereafter.. Contractor covenants and agrees that Owner may retain, deduct, and/or offset monies due to the Owner pursuant to this Paragraph 14.04.B.1 from monies due to Contractor under the Agreement. Contractor further covenants and agrees that Owner retains the right to make such deduction or offset at any time prior to and including final payment and that the imposition and the deduction and/or offset of such monies shall not be subject to any notice or claim provisions of the Contract Documents.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a proposed certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a proposed list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the proposed certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the proposed certificate to Owner, notify Contractor in writing, stating the reasons therefore. If, after consideration of Owner's objections, Engineer considers the Work substantially complete,

Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised list of items to be completed or corrected) reflecting such changes from the proposed certificate as Engineer believes justified after consideration of any objections from Owner.

- D. At the time of delivery of the proposed certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the final certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.
- E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the tentative list.

#### 14.05 *Partial Utilization*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
  - 1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 14.04.A through D for that part of the Work.
  - 2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
  - 3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefore. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
  - 4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

#### 14.06 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is fully complete, inclusive of all requirements of the Contract, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.
1. If after the performance of such final completion inspection, Engineer determines that punch list items, site or project cleanup activities remain or the Work is otherwise not fully complete in accordance with all of the requirements of the Contract Documents, Contractor shall be liable to Owner for any and all costs and expenses (including, but not limited to, Engineer's fees and expenses) incurred by the Owner as a result thereof. Contractor covenants and agrees that Owner may retain, deduct, and/or offset Monies due to the Owner pursuant to this Paragraph 14.06.A.1 from Monies due to Contractor under the Agreement. Contractor further covenants and agrees that Owner retains the right to make such deduction or offset at any time prior to and including final payment and that the imposition and the deduction and/or offset of such Monies shall not be subject to any notice or claim provisions of the Contract Documents.

#### 14.07 *Final Payment*

##### A. *Application for Payment:*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:
  - a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.6;
  - b. consent of the surety, if any, to final payment;
  - c. a list of all Claims against Owner that Contractor believes are unsettled; and
  - d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment

bills, and other indebtedness connected with the Work for which Owner 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.

4. Contractor must submit to the Engineer within thirty (30) days of the Final Completion date, all Maintenance and Operating Manuals, schedules, guarantees, equipment test reports, and record drawings noting all changes during construction. Failure to submit all items listed will give cause to the Engineer to deny final payment recommendation to the Owner.

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

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

*C. Payment Becomes Due:*

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

14.08 *Final Completion Delayed*

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

## 14.09 *Waiver of Claims*

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

1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and
2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

## **ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION**

### 15.01 *Owner May Suspend Work*

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

### 15.02 *Owner May Terminate for Cause*

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

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);
2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;
3. Contractor's repeated disregard of the authority of Engineer; or
4. Contractor's violation in any substantial way of any provisions of the Contract Documents.

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

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

2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere; and
  3. complete the Work as Owner may deem expedient, including hiring contractors on any contractual basis including payment under a cost plus contract
- C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph, Owner shall not be required to obtain the lowest price for the Work performed.
- D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 10 days of receipt of said notice.
- E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of Monies due Contractor by Owner will not release Contractor from liability.
- F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B and 15.02.C.

### 15.03 *Owner May Terminate For Convenience*

- A. Owner may, at any time, terminate the contract in whole or in part for Owner's convenience and without cause. Termination by Owner under this Paragraph 15.03 shall be by a notice of termination prepared by the Owner and delivered to Contractor indicating intent to terminate for convenience and the effective date thereof.
1. (Intentionally deleted)
  2. (Intentionally deleted)
  3. (Intentionally deleted)
  4. (Intentionally deleted)
- B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.



- C. Upon receipt of a notice of termination for convenience, Contractor shall immediately, in accordance with instruction from Owner, proceed with performance of the following duties regardless of delay in determining or adjusting amounts due under this Paragraph 15.03.B:
1. Cease operations as specified in the notice;
  2. Place no further order and enter into no further subcontracts for materials, labor, services, or facilities except as necessary to complete continued portions of the Contract;
  3. Terminate all subcontracts and orders to the extent they relate to the Work terminated;
  4. Proceed to complete the performance of Work not terminated; and
  5. Take actions that may be necessary, or that Owner may direct, for the protection and preservation of the Work.
- D. Upon such termination, Contractor shall recover as its sole remedy payment of the percentage of the Contract Price equal to the percentage of the Work performed satisfactorily and not previously paid for as determined by the Engineer. Contractor hereby waives and forfeits all other claims for payment and damages, including, without limitation, anticipated profits or revenue or other economic loss arising out of or resulting from such termination.
- E. Owner shall be credited for:
1. Payments previously made to Contractor for the terminated portion of the Work;
  2. Claims which Owner has against Contractor under the contract; and
  3. The value of the materials, supplies, equipment, or other items that are to be disposed of by contractor that are part of the Contract Price.

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

- A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) 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 does not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

## **ARTICLE 16 – DISPUTE RESOLUTION**

### *16.01 Methods and Procedures*

If this project is a State Construction Project and/or for a public Owner, Dispute Resolution shall be governed by RULES IMPLEMENTING MEDIATED SETTLEMENT CONFERENCES IN NORTH CAROLINA PUBLIC CONSTRUCTION PROJECTS adopted February 26, 2002.

If the project is a private project, Dispute Resolution shall be as follows:

- A. Either Owner or Contractor, when mutually agreed to by both parties, may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the North Carolina Rules of Mediated Settlement Conferences then in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the Engineer and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.
- B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.
- C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:
  1. Files for Arbitration in accordance with the N.C. Arbitration Act, which arbitration shall be governed by the current Construction Arbitration rules of the American Arbitration Association; or
  2. Agrees with the other party to submit the Claim to another dispute resolution process;

## **ARTICLE 17 – MISCELLANEOUS**

### *17.01 Giving Notice*

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
  1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended; or
  2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

### *17.02 Computation of Times*

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

### 17.03 *Cumulative Remedies*

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

### 17.04 *Survival of Obligations*

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

### 17.05 *Controlling Law*

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

### 17.06 *Headings*

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



## **MEET NORTH CAROLINA ONE-CALL CENTER**

North Carolina One-Call is a Corporation formed and funded by participating utility companies and municipalities in the interest of community and job safety and improved service through damage reduction to the utilities.

A one call toll free number, **1-800-632-4949**, provides an avenue to all of the participating members from any point within the State of North Carolina.

Anyone proposing to excavate, dig, bore, tunnel, blast or disturb the earth in any manner in which buried utilities may be damaged is requested to call the toll-free number between the hours of 7:00 a.m. and 5:00 p.m., Monday through Friday, forty-eight hours before starting the proposed work.

Within minutes of your telephone call, the participating members will be made aware of your plans and will be given pertinent information that has been provided by you about your planned work. You will be told the names of the participating members from whom you can expect a response. If there are buried facilities in the path of your activity, the route of the utilities will be staked and/or marked at no expense to you. If there are no facilities in the area of the planned work, you will be called or notified by a representative of the participating company accordingly.

Should a non-participating utility operator be serving your area, we recommend that you call them on an individual basis. All utility operators, whether company or municipality, will be provided an opportunity to become a member of North Carolina One-Call.

Naturally, knowing the route of the utilities, the excavator is expected to exercise caution and to avoid damage as the project progresses.

Damage prevention doesn't just happen - it is a planned and orderly process through which each of us can participate - **Yes, we can and will dramatically reduce damages to the utilities in the State of North Carolina! Thanks for your help.**

**BEFORE YOU DIG**

**IN THE INTEREST OF COMMUNITY AND JOB SAFETY**

**AND IMPROVED SERVICE**

**CALL NORTH CAROLINA ONE-CALL**

**1-800-632-4949**





**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		
				<b>1. ORIGINAL CONTRACT PRICE</b> .....	\$ _____
				<b>2. Net change by Change Orders</b> .....	\$ _____
				<b>3. Current Contract Price (Line 1 ± 2)</b> .....	\$ _____
				<b>4. TOTAL COMPLETED AND STORED TO DATE</b> (Column F total on Progress Estimates).....	\$ _____
				<b>5. RETAINAGE:</b>	
				a. X <u>5.00%</u> Work Completed.....	\$ _____
				b. X <u>5.00%</u> Stored Material.....	\$ _____
				c. Total Retainage (Line 5.a + Line 5.b).....	\$ _____
				<b>6. AMOUNT ELIGIBLE TO DATE (Line 4 - Line 5.c)</b> .....	\$ _____
				<b>7. LESS PREVIOUS PAYMENTS (Line 6 from prior Application)</b> .....	\$ _____
				<b>8. AMOUNT DUE THIS APPLICATION</b> .....	\$ _____
				<b>9. BALANCE TO FINISH, PLUS RETAINAGE</b> (Column G total on Progress Estimates + Line 5.c above).....	\$ _____
TOTALS					
NET CHANGE BY CHANGE ORDERS					

<b>Contractor's Certification</b>	
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.	
<b>Contractor Signature</b>	
By: _____	Date: _____

Payment of: \$ \_\_\_\_\_  
 (Line 8 or other - attach explanation of the other amount)

is recommended by: \_\_\_\_\_ (Engineer) \_\_\_\_\_ (Date)

Payment of: \$ \_\_\_\_\_  
 (Line 8 or other - attach explanation of the other amount)

is approved by: \_\_\_\_\_ (Owner) \_\_\_\_\_ (Date)

Approved by: \_\_\_\_\_ (Date)  
 Funding or Financing Entity (if applicable)





# Certificate of Substantial Completion

Project: Jonathan Creek Soil Reclamation Site & Dennis Farm Borrow Area Project	
Owner: Haywood County	Owner's Contract No.:
Contract:	Engineer's Project No.: 18.00162

**This [tentative] [definitive] Certificate of Substantial Completion applies to:**

All Work under the Contract Documents:       The following specified portions of the Work:

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\_\_\_\_\_  
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 Project or portion thereof designated above is hereby declared and is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below.

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

**The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance and warranties shall be as provided in the Contract Documents except as amended as follows:**

Amended Responsibilities                       Not Amended

Owner's Amended Responsibilities:

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Contractor's Amended Responsibilities:

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

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

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Executed by Engineer

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Date

---

Accepted by Contractor

---

Date

---

Accepted by Owner

---

Date

**PART 1: GENERAL****1.01 SUMMARY OF WORK**

- A. This project generally includes the following:

Compaction of offsite concrete to create flat pad for future development, erosion control, site stabilization, and construction entrance.

**1.02 PROJECT MEETINGS**

- A. Preconstruction Conference: A preconstruction conference will be scheduled by the Engineer after issuance of the Notice of Award. The Contractor and his major subcontractors shall attend the meeting, which will be chaired by the Engineer or his representative. The purpose of the pre-construction conference will be to discuss administration of the Contract and the execution of work, and to answer any questions relative to performance of work under these Contract Documents. All decisions, instructions and interpretations made at this conference shall be binding and conclusive. The proceedings of this conference will be recorded and copies of the proceeding minutes will be issued to the Contractor for his use and distribution to his subcontractors.
- B. Progress Meetings: The Contractor and any subcontractors, material suppliers or vendors whose presence is necessary or requested shall attend meetings, referred to as Progress Meetings, when requested by the Engineer or his representative for the purpose of discussing the execution of work. Each meeting will be held at the time and place designated by the Engineer or his representative. Any decisions, instructions and interpretations at these meetings shall be binding and conclusive on the Contractor and such decisions, instructions and interpretations shall be confirmed in writing by the Engineer or his representative. The proceedings of these meetings will be recorded and the Contractor will be furnished with a reasonable number of copies for his use and for his distribution to the subcontractors, material suppliers and vendors involved.

### **1.03 PROJECT PAYMENTS AND RETAINAGE**

- A. The Owner may retain a portion of the amount otherwise due the Contractor. Except as provided elsewhere, the amount retained by the Owner shall be limited to the following:
1. Withholding of not more than 5% of the payment claimed until work is 50% complete.
  2. When the contract is 50% complete no further retainage shall be withheld from periodic payments. However, the Owner may reinstate retainage (up to 5%) if they feel the work is unsatisfactory. The Owner may withhold additional retainage as necessary from periodic payments in a sum necessary to maintain total retainage of 2.5% of contract cost through the completion of the project.
  3. When the work is substantially complete (operational or beneficial occupancy), the withheld amount shall be further reduced below 5% to only that amount necessary to assure completion.
  4. The Owner may accept securities negotiable without recourse, conditions or restrictions, a release of retainage bond or an irrevocable letter of credit provided by the Contractor in lieu of all or part of the cash retainage.
- B. For unit price projects, the Contractor may use the "Unit Bid Item Summary" form included at the end of this section, or a similar form that provides the required information.
- C. Sales Tax Statement: When requested by the Owner, each request for progress payment submitted by the Contractor shall include a sales tax reimbursement statement. The Contractor shall utilize the form provided at the end of this section, or a similar form that provides the required information and certification.

### **1.04 SUBMITTALS**

- A. General: All transmittals from the Contractor shall be accompanied by a transmittal cover form that includes pertinent information related to the project and the particular transmittal. The Contractor shall use the "Transmittal Form" provided at the end of this section, or a similar form that includes the required information.
- B. Construction Schedule: The Contractor shall, within ten (10) days after receipt of the Notice of Award, prepare and submit to the Engineer for

approval a practicable construction schedule showing the order in which the Contractor proposes to carry on the work, the date on which he will start the several salient features and the contemplated dates for completing such salient features. The schedule may be in any form, at the option of the Contractor, but shall maintain current with each submittal for progress payment, at least the following information.

1. The various classes and area of work broken down into times projected for submittals, approvals and procurement; times for installation and erection; and times for testing and inspection.
  2. The work completed and the work remaining to complete the project.
  3. Any items of work which will delay the start or completion of other major items of work so as to delay completion of the whole project.
- C. Schedule of Values: For lump sum items, the Contractor shall, within thirty (30) days after the Notice of Award and prior to submitting the first Application for Payment, submit to the Engineer for approval a Schedule of Values for the project. The Schedule of Values shall establish the actual value of the components of the work and, after approval by the Engineer, shall be the basis for the Contractor's Applications for Payment. The Schedule of Values shall include separate line items for all major portions of the work.
- D. Material Suppliers and Subcontractor Listings: As soon as possible, but in no case more than 30 days after receipt of the Notice of Award, the Contractor shall supply the names and addresses of all major material suppliers and subcontractors to the Engineer.
- E. Shop Drawings and Samples: The Contractual requirements for shop drawings and samples are specified in the General Conditions and in the individual specification sections for each item. The Contractor shall submit shop drawings and samples accompanied by the "Submittal and Routing Form" included at the end of this section. Resubmissions, where required, shall be in accordance with the procedures established for the initial submittal.
- F. Record Documents: Record drawings will not be required of the Contractor; however, to enable the Owner to prepare record drawings, the Contractor shall keep a complete and accurate record of changes and/or deviations from the Contract Documents and shop drawings, indicating the work as actually installed. Changes shall be neatly and correctly shown on the respective portion of the affected document, using prints of the Drawings affected, or the Specifications, with appropriate

supplementary notes. The record set of marked-up Drawings, shop drawings, and Specifications shall be kept at the job site during construction and be available for inspection by the Engineer and the Owner. These marked prints shall be included in the package of final documentation submitted before final payment is required.

## **1.05 DELIVERY, STORAGE AND HANDLING**

- A. The Contractor shall be responsible for delivery, storage and handling of all materials and equipment, unless otherwise noted. All material and equipment shall be shipped to arrive at the job site on the dates indicated on the purchase order. The following information shall be supplied:
  - 1. The contents and bill of lading, number of shipments.
  - 2. The method of shipments.
  - 3. The date of shipment.
  - 4. The name of the construction project.
- B. Prior to shipment, all items shall be properly prepared to protect all critical areas from the effects of weather, normal expected transport and on site handling.
- C. Items shall be tagged and marked with equipment and/or motor numbers as per the manner stipulated in the purchase order.
- D. All spare parts and expendable supplies shall be properly crated, marked, and shipped to the job site on the date specified.

## **PART 2: PRODUCTS**

### **2.01 EQUIPMENT AND MATERIAL STANDARDS**

- A. All equipment and materials of construction described in this specification shall meet the more stringent requirements of the applicable codes listed below:
  - 1. OSHA - Occupational Safety and Health Administration.
  - 2. ASTM - American Society for Testing Materials.
  - 3. ANSI - American National Standards Institute.
  - 4. AGMA - American Gear Manufacturers Association.
  - 5. AISC - American Institute of Steel Construction.
  - 6. AWS - American Welding Society.

7. NEC - National Electric Code.
8. NEMA - National Electrical Manufacturers Association.
9. API - American Petroleum Institute.

## **2.02 QUALITY ASSURANCE**

- A. All equipment shall, after installation by the Contractor, shall be inspected, tested and started up by a qualified representative of the equipment manufacturer. The Contractor and the manufacturer's representative shall complete the "Equipment Start-up Form" provided at the end of this section and submit the completed form to the Engineer.
- B. The listing of a manufacturer in the specifications does not necessarily imply that the manufacturer's standard equipment meets the requirements of the specifications, but that the manufacturer listed has the capability to meet the requirements of the specifications.

## **PART 3: EXECUTION**

### **3.01 SPECIAL REQUIREMENTS**

- A. Limits of Construction: The Contractor shall confine all operations and personnel to the limits of construction as shown on the plans. There shall be no disturbance whatsoever of any areas outside the limits of construction nor shall the workmen be allowed to travel at will through the surrounding private property.
- B. Construction Superintendent: The Contractor shall place in charge of the work a competent and reliable superintendent, who shall have the authority to act for the Contractor and who shall be accountable to the Engineer. The Contractor shall, at all times, employ labor and equipment sufficient to accomplish the several classes of work to full completion in the manner and time specified.
- C. Site Conditions:
  1. The Contractor shall maintain the work and project grounds free from rubbish, debris and waste materials during all phases of the work.
  2. Immediately upon completion of the work and prior to final acceptance, the Contractor shall remove all rubbish, debris, temporary structures, equipment, excess or waste materials and shall leave the work and project grounds in a neat and orderly condition that is satisfactory to the Engineer and Owner.

- D. Right of Entry: The Engineer and his representative will at all times have access to the work. In addition, authorized representatives and agents of any participating Federal or State agency shall be permitted to inspect all work, materials, payrolls, records of personnel, invoices of materials, and other relevant data and records.
- E. Temporary Construction Services and Facilities: The Contractor shall obtain all necessary permits, licenses, etc. and shall pay all costs incident to the furnishing, installing and maintenance of temporary utility services and facilities required for the duration of the work.
- F. Control of Erosion, Siltation, and Pollution:
1. Surface drainage from cuts and fills within the construction limits, whether or not completed, and from borrow and waste disposal areas, shall, if turbidity producing materials are present, be graded to control erosion within acceptable limits. Temporary erosion and sediment control measures such as berms, dikes or drains, if required to meet the above standards, shall be provided and maintained until permanent drainage and erosion control facilities are completed and operative. The area of bare soil exposed at any one time by construction operations should be held to a minimum. Fills and waste areas shall be constructed by selective placement to eliminate silts or clays on the surface that will erode and contaminate adjacent streams.
  2. The Contractor shall take whatever measures are necessary to minimize soil erosion and siltation, water pollution, and air 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. The Engineer shall have the authority to limit the area over which clearing and grubbing, excavation, borrow, and embankment operations are performed whenever the Contractor's operations do not make effective use of construction practices and temporary measures which will minimize erosion, or whenever construction operations have not been coordinated to effectively minimize erosion, or whenever permanent erosion control features are not being completed as soon as permitted by construction operations.



4. 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 pits, 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.
  5. The Contractor will not be directly compensated for any dust control measures necessary, as this work will be considered incidental to the work covered by the various contract items.
- G. Disposal of Materials: Debris and waste materials, including all combustibles, shall be removed by the Contractor from the construction area unless otherwise approved in writing by the Owner or his Representative.
- H. Quantities of Estimate: The estimated quantities of work to be done and materials to be furnished under this Contract shown in any of the documents, including the proposal, are given for use in comparing bids and to indicate approximately the total amount of the contract; and the right is especially reserved, except as herein otherwise specifically limited to, to increase or diminish the quantities as may be reasonably necessary or desirable by the Owner to complete the work contemplated by this Contract.
- I. Utility Coordination: The Contractor shall make all necessary arrangements with private and public utility companies to avoid any possible damage to or interruption of utility equipment or service. The Contractor shall be responsible for all inquiries concerning locations of utility lines. Repair of any damage to public or private utilities resulting from this work shall be the responsibility of the Contractor.
- J. Construction Surveying: All work shall be constructed in accordance with the lines, grades and elevations shown on the plans or as given by the Engineer in the field. The Contractor shall be fully responsible for maintaining alignment and grade. All principal controlling points and base lines for locating the principal components of the work together with a suitable number of benchmarks adjacent to the work will be provided by the Engineer. From this information, the Contractor shall verify benchmarks and develop and make all detail surveys needed for construction. The Contractor shall protect and safeguard all points, stakes, grade marks, monuments, and benchmarks at the site of the work

and shall re-establish, at his own expense, any marks which are removed or destroyed due to his construction operations.

K. Laying Out Work:

1. It is imperative that the Contractor work within the shown rights of way or easements at all times, unless approved otherwise by the property owner and the Engineer.
2. The Contractor shall, at his expense, provide competent engineering survey services and shall provide and maintain accurate, detailed, survey work.
3. The plans and supplementary drawings shall not be scaled and the Contractor must verify all dimensions and elevations at the site prior to proceeding with the work. The Contractor shall also verify existing utility locations prior to purchasing materials affected by these locations.

L. Use of Explosives:

1. If the use of explosives is necessary for the execution of the work, the Contractor shall exercise the utmost care not to endanger life or property. The Contractor shall be responsible for any and all damage or injury to persons or property resulting from the use of explosives. Such responsibility shall include, but shall in no way be limited to, all damages arising from all forms of trespass to adjacent property as a result of blasting by the Contractor.
2. All explosives shall be stored in a secure manner, in compliance with all laws, and all such storage places shall be marked clearly "DANGEROUS EXPLOSIVES".

M. Use of Chemicals: All chemicals used during project construction, whether herbicide, pesticide, disinfectant, polymer, reactant or of other classification, must show approval of either EPA or USDA. Use of all such chemicals and disposal of residues shall be in conformance with instructions.

N. Safety and Health Regulations:

1. The Contractor shall comply with all Federal, State and Local Safety and Health Regulations including the Department of Labor Safety and Health Regulations for construction promulgated under the Occupational Safety and Health Act of 1970 (P.L. 91 - 596) and under Section 107 of the Contract Work Hours and Safety Standards Act (P.L. 91-54).

2. The Contractor shall provide continuous, safe access to all properties, both public and private, along the project in all cases where such access will be provided by the completed facility and shall conduct his operations in such a manner that inconvenience to the property owners will be held to a minimum.
- O. Equipment and Material Storage: The Contractor shall plan his activities so that all materials and equipment can be stored within the project limits. There shall be no disturbance whatsoever of any areas outside the project limits without the prior approval of the Engineer.
- P. Disturbed Areas: All areas disturbed as a result of the work of the Contractor shall be restored to the original or better condition. Reasonable care shall be taken during construction to avoid damage to the Owner's property or that of any adjacent property owner(s).
- Q. Tree and Plant Protection: No trees or shrubs except those specifically indicated, shall be removed or trimmed without prior approval from the Engineer. All trees and shrubs within the construction limits to be retained by the Owner shall be properly protected by fencing, posts or other means approved by the Engineer. Where any trees or shrubs are damaged or where limbs are required to be trimmed or removed because of operations under this Contract a qualified horticulturist shall be consulted and the trimming performed in the proper manner. Any landscape plantings severely damaged or which die as a result of the Contractor's operations shall be replaced at no additional cost to the Owner.
- R. Temporary Sanitary Facilities: The Contractor shall be solely responsible for furnishing and maintaining temporary sanitary facilities during the construction period. Such facilities shall include but not be limited to, potable water supply and toilet facilities. Such facilities shall be in compliance with all applicable state and local laws, codes, and ordinances and shall be placed convenient to work stations and secluded from public observation. Once the project is completed all temporary sanitary facilities shall be removed by the Contractor.
- S. Traffic Maintenance:
1. The Contractor shall provide, erect, and maintain all necessary barricades, suitable and sufficient warning lights, danger signals, and signs, shall provide a sufficient number of flagmen to direct the traffic and shall take all necessary precautions for the protection of the work and the safety of the public.
  2. All barricades and obstructions or hazardous conditions shall be illuminated as necessary to provide for safe traffic conditions.
  3. Warning and caution signs shall be posted throughout the length of any portion of the project where traffic flow is restricted.

### 3.02 WEATHER DELAYS

#### A. Extensions of Contract Time for Abnormal Weather:

1. If the basis exists for an extension of time in accordance with article 12.03 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.
2. In the event adverse weather other than those conditions described in Section C, "Adverse Weather and Rain Delay Days", delays construction activity, such as temperature extremes. The baseline must be adjusted to reflect the number of expected days as described in Section D, "Development of Adverse Weather Baseline".
3. 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.

#### B. 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 climactic range for the City of Asheville, North Carolina. In the event that the standard baseline for the construction site differs significantly from the Asheville, 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.
3. Standard Baseline is as follows:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
8	6	6	7	5	8	7	5	6	3	5	7

C. Adverse Weather and Rain Delay Days:

1. 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").
2. Adverse Weather may include, if appropriate, "dry-out" or "mud" days:
  - a. For rain days above the standard baseline,
  - b. Only if there is a hindrance to site access or site work such as excavation, backfill, footings; and,
  - c. 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.
3. 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.

D. Development of Adverse Weather Baseline:

1. Development of Adverse Weather Data – This is the process of collecting, compiling and analyzing the raw weather data (NOAA and other sources) that forms the baseline for estimating anticipated delays and project durations and determining the occurrence of unusually severe weather. The following actions make up the development process:
  - a. Analyze the project scope and site geography to determine which weather parameters (temperature, precipitation, wind, etc.) are applicable. The parameters selected should present adverse conditions that could potentially delay construction activities.
  - b. Review the technical specifications to determine the numerical values that will be assigned to each parameter in order to establish the anticipated adverse weather. Usually when two or more construction phases are affected by the

same parameter, the less severe numerical value should be used (i.e. if roofing work is delayed by temperatures below 40 degrees and concrete work is delayed by temperatures below 32 degrees, then the numerical value used to define adverse weather should be 40 degrees unless some other factor renders the roofing phase insignificant in terms of schedule criticality).

- c. Compile the number of days per month that the anticipated weather is expected to be adverse by analysis of NOAA or other weather data. When at all possible, the last 10 years of consecutive data should be used to establish the baseline. However, in the absence of 10 years of data, a shorter period may be used. It may be necessary to extrapolate the number of calendar days that the temperature is expected to fall below the selected numerical value (say, 40 degrees) from raw data.
- d. Adverse weather data must be periodically updated in order to reflect changes in the 10-year averages and incorporate any necessary corrections derived from actual field experience. It is recommended that data used for establishing adverse weather baselines be reviewed annually.

### **3.03 PROJECT CLOSE-OUT**

- A. Final Documentation: Prior to final payment, and before the issuance of a final certificate for payment in accordance with the provisions of the General Conditions, the Contractor shall file with the Engineer the documents listed hereinafter:
  1. Guarantees: The Contractor's one (1) year guarantee required by the General Conditions and all other guarantees stated in the Specifications.
  2. Affidavit and Waiver of Liens: As required by General Conditions. The Contractor shall utilize the form provided at the end of this section.
  3. Consent of Surety Company to Final Payment.
  4. Project Record Documents: Record documents shall be as specified in Section 01200-1.04.F.
- B. Submittals: The above records shall be arranged in order, in accordance with the various sections of the Specifications, and properly indexed. At

the completion of the work, the Contractor shall certify by endorsement thereof that each of the revised and marked-up prints of the Drawings and Specifications is complete and accurate.

- C. No review or receipt of such records by the Engineer or the Owner shall be a waiver of any change from the Contract Documents or the shop drawings, or in any way relieve the Contractor of his responsibility to perform the work as required by the Contract Documents, and the shop drawings to the extent they are in accordance with the Contract Documents.

**END OF SECTION**

(Recommended Standard Forms follow)







**ATTENTION: CONSTRUCTION ADMINISTRATION**  
**SUBMITTAL AND ROUTING FORM**

(TO BE USED WITH EACH INDIVIDUAL PLAN SUBMITTAL OR SHOP DRAWING)

SUBMITTAL AND APPROVAL (Contractor to complete)	
Project Name: _____	McGill Project #: _____
Contractor: _____	Submittal #: _____
Contract for: _____	Specification Section: _____
Submittal Title: _____	
Sheet/item numbers: _____	
Subcontractor: _____	Supplier: _____
Date Transmitted: _____	Date Needed: _____
Change from Contract Documents? Yes <input type="checkbox"/> No <input type="checkbox"/>	Attached documentation: _____
Complete Submittal? Yes <input type="checkbox"/> No <input type="checkbox"/>	_____
<p><b>The Contractor must review and approve this submittal for all requirements and conformance to Contract documents prior to submittal to McGill Associates. Submittals forwarded without the Contractor's approval will be returned without review or comment.</b></p>	
Reviewed by: _____	Date: _____

McGILL ASSOCIATES SUBMITTAL ROUTING (McGill to complete)				
Date Received: _____		Logged by: _____		To: _____
				Return by: _____
<b>REVIEW CODES:</b> 1 = <u>Approved</u> ; 2 = <u>Approved as Noted</u> ; 3 = <u>Revise &amp; Resubmit</u> ; 4 = <u>Not Approved</u>				
Reviewed by (in order)	Review Code	COMMENTS	Date	Initials
Project Engineer's approval: _____			Date _____	

CONTRACTOR'S FINAL AFFIDAVIT AND WAIVER OF LIEN

PROJECT: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

OWNER: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

CONTRACT AMOUNT: \_\_\_\_\_  
STATE OF: \_\_\_\_\_  
COUNTY OF: \_\_\_\_\_

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

This is to certify that all claims for labor, material, services and any other just claims arising out of the performance of this Contract have been satisfied, except for payment to subcontractors to be made out of retainage presently being held by the Owner, and that no claims or liens exist against this Contractor in connection with this contract; that to the best of our knowledge no claims or liens exist, and if any such claims or liens appear after payment of the retained amount due on the Contract, this Contractor shall save the Owner harmless on account thereof. After payment of the retained amount the undersigned does hereby waive, release and relinquish any and all claims or rights of lien presently held or hereafter accruing upon the above project.

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

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

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

Sworn to and subscribed before me this  
\_\_\_\_\_ day of \_\_\_\_\_ 200 \_\_\_\_\_

\_\_\_\_\_  
(Notary Public)

My Commission expires: \_\_\_\_\_

**013000.1 SCOPE**

This section covers the method of measurement and payment for items of work under this contract.

**013000.2 GENERAL**

The total Bid Price for each section of the contract shall cover all work required by the Contract Documents. All costs in connection with the proper and successful completion of the work including furnishing all materials, equipment, supplies, and appurtenances; providing all construction plant, equipment, and tools; and performing all necessary labor and supervision to fully complete the work, shall be included in the unit and lump sum prices bid. All work not specifically set forth as a pay item in the Bid Schedule shall be considered a subsidiary obligation of the Contractor and all costs in connection therewith shall be included in the prices bid.

**013000.3 ESTIMATED QUANTITIES**

All estimated quantities stipulated in the Bid Schedule or other Contract Documents are approximate and are to be used only a) as a basis for estimating the probable cost of the work and b) for the purpose of comparing the bids submitted for the work. The actual amounts of work done and materials furnished under unit price items may differ from the estimated quantities. In some cases a unit price item has been added to the bid schedule for the purpose of establishing a cost basis in the event work associated with that item is required. No guarantee is expressed or implied that the quantities shown in the bid schedule shall be required to fulfill the Contract. The basis of payment for work and materials will be the actual amount of work done and materials furnished. The Contractor agrees that he will make no claim for damages, anticipated profits, or otherwise on account of any difference between the amounts of work actually performed and materials actually furnished and the estimated amounts thereof.

**013000.4 WORK ITEMS**

The following describes the method of measurement and payment for the bid items shown in the Bid Schedule. Lump sum and/or unit prices may be further broken down in a Schedule of Values submitted by the Contractor for payment purposes as approved by the Engineer.

## **ITEM 1 – MOBILIZATION/GENERAL REQUIREMENTS**

Partial payments for the item "Mobilization/General Requirements" will be made with the first and second applications for payment for the contract, and will be made at the rate of 50% of the lump sum price for "Mobilization/General Requirements" on each of these applications for payment. The amount for "Mobilization/General Requirements" in the approved schedule of values shall not exceed 3% of the total project bid. Mobilization shall include all costs for Contractor's bonds, insurance, temporary facilities, safety measures, general requirements for the contract, "trucks entering highway" signage, and all other miscellaneous costs. Please note that initial construction staking will be provided by Owner. Damage to staking that will require re-staking will be paid for by the Contractor.

## **ITEM 2 – EARTHWORK**

Work included in this line item of payment shall include, but is not limited to, all earthwork associated with the project, excavating, grading and fine grading at the Dennis Farm site, hauling excavated material to the Jonathan Creek site, and proofrolling subgrade, excavating, grading, and fine grading at the Jonathan Creek site. Work required to meet optimum moisture content of excavated material including drying, scarifying, spreading, etc are also included in this line item of work. No additional payment shall be made by Owner for drying or wetting of material prior to compaction. Material above optimum moisture content shall not be considered unsuitable and paid under undercut/removal of unsuitable unit prices. If material is encountered at the Dennis Farm site that is unsuitable based on soil classification, it will still be excavated and hauled to the designed waste area at Jonathan Creek and compacted to a minimum of 92%.

The quantity of earthwork will be paid for at the contract unit price in accordance with the contract documents for the actual compacted cubic yards of material placed at the Jonathan Creek Site. The quantity will be verified by **comparison of the difference in cubic yardage of As-Built survey upon completion of grading of the Jonathan Creek site to existing pre-construction topographic survey** once the earthwork has been completed. The pre-construction topographic survey was completed for design, and is shown on the Drawings. Post-construction topographic survey will be provided by McGill Associates upon completion of **compacted and fine graded** site, at the completion of project. If contractor requires payment prior to As-Built survey an assumed percentage complete agreed upon in the field with Engineer can be discussed for approval. Payment shall not be made based on truck load counts or based on a calculated cubic yardage by the Contractor based on material removed from the Dennis Farm Site.

### **ITEM 3 – ADDITIONAL 15,000 CY EARTHWORK**

Work included in this line item of payment shall include all earthwork associated with the project in excess of 33,500 CY included in Item #2. This shall include, but not be limited to, excavating, grading and fine grading at the Dennis Farm site, hauling excavated material to the Jonathan Creek site, and proofrolling subgrade, excavating, grading, and fine grading at the Jonathan Creek site. Work required to meet optimum moisture content of excavated material including drying, scarifying, spreading, etc are also included in this line item of work. No additional payment shall be made by Owner for drying or wetting of material prior to compaction. Material above optimum moisture content shall not be considered unsuitable and paid under undercut/removal of unsuitable unit prices. If material is encountered at the Dennis Farm site that is unsuitable based on soil classification, it will still be excavated and hauled to the designed waste area at Jonathan Creek and compacted to a minimum of 92%.

The quantity of earthwork will be paid for at the contract unit price in accordance with the contract documents for the actual cubic yards of material exported from the site hauled to Jonathan Creek reclamation site in excess of 33,500 CY paid for in Item #2. The quantity will be verified by **comparison of as-built post construction survey of the Jonathan Creek site to existing pre-construction topographic survey** once the earthwork has been completed. The pre-construction topographic survey was completed for design, and is shown on the Drawings. Post-construction topographic survey will be provided by McGill Associates upon completion of **compacted and fine graded** site, at the completion of project. If contractor requires payment prior to As-Built survey an assumed percentage complete agreed upon in the field with Engineer can be discussed for approval. Payment shall not be made based on truck load counts or based on a calculated cubic yardage by the Contractor based on material removed from the Dennis Farm Site.

### **ITEM 4 – EROSION CONTROL CASH ALLOWANCE**

An erosion control cash allowance of \$10,000 has been included in the Bid Schedule to cover the cost of adding erosion control measures, unforeseen at this time. This could include temporary sediment traps, stormwater culverts, rip rap for ditches and pipe outlets, and erosion control matting. The Contractor will not be eligible for compensation of this allowances unless a proposal of cost for completing work is submitted to the Engineer prior to beginning construction. The Contractor will be required to provide documentation for all expenses incurred. Maintenance of existing erosion control measures, or additional measures required for phasing of the work or preparation of storm events shall not be eligible for compensation under

the cash allowance. This item will only be paid at the sole discretion and prior approval of Engineer and Owner.

#### **ITEM 5, 9 – CLEARING AND GRUBBING**

Work included in this line item of payment shall include all clearing and grubbing within the limits of disturbance shown on the Drawings for the Dennis Farm Site and Jonathan Creek Site, stockpiling material onsite, and final placement on top of proposed contours.

The quantity of clearing and grubbing will be paid for at the contract lump sum price in accordance with the Contract Documents. The lump sum price will be the full compensation for all labor, equipment, and materials necessary for clearing and grubbing (topsoil or vegetative material) onsite as described in these specifications and/or shown on the Drawings. No compensation will be given for clearing and grubbing outside of the limits of disturbance without prior approval from Engineer. Included in this item is the stockpile of the clear and grubbed material. Once final grading has been approved by the Engineer, the cleared and grubbed material will be placed on top of the proposed contours prior to seeding. This placement of the stockpiled materials is included in this line item.

#### **ITEM 6,11 – EROSION CONTROL MEASURES**

Work included in this line item of payment shall consist of all erosion control measures as shown on the plans or additional measures necessary to remain in compliance.

The quantity of erosion control measures will be paid for at the contract lump sum price in accordance with the Contract Documents. The lump sum price will be full compensation for all labor, equipment, and materials necessary for work associated with erosion control measures, including but not limited to, furnishing and installing silt fence, temporary construction entrance, temporary diversion ditches (including NAG S150 matting), sediment basins, etc as shown on the plans. The lump sum price shall also include any temporary ditches not shown on the drawings that will be necessary to provide positive drainage until the site is stabilized. Maintenance during construction of erosion control measures, as well as removal and restoration of surfaces shall also be included in the lump sum price.

#### **ITEM 7 – SC250 SLOPE MATTING**

The quantity of slope/ditch matting to be paid for will be the actual square yards of matting installed at the Dennis Farm Site as measured along the surface of the ground at locations per the Drawings or as directed by the Engineer at the contract unit price per square yard. The unit price will be

the full compensation for all work including, but not limited to material, equipment and labor for a complete installation as described in these specifications and/or shown on the Drawings.

#### **ITEM 8,16 – SEEDING**

Work associated with Seeding, shall be paid for at the Lump Sum price as listed in the bid schedule. The Owner will retain 20% of the Lump Sum cost until a satisfactory stand of grass has been established on the disturbed areas of the site. The lump Sum price for Seeding shall include all cost for materials, equipment, and labor for providing an acceptable stand of grass on all disturbed areas of the project in accordance with the specifications. The work shall include, but is not limited to, surface preparation, seeding, fertilizer, and mulching.

#### **ITEM 10 – DEMOLITION/RELOCATION**

Work included in this line item of payment shall consist of all demolition/relocation shown on the plans or necessary to accommodate new construction at the Jonathan Creek Site.

The quantity of demolition/relocation will be paid for at the contract lump sum price in accordance with the Contract Documents. The lump sum price will be full compensation for all labor, equipment, and materials necessary for work associated with demolition, including but not limited to, relocation of existing soil stockpile and existing silt fence as well as demolition of any onsite items to accommodate new construction. Demolished material shall be disposed of in accordance with all local, state, and federal requirements.

#### **ITEM 12– UNDERCUT EXCAVATION, REMAIN ONSITE**

The quantity of undercut excavation to be paid for will be by cubic yard measured by the average end area method, based on measurements made following excavation. The quantity measured will be paid for at the Contract price for undercut excavation, remain onsite. Work associated with this line item shall consist of the removal and disposal of residual soil deemed unsuitable during excavation or proofrolling prior to fill placement and placed within the permitted disturbance limits with approval from Engineer. The unit price bid per cubic yard of undercut excavation shall include all costs for excavation placement onsite.

#### **ITEM 13 – SELECT BACKFILL**

Work associated with this line item shall consist of providing and placement of select backfill material to replace material removed as part of undercut excavation. Select backfill material shall be the same material that has

been brought onsite from the Dennis Farm site. An outside source other than the Dennis Farm site for select backfill will not be approved.

The quantity of select backfill to be paid for will be by cubic yard measurement in place by the average end area method, based on measurements made prior to and following placement. The unit price bid per cubic yard of select backfill installed in-place shall include all costs for excavating at the Dennis Farm site, hauling, placement and compaction.

#### **ITEM 14 -WASHED STONE FOR BASE STABILIZATION**

Work associated with this line item shall be paid for at the unit price per ton for Washed Stone for Base Stabilization to backfill undercut excavation. The unit price per ton shall include all materials, equipment, and labor for the complete installation of Washed Stone for Base Stabilization as directed by the Engineer.

The work shall include, but is not limited to, preparation of the surface to receive stone, and furnishing, placing, and compacting of the stone 100% Standard Proctor. The Contractor shall be paid for the actual number of tons placed and shall furnish certified weight tickets.

#### **ITEM 15 -GEOGRID FOR BASE STABILIZATION**

This item of work shall include furnishing and installing geogrid at locations as directed by the Engineer. Geogrid shall be TENSAR BX 1100 or an approved equivalent. Measurement will be made along the surface of the ground, over which the fabric has been acceptably placed, and payment will be based on the actual surface area in square yards installed and accepted.

The unit bid price will be full compensation for all labor, equipment, and materials necessary to install the geogrid. Any necessary removal and replacement of material associated with the placement of the geogrid will be covered under the undercut and washed stone for base stabilization unit prices.



**PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract apply to this Section.

**1.2 SUMMARY**

- A. This Section includes the following:
  - 1. Demolition and removal of structures and/or site improvements.
  - 2. Abandoning in place or removing below-grade construction.
  - 3. Disconnecting, capping or sealing, and abandoning in-place or removing site utilities.
  - 4. Salvaging items for reuse by Owner.
- B. Related Sections include the following:
  - 1. Division 31 Section "Site Clearing" for site clearing and removal of above- and below-grade site improvements not part of building demolition.

**1.3 DEFINITIONS**

- A. Demolish: Completely remove and legally dispose of off-site.
- B. Recycle: Recovery of demolition waste for subsequent processing in preparation for reuse.
- C. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.
- D. Salvage: Carefully detach from existing construction, in a manner to prevent damage, allow for further use, and deliver to Owner. Include fasteners or brackets needed for reattachment elsewhere.

**1.4 MATERIALS OWNERSHIP**

- A. Unless otherwise indicated, demolition waste becomes the property of Contractor.

- B. Timber, steel and other merchantable goods and materials removed incidental to demolition shall remain the property of the Owner unless otherwise directed.
- C. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
  - 1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

## 1.5 **SUBMITTALS**

- A. Proposed Protection Measures: Submit, as requested, informational report, including drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and, for noise control. Indicate proposed locations and construction of barriers.
  - 1. Adjacent Buildings and Property: Detail special measures proposed to protect adjacent buildings to remain and property.
- B. Schedule of Demolition Activities: Indicate the following:
  - 1. Detailed sequence of demolition work, with starting and ending dates for each activity.
  - 2. Temporary interruption of utility services.
  - 3. Shutoff and capping or re-routing of utility services.
- C. Demolition Plans: Drawings indicating the following:
  - 1. Locations of temporary protection.
- D. Inventory: Submit a list of items to be removed and salvaged and deliver to Owner prior to start of demolition.
- E. Preconstruction Photographs or Video: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by demolition operations.
- F. Retain record submittal in paragraph below if applicable. Landfill records may be required by Owner when demolished materials contain hazardous wastes or, in rare circumstances, where recycling is not allowed.
- G. Landfill Records: Provide receipt for the acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

- H. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

## **1.6 QUALITY ASSURANCE**

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI A10.6 and NFPA 241.

## **1.7 PROJECT CONDITIONS**

- A. Structures to be demolished will be vacated and their use discontinued before start of the Work.
- B. Structures immediately adjacent to the demolition area may be occupied or otherwise in operation. Conduct demolition so operations of occupied or operating structures will not be disrupted.
  - 1. Provide not less than three (3) business days' notice of activities that will affect operations of adjacent occupied or operating structures.
  - 2. Maintain access to existing roadways, walkways, exits, and other facilities used by occupants/operators of adjacent structures.
    - a. Do not close or obstruct roadways, walkways, exits, or other facilities used by occupants/operators of adjacent structures without written permission from authorities having jurisdiction.
- C. Owner assumes no responsibility for buildings and structures to be demolished.
  - 1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- D. Hazardous Materials: It is not expected that 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. Hazardous materials will be removed by the Contractor by way of a Change Order or by the Owner under a separate contract. If the removal of hazardous materials results in a delay to the Contractor's schedule an appropriate adjustment will be made to the Contract Time by way of Change Order.

- E. Hazardous Materials: Hazardous materials may be present in buildings and structures to be demolished. If a report on the presence of hazardous materials is on file for review and use, the Contractor may examine report to become aware of locations where hazardous materials are present.
  - 1. Hazardous material remediation is specified elsewhere in the Contract Documents.
  - 2. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.
  - 3. Owner will provide material safety data sheets for materials that are known to be present in buildings and structures to be demolished because of building operations or processes performed there.
- F. On-site storage or sale of removed items or materials is not permitted.

## **1.8 COORDINATION**

- A. Arrange demolition schedule so as not to interfere with Owner's on-site operations or the operations of adjacent occupied or operating structures.

## **PART 2 - PRODUCTS**

### **2.1 SOIL MATERIALS**

- A. Satisfactory Soils: Comply with requirements in Division 31 Section "Earth Moving."

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Verify that utilities have been disconnected and capped before starting demolition operations.
- B. Review Project Record Documents of existing construction provided by Owner, if available. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.
- C. Inventory and record the condition of items to be removed and salvaged. Provide photographs and/or video of conditions that might be misconstrued as damage caused by salvage operations.

- A. As necessary, perform or engage a professional engineer properly licensed to practice in the state of the project site to perform an engineering survey of condition of structure to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during demolition operations.
- B. Retain subparagraph below if demolition includes prestressed or post-tensioned concrete slabs.
  - 1. Steel Tendons: Locate tensioned steel tendons and include recommendations for de-tensioning.
- C. Verify that hazardous materials have been remediated before proceeding with demolition operations.

### **3.2 PREPARATION**

- A. Refrigerant: Remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction before starting demolition.
- B. Existing Utilities: Locate, identify, disconnect, and seal or cap off all utilities serving structures to be demolished.
  - 1. Arrange to shut off indicated utilities with utility companies.
  - 2. If removal, relocation, or abandonment of utility services will affect adjacent occupied or operating structures, then provide temporary utilities that bypass structures to be demolished and that maintain continuity of service to other structures.
  - 3. Cut off pipe or conduit a minimum of 36 inches below grade. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing according to requirements of authorities having jurisdiction.
- C. Existing Utilities: Do not start demolition work until utility disconnecting and sealing have been completed and verified in writing.
- D. Temporary Shoring: Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent unexpected movement or collapse of construction being demolished.
  - 1. Strengthen or add new supports when required during progress of demolition.
- E. Salvaged Items: Comply with the following:
  - 1. Clean salvaged items of dirt and demolition debris.
  - 2. Pack or crate items after cleaning. Identify contents of containers.

3. Store items in a secure area until delivery to Owner.
4. Transport items to storage area designated by Owner or indicated on Drawings.
5. Protect items from damage during transport and storage.

### **3.3 PROTECTION**

- A. Existing Facilities: Protect adjacent roadways, walkways, loading docks, structure entries, and other facilities during demolition operations. Maintain exits from existing structures.
- B. Existing Utilities: Maintain utility services to remain and protect from damage during demolition operations.
  1. Do not interrupt existing utilities serving adjacent occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction.
  2. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and authorities having jurisdiction.
    - a. Provide at least 3 business days' notice to occupants/operators of affected structures if shutdown of service is required during changeover.
- C. Temporary Protection: Erect temporary protection, such as roadways, walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction and as indicated.
  1. Protect adjacent structures and facilities from damage due to demolition activities.
  2. Protect existing site improvements, appurtenances, and landscaping to remain.
  3. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.
  4. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent structures and facilities to remain.
  5. Provide protection to ensure safe passage of people around demolition area and to and from occupied or operating portions of adjacent structures.
  6. Protect all adjacent improvements that are to remain and that are exposed to demolition operations.
  7. Erect and maintain dustproof partitions and temporary enclosures to limit dust, noise, and dirt migration to occupied or operating portions of adjacent structures.

- D. Remove temporary barriers and protections where hazards no longer exist. Where open excavations or other hazardous conditions remain, leave temporary barriers and protections in place.

### **3.4 DEMOLITION, GENERAL**

- A. General: Demolish indicated existing structures and site improvements completely. Use methods required to complete the Work within limitations of governing regulations and as follows:
  - 1. Do not use cutting torches until work area is cleared of flammable materials. Maintain portable fire-suppression devices during flame-cutting operations.
  - 2. Maintain fire watch during and for at least two hours after flame cutting operations.
  - 3. Maintain adequate ventilation when using cutting torches.
  - 4. Locate demolition equipment and remove debris and materials so as not to impose excessive loads on any part of the structure.
- B. During demolition, perform surveys to detect hazards that may result from demolition activities.
- C. Site Access and Temporary Controls: Conduct demolition and debris removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and operating facilities.
  - 1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or operating facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed areas if required by Owner or authorities having jurisdiction.
  - 2. Use water mist and other suitable methods to limit spread of dust and dirt. Comply with governing environmental protection regulations. Do not use water when it may damage adjacent structures or create hazardous or objectionable conditions, such as ice, flooding, and pollution.
- D. Bituminous Paved Areas: Scarify and completely remove. Resultant material may be utilized in bottom portion of areas to receive fill. No pieces shall be left exposed in the fill slopes. If material is used in any portion of the new construction, layers shall be a maximum of 8 inches and separated by minimum 6-inch layers of earth. Water and compaction requirements are specified under other sections. No compaction is required for materials used for obliteration work outside the limits of new construction.
- E. Removal of Concrete Surfaces and Structures: Concrete designated for removal, break into pieces and use for rip rap. Volume, minimum 0.5 cubic feet; 75 percent of pieces shall be between 1.5 and 2.0 cubic feet. Stockpile at designated locations.

- F. Pipe Removal: Remove pipe, exercising care to avoid breaking or damaging. Store pipe to be re-laid as directed.

### **3.5 DEMOLITION BY MECHANICAL MEANS**

- A. Proceed with demolition of structural members systematically, from higher to lower level.
- B. Remove debris from elevated portions of a structure by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
  - 1. Remove structural members and lower to ground by method suitable to minimize ground impact and dust generation.
- C. Salvage: Items to be salvaged are indicated on Drawings.
- D. Below-Grade Construction: Demolish all below-grade construction that is within the footprint of new construction and extending 5 feet outside footprint indicated for new construction. Abandon below-grade construction outside this area.
  - 1. Remove below-grade construction to at least 36 inches below grade, unless otherwise indicated.
- E. Existing Utilities: Abandon existing utilities and below-grade utility structures as shown on the Drawings.
  - 1. Fill abandoned utility structures with satisfactory materials according to backfill requirements in Division 31 Section "Earth Moving."
  - 2. Piping: Disconnect piping at unions, flanges, valves, or fittings.
  - 3. Wiring Ducts: Disassemble into unit lengths and remove plug-in and disconnecting devices.

### **3.6 SITE RESTORATION**

- A. Below-Grade Areas: Completely fill below-grade areas and voids resulting from demolition operations with satisfactory soil materials according to backfill requirements in Division 31 Section "Earth Moving."
- B. Site Grading: Uniformly rough grade area of demolished construction to a smooth surface, free from irregular surface changes. Provide a smooth transition between adjacent existing grades and new grades. Eliminate areas where water may collect in depressions.



### **3.7 REPAIRS**

- A. Promptly repair damage to adjacent improvements caused by demolition operations.

### **3.8 DISPOSAL OF DEMOLISHED MATERIALS**

- A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an approved landfill acceptable to authorities having jurisdiction.
  - 1. Do not allow demolished materials to accumulate on-site.
  - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn demolished materials.

### **3.9 CLEANING**

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by demolition operations. Return adjacent areas to condition existing before demolition operations began.

**END OF SECTION 024116**



**PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract apply to this Section.

**1.2 SUMMARY**

- A. Section Includes:
  - 1. Protecting existing vegetation to remain.
  - 2. Removing existing vegetation.
  - 3. Clearing and grubbing.
  - 4. Stripping and stockpiling topsoil.
  - 5. Removing above- and below-grade site improvements.
  - 6. Temporary erosion and sedimentation control measures.
- B. Related Sections:
  - 1. Division 02 Section "Demolition" for site improvements.

**1.3 DEFINITIONS**

- A. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.
- B. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil; but in disturbed areas such as urban environments, the surface soil can be subsoil.
- C. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil and is the zone where plant roots grow.
- D. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction, as indicated on Drawings or as designated by the Engineer.
- E. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction, as indicated on Drawings or as designated by the Engineer.
- F. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

#### **1.4 MATERIAL OWNERSHIP**

- A. Except for stripped topsoil and other materials indicated to be stockpiled or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.
- B. Timber, steel and other merchantable materials removed incidental to clearing and grubbing shall remain the property of the Owner unless otherwise directed.

#### **1.5 SUBMITTALS**

- A. Existing Conditions: Documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.
  - 1. Use sufficiently detailed photographs or videotape.
  - 2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.
- B. Record Drawings: Identifying and accurately showing locations of capped utilities and other subsurface structural, electrical, and mechanical conditions.

#### **1.6 PROJECT CONDITIONS**

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
  - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
  - 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- B. Work on Adjoining Property: Work on adjoining property will be not permitted without the written consent of the property owner and the Engineer. This shall include, but not limited to temporary access to the Work, storage of materials and any ground disturbing activities.
- C. Utility Locator Service: Notify appropriate utility locator services for area where Project is located a minimum of 72 hours prior to commencing site clearing activities.
- D. Do not commence site clearing operations until temporary erosion and sedimentation control and plant/tree protection measures are in place.
- E. The following practices are prohibited within protection zones:
  - 1. Storage of construction materials, debris, or excavated material.

2. Parking vehicles or equipment.
  3. Foot traffic.
  4. Erection of sheds or structures.
  5. Impoundment of water.
  6. Excavation or other digging unless otherwise indicated.
  7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- F. Do not direct vehicle or equipment exhaust towards protection zones.
- G. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.
- H. Soil Stripping, Handling, and Stockpiling: Perform only when the topsoil is dry or slightly moist.

## **PART 2 - PRODUCTS**

### **2.1 MATERIALS**

- A. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Division 31 Section "Earthwork."
1. Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site.

## **PART 3 - EXECUTION**

### **3.1 PREPARATION**

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Locate and clearly identify trees, shrubs, and other vegetation to remain or to be relocated. Wrap a 1-inch blue vinyl tie tape flag around each tree trunk at 54 inches above the ground.
- C. Protect existing site improvements to remain from damage during construction.
1. Restore damaged improvements to their original condition, as acceptable to Owner.

### **3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL**

- A. Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to erosion and sedimentation control Drawings and requirements of authorities having jurisdiction.
- B. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.
- C. Inspect, maintain, and repair erosion and sedimentation control measures during construction until permanent vegetation has been established.
- D. Upon the establishment of permanent vegetative covers, remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

### **3.3 TREE AND PLANT PROTECTION**

- A. General: Protect trees and plants remaining on-site (including root structure) to avoid injury.
- B. Enclose the trunks of trees which are to remain adjacent to the work with substantial wooden boxes of such height as may be necessary to protect them from piled material, equipment or equipment operation. Use excavating machinery and cranes of suitable type and operate the equipment with care to prevent injury to remaining tree trunks, roots, branches and limbs.
- C. Do not cut branches, limbs, and roots except by permission of the Engineer. Cut smoothly and neatly without splitting or crushing. In case of cutting or unavoidable injury to branches, limbs, and trunks of trees, neatly trim the cut or injured portions and cover with an application of grafting wax and tree healing paint as directed.
- D. Protect by suitable means all cultivated hedges, shrubs and plants that might be injured by the Contractor's operations. Promptly heel in any such trees or shrubbery necessary to be removed and replanted. Perform heeling in and replanting under the direction of a licensed and experienced nurseryman. Replant in their original position all removed shrubbery and trees after construction operations have been substantially completed and care for until growth is reestablished.
- E. Replace cultivated hedges, shrubs, and plants injured to such a degree as to affect their growth or diminish their beauty or usefulness, by items of kind and quality at least equal to the kind and quality existing at the start of the work.

### **3.4 EXISTING UTILITIES**

- A. Interrupting Existing Utilities: 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 Engineer not less than three (3) days in advance of proposed utility interruptions.
  - 2. Do not proceed with utility interruptions without Engineer's written permission.

### **3.5 CLEARING AND GRUBBING**

- A. Clearing and grubbing shall consist of the removal and satisfactory disposal of all trees, brush, stumps, logs, grass, weeds, roots, decayed vegetable matter, posts, fences, stubs, rubbish and all other objectionable matter resting on or protruding through the original ground surface and occurring within the construction limits or right of way of any excavation, borrow area, or embankment.
- B. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.
  - 1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
  - 2. Grind down stumps and remove roots, obstructions, and debris to a depth of 18 inches below exposed subgrade.
  - 3. Use only hand methods for grubbing within protection zones.
  - 4. Chip removed tree branches and stockpile in approved areas, if approved by Engineer, or dispose of off-site.
- C. The work of clearing shall only be performed within the limits established by the plans, specifications, or the Engineer.
- D. Clearing shall consist of the felling and cutting up, or the trimming of, trees and the satisfactory disposal of the trees and other vegetation together with the down timber, snags, brush and rubbish occurring within the areas to be cleared. Trees and other vegetation, except such individual trees, groups of trees, and vegetation, as may be indicated on the plans to be left standing, and all stumps, roots and brush in the areas to be cleared shall be cut off 6 inches above the original ground surface.
- E. Individual trees and groups of trees designated to be left standing within cleared areas shall be trimmed of all branches to such heights and in such manner as may be necessary to prevent interference with construction operations. All limbs and branches required to be trimmed shall be neatly cut close to the

whole of the tree or to main branches, and the cuts thus made shall be painted with an approved tree wound paint. Individual trees, groups of trees, and other vegetation, to be left standing shall be thoroughly protected from damage incident to construction operations by the erection of barriers or by such other means as the circumstances require.

- F. The Engineer will designate all areas of growth or individual trees which are to be preserved due to their desirability for landscape or erosion control purposes. When the trees to be preserved are located within the construction limits, they will be shown on the plans or designated by the Engineer.
- G. Clearing operations shall be conducted so as to prevent damage by falling trees to trees left standing, to existing structures and installations, and to those under construction, and so as to provide for the safety of employees and others. When such damages occur, all damaged areas shall be repaired, removed or otherwise resolved utilizing generally accepted practices at the Contractor's expense.
- H. Grubbing shall consist of the removal and disposal of all stumps, roots and matted roots from all cleared areas, except as herein specified.
- I. In embankment areas, when the depth of embankment exceeds 42 inches in height sound stumps shall be cut off not more than 6 inches above the existing ground level and not grubbed. Unsound or decayed stumps shall be removed to a depth of approximately 2 feet below the natural ground surface.
- J. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.
  - 1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches and compact each layer to a density equal to adjacent original ground.
- K. Clearing and grubbing operations shall be completed sufficiently in advance of grading operations as may be necessary to prevent any of the debris from the clearing and grubbing operations from interfering with the excavation or embankment operations. All work under this section shall be performed in a manner which will cause minimum soil erosion. The Contractor shall perform such erosion control work, temporary or permanent, as may be directed by the Engineer in order to satisfactorily minimize erosion resulting from clearing and grubbing operations.



### **3.6 TOPSOIL STRIPPING**

- A. Remove sod and grass before stripping topsoil.
- B. Strip topsoil to the depth required for complete removal in a manner to prevent intermingling with underlying subsoil or other waste materials.
  - 1. Remove subsoil and non-soil materials from topsoil, including clay lumps, gravel, and other objects more than 2 inches in diameter; trash, debris, weeds, roots, and other waste materials.
- C. Stockpile topsoil away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water.
  - 1. Limit height of topsoil stockpiles to 72 inches.
  - 2. Do not stockpile topsoil within protection zones.
  - 3. Dispose of surplus topsoil that cannot be used for seeding of lawn areas or slopes. Spreading topsoil on building pads is prohibited.
  - 4. Stockpile surplus topsoil to allow for respreading deeper topsoil.

### **3.7 DISPOSAL OF SURPLUS AND WASTE MATERIALS**

- A. Timber, steel and other merchantable goods and materials removed incidental to clearing and grubbing shall remain the property of individual property owners unless otherwise directed.
- B. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off site.
- C. Separate recyclable materials produced during site clearing from other non-recyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities. Do not interfere with other Project work.
- D. All combustible matter shall be deposited at locations approved by authorities having jurisdiction. Combustible matter may be burned (with written approval of authorities having jurisdiction) or may be disposed of as stated above.
- E. Debris shall not be burned unless written permission or permit is issued by the Fire Marshall or other entity having jurisdiction. The Contractor shall adhere to all limitations and conditions set forth in the permit.

- F. Burning shall be done at such time and in such a manner as to prevent fire from spreading and to prevent any damage to adjacent cover and shall further be subject to all requirements of agencies having jurisdiction pertaining to the burning. Disposal by burning shall be kept under constant attendance until all fires have burned out or have been extinguished.

**END OF SECTION 311000**

**PART 1: GENERAL****1.1 SCOPE OF WORK**

- A. General: The work included in this section consists of the grading of the project area. The work includes:
1. Site clearing and off-site disposal of all debris and unsuitable material.
  2. Removal of all topsoil, organically contaminated soil and existing unsuitable fill.
  3. Proofrolling and grading of the property to the prescribed elevations.
  4. Stockpiling or wasting on site of any excess cut material for providing acceptable material as required to obtain the desired grades.
- B. Related Sections:
1. Division 31 Section "Excavation and Backfill".

**PART 2: PRODUCTS****2.1 MATERIALS**

- A. Unstable Material:
1. Organically contaminated soils must be removed from the area of grading operations. At the discretion of the Engineer, topsoil within the area to be stripped shall be stockpiled in a convenient area, selected by the Engineer, for later use in planting area. All topsoil shall be graded by the Engineer as suitable and shall be stockpiled separately as directed by the Engineer in the field.
  2. All areas to receive fill shall be stripped of root mat five (5) feet beyond toe of anticipated fills. Topsoil, all vegetation, such as roots, brush, heavy sods, heavy growth of grass, and all decayed vegetable matter, rubbish and other debris within the area upon which fill is to be placed, shall be stripped or otherwise removed before the fill placement begins. In no case will such objectionable material be allowed to remain in or under the fill area.

3. Soft or excessively yielding material shall be removed and replaced with inert controlled fill.

**B. Structural Fill Material:**

1. Material to be used for fill shall be approved by the Engineer.
2. All roots, organic matter, trash, debris, and other unsuitable materials that may find their way into otherwise acceptable fill material shall be removed during the dumping and spreading operations.
3. Broken rock and boulders larger than 6" in any dimension may not be used as fill without the specific approval of the Engineer.
4. Frozen soil shall not be used for fill.
5. Structural Fill material shall meet the following minimum requirements and/or be tested for the following criteria in accordance with the Site Specific Construction Quality Assurance Plan:

<b>Test</b>	<b>Test Method</b>	<b>Frequency</b>	<b>Acceptable Values</b>
Minimum Laboratory Dry Weight	ASTM D-698	1/5,000 YD <sup>3</sup>	> 100 lbs. / FT <sup>3</sup>
Natural Moisture Content	ASTM D-2216	1/5,000 YD <sup>3</sup>	Reference Only
Laboratory Compaction	ASTM D-698	1/5,000 YD <sup>3</sup>	95% Maximum Dry Density

**PART 3: EXECUTION**

**3.1 PREPARATION**

**A. Subgrade Preparation:**

1. After removal of all existing topsoil, debris, and other undesirable material, the areas which are to receive fill, which have been cut to the desired grade, or which are at the approximate required subgrade elevation without additional earthwork, should be proofrolled to locate any soft or yielding area. Proofrolling shall be done with a smooth-drum roller (minimum 20 tons) making a minimum of two passes in each direction or other procedures and equipment approved by the Project Engineer. In addition, the following tests shall be performed at the frequencies indicated:

<b>Test</b>	<b>Test Method</b>	<b>Frequency</b>	<b>Acceptable Values</b>
Field Density	ASTM D-6938, ASTM D-1556, ASTM D-2937	1/5,000 YD <sup>3</sup>	95% Maximum Dry Density
Field Moisture	ASTM D-2216, ASTM D-6938, ASTM D-4643	1/5,000 YD <sup>3</sup>	+/- 2% Optimum

2. Any soft, or excessively yielding material revealed by the proofrolling shall be removed and replaced with inert controlled fill. The Engineer shall be the sole judge of what constitutes soft or excessively yielding material.
  3. Drainage from existing watercourses, springs or other sources should be rerouted out of the earthwork area. The Contractor shall take special care to remove all organically contaminated sediment, saturated soil, and other undesirable material from existing watercourses.
- B. Blasting and Damages: Where blasting is done, it shall be done by qualified personnel and in accordance with all federal, state or local requirements and procedures. The Contractor shall be responsible for any damage done to adjoining properties, or to persons, by reason of the blasting or other earthwork operations. The Contractor shall also be responsible for damage to embankments and cut areas, and sewer, water, gas or other underground lines which may result from blasting or earthwork operations. All such damage shall be repaired and made good by the Contractor in a timely manner.

### **3.2 INSTALLATION**

A. Filling and Compaction:

1. After a stable non-yielding surface has been established, the surface of the area to be filled shall be scarified with a disc or harrow to a depth of 4" to 6". An initial 3" layer of fill material shall then be spread over the scarified surface and the entire area compacted as specified below.
2. No fill shall be placed on any area until that area has been inspected and approved by the Engineer. Fill shall not be placed on a snow covered or frozen surface. Fill materials shall be spread in uniform horizontal layers not exceeding 8" in uncompacted thickness. Alternating layers of cohesive and granular fill soils shall not be permitted. Spreading and compacting of fill material should be

started at the lowest portion of the site. All fill must be placed in horizontal layers. Sloping fill planes will not be permitted. Fill material shall be distributed over the full width of the embankment, and in no case will deep ruts be allowed to form.

3. Keyways shall be provided at the toe of each fill slope as shown on the drawings. As each layer of fill meets the natural grade of a slope, a bench, approximately 7 to 8 feet wide, shall be cut into the existing grade with each layer of newly placed fill. If rock is encountered at the face of the natural grade, the original ground shall be cut in vertical steps of 4 to 5 feet and a horizontal bench cut into the rock at the top of each vertical increment. A horizontal plateau, approximately 15 to 20 feet wide, should be provided in the existing slope at vertical intervals of roughly 25 feet. Subsurface drains shall be installed at the toe of the slope and wherever springs or excessive seepage are encountered. Drains should be led to the outside face of the embankment and the water picked up and carried away in such a manner as to avoid softening the embankment or its toe, or producing erosion gullies.
4. Before compaction begins, the fill shall be brought to a water content that will permit proper compaction. This may require aerating the material if it is too wet, or the addition of water if it is too dry. If additional water is required, it should be uniformly distributed through the use of approved water wagons, and shall be thoroughly incorporated into the material by means of discs or other suitable mixing equipment. Care shall be taken to avoid trapping water within the fill.
5. The standard Proctor method of moisture-density relationship test, ASTM D 698 or AASHTO T-99, shall be used to determine the maximum laboratory dry density and the optimum moisture content of the material which is to be used for fill.
6. Each layer of fill material shall be compacted until its density is not less than 92% of the maximum laboratory dry density for the same material. See Specification Section 312010 Excavation and Backfill for percentage of maximum density requirements for differing areas. The moisture content of compacted cohesive materials shall not vary by more than two (2) percentage points from the optimum moisture content for the same material, providing excessive yielding is not produced within this range of moisture contents. Where, in the opinion of the Engineer, proposed fill material is too wet to permit drying in a reasonable length of time, the Engineer may reject the material and it must be removed from the work area. No additional compensation shall be provided to the Contractor for rejected material. Structural fill shall be compacted and tested in accordance with the following requirements:

<b>Test</b>	<b>Test Method</b>	<b>Frequency</b>	<b>Acceptable Values</b>
Field Density	ASTM D-6938, ASTM D-1556, ASTM D-2937	1/5,000 YD <sup>3</sup>	95% Maximum Dry Density
Field Moisture	ASTM D-2216, ASTM D-6938, ASTM D-4643	1/5,000 YD <sup>3</sup>	+/- 2% Optimum

7. The above compaction requirements are to be satisfied for all soil and weathered or soft rock fills. Weathered or soft rocks are those that can be broken down and disintegrated under normal compaction procedures and equipment.
8. At the close of each day's work, or where work is to be interrupted for a period of time, the surface of the site shall be shaped to drain freely, and sealed. If after a prolonged rainfall, the surface of the area to be filled or cut is too wet to work properly, the unsuitable material shall be removed to expose workable soil. The wet material removed may be dried and reused. Construction traffic shall be controlled so as to prevent rutting of graded areas and to avoid overrolling of any section.
9. All cut areas shall be rolled and compacted to produce a compaction equal to that of the filled area. If soft or yielding material is encountered in cuts, or fills as a result of trapping water, overrolling or improper control of construction traffic, and cannot be satisfactorily stabilized by moisture control, compaction or other means approved by the Engineer, the unstable material shall be excavated to the depth required by the Engineer. The excavation shall then be filled with suitable compacted material in accordance with the requirements outlined above.

**B. Grading:**

1. Elevations shown on the plans are finished ground unless otherwise noted. Grading shall be maintained in such a manner as to provide free surface drainage of the site at all times without any ponding of water.
2. Provide ditches and swales to the cross-sections and grades shown on the drawings. Cut ditch subgrades 4" below the grades shown and provide 4" of topsoil where the plans call for seeding or sodding of the ditch. Keep ditches and swales free of accumulations of debris or washed in material until final acceptance of work by the Engineer.

3. Shape all surfaces to within not more than 0.10 feet above or below the required subgrade elevations and free from irregular surface changes.

C. Control and Testing:

1. The services of qualified soils testing personnel will be employed by the Owner for the making of tests to determine the moisture-density relationships, relative densities, plastic and liquid limits and suitability of materials for compaction and for inspection and control of the site preparation, selection, placing and compaction of the fill. A copy of the testing personnel's daily field report including results of in-place density and moisture content tests should be forwarded to the Owner and the Engineer at the end of each working day. If an independent testing firm is hired by the Contractor for the purpose of testing soil used in the construction of the landfill, the testing firm shall submit a field report to the Owner and Engineer at least once per week.
2. The Contractor shall cooperate with the testing personnel so as to permit proper inspection and control of the work without unnecessary delays.

D. Maintenance

1. The Contractor shall be responsible during construction and until final acceptance for the maintenance of all embankments made under the Contract.
2. During construction and until final acceptance; the Contractor shall construct temporary or permanent earth berms along the outer edges of the top surface of the embankment, construct temporary ditches, shape the embankment surface to provide for the drainage of surface runoff along and throughout the length of the embankments, and use any other methods necessary to maintain the work covered by this section so that the work will not contribute to excessive soil erosion. The Contractor shall construct brush dikes, or install temporary or permanent slope drains or other drainage features to assist in controlling erosion.
3. The Contractor shall replace, at no cost to the Owner, any portion of embankment which have become displaced or damaged due to carelessness or neglect on the part of the Contractor. Where the work has been properly constructed, completely drained and properly maintained, and damage occurs due to natural causes, the Contractor will be paid at the Contract unit price for the excavated material required to make necessary repairs to such damage.



4. All embankments shall be brought to the grade and cross section shown on the plans or established by the Engineer, prior to final inspection and acceptance by the Engineer.

**END OF SECTION**



**PART 1: GENERAL****1.01 SCOPE OF WORK****A. General:**

1. The work covered by this section shall consist of furnishing all materials, labor, equipment and services for the excavation and backfill at all areas within the limits of the project. Work is limited to the areas of construction, and includes (but is not necessarily limited to) stockpiling of topsoil, site grading, excavation of footings and trenches, filling, backfilling, compaction, finish grading, spreading of topsoil, disposal of waste material, and proof rolling.
2. Perform all excavation, dewatering, sheeting, bracing, and backfilling in such a manner as to eliminate all possibility of undermining or disturbing the foundations of existing structures.
3. Requirements of the General and Supplemental Conditions apply to all work in this section. Provide all labor, materials, equipment, and services indicated on the drawings, or specified herein, or reasonably necessary for or incidental to a complete job.
4. Excavations shall provide adequate working space and clearances for the work to be performed therein and for installation and removal of concrete forms. In no case shall excavation faces be undercut for extended footings.
5. Subgrade surfaces shall be clean and free of loose material of any kind when concrete is placed thereon.
6. Backfilling during freezing weather shall not be done except by permission of the Engineer. No backfill, fill, or embankment materials shall be installed on frozen surfaces, nor shall frozen materials, snow, or ice be placed in any backfill, fill, or embankment.

## 1.02 SYSTEM DESCRIPTION

- A. Excavation, General: Excavation consists of the removal and disposal of all materials encountered for footings, foundations, pipework, and other construction as shown on the drawings. Perform all excavation work in compliance with applicable requirements of governing authorities having jurisdiction.

## 1.03 QUALITY ASSURANCE

- A. Referenced Standards: Unless otherwise indicated, all referenced standards shall be the latest edition available at the time of bidding. Any requirements of these specifications shall in no way invalidate the minimum requirements of the referenced standards. Comply with the provisions of the following codes and standards, except as otherwise shown or specified.
1. ASTM C33: Standard Specifications for Concrete Aggregate
  2. ASTM D698: Standard Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5 lb. Rammer and 12" Drop.
  3. ASTM D3282: Standard Recommended Practice for Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes.
  4. Standard Specifications for Roads and Structures, North Carolina Department of Transportation, January 1, 2002 edition.
  5. Erosion and Sediment Control Planning and Design Manual.
- B. Unauthorized Excavation: Except where otherwise authorized, indicated, or specified, all materials excavated below the bottom of concrete walls, footings, slabs on grade, and foundations shall be replaced, by and at the expense of the Contractor, with concrete placed at the same time and monolithic with the concrete above.
- C. Existing Utilities:
1. Locate existing underground utilities in the area of work. If utilities are to remain in place, provide adequate means of protection during earthwork operations.
  2. Should uncharted or incorrectly charted piping or other utilities be encountered during excavation, consult the Engineer immediately

for directions as to procedure. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to the satisfaction of utility companies.

#### **1.04 SITE CONDITIONS**

- A. Site Information: A Report of Geotechnical Exploration is available for this project. Test borings and other exploratory operations may be undertaken by the Contractor at his own expense, provided such operations are acceptable to the Owner. All recommendations contained in the Report of Geotechnical Exploration shall be implemented by the Contractor. If discrepancies existing between the report and these specifications, the most stringent requirement shall be implemented.

### **PART 2: PRODUCTS**

#### **2.01 MATERIALS**

- A. Classification of Excavated Materials: Classification of excavated materials will be made as follows:
1. All materials excavated for this project regardless of its nature or composition shall be classified as:
    - a. Earth Excavation: covered under lump sum prices for various grading line items detailed on the Bid Schedule and all other excavation not associated with utility construction.
    - b. Rock Excavation: defined in specification section 312020, and paid for by the rock excavation unit price.
    - c. Undercut Excavation: Excavation of unsuitable soil as determined by the Engineer and disposed of onsite. Further defined in this section and paid for by the undercut excavation unit price.
- B. Classification of Other Materials:
1. Satisfactory Subgrade Soil Materials: Soils complying with ASTM D 3282, soil classification Groups A-1, A-2-4, A-2-5, and A-3.
  2. Unsatisfactory Subgrade Soil Materials: Soils described in ASTM D 3282, soil classification groups A-2-6, A-2-7, A-4, A-5, A-6, and A-7; also peat and other highly organic soils, unless otherwise acceptable to the Engineer.

3. Cohesionless Soil Materials: Gravels, sand-gravel mixtures, sands, and gravelly-sands.
4. Cohesive Soil Materials: Clayey and silty gravels, sand-clay mixtures, gravel-silt mixtures, clayey and silty sands, sand-silt mixtures, clays, silts, and very fine sands.
5. Backfill and Fill Materials: Provide satisfactory soil materials for backfill and fill, free of masonry, rock, or gravel larger than 4" in any dimension, and free of metal, gypsum, lime, debris, waste, frozen materials, vegetable, and other deleterious matter. Use only excavated material that has been sampled, tested, and certified as satisfactory soil material.
6. Select Backfill: Select backfill is defined as backfill and fill material that is transported from an area onsite, and which meets the soil requirements specified above under "Backfill and Fill Materials" and is used to replace the material removed as part of undercut excavation. Paid for under the unit price for Select Backfill.
7. Pipe Bedding: Crushed stone or crushed gravel meeting the requirements of ASTM C 33, Gradation 67.
8. Inundated Sand: Sand for inundated sand backfill shall be clean with not more than 25% retained on a No. 4 sieve and not more than 7% passing a No. 200 sieve and shall have an effective size between 0.10 mm and 0.30 mm. Sand shall be deposited in, or placed simultaneously with application of, water so that the sand shall be compacted by a mechanical probe type vibrator. Inundated sand shall be compacted to 70% relative density as determined by ASTM D4253 and D4254.
9. Graded Gravel: Gravel for compacted backfill shall conform to the following gradation:

Sieve Size	Percent Passing by Weight
1"	100
3/4"	85 - 100
3/8"	50 - 80
No. 4	35 - 60
No. 40	15 - 30
No. 200	05 - 10

The gravel mixture shall contain no clay lumps or organic matters. The fraction passing the No. 4 sieve shall have a liquid limit not greater than 25 and a plasticity index not greater than 5. Gravel backfill shall be deposited in uniform layers not exceeding 12" in

uncompacted thickness. The backfill shall be compacted by a suitable vibratory roller or platform vibrator to not less than 70% relative density as determined by ASTM D4253 and D4254.

## **2.01 EQUIPMENT**

### **A. Mechanical Excavation:**

1. The use of mechanical equipment will not be permitted in locations where its operation would cause damage to trees, buildings, culverts, or other existing property, utilities, or structures above or below ground. In all such locations, hand excavating methods shall be used.
2. Mechanical equipment used for trench excavation shall be of a type, design, and construction and shall be controlled, that uniform trench widths and vertical sidewalls are obtained at least from an elevation one foot above the top of the installed pipe to the bottom of the trench, and that trench alignment is such that pipe when accurately laid to specified alignment will be centered in the trench with adequate clearance between the pipe and sidewalls of the trench. Undercutting the trench sidewall to obtain clearance will not be permitted.

## **PART 3: EXECUTION**

### **3.01 PREPARATION**

#### **A. Dewatering:**

1. The Contractor shall provide and maintain adequate dewatering equipment to remove and dispose of all surface water and groundwater entering excavations, trenches, or other parts of the work. Each excavation shall be kept dry during subgrade preparation and continually thereafter until the structure to be built, or the pipe to be installed therein, is completed to the extent that no damage from hydrostatic pressure, flotation, or other cause will result.
2. All excavations for concrete structures or trenches that extend down to or below groundwater shall be dewatered by lowering and keeping the groundwater level beneath such excavations 12" or more below the bottom of the excavation.

3. Surface water shall be diverted or otherwise prevented from entering excavated areas or trenches without causing damage to adjacent property.
4. The Contractor is responsible for obtaining any required permits or permissions necessary for the disposal of groundwater that is removed. Any discharged groundwater shall be clean and free of sediment.
5. The Contractor shall be responsible for the condition of any pipe or conduit which he may use for drainage purposes, and all such pipes or conduits which he may use for drainage purposes, and all such pipes or conduits shall be left clean and free of sediment.
6. Where trench sheeting is left in place, such sheeting shall not be braced against the pipe, but shall be supported in a manner which will preclude concentrated loads or horizontal thrusts on the pipe. Cross braces installed above the pipe to support sheeting may be removed after pipe embedment has been completed.

B. Stabilization:

1. Subgrades for concrete structures and trench bottoms shall be firm, dense, and thoroughly compacted and consolidated; free from mud and muck; and sufficiently stable to remain firm and intact under the feet of the workmen.
2. Subgrades for concrete structures or trench bottoms, which are otherwise solid but which become mucky on top due to construction operations, shall be reinforced with one or more layers of crushed rock or gravel. The stabilizing material shall be spread and compacted to a depth of not less than 6" below the bottom of the structure or pipe. Not more than 1/2" depth of mud or muck shall be allowed to remain on stabilized trench bottoms when the pipe bedding material is placed thereon. The finished elevation of stabilized subgrades for concrete structures shall not be above subgrade elevations indicated on the drawings.

D. Site Grade:

1. General: Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finish the surface within specified tolerances; compact with uniform levels or slopes between points where elevations are shown, or between such points and existing grades.



2. Ground Surface Preparation: Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placement of fills. Plow, strip, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so that fill material will bond with existing surface. Shape the subgrade as indicated on the drawings by forking, furrowing, or plowing so that the first layer of new material placed thereon will be well bonded to it.

### **3.02 FIELD MEASUREMENTS**

#### **A. Alignment, Grade, and Minimum Cover:**

1. Vertical and horizontal alignment of pipes, and the maximum joint deflection used in connection therewith, shall be in conformity with requirements of the section covering installation of pipe.
2. Where pipe grades or elevations are not definitely fixed by the contract drawings, trenches shall be excavated to a depth sufficient to provide a minimum depth of backfill cover over the top of the pipe cover depths may be necessary on vertical curves or to provide necessary clearance beneath existing pipes, conduits, drains, drainage structures, or other obstructions encountered at normal pipe grades. Measurement of pipe cover depth shall be made vertically from the outside top of pipe to finished ground or pavement surface elevation except where future surface elevations are indicated on the drawings.

- B. Limiting Trench Widths**: Trenches shall be excavated to a width that will provide adequate working space and sidewall clearances for proper pipe installation, jointing, and embedment. For the purposes of quantity measurements and payments, maximum trench widths shall be no greater than the pipe outside diameter plus 24" (12" either side of pipe).

### **3.03 PROTECTION**

- A. Temporary Protection**: Protect structures, utilities, sidewalks, pavements, and other facilities from damages caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- B. Sheeting and Bracing**: Make all excavations in accordance with Federal, State, and Local health and safety rules and regulations, including those promulgated by the Department of Labor, Occupation Safety and Health Administration, "Safety and Health Regulations for Construction".

Furnish, put in place, and maintain such sheeting, bracing, etc., as may be necessary to support the sides of the excavation to comply with the above mentioned rules and regulations.

C. Blasting:

1. The Contractor shall be responsible for all damage caused by blasting operations. Suitable methods shall be employed to confine all materials lifted by blasting within the limits of the excavation or trench.
2. All rock which cannot be handled and compacted as earth shall be kept separate from other excavated materials and shall not be mixed with backfill or embankment materials except as specified or directed.

D. Care and Restoration of Property:

1. Enclose the trunks of trees which are to remain adjacent to the work with substantial wooden boxes of such height as may be necessary to protect them from piled material, equipment or equipment operation. Use excavating machinery and cranes of suitable type and operate the equipment with care to prevent injury to remaining tree trunks, roots, branches and limbs.
2. Do not cut branches, limbs, and roots except by permission of the Engineer. Cut smoothly and neatly without splitting or crushing. In case of cutting or unavoidable injury to branches, limbs, and trunks of trees, neatly trim the cut or injured portions and cover with an application of grafting wax and tree healing paint as directed.
3. Protect by suitable means all cultivated hedges, shrubs and plants that might be injured by the Contractor's operations. Promptly heel in any such trees or shrubbery necessary to be removed and replanted. Perform heeling in and replanting under the direction of a licensed and experienced nurseryman. Replant in their original position all removed shrubbery and trees after construction operations have been substantially completed and care for until growth is reestablished.
4. Replace cultivated hedges, shrubs, and plants injured to such a degree as to affect their growth or diminish their beauty or usefulness, by items of kind and quality at least equal to the kind and quality existing at the start of the work.

5. Do not operate tractors, bulldozers or other power-operated equipment on paved surfaces if the treads or wheels of the equipment are so shaped as to cut or otherwise injure the surfaces.
  6. Restore all surfaces, including lawns, grassed, and planted areas that have been injured by the Contractor's operations, to a condition at least equal to that in which they were found immediately before the work was begun. Use suitable materials and methods for such restoration. Maintain all restored plantings by cutting, trimming, fertilizing, etc., until acceptance. Restore existing property or structures as promptly as practicable and do not leave until the end of construction period.
- E. Protection of Streams: Exercise reasonable precaution to prevent the silting of streams. Provide at Contractor's expense temporary erosion and sediment control measures to prevent the silting of streams and existing drainage facilities. The Contractor shall size structures and conform fully with the North Carolina Sedimentation Pollution Control Act.
- F. Air Pollution:
1. Comply with all pollution control rules, regulations, ordinances, and statutes which apply to any work performed under the Contract, including any air pollution control rules, regulations, ordinances and statutes, or any municipal regulations pertaining to air pollution.
  2. During the progress of the work, maintain the area of activity, including sweeping and sprinkling of streets as necessary, so as to minimize the creation and dispersion of dust. If the Engineer decides that it is necessary to use calcium chloride or more effective dust control, furnish and spread the material, as directed, and without additional compensation.

### **3.04 TRENCH EXCAVATION**

- A. Length of Trench:
1. No more trenches shall be opened in advance of pipe laying than is necessary to expedite the work. One block or 400 feet (whichever is the shorter) shall be the maximum length of open trench on any line under construction.
  2. Except where tunneling is indicated on the drawings, is specified, or is permitted by the Engineer, all trench excavation shall be open cut from the surface.

B. Trench Excavation:

1. General: Perform all excavation of every description and of whatever substance encountered so that the pipe can be laid to the alignment and depth shown on the drawings.
2. Brace and shore all trenches, where required, in accordance with Federal, State, and Local health and safety rules and regulations, including those promulgated by the Department of Labor, Occupation Safety and Health Administration, "Safety and Health Regulations for Construction".
3. Make all excavations by open cut unless otherwise specified or indicated on the drawings.
4. Width of Trenches: Excavate trenches sufficiently wide to allow proper installation of pipe, fittings and other materials. Measurement and payment quantities will be based on a maximum trench width of not more than 12" clear of pipe on either side at any point. Do not widen trenches by scraping or loosening materials from the sides.
5. Trench Excavation in Earth: Earth excavation includes all excavation of whatever substance encountered. In locations where pipe is to be bedded in earth excavated trenches, fine grade the bottoms of such trenches to allow firm bearing for the bottom of the pipe on undisturbed earth. Where any part of the trench has been excavated below the grade of the pipe, fill the part excavated below such grade with pipe bedding material and compact at the Contractor's expense.
6. Trench Excavation in Fill: If pipe is to be laid in embankments or other recently filled material, first place the fill material to the finish grade or to a height of at least one foot above the top of the pipe, whichever is the lesser. Take particular care to ensure maximum consolidation of material under the pipe location. Excavate the pipe trench as though in undisturbed material.
7. Trench Bottom in Poor Soil: Excavate and remove unstable or unsuitable soil to a width and depth, as directed by the Engineer, and refill with a thoroughly compacted gravel bedding.
8. Bell Holes: Provide bell holes at each joint to permit the joint to be made properly and to provide a continuous bearing and support for the pipe.

C. Trench Backfill:

1. General: Unless otherwise specified or indicated on the drawings, use suitable material for backfill which was removed in the course of making the construction excavations. Do not use frozen material for the backfill and do not place backfill on frozen material. Remove previously frozen material before new backfill is placed. Start backfilling as soon as practicable after the pipes have been laid, or the structures have been built and are structurally adequate to support the loads, including construction loads to which they will be subjected, and proceed until its completion.
2. With the exception mentioned below in this paragraph, do not backfill trenches at pipe joints until after that section of the pipeline has successfully passed any specified tests required. Should the Contractor wish to minimize the maintenance of lights, and barricades, and the obstruction of traffic, he may, at his own risk, backfill the entire trench as soon as practicable after installation of pipe, and the related structures have acquired a suitable degree of strength. He shall, however, be responsible for removing and later replacing such backfill, at his own expense, should he be ordered to do so in order to locate and repair or replace leaking or defective joints or pipe.
3. Material: The nature of the materials will govern both their acceptability for backfill and the methods best suited for their placement and compaction in the backfill. Both are subject to the approval of the Engineer. Do not place stone or rock fragments larger than 4" in greatest dimension in the backfill. Do not drop large masses of backfill material into the trench in such a manner as to endanger the pipeline. Use a timber grillage to break the fall of material dropped from a height of more than 5 feet. Exclude pieces of bituminous pavement from the backfill unless their use is expressly permitted.
4. Zone Around Pipe: Place bedding material to the level shown on the Drawings and work material carefully around the pipe to insure that all voids are filled, particularly in bell holes. For backfill up to a level of 2 feet over the top of the pipe, use only selected materials containing no rock, clods or organic materials. Place the backfill and compact thoroughly under the pipe haunches and up to the mid-line of the pipe in layers not exceeding 6" in depth. Place each layer and tamp carefully and uniformly so as to eliminate the possibility of lateral displacement. Place and compact the remainder of the zone around the pipe and to a height of one foot above the pipe in layers not exceeding 6" and compact to a

maximum density of at least 100 % as determined by ASTM D0698.

5. Tamping: Deposit and spread backfill materials in uniform, parallel layers not exceeding 12" thick before compaction. Tamp each layer before the next layer is placed to obtain a thoroughly compacted mass. Furnish and use, if necessary, an adequate number of power driven tampers, each weighing at least 20 pounds for this purpose. Take care that the material close to the bank, as well as in all other portions of the trench, is thoroughly compacted. When the trench width and the depth to which backfill has been placed are sufficient to make it feasible, and it can be done effectively and without damage to the pipe, backfill may, on approval of the Engineer, be compacted by the use of suitable rollers, tractors, or similarly powered equipment instead of by tamping. For compaction by tamping (or rolling), the rate at which backfilling material is deposited in the trench shall not exceed that permitted by the facilities for its spreading, leveling and compacting as furnished by the Contractor.
6. Wet the material by sprinkling, if necessary, to insure proper compaction by tamping (or rolling). Perform no compaction by tamping (or rolling) when the material is too wet either from rain or applied water to be compacted properly.
7. Trench Compaction: Compact backfill in pipe trenches to the maximum density as shown on the drawings, or as listed in the subsection entitled COMPACTION, with a moisture content within the range of values of maximum density as indicated by the moisture-density relationship curve.

### **3.05 SITE GRADE**

#### **A. Placement and Compaction:**

1. Place backfill and fill material in layers not more than 8" in loose depth. Before compaction, moisten or aerate each layer as necessary to provide the optimum moisture content. Compact each layer to the required percentage of maximum density for each area classification. Do not place backfill or material on surfaces that are muddy, frozen, or contain frost or ice.
2. In areas not accessible to rollers or compactors, compact the fill with mechanical hand tampers. If the mixture is excessively moistened by rain, aerate the material by means of blade graders, harrows, or other approved equipment, until the moisture content of

the mixture is satisfactory. Finish the surface of the layer by blading or rolling with a smooth roller, or a combination thereof, and leave the surface smooth and free from waves and inequalities.

3. Place backfill and fill materials evenly adjacent to structures, to the required elevations. Take care to prevent wedging action of backfill against structures. Carry the material uniformly around all parts of the structure to approximately the same elevation in each lift.
  4. When existing ground surface has a density less than that specified under the subsection entitled COMPACTION for the particular area classification, break up the ground surface, pulverize, moisture-condition to the optimum moisture content, and compact to required depth and percentage of maximum density.
- B. Grading Outside Building Lines: Grade to drain away from structures to prevent ponding of water. Finish surface free from irregular surface changes.
- C. Planting Areas: Finish areas to receive topsoil to within not more than one inch (1") above or below the required subgrade elevations, compacted as specified, and free from irregular surface changes.
- D. Walks: Shape the surface of areas under walks to line, grade, and cross-section, with the finish surface not more than 0" above or 1" below the required subgrade elevation, compacted as specified, and graded to prevent ponding of water after rains.
- E. Pavements:
1. Shape the surface of the areas under pavement to line, grade and cross section, with finish surface not more than 1/2" above or below the required subgrade elevation, compacted as specified, and graded to prevent ponding of water after rains. Include such operations as plowing, discing, and any moisture or aerating required to provide the optimum moisture content for compaction.
  2. Fill low areas resulting from removal of unsatisfactory soil materials, obstructions, and other deleterious materials, using satisfactory soil material.
  3. Shape to line, grade, and cross section as shown on the drawings.
- F. Protection of Graded Areas: Protect newly graded areas from traffic and erosion, and keep free of trash and debris. Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.

- G. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather prior to acceptance of work, scarify surface, reshape, and compact to required density prior to further construction.
- H. Unauthorized Excavation:
1. Unauthorized excavation consists of the removal of materials beyond indicated elevations without the specific direction of the Engineer. Under footings, foundations, bases, etc., fill unauthorized excavation by extending the indicated bottom elevation of the concrete to the bottom of the excavation, without altering the required top elevation. Lean concrete fill may be used to bring elevations to proper position only when acceptable to the Engineer.
  2. For pipe trenches and elsewhere, backfill and compact unauthorized excavations as specified for authorized excavations of the same classification, unless otherwise directed by the Engineer.

### **3.06 BACKFILL AROUND STRUCTURES**

- A. General: Unless otherwise specified or indicated on the drawings, use suitable material for backfill which was removed in the course of making the backfill and do not place backfill which was removed in the course of making the construction excavations. Do not use frozen material for the backfill and do not place backfill upon frozen material. Remove previously frozen material before new backfill is placed.
- B. Material: Approved selected materials available from the excavations may be used for backfilling around structures. Obtain material needed in addition to that of construction excavations from off-site borrow pits selected by the Contractor. Furnish all borrow material needed on the work. Place and compact all material, whether from the excavation or borrow, to make a dense, stable fill. Use fill material which contains no vegetation, masses of roots, individual roots over 18" long or more than 1/2" in diameter, stones over 4" in diameter, or porous matter. Organic matter must not exceed negligible quantities.
- C. Placing Backfill: Do not place backfill against or on structures until they have attained sufficient strength to support the loads (including



construction loads) to which they will be subjected, without distortion, cracking, or other damage. Make special leakage tests, if required, as soon as practicable after the structures are structurally adequate and other necessary work has been done. Use the best of the excavated materials in backfilling within 2 feet of the structure. Avoid unequal soil pressures by depositing the material evenly around the structure.

**3.07 COMPACTION**

- A. General: Control soil compaction during construction providing at least the minimum percentage of density specified for each area classification.
- B. Percentage of Maximum Density Requirements: After compaction, all fill will be tested in accordance with Method "C" of ASTM D-698, unless specified otherwise. Except as noted otherwise for the zone around pipe, provide not less than the following percentages of maximum density of soil material compacted at optimum moisture content, for the actual density of each layer of soil material-in-place:

STRUCTURAL FILL	Compact Full Depth to 95%
STRUCTURAL FILL (ROADWAYS)	Top 24" - 100%
TRENCH BACKFILL (ROADWAYS)	Compact full depth to 100%
TRENCH BACKFILL	Compact full depth to 95%
STOCKPILE AREAS	Compact full depth to 92%

- C. Moisture Control: Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade, or layer of soil material, to prevent free water appearing on surface during or subsequent to compaction operations. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing or pulverizing, until moisture content is reduced to a satisfactory value, as determined by moisture-density relation tests.
- D. Disposal of Surface Material: Upon approval of the Engineer, haul all surplus materials not needed or acceptable for backfill off-site.

**3.08 FIELD QUALITY CONTROL**

- A. Soil Testing and Inspection Service: Compaction tests of all fill areas will be made by an independent testing laboratory. Such tests will be provided and paid for by the Owner, except that tests that reveal non-conformance with the specifications and all succeeding tests for the same area shall be at the expense of the Contractor until conformance with the

specifications is established. The Owner will be responsible for paying for only the successful tests.

**END OF SECTION**

**PART 1: GENERAL****1.01 SCOPE OF WORK**

- A. The work covered by this section consists of the construction of plain rip rap in accordance with the requirements of the plans and these specifications and at the locations designated by the Engineer.

**PART 2: PRODUCTS****2.01 DEFINITIONS**

- A. Plain Rip Rap: Plain rip rap shall consist of quarry run stone, or field stone or granite stone, etc., and shall be classified by size into Class 1, or Class 2. The class and thickness to be used will be called for on the plans.
- B. Class 1 Rip Rap: Stone shall vary in weight from 5 to 200 pounds. At least 30% of the total weight of the rip rap shall be in individual pieces weighing a minimum of 60 pounds each. Not more than 10% of the total weight of the rip rap may be in individual pieces weighing less than 15 pounds each.
- C. Class 2 Rip Rap: Stone shall vary in weight from 25 to 250 pounds. At least 60% of the total weight shall be in individual pieces weighing a minimum of 100 pounds each and not more than 100 pounds each and not more than 5% of the total weight may be individual pieces weighing less than 50 pounds each.

**PART 3: EXECUTION****3.01 PLACEMENT OF RIP RAP**

- A. Unless otherwise indicated or directed by the Engineer, the stone shall be placed upon a slope which shall be no steeper than the angle of repose. The stone shall be graded so that the smaller stones are uniformly distributed throughout the mass. The area and thickness shall be as shown on the plans or as designated by the Engineer.

The Contractor may place the stone by mechanical methods, augmented by hand placing where necessary, provided that when the rip rap is completed it forms a properly graded, dense, neat layer of stone.

**END OF SECTION**



**PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract apply to this Section.

**1.2 SUMMARY**

- A. This section covers the furnishing of all labor, equipment and materials necessary for the proper restoration of existing surfaces disturbed or damaged as a result of construction operations which are not specifically scheduled or specified for topsoil and seeding, paving, landscaping or other surfacing.
- B. In general, the types of replacement included in this section are seeding along pipelines, concrete sidewalks, driveways, roadways, ditches, lawns and landscaped areas, and curb and gutter.
- C. Any damage to existing structures shall be repaired using materials and workmanship equal to, or better than, those of the original construction.

**1.3 DEFINITIONS**

- A. CABC – Crushed aggregate base course.
- B. NCDOT – North Carolina Department of Transportation.
- C. PSI – Pounds per square inch.

**1.4 SUBMITTALS**

- A. All submittals shall be in accordance with the requirements of the pertinent specification sections referenced herein.
- B. An appropriate concrete mix design shall be submitted for all concrete sidewalks, driveways, roadways, and curb and gutter restored as part of this project.

## **PART 2 - PRODUCTS (Not Applicable)**

## **PART 3 - EXECUTION**

### **3.1 SEEDING DISTURBED AREAS**

- A. All ground surfaces disturbed by construction activity, which are not classified as lawns, landscaped areas, or pavement areas, but would be classified as open fields, shall be raked smooth and seeded in accordance with the appropriate paragraph(s) within Section 329200 entitled Turf and Grasses. Large rocks, clumps of earth and excessive spoil material shall be removed from the area prior to seeding.
- B. Shoulders of all roads shall be restored as specified for lawns and landscaped areas.
- C. Wooded areas not classified as lawns shall be restored to as near their original condition as possible.

### **3.2 CONCRETE SIDEWALKS**

- A. Concrete walks removed in connection with, or damaged as a result of, construction operations under the Contract shall be replaced with new construction. Such walks shall be constructed of 4,000 PSI concrete on a thoroughly compacted subgrade, shall have a vertical thickness, unless otherwise noted, of not less than 4 inches or the thickness of the replaced walk where greater than 4 inches.
- B. Walks shall be float finished, edged with an edging tool, and grooved at intermediate intervals not in excess of the width of the walk, uniform throughout the length of the walk in any one direction.

### **3.3 DRIVEWAYS**

- A. Unless otherwise noted, unpaved driveways shall be surfaced with not less than 4 inches of CABC, topped with 4 inches of stone, gravel, or other materials equal to that found in the original driveway. Driveways shall be left in a condition better than their original condition.
- B. Concrete drives shall be replaced with 4,000 PSI concrete and shall have equal thickness and reinforcing steel to that of the original drive. Prior to placing the concrete a 6-inch aggregate base course shall be placed in the drive area.
- C. Unless otherwise noted, bituminous or asphaltic concrete drives shall be restored to original base and asphalt thicknesses or a minimum of 6 inches of

aggregate base course and a 2-inch surface course, whichever is greater. Base material shall be compacted in 3-inch lifts and Type SF 9.5A or S 9.5B asphalt compacted in 2-inch lifts to match existing pavement section. All work shall be in accordance with the appropriate paragraph(s) of Section 321216 entitled Bituminous Paving.

### **3.4 ROADWAY REPLACEMENT**

- A. Bituminous or Asphaltic pavements shall include all areas paved with blacktop, built up pavements or oil and stone, tar and stone and similar pavements constructed with a bituminous or asphalt and stone materials.
- B. Unless otherwise noted, bituminous or asphaltic concrete roadways shall be restored to original base and asphalt thicknesses or a minimum of 6 inches of aggregate base course and a 2-inch surface course, whichever is greater. Base material shall be compacted in 3-inch lifts and Type SF 9.5A or S 9.5B asphalt compacted in 2-inch lifts to match existing pavement section. All work shall be in accordance with the appropriate paragraph(s) of Section 321216 entitled Bituminous Paving.
- C. Portland cement concrete roadways shall be replaced with 4,000 PSI concrete and shall have equal thickness and reinforcing steel as the original roadway. An aggregate base course with a thickness of 6 inches shall be placed prior to the placing of concrete.
- D. Differential settlement of restored pavements shall be corrected immediately.
- E. The Contractor shall repair and restripe any traffic markings that were damaged, removed or covered during construction. All work shall be done in accordance with NCDOT requirements and specifications.

### **3.5 DITCHES**

- A. Ditches shall be regraded to the original grade and line. The surface of all ditches shall be returned to the same condition as found before commencing work.

### **3.6 LAWNS AND LANDSCAPED AREAS**

- A. Lawns and landscaped areas shall be regraded and replaced as follows:
  - 1. Grading shall be to the grade existing before construction of the work under this Contract.

2. Lawn replacement shall be in accordance with the appropriate paragraph(s) within Section 329200 entitled Turf and Grasses. Topsoiled areas shall be replaced with topsoil of equal quality and quantity.
- B. Landscaped areas shall be replaced with shrubs, hedges, ornamental trees, flowers, or other items to original condition.

### **3.7 CURB AND GUTTER**

- A. Curb and gutter removed with or damaged as a result of construction operations, injured or disturbed by the Contractor, his agents, or employees, shall be replaced with new construction to a condition similar and equal to that existing before damage was incurred. 4,000 PSI concrete shall be used in curb and gutter replacement.
- B. All work associated with curb and gutter replacement shall be in accordance with Section 846-3 of the NCDOT Standard Specifications for Roads and Structures (latest edition). Horizontal and vertical alignment of the curb and gutter shall match that of the existing to the greatest extent practical, unless directed otherwise by the Engineer.

### **3.8 DAMAGE TO STRUCTURES**

- A. Any damage to existing structures shall be repaired of materials and workmanship equal to those of original construction. Extensively damaged structures, where the structural stability has been affected or which cannot be repaired in a suitable fashion shall be replaced entirely. Replacement shall not commence until approval of the plan of replacement has been given by the Engineer. Replacement costs shall be responsibility of the Contractor.

**END OF SECTION 322905**



**PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract apply to this Section.

**1.2 SUMMARY**

- A. This section covers the furnishing of all labor, equipment and materials necessary for the establishment of vegetation in all areas of the site disturbed by construction operations and all earth surfaces of embankments including rough and fine grading, topsoil if required, fertilizer, lime, seeding and mulching. The Contractor shall adapt his operations to variations in weather or soil conditions as necessary for the successful establishment and growth of the grasses or legumes.
- B. Related Sections:
  - 1. Division 31 Section "Site Clearing" for topsoil stripping and stockpiling.
  - 2. Division 31 Sections for excavation, filling and backfilling, and rough grading.

**1.3 DEFINITIONS**

- A. Duff Layer: The surface layer of native topsoil that is composed of mostly decayed leaves, twigs, and detritus.
- B. Finish Grade: Elevation of finished surface of planting soil.
- C. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
- D. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.
- E. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

- F. Planting Soil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.
- G. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or top surface of a fill or backfill before planting soil is placed.
- H. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.
- I. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil, but in disturbed areas such as urban environments, the surface soil can be subsoil.

#### **1.4 SUBMITTALS**

- A. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.
  - 1. Evidence of State certification of each seed mixture for turfgrass sod and plugs. Include identification of nursery source and name and telephone number of supplier.
- B. Product Certificates: For soil amendments and fertilizers, from manufacturer.
- C. Certificates of Inspection as required by law or governing authorities to accompany shipments.
- D. Source of mulch for approval and five (5) gallon bucketful physical sample.
- E. Proposed planting schedule, indicating dates for all work during normal seasons for such work. Once accepted, revise dates only as approved in writing, after documentation of reasons for delays.
- F. Maintenance Instructions: Recommended procedures to be established by Owner for maintenance of turf and grasses during a calendar year. Submit before expiration of required initial maintenance periods.

#### **1.5 QUALITY ASSURANCE**

- A. No material substitutions will be permitted without the prior written approval of the Engineer.

- B. All materials shall be applied in strict accordance with manufacturer's written instructions.

## **1.6 DELIVERY, STORAGE, AND HANDLING**

- A. Products shall be packed and shipped in a manner which will not damage them.
- B. Damaged products shall be rejected upon delivery and promptly removed from the site.
- C. Products which must be stored prior to installation shall be protected from damage and theft.
- D. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws, as applicable. During handling and storing, the seed shall be cared for in such a manner that it will be protected from damage by heat, moisture, rodents, or other causes.
- E. Bulk Materials:
  - 1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
  - 2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
  - 3. Accompany each delivery of bulk fertilizers, lime, and soil amendments with appropriate certificates.

## **1.7 PROJECT CONDITIONS**

- A. Schedule and coordinate work with all trades involved.
- B. Verify that the areas of work have been properly contoured and brought to final grade prior to beginning work.
- C. Consult record drawings and installers to determine actual underground utility and drainage system locations in the vicinity of this work. Damage to known or unrecorded utilities will be repaired at the Contractor's expense.
- D. Notify the Engineer of any unforeseen conditions which will affect plant installation or growth.

- E. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of planting completion.
  - 1. Optimum Spring Planting: April 1 – May 1.
  - 2. Optimum Fall Planting: September 1 – October 1.
- F. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

## **1.8 MAINTENANCE SERVICE**

- A. Initial Turf Maintenance Service: Provide full maintenance by skilled employees. Maintain as required in Part 3. Begin maintenance immediately after each area is planted and continue until Final Acceptance of the project by the Owner.
- B. Initial Meadow Maintenance Service: Provide full maintenance by skilled employees. Maintain as required in Part 3. Begin maintenance immediately after each area is planted and continue until Final Acceptance of the project by the Owner.
- C. Continuing Maintenance Requirements: Throughout the warranty period of the Work, excluding conditions of vandalism, theft, accident, acts of God and Owner's negligent maintenance, Contractor shall be responsible for making any and all necessary repairs to planted areas which may include or may result from, the lack of fully established growth of turfs and grasses and/or soil erosion from project areas. In such instances, Contractor shall be responsible for restoring these areas to originally accepted conditions as well as full establishment of turfs and grasses or other groundcovers in the area. The Contractor shall also be responsible for any damages to adjacent areas impacted by the lack of proper turf and grass establishment.

## **PART 2 - PRODUCTS**

### **2.1 FERTILIZERS**

- A. The quality of fertilizer and all operations in connection with the furnishing of this material shall comply with the requirements of the North Carolina Fertilizer Law and regulations adopted by the North Carolina Board of Agriculture.
- B. For all areas to be seeded which are not classified as lawns, but would be classified as open fields, fertilizer shall be free-flowing, ready mixed 10-10-10

grade commercial fertilizer. Upon written approval of the Engineer a different grade of fertilizer may be used, provided the rate of application is adjusted to provide the same amounts of plant food.

- C. For all areas to be seeded which are classified as lawns, fertilizer shall be as follows:
  - 1. Fertilizer tablets: Agriform Planting Tablets 20-10-5 as manufactured by Scotts-Sierra Horticultural Products, or equal, may be used at installer's option.
  - 2. Encapsulated fertilizer: Osmocote 19-6-12 as manufactured by Scotts-Miracle Gro, or equal, may be used at installer's option.
- D. During handling and storing, the fertilizer shall be cared for in such a manner that it will be protected against hardening, caking, or loss of plant food values. Any hardened or caked fertilizer shall be pulverized to its original conditions before being used.

## **2.2 LIME**

- A. Lime: The quality of lime and all operations in connection with the furnishing of this material shall comply with the requirements of ASTM C 602, agricultural liming material containing a minimum of 80 percent calcium carbonate equivalent and as follows:
  - 1. Class: O, with a minimum of 95 percent passing through No. 8 sieve and a minimum of 55 percent passing through No. 60 sieve.
  - 2. Provide lime in the form of free-flowing ground dolomitic limestone.
- B. During the handling and storing, the lime shall be cared for in such a manner that it will be protected against hardening and caking. Any hardened or caked lime shall be pulverized to its original condition before being used.

## **2.3 SEED**

- A. Grass seed shall be fresh, clean, dry, new-crop seed complying with the requirements of the North Carolina Seed Law and regulations adopted by the North Carolina Board of Agriculture.
- B. Seed shall have been approved by the North Carolina Department of Agriculture or any agency approved by the Engineer before being sown, and no seed will be accepted with a date of test more than nine (9) months prior to the date of sowing. Such testing however, will not relieve the Contractor from responsibility for furnishing and sowing seed that meets these specifications at the time of sowing. When a low percentage of germination causes the quality of the seed to fall below the minimum pure live seed specified, the Contractor

may elect, subject to the approval of the Engineer, to increase the rate of seeding sufficiently to obtain the minimum pure live seed contents specified, provided that such an increase in seeding does not cause the quantity of noxious weed seed per square yard to exceed the quantity that would be allowable at the regular rate of seed.

- C. During handling and storing, the seed shall be cared for in such a manner that it will be protected from damage by heat, moisture, rodents, or other causes.
- D. Seed shall be entirely free from bulblets or seed of Johnson Grass, Nutgrass, Sandbur, Wild Onion, Wild Garlic, and Bermuda Grass. The specifications for restricted noxious weed seed refers to the number per pound, singly or collectively, of Blessed Thistle, Wild Radish, Canada Thistle, Corncockle, Field Bindweed, Quackgrass, Dodders, Dock, Horsenettle, Bracted Plantain, Buckhorn or Wild Mustard; but in no case shall the number of Blessed Thistle or Wild Radish exceed 27 seeds of each per pound. No tolerance on weed seed will be allowed.
- E. Seed Purity: All seed species shall consist of seed with not less than a 95 percent germination rate, not less than 85 percent pure seed, and not more than 0.5 percent weed seed:

## **2.4 MULCH**

- A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, threshed straw of wheat, rye, or oats which is free of noxious weeds or other species which would grow and be detrimental to the specified grass.
- B. Wood Fiber Mulch: Biodegradable, dyed-wood, cellulose-fiber mulch; nontoxic and free of plant-growth or germination inhibitors; with a maximum moisture content of 10 percent ( $\pm 2$  percent); organic matter 99.4 percent ( $\pm 0.2$  percent); ash content 0.6 percent ( $\pm 0.2$  percent) water holding capacity of 1050 grams water/100 grams dry fiber. and a pH range of 4.5 to 6.5.

## **2.5 TACKIFIER**

- A. Tackifier shall consist of an asphalt emulsion in accordance with ASTM D 977, Grade SS-1; shall be nontoxic and free of plant-growth or germination inhibitors.

## **2.6 WATER**

- A. Water shall be clean, clear water free from any objectionable or harmful chemical qualities or organisms and shall be furnished by the Contractor.

## **2.7 EROSION-CONTROL MATERIALS**

- A. Erosion-Control Blankets: Biodegradable wood excelsior, straw, or coconut-fiber mat enclosed in a photodegradable plastic mesh. Include manufacturer's recommended steel wire staples, 6 inches long.
- B. Erosion-Control Mats: Cellular, non-biodegradable slope-stabilization mats designed to isolate and contain small areas of soil over steeply sloped surface. Include manufacturer's recommended anchorage system for slope conditions.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Examine areas to be planted for compliance with requirements and other conditions affecting performance.
  - 1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
  - 2. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.
  - 3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
  - 4. Uniformly moisten excessively dry soil that is not workable and which is too dusty.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Engineer and replace with new planting soil.

### **3.2 PROTECTION OF EXISTING STRUCTURES, UTILITIES, TREES AND VEGETATION**

- A. Protect existing structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings indicated to remain in place against unnecessary cutting, breaking or skinning of roots, skinning and bruising of bark, and smothering of trees by stockpiling construction materials or excavated materials, excess foot or vehicular traffic, or parking of vehicles within drip line. Provide wood or metal stakes 48 inches in height, set on eight (8) to 10 foot

centers, connected by 2-inch minimum brightly colored flagging tape or fabric fencing to protect trees and vegetation to remain. Set perimeter of protection at the drip line of trees to remain unless approved otherwise by the Engineer.

- B. Provide protection for roots over 1-1/2 inch in diameter cut during construction operations. Coat cut faces with an emulsified asphalt, or other acceptable coating, formulated for use on damaged plant tissues. Temporarily cover exposed roots with wet burlap to prevent roots from drying out and cover with earth as soon as possible.
- C. The Contractor shall not remove or damage trees and shrubs which are outside the Clearing Limits established by the Owner or those within the Clearing Limits designated to remain.
- D. Repair trees scheduled to remain and damaged by construction operations in a manner acceptable to the Engineer. Repair damaged trees promptly to prevent progressive deterioration caused by damage.
- E. Replace trees scheduled to remain and damaged beyond repair by construction operations, as determined by the Engineer, with trees of similar size and species. Repair and replacement of trees scheduled to remain and damaged by construction operations or lack of adequate protection during construction operations shall be at the Contractor's expense.
- F. Protect adjacent and adjoining areas from hydroseeding, hydromulching, and tackifier overspray.
- G. Protect grade stakes set by others until directed to remove them.

### **3.3 GRADING**

- A. Rough grading shall be done as soon as all excavation required in the area has been backfilled. The necessary earthwork shall be accomplished to bring the existing ground to the desired finish elevations as shown on the Contract Drawings or otherwise directed.
- B. Fine grading shall consist of shaping the final contours for drainage and removing all large rock, clumps of earth, roots and waste construction materials. It shall also include thorough loosening of the soil to a depth of 6" by plowing, discing, harrowing or other approved methods until the area is acceptable as suitable for subsequent landscaping operations. The work of landscaping shall be performed on a section by section basis immediately upon completion of earthwork.
- C. Upon failure or neglect on the part of the Contractor to coordinate his grading with seeding and mulching operations and diligently pursue the control of erosion and siltation, the Engineer may suspend the Contractor's grading



operations until such time as the work is coordinated in a manner acceptable to the Engineer.

### **3.4 SECURING AND PLACING TOPSOIL**

- A. Topsoil shall be secured from areas from which topsoil has not been previously removed, either by erosion or mechanical methods. Topsoil shall not be removed to a depth in excess of the depth approved by the Engineer.
- B. The area or areas from which topsoil is secured shall possess such uniformity of soil depth, color, texture, drainage and other characteristics as to offer assurance that, when removed the product, will be homogeneous in nature and will conform to the requirements of these specifications.
- C. .All areas from which topsoil is to be secured, shall be cleaned of all sticks, boards, stones, lime, cement, ashes, cinders, slag, concrete, bitumen or its residue and any other effuse which will hinder or prevent growth.
- D. In securing topsoil from a designated pit, or elsewhere, should strata or seams of material occur which do not come under the requirements for topsoil, such material shall be removed from the topsoil or if required by the Engineer, the pit shall be abandoned.
- E. Before placing or depositing topsoil upon any areas, all improvement within the area shall be completed, unless otherwise approved by the Engineer. The areas in which topsoil is to be placed or incorporated shall be prepared before securing topsoil for use.
- F. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

### **3.5 SEEDBED PREPARATION**

- A. The Contractor shall cut and satisfactorily dispose of weeds or other unacceptable growth on the areas to be seeded. Uneven and rough areas outside of the graded section, such as crop rows, farm contours, ditches and ditch spoil banks, fence line and hedgerow soil accumulations, and other minor irregularities which cannot be obliterated by normal seedbed preparation operations, shall be shaped and smoothed as directed by the Engineer to provide for more effective seeding and for ease of subsequent mowing operations.
- B. The soil shall then be scarified or otherwise loosened to a depth of not less than 6 inches except as otherwise provided below or otherwise directed by the Engineer. Clods shall be broken and the top 2 to 3 inches of soil shall be

worked into an acceptable seedbed by the use of soil pulverizers, drags, or harrows; or by other methods approved by the Engineer.

- C. On 2:1 slopes a seedbed preparation will be required that is the same depth as that required on flatter areas, although the degree of smoothness may be reduced from that required on the flatter areas if so permitted by the Engineer.
- D. On cut slopes that are steeper than 2:1, both the depth of preparation and the degree of smoothness of the seedbed may be reduced as permitted by the Engineer, but in all cases the slope surface shall be scarified, grooved, trenched, or punctured so as to provide pockets, ridges, or trenches in which the seeding materials can lodge.
- E. On cut slopes that are either 2:1 or steeper, the Engineer may permit the preparation of a partial or complete seedbed during the grading of the slope. If at the time of seeding and mulching operations such preparation is still in a condition acceptable to the Engineer, additional seedbed preparation may be reduced or eliminated.
- F. The preparation of seedbeds shall not be done when the soil is frozen, extremely wet, or when the Engineer determines that it is in an otherwise unfavorable working condition.
- G. Limestone may be applied at the rate described below as a part of the seedbed preparation, provided it is immediately worked into the soil. If not so applied, limestone and fertilizer shall be applied as described below.

### **3.6 APPLICATION OF LIMESTONE, FERTILIZER, SEED, AND MULCH (GENERAL)**

- A. Equipment to be used for the application, covering or compaction of limestone, fertilizer, and seed shall have been approved by the Engineer before being used on the project. Approval may be revoked at any time if equipment is not maintained in satisfactory working condition, or if the equipment operation damages the seed.
- B. Limestone, fertilizer, seed and mulch shall be applied within 24 hours after completion of seedbed preparation unless otherwise permitted by the Engineer, but no limestone or fertilizer shall be distributed and no seed shall be sown when the Engineer determines that weather and soil conditions are unfavorable for such operations.

### **3.7 FERTILIZATION AND LIMING**

- A. Following seedbed preparation, fertilizer shall be applied to all areas to be seeded so as to achieve the application rates shown below. Fertilizer shall be

spread evenly over the seedbed and shall be lightly harrowed, raked, or otherwise incorporated into the soil for a depth of ½ inch.

- B. Fertilizer need not be incorporated in the soil as specified above when mixed with seed in water and applied with power sprayer equipment. The seed shall not remain in water containing fertilizer for more than 30 minutes when a hydraulic seeder is used.
- C. Agricultural limestone shall be thoroughly mixed into the soil according to the rates indicated below. The specified rate of limestone application may be reduced by the Engineer if pH tests indicate this to be desirable. It is the responsibility of the Contractor to obtain such tests and submit the results to the Engineer for adjustment in rates.
- D. In the absence of a soil test, the following rates of application of fertilizer and lime shall be to all areas to be seeded which are not classified as lawns, but would be classified as open fields:
  - 1. Lime: 4,000 pounds per acre
  - 2. Fertilizer: 1,000 pounds per acre
- E. For all areas to be seeded which are classified as lawns, fertilizer and lime shall be applied at the following rates:
  - 1. Lime: 92 pounds per 1,000 square feet
  - 2. Fertilizer: 23 pounds per 1,000 square feet
- F. When adverse seeding conditions are encountered due to steepness of slope, height of slope, or soil conditions, the Engineer may direct or permit that modifications be made in the above requirements which pertain to incorporating limestone into the seedbed; covering limestone, seed, and fertilizer; and compacting the seedbed. Such modifications may include but not be limited to the following:
  - 1. The incorporation of limestone into the seedbed may be omitted on:
    - a. Cut slopes steeper than 2:1;
    - b. On 2:1 cut slopes when a seedbed has been prepared during the excavation of the cut and is still in an acceptable condition; or
    - c. on areas of slopes where the surface of the area is too rocky to permit the incorporation of the limestone.
- G. It shall be the responsibility of the Contractor to make an additional application of maintenance fertilizer in the amount of 650 pounds per acre (15 pounds per 1,000 square feet) following the initial establishment of groundcover. This application shall occur when vegetation is three (3) inches in height or 45 days after initial seeding, whichever comes first.

### 3.8 SEEDING

- A. Seeding shall commence as soon as preparation of the seedbed has been completed. Do not broadcast or drop seed when wind velocity exceeds 5 mph or until the surface is suitable for working and is in proper condition. Seed mixtures may be sown together provided they are kept in a thoroughly mixed condition during the seeding operation.
- B. All disturbed areas shall be seeded unless specifically indicated to receive other types of plantings or groundcovers.
- C. Seed may be uniformly sown over the seedbed by a mechanical method suitable for the slopes and size of the areas to be seeded. Broadcast type seeders, windmill hand seeder or approved mechanical power drawn seed drills may be utilized.
  - 1. Do not use wet seed or seed that is moldy or otherwise damaged.
  - 2. Do not seed against existing trees.
- D. For all areas to be seeded which are not classified as lawns, but would be classified as open fields, seed species and application rates shall be as follows:
  - 1. Spring/Summer (Normally April 1 to August 31):
    - a. 100 pounds of Ky-31 tall fescue per acre.
  - 2. Fall and Winter (Normally September 1 to March 31):
    - a. 85 pounds of Ky-31 tall fescue and 15 pounds of rye grain per acre.
  - 3. On cut and fill slopes having 2:1 or steeper slopes, add 15 pounds of sudangrass to the planned seeding in summer seeding or 25 pounds of rye cereal per acre in fall and winter seeding, if seeded September to February.
  - 4. These seeding rates are prescribed for all sites with less than 50 percent ground cover and for sites with more than 50 percent ground cover where complete seeding is necessary to establish effective erosion control vegetative cover. On sites having 50 to 80 percent ground cover where complete seeding is not necessary to establish vegetative cover, reduce the seeding rate at least one-half the normal rate.
- E. For all areas to be seeded which are classified as lawns, seed species and application rates shall be as follows:
  - 1. "Rebel" turf-type fescue.....3 pounds per 1,000 square feet
  - 2. "Falcon" turf-type fescue .....3 pounds per 1,000 square feet
  - Total Mix .....6 pounds per 1,000 square feet**

- F. Care shall be taken to adjust the seeder for seeding at the proper rate before seeding operations are started and to maintain their adjustment during seeding. Seed in hoppers shall be agitated to prevent segregation of the various seeds in the mixture.
- G. Immediately after application, harrow, drag, rake, or otherwise work seedbed so as to cover the seed with a layer of soil. The depth of covering shall be as directed by the Engineer. If two kinds of seed are to be used which require different depths of covering, they shall be sown separately.
- H. When a combination seed and fertilizer drill is used, fertilizer may be drilled in with the seed after limestone has been applied and worked into the soil. If two kinds of seed are being used which require different depths of cover, the seed requiring the lighter cover may be sown broadcast or with a special attachment to the drill, or drilled lightly following the initial drilling operation.
  - 1. The rates of application of limestone, fertilizer, and seed on slopes 2:1 or steeper or on rocky surfaces may be reduced or eliminated.
  - 2. Compaction after seeding may be reduced or eliminated on slopes 2:1 or steeper, on rocky surfaces, or on other areas where soil conditions would make compaction undesirable.
- I. Protect seeded areas with erosion-control mats where shown on Drawings; install and anchor according to manufacturer's written instructions.

### **3.9 MULCHING**

- A. All seeded areas shall be uniformly mulched in a continuous blanket immediately after seeding. The mulch shall be applied so as to permit some sunlight to penetrate and the air to circulate and at the same time, shade the grounds, reduce erosion and conserve soil moisture. Approximately 25 percent of the ground shall be visible through the mulch blanket.
- B. To achieve the coverage described above, it will be necessary to apply straw mulch to seeded areas at a rate of approximately 4,000 pounds per acre (92 pounds per 1,000 square feet) or wood fiber mulch at a rate of 1,600 pounds per acre (37 pounds per 1,000 square feet).
- C. Mulch shall be uniformly spread by hand or by approved mechanical spreaders or blowers which will provide an acceptable application as described above.
- D. Before mulch is applied on cut or fill slopes which are 3:1 or flatter, and ditch slopes, the Contractor shall remove and dispose of all exposed stones in excess of 3 inches in diameter and all roots or other debris which will prevent proper contact of the mulch with the soil.

- E. Care shall be exercised to prevent displacement of soil or seed or other damage to the seeded area during the mulching operations.
- F. The Contractor shall take sufficient precautions to prevent mulch from entering drainage structures through displacement by wind, water, or other causes and shall promptly remove any blockage to drainage facilities which may occur.

### **3.10 TACIFIER**

- A. Emulsified asphalt or organic tackifier shall be sprayed uniformly on mulch as it is ejected from blower or immediately thereafter. Tackifier shall be applied evenly over area creating uniform appearance. Application rates and method of application will vary with conditions, be approved by the Engineer, and shall be applied in sufficient amount to assure that the mulch is properly held in place. Where the binding material is not applied directly with the mulch it shall be applied immediately following the mulch operation.
- B. The Contractor shall cover/protect structures, poles, fences and other appurtenances if mulch binder is applied in such a way that it may come in contact with or discolor those structures or appurtenances. Mulch and binder shall be applied by suitable blowing equipment at closely controlled application rates in a manner acceptable to the Engineer.
- C. Asphalt shall not be used in freezing weather.

### **3.11 HYDROSEEDING**

- A. Hydroseeding: Mix specified seed, fertilizer, and fiber mulch in water, using equipment specifically designed for hydroseeding applications. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.
  - 1. Mix slurry with fiber-mulch tackifier in accordance with manufacturer's recommendations.
  - 2. Fiber mulch shall be mixed into the slurry such that the application rate of the fiber mulch is 1,500 to 2,000 pounds per acre.
  - 3. Apply slurry uniformly to all areas to be seeded in a one-step process in accordance with the application rates described herein.
- B. When a hydraulic seeder is used for application of seed and fertilizer, the seed shall not remain in water containing fertilizer for more than 30 minutes prior to application unless otherwise permitted by the Engineer.

### **3.12 EROSION CONTROL MATERIALS**

- A. Install all erosion control materials in accordance with manufacturer's recommendations and as shown on Drawings.

### **3.13 TURF RENOVATION**

- A. Renovate existing turf damaged by Contractor's operations, such as storage of materials or equipment and movement of vehicles.
  - 1. Reestablish turf where settlement or washouts occur or where minor regrading is required.
  - 2. Install new planting soil as required.
- B. Remove sod and vegetation from diseased or unsatisfactory turf areas; do not bury in soil.
- C. Remove topsoil containing foreign materials such as oil drippings, fuel spills, stones, gravel, and other construction materials resulting from Contractor's operations, and replace with new planting soil.
- D. Mow, dethatch, core aerate, and rake existing turf.
- E. Remove weeds before seeding. Where weeds are extensive, apply selective herbicides as required. Do not use pre-emergence herbicides.
- F. Remove waste and foreign materials, including weeds, soil cores, grass, vegetation, and turf, and legally dispose of them off Owner's property.
- G. Till stripped, bare, and compacted areas thoroughly to a soil depth of 6 inches.
- H. Apply soil amendments and initial fertilizers required for establishing new turf and mix thoroughly into top 4 inches of existing soil. Install new planting soil to fill low spots and meet finish grades.
- I. Apply seed and protect with straw mulch as required for new turf.
- J. Water newly planted areas and keep moist until new turf is established.

### **3.14 TURF MAINTENANCE**

- A. The Contractor shall keep all seeded areas in good condition, reseeding and mowing if and when necessary as directed by the Engineer, until a good lawn is established over the entire area seeded and shall maintain these areas in an approved condition until final acceptance of the Contract.

- B. Grassed areas will be accepted when a 95 percent cover by permanent grasses is obtained and weeds are not dominant. On slopes, the Contractor shall provide against washouts by an approved method. Any washouts which occur shall be regraded and reseeded until a good sod is established.
- C. Areas of damage or failure due to any cause shall be corrected by repair or by being completely redone as may be directed by the Engineer. Areas of damage or failure resulting either from negligence on the part of the Contractor in performing subsequent construction operations or from not taking adequate precautions to control erosion and siltation as required throughout the various sections of the specifications shall be repaired by the Contractor as directed by the Engineer at no cost to the Owner.

### **3.15 CLEANUP AND PROTECTION**

- A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- B. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.
- C. Remove nondegradable erosion-control measures after grass establishment period.

**END OF SECTION 329200**



# JONATHAN CREEK SOIL RECLAMATION & DENNIS FARM BORROW AREA PROJECT HAYWOOD COUNTY

## HAYWOOD COUNTY, NORTH CAROLINA

**PRIMARY PROJECT CONTACT:**

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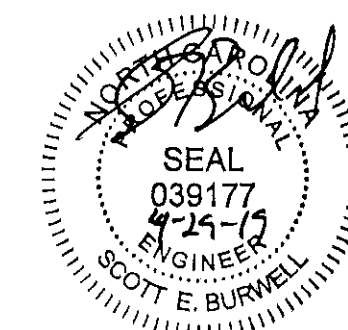
**ENGINEER/ EROSION CONTROL MAINTENANCE CONTACT:**

NAME: SCOTT BURWELL, P.E.  
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**SCHEDULE OF DRAWINGS**

- G-001 . . . . . COVER SHEET
- G-002 . . . . . GENERAL NOTES & LEGENDS
- G-003 . . . . . GENERAL NOTES
- G-004 . . . . . GENERAL NOTES
- CD-101 . . . . . JONATHAN CREEK- EXISTING  
CONDITIONS & DEMOLITION PLAN
- CD-102 . . . . . DENNIS FARM - EXISTING CONDITIONS &  
DEMOLITION PLAN
- C-101 . . . . . JONATHAN CREEK - INITIAL GRADING &  
EROSION CONTROL PLAN
- C-102 . . . . . JONATHAN CREEK - FINAL GRADING  
PLAN
- C-103 . . . . . DENNIS FARM - INITIAL GRADING &  
EROSION CONTROL PLAN OPTION 1
- C-104 . . . . . DENNIS FARM - FINAL GRADING PLAN  
OPTION 1
- C-105 . . . . . DENNIS FARM - INITIAL GRADING &  
EROSION CONTROL PLAN OPTION 2
- C-106 . . . . . DENNIS FARM - FINAL GRADING PLAN  
OPTION 2
- C-501 . . . . . MISCELLANEOUS DETAILS
- C-502 . . . . . MISCELLANEOUS DETAILS
- C-503 . . . . . MISCELLANEOUS DETAILS



APRIL 2019



GENERAL: ALL EROSION CONTROL MEASURES ARE TO BE PERFORMED IN STRICT ACCORDANCE WITH REQUIREMENTS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY (NCEQ), DIVISION OF ENERGY, MINERAL, AND LAND RESOURCES (DEMLR), LAND QUALITY SECTION. THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE COMPLIED WITH FOR ALL WORK.

- PRIOR TO BEGINNING WORK ON THE PROJECT THE CONTRACTOR SHALL OBTAIN FROM THE OWNER A COPY OF THE "EROSION AND SEDIMENT CONTROL APPROVAL" AND "CERTIFICATE OF COVERAGE" FROM THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY (NCEQ), DIVISION OF ENERGY, MINERAL, AND LAND RESOURCES (DEMLR), DIVISION OF LAND QUALITY, OR THE LOCAL AUTHORIZED PROGRAM. THE APPROVAL NOTICE AND CERTIFICATE OF COVERAGE MUST BE AVAILABLE ON-SITE DURING ALL GRADING AND CONSTRUCTION ACTIVITIES.
- INSTALL ALL EROSION CONTROL MEASURES AS REQUIRED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF ENERGY, MINERAL, AND LAND RESOURCES, LAND QUALITY SECTION.

NOTE: ALL UTILITY INSTALLATION WITHIN 25' OF A RIVER OR STREAM BANK SHALL BE INSTALLED PER STREAM PROTECTION DURING EXCAVATION DETAIL. SEEDING AND MULCHING SHALL BE COMPLETED DAILY IN AREAS NOTED AS STREAM PROTECTION AREAS. SILT FENCE IN THESE AREAS SHALL NOT BE INSTALLED CLOSER THAN 5' FROM CREEK BANK UNLESS FIELD CONDITIONS PREVENT SUFFICIENT CLEARANCE. ALL SILT FENCES SHALL BE INSPECTED AND CLEANED AS NEEDED AFTER EACH RAIN.

- NO WORK SHALL BE PERFORMED IN STREAM FROM OCTOBER 15 TO APRIL 15 (TO ACCOMMODATE COE AND DWQ RECOMMENDATIONS CONCERNING WORK IN TROUT WATERS.)
- CONTRACTOR IS TO PLACE PERMANENT STAKES MARKING CLEARLY THE 25' BUFFER FOR STREAMS WHERE SHOWN ON THE PLANS AND THE MARKERS ARE TO BE VISIBLE AT ALL TIMES DURING CONSTRUCTION.
- OBTAIN CERTIFICATE OF COMPLIANCE THROUGH ON-SITE INSPECTION BY A REPRESENTATIVE OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF ENERGY, MINERAL, AND LAND RESOURCES, LAND QUALITY SECTION.
- CONSTRUCTION SHALL BE LIMITED TO 2000' OF CONTIGUOUS ROAD CORRIDOR UNTIL ALL CUTS, FILLS, AND DITCHES ARE STABILIZED FOR THAT 2000' SECTION. UPON STABILIZATION OF THAT SECTION ANOTHER 2000' SECTION CAN BE CONSTRUCTED AND STABILIZED.
- ALL STREAM CROSSINGS AND PERENNIAL STREAMS WILL BE ALIGNED WITH THE NATURAL STREAM PATTERNS ABOVE AND BELOW THE PROPOSED ROAD. ARCH CULVERTS WILL BE USED AND FOOTERS WILL BE CONSTRUCTED IN UNDISTURBED BANKS AWAY FROM THE STREAM FLOW.
- PROCEED WITH GRADING, CLEARING AND GRUBBING. NOTE: NO OFF SITE DISPOSAL OF MATERIAL IS ALLOWED UNLESS THE DISPOSAL SITE HAS AN APPROVED EROSION CONTROL PLAN.
- SEED AND PLACE EROSION CONTROL MATTING ON ALL CUT AND FILL SLOPES THAT ARE NOT ROCK IMMEDIATELY UPON COMPLETION OF SLOPE STABILIZATION.
- ALL TEMPORARY STREAM AND CREEK CROSSINGS FOR EQUIPMENT DURING CONSTRUCTION SHALL BE MADE USING TEMPORARY BRIDGES. NO STREAM BANK OR STREAM BED DISTURBANCE SHALL BE ALLOWED FOR EQUIPMENT CROSSINGS.
- SEED AND MULCH DENUDED AREA WITHIN TIME FRAME SPECIFIED (SEE TABLE). SEED AND SOIL AMENDMENTS SHALL BE PLACED ON A PREPARED SEEDBED AT THE FOLLOWING RATES PER ACRE. STRAW MULCH SHALL BE TACKED WITH TACKING AGENT APPLIED BY HYDROSEEDER.

LIME	4,000 LBS
FERTILIZER (10-10-10)	1,000 LBS
KY-31 FESCUE (POA PRATENSIS)	100 LBS (MOWED AND MAINTAINED AREAS ONLY)
OR	
CREeping RED FESCUE	100 LBS (NATURAL AREAS AND STREAMBANKS)
STRAW MULCH	60-80 BALES
FOR SUMMER SEEDING ADD TO THE ABOVE:	
GERMAN MILLET (SETARIA ITALICA)	40 LBS
SMALL-STEMMED SUDAN GRASS (SORGHUM BICOLOR)	50 LBS
FOR WINTER SEEDING ADD TO THE ABOVE:	
RYE GRAIN (SECAE CEREALE)	120 LBS

IF HYDROSEEDING, WOOD CELLULOSE MAY BE USED IN ADDITION TO STRAW MULCH AT THE RATE OF 1,000 LBS PER ACRE.

ALL SEEDING SHALL BE MAINTAINED, WATERED ETC., UNTIL A PERMANENT VEGETATIVE GROUND COVER IS ESTABLISHED OVER ALL DISTURBED AREAS. FOR ALL SLOPES 2:1 OR STEEPER ADD TO THE ABOVE:

PURGE LIVE SEED SWITCHGRASS	4 LBS
BROWNTOP MILLET OR PEARL MILLET (PENNISETUM GLAUCUM)	8 LBS
GRAIN SORGHUM (SORGHUM BICOLOR (L) MOENCH SSP. BICOLOR)	2 LBS

ALL SLOPES 2:1 OR STEEPER SHALL BE COVERED BY EROSION CONTROL MATTING.

**NATIVE SEEDING:**

THE CORRECT SEEDBED pH IS 5.5 TO 6.5.

APPLY ZERO NITROGEN AT PLANTING.

INCORPORATE SOIL AMENDMENTS INTO TOPSOIL/ROOT ZONE BEFORE SEEDING.

FIRM SEEDBED BEFORE SEEDING (TRAVEL WITH DOZER CLEATS).

SEEDING DEPTH FOR ALL NATIVE SSP. EXCEPT E.GAMAGRASS (TRIPSACUM DACTYBIDES) NEED TO BE 1/4" - 1/2". GREATER DEPTHS CAUSE HIGH SEED MORTALITY.

SPECIALIZED SEEDING IMPLEMENTS ARE REQUIRED. SEED MIXES AND RATES TO MATCH SEEDER USED. A NO-TILL, DROP SEEDER OR BROADCASTER WITH PRECISION METERING TO CONTROL SMALL SEED FLOW AND PICKER WHEEL AGITATORS TO HANDLE FLUFFY SEED ARE BEST SUITED FOR NATIVE SEED.

**NATIVE PLANT SEEDING MIX FOR STREAM OR RIVERBANK STABILIZATION**

SEEDING FOR STREAM OR RIVERBANK STABILIZATION SHALL BE A MIXTURE OF NATIVE GRASSES, PLANTS AND TREES. NATIVE PLANT MIX SHALL INCLUDE THE FOLLOWING:  
 GRASSES - BIG BLUESTEM (ANDROPOGON GERARDII), INDIAN GRASS (SORGASTRUM NUTANS), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), SWITCHGRASS (PANICUM VIRGATUM). 15 LBS/ACRE EACH  
 AUGUST THRU MAY - GREENRYE (SECALE CEREALE) 25 LBS/ACRE EACH  
 MAY 1 THRU AUGUST - MILLET (PENNISETUM GLAUCUM) 25 LBS/ACRE EACH

TREES - SILKY DOGWOOD (CORNUS AMONUM), SILKY WILLOW (SALIX SERICEA), HAZEL ALDER (ALMUS SERRULATA) AND ELDERBERRY (SAMBUEUS CANADENSIS)

NATIVE PLANT MIX VARIATIONS SHALL BE APPROVED BY ENGINEER  
 NOTE: NO FERTILIZER SHALL BE USED WITHIN 10' OF TOP OF STREAM OR RIVER BANK.

- MAINTAIN SOIL EROSION CONTROL MEASURES UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
- REQUEST FINAL APPROVAL BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF ENERGY, MINERAL, AND LAND RESOURCES, LAND QUALITY SECTION.
- REMOVE SOIL EROSION CONTROL MEASURES AND STABILIZE THESE AREAS.

**TEMPORARY SEEDING SPECIFICATION**

SEEDING MIXTURE:  
 SPECIES RATE (lb/acre)  
 RYE (grain) 120

SEEDING DATES:  
 AUG 15 TO DEC 30

SOIL AMENDMENTS:  
 FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY  
 2000 lb/ac GROUND AGRICULTURAL LIMESTONE AND  
 750 lb/ac 10-10-10 FERTILIZER.

MULCH:  
 APPLY 4000lb/ac STRAW. ANCHOR STRAW BY TACKLING w/ ASPHALT, NETTING, OR A MULCH ANCHORING TOOL.  
 A DISK w/ BLADES SER NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE:  
 RE-FERTILIZE IF GROWTH IS NOT FULLY ADEQUATE, RE-SEED, RE-FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

**CUT/FILL SLOPES SEEDING SPECIFICATIONS - STEEPER THAN 3:1**

SEEDING MIXTURE:  
 SPECIES RATE (lb/acre)  
 TALL FESCUE 100  
 SWITCHGRASS AND PARTRIDGE PEA MIX 30  
 KOBE LESPENDEZA 10

NURSE PLANTS:  
 BETWEEN MAY 1 AND AUG 15, ADD 10lb/ac GERMAN MILLET OR 15 lb/ac SUDANGRASS. PRIOR TO MAY 1 OR AFTER AUG 15, ADD 40 lb/ac RYE (GRAIN). IT MAY BE BENEFICIAL TO PLANT THE GRASSES IN LATE SUMMER AND OVERSEED THE LESPENDEZAS IN MARCH.

SEEDING DATES:  
 BEST POSSIBLE  
 AUG 25 - SEPT 15 AUG 20 - OCT 25  
 FEB 15 - MAR 20 FEB 1 - APRIL 15

SOIL AMENDMENTS:  
 APPLY LIME AND FERTILIZER ACCORDING TO SOIL TEST, OR  
 APPLY 4000 lb/ac GROUND AGRICULTURAL LIMESTONE AND  
 750 lb/ac 10-10-10 FERTILIZER.

MULCH:  
 APPLY 4000 lb/ac GRAIN STRAW OR EQUIVALENT COVER OF ANOTHER SUITABLE MULCHING MATERIAL, ANCHOR MULCH BY TACKLING w/ ASPHALT, ROVING OR NETTING. NETTING IS THE PREFERRED ANCHORING METHOD ON STEEP SLOPES.

MAINTENANCE:  
 MOW NO MORE THAN ONCE A YEAR, RE-FERTILIZE IN THE SECOND YEAR UNLESS GROWTH IS FULLY ADEQUATE.  
 RE-SEED, RE-FERTILIZE, RE-MULCH DAMAGED AREAS IMMEDIATELY.

**DITCH/OPEN AREA PERMANENT SEEDING SPECIFICATION**

SEEDING MIXTURE:  
 SPECIES RATE (lb/acre)  
 TALL FESCUE 250 (6 lb/1000 sq ft) (S)

NURSE PLANTS:  
 BETWEEN MAY 1 AND AU 15, ADD 10 lb/ac GERMAN MILLET OR 15 lb/ac SUDANGRASS, PRIOR TO MAY 1 OR AFTER AUG 15, ADD 40 lb/ac RYE (GRAIN).

SOIL AMENDMENTS:  
 APPLY LIME AND FERTILIZE ACCORDING TO SOIL TEST, OR APPLY  
 4000 lb/ac GROUND AGRICULTURAL LIMESTONE AND 750 lb/ac 10-10-10 FERTILIZER.

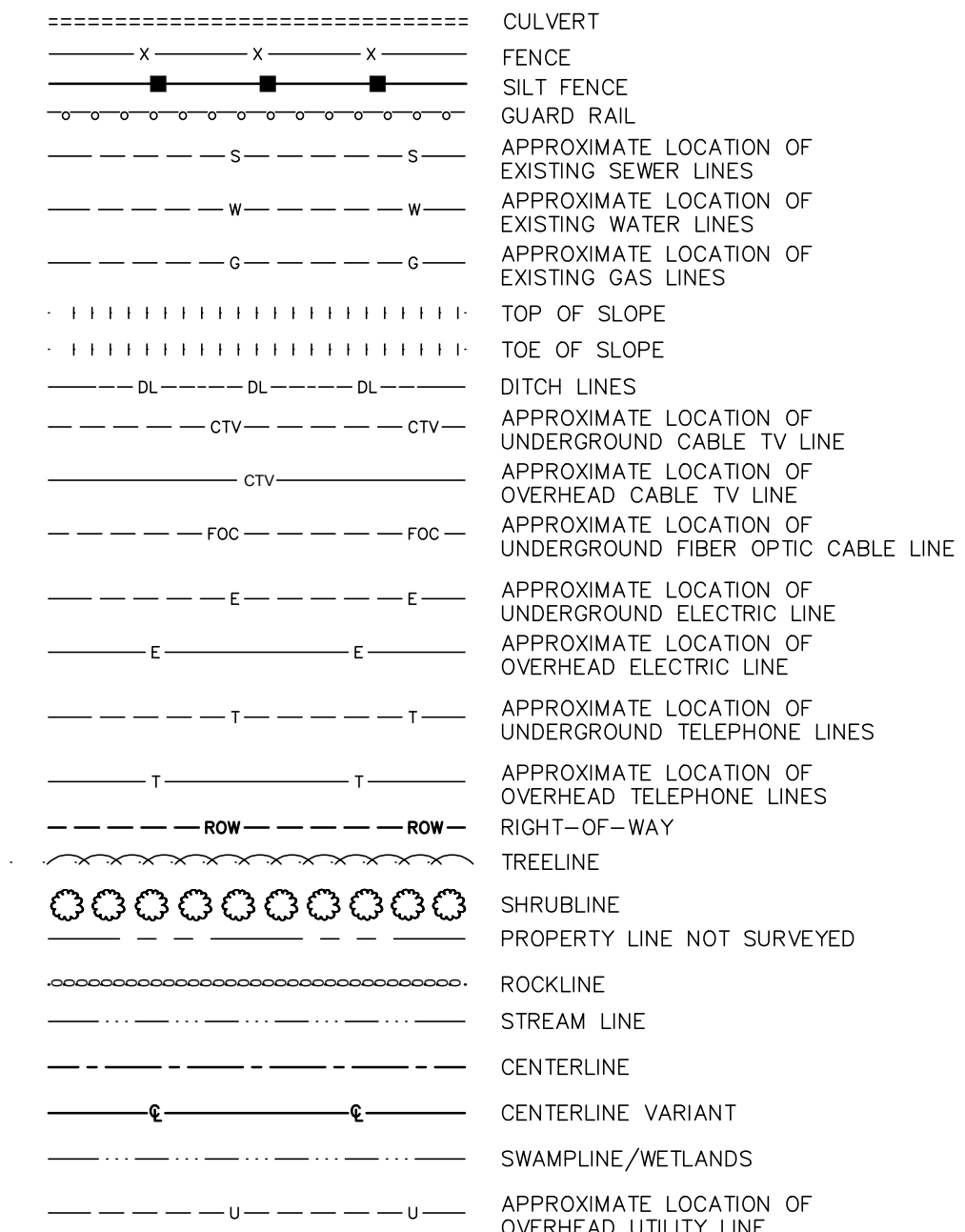
MULCH:  
 USE CHANNEL LINING MATERIAL TO COVER THE BOTTOM OF DITCHES. THE LINING SHOULD EXTEND ABOVE THE HIGHEST CALCULATED DEPTH OF FLOW. ON CHANNEL SIDE SLOPES ABOVE THE HEIGHT, AND IN DRAINAGES NOT REQUIRING TEMPORARY LININGS, APPLY 4000 lb/ac GRAIN STRAW AND ANCHOR STRAW BY STAPLING NETTING OVER THE TOP.

MULCH AND ANCHORING MATERIALS MUST NOT BE ALLOWED TO WASH DOWN SLOPE WHERE THEY CAN CLOG DRAINAGE DEVICES.

MAINTENANCE:  
 INSPECT AND REPAIR MULCH FREQUENTLY. RE-FERTILIZE IN LATE WINTER ACCORDING TO SOIL TESTS OR APPLY 150 lb/ac 10-10-10 FERTILIZER (3 lb/1000 sq ft). MOW REGULARLY TO A HEIGHT OF 2" TO 4".

**EXISTING CONDITIONS LEGEND**

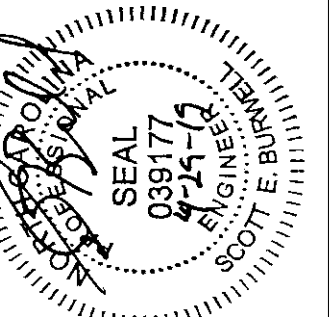
TEL PED	TELEPHONE PEDESTAL	△	CALCULATED POINT
ELEC PED	ELECTRIC PEDESTAL	○ IPS	1/2" REBAR SET WITH CAP
CATV PED	CABLE TV PEDESTAL	⊠	CONCRETE MONUMENT
SIGN	SIGN	⊠ CM-R/W	RIGHT-OF-WAY MONUMENT
CATV	UNDERGROUND CABLE TV SIGN	○ DOT MON	D.O.T. CONTROL POINT
UG FOC	UNDERGROUND FIBER OPTIC CABLE SIGN	● RBF	REBAR FOUND
UG TCS	UNDERGROUND TELEPHONE CABLE SIGN	● RRSPIKE	RAILROAD SPIKE
UG GAS	UNDERGROUND GAS LINE SIGN	⊙ PK NL	PK NAIL FOUND / SET
UG ELEC	UNDERGROUND ELECTRIC LINE SIGN	⊙ SPINDLE	SPINDLE FOUND / SET
LP	LIGHT POLE	⊙ CP/HUB	HUB & TACK SET
UP	UTILITY POLE	△ CP/NL GPS	CONTROL POINT NAIL SET / FOUND
W	GUY WIRE ANCHOR	△ CP/NL	CONTROL POINT/NAIL SET GPS
TSP	TRAFFIC SIGNAL POLE	⊙ CP/TEMP	CONTROL POINT TEMPORARY MARK
R	RAILROAD CROSSING SIGNAL	⊙ NGS METAL ROD	NATIONAL GEODETIC SURVEY METAL ROD
MH	MANHOLE	⊠ NGS CM	NATIONAL GEODETIC SURVEY CONCRETE MONUMENT
SSMH	SANITARY SEWER MANHOLE	⊠	TEMPORARY CONTROL POINT SET
SDMH	STORM DRAIN MANHOLE	⊠	NETWORK TRIANGULATION POINT
COMM	COMMUNICATION MANHOLE	▲	STAKE FOUND
ELMH	ELECTRICAL MANHOLE	⊠	INTERSTATE HIGHWAY
JB	JUNCTION BOX	⊠	U.S. HIGHWAY
SPIGOT	SPIGOT/YARD HYDRANT	⊠	FINISHED FLOOR ELEVATION
C.O.	SEWER CLEAN-OUT	⊠	MONITORING WELL
E.SS	ELECTRIC SERVICE STUB-OUT	⊠	PIEZOMETER
G.SS	GAS SERVICE STUB-OUT	⊠	LANDFILL GAS MONITORING PROBE
CB	CATCH BASIN	⊠	SURFACE WATER SAMPLING LOCATION
CI	CURB INLET	⊠	LANDFILL GAS VENT
WM	WATER METER	⊠	LANDFILL GAS COLLECTION WELLHEAD
FH	FIRE HYDRANT	⊠	POTABLE WATER WELL
WV	WATER VALVE	⊠	MAILBOX OR PAPER BOX
BLOWOFF VALVE	BLOW OFF VALVE	⊠	POSTAL DROP BOX
G/M	GAS METER	⊠	SATELLITE DISH
G/V	GAS VALVE	⊠	STATUE, BIRD BATHS, ETC.
ICV	IRRIGATION CONTROL VALVE	⊠	TREES
PIV	POST INDICATOR VALVE	⊠	SHRUBS / BUSHES
JUNC	ELECTRIC JUNCTION BOX OR OUTLET	⊠	(H) HORIZONTAL GROUND DISTANCE
BOX	TRAFFIC SIGNAL BOX	⊠	(G) NC STATE PLANE GRID DISTANCE



IPS	IRON PIN SET	CMU	CONCRETE MASONRY UNIT
RBF	REBAR FOUND	CPP	CORRUGATED PLASTIC PIPE
OTIPF	OPEN TOP IRON PIN FOUND	DIP	DUCTILE IRON PIPE
CTIPF	CRIMPED TOP IRON PIN FOUND	E&T	ELECTRIC & TELEPHONE
CMU	CONCRETE MASONRY UNIT	FOC	FIBER OPTIC CABLE
R/W	RIGHT OF WAY	GIP	GALVANIZED IRON PIPE
CL	CENTERLINE	O/H	OVERHEAD
C	CURVE (SEE CURVE TABLE)	RCP	REINFORCED CONCRETE PIPE
POB	POINT OF BEGINNING	U/G	UNDERGROUND
CP	CALCULATED POINT	VCP	VITRIFIED CLAY PIPE
PB	PLAT BOOK	PVC	POLYVINYL CHLORIDE PIPE
DB	DEED BOOK	FFE	FINISHED FLOOR ELEVATION
L	LINE (SEE LINE TABLE)	PG	PAGE
BLDG	BUILDING	REF	REFERENCE
CIP	CAST IRON PIPE	DOT	DEPARTMENT OF TRANSPORTATION
CMP	CORRUGATED METAL PIPE	NGS	NATIONAL GEODETIC SURVEY
CONC	CONCRETE	NCSP	NORTH CAROLINA STATE PLANE
		MTR BOX	METER BOX



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JONATHAN CREEK SOIL RECLAMATION & DENNIS FARM BORROW AREA PROJECT  
**HAYWOOD COUNTY**  
 HAYWOOD COUNTY, NORTH CAROLINA

JOB NO.: 18.00162  
 DATE: APRIL 2019  
 DESIGNED BY: TAH  
 CADD BY: TAH  
 DESIGN REVIEW:  
 CONST. REVIEW:  
 FILE NAME: 18.00162-J Creek Design-R.dwg

**GENERAL NOTES AND LEGENDS**

SHEET  
**G-002**

NO.	DATE	BY	REVISION DESCRIPTION

**GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT**

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

**SECTION E: GROUND STABILIZATION**

**Required Ground Stabilization Timeframes**

Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

**Note:** After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

**GROUND STABILIZATION SPECIFICATION**

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
<ul style="list-style-type: none"> <li>Temporary grass seed covered with straw or other mulches and tackifiers</li> <li>Hydroseeding</li> <li>Rolled erosion control products with or without temporary grass seed</li> <li>Appropriately applied straw or other mulch</li> <li>Plastic sheeting</li> </ul>	<ul style="list-style-type: none"> <li>Permanent grass seed covered with straw or other mulches and tackifiers</li> <li>Geotextile fabrics such as permanent soil reinforcement matting</li> <li>Hydroseeding</li> <li>Shrubs or other permanent plantings covered with mulch</li> <li>Uniform and evenly distributed ground cover sufficient to restrain erosion</li> <li>Structural methods such as concrete, asphalt or retaining walls</li> <li>Rolled erosion control products with grass seed</li> </ul>

**POLYACRYLAMIDES (PAMS) AND FLOCCULANTS**

- Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
- Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
- Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
- Provide ponding area for containment of treated Stormwater before discharging offsite.
- Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

**EQUIPMENT AND VEHICLE MAINTENANCE**

- Maintain vehicles and equipment to prevent discharge of fluids.
- Provide drip pans under any stored equipment.
- Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
- Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
- Remove leaking vehicles and construction equipment from service until the problem has been corrected.
- Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

**LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE**

- Never bury or burn waste. Place litter and debris in approved waste containers.
- Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
- Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
- Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
- Anchor all lightweight items in waste containers during times of high winds.
- Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
- Dispose waste off-site at an approved disposal facility.
- On business days, clean up and dispose of waste in designated waste containers.

**PAINT AND OTHER LIQUID WASTE**

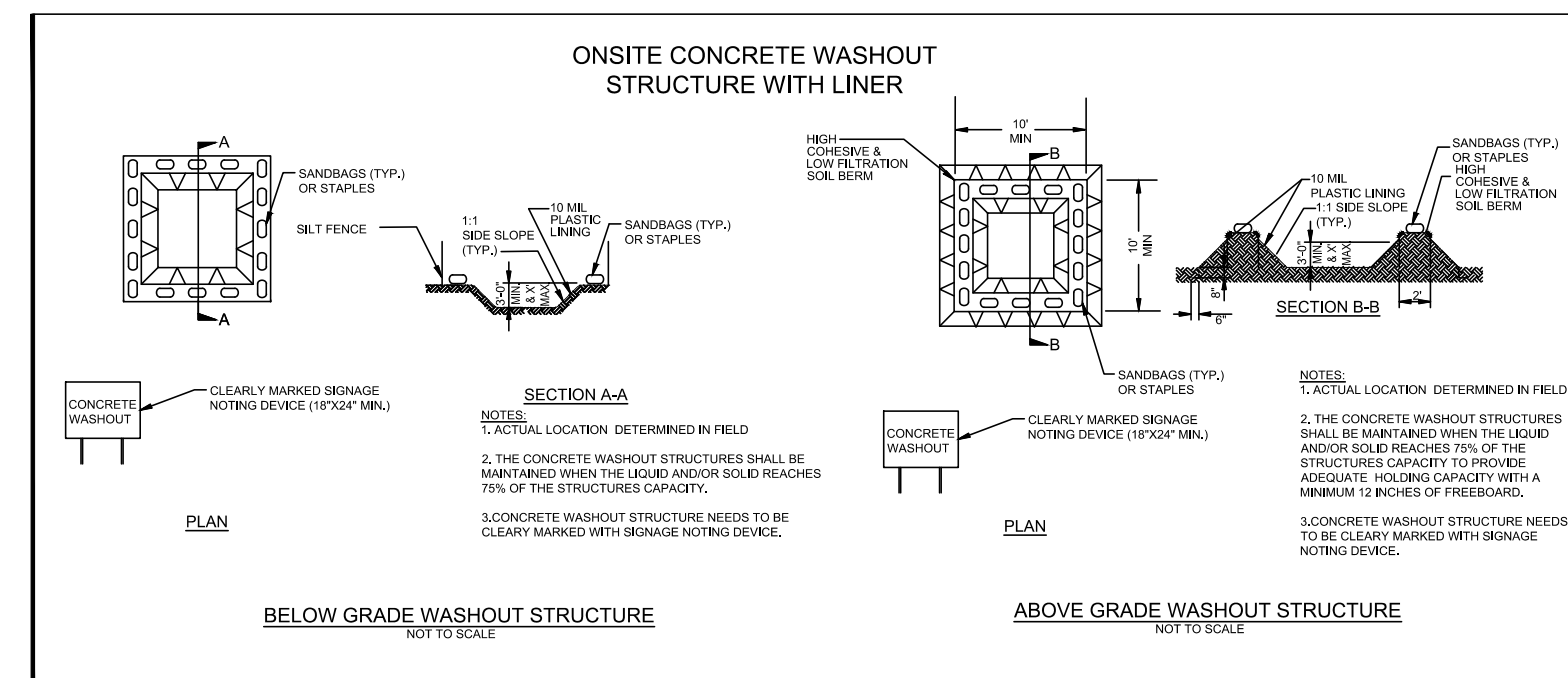
- Do not dump paint and other liquid waste into storm drains, streams or wetlands.
- Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Contain liquid wastes in a controlled area.
- Containment must be labeled, sized and placed appropriately for the needs of site.
- Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

**PORTABLE TOILETS**

- Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
- Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
- Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

**EARTHEN STOCKPILE MANAGEMENT**

- Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
- Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
- Provide stable stone access point when feasible.
- Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.



**CONCRETE WASHOUTS**

- Do not discharge concrete or cement slurry from the site.
- Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
- Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
- Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
- Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
- Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
- Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
- Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
- Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
- At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

**HERBICIDES, PESTICIDES AND RODENTICIDES**

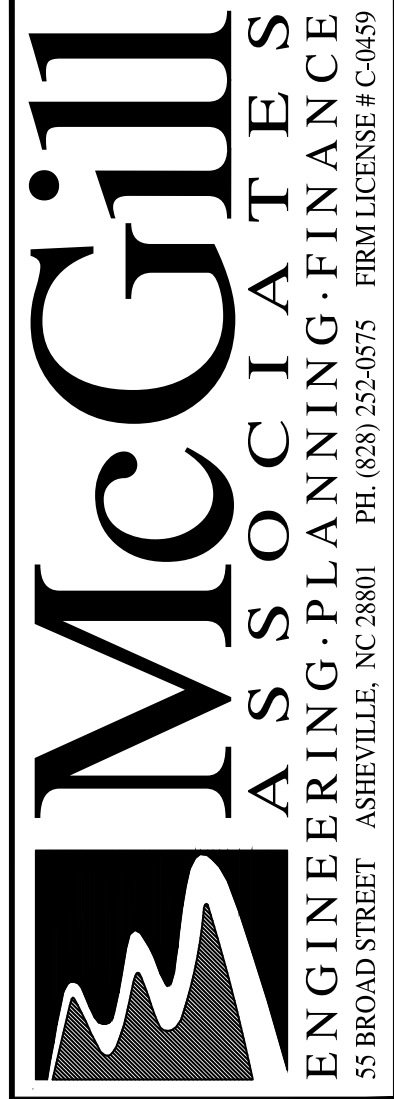
- Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
- Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
- Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
- Do not stockpile these materials onsite.

**HAZARDOUS AND TOXIC WASTE**

- Create designated hazardous waste collection areas on-site.
- Place hazardous waste containers under cover or in secondary containment.
- Do not store hazardous chemicals, drums or bagged materials directly on the ground.

**NCG01 GROUND STABILIZATION AND MATERIALS HANDLING**

**EFFECTIVE: 04/01/19**



JONATHAN CREEK SOIL RECLAMATION & DENNIS FARM BORROW AREA PROJECT  
**HAYWOOD COUNTY**  
HAYWOOD COUNTY, NORTH CAROLINA

JOB NO.: 18.00162  
DATE: APRIL 2019  
DESIGNED BY: TAH  
CADD BY: TAH  
DESIGN REVIEW: ---  
CONST. REVIEW: ---  
FILE NAME: 18.00162-J Creek Design-R.dwg

**GENERAL NOTES**

**SHEET**  
**G-003**

NO.	DATE	BY	REVISION DESCRIPTION

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**PART III  
SELF-INSPECTION, RECORDKEEPING AND REPORTING**

**SECTION A: SELF-INSPECTION**

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those unattended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event $\geq$ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event $\geq$ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event $\geq$ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event $\geq$ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

**PART III  
SELF-INSPECTION, RECORDKEEPING AND REPORTING**

**SECTION B: RECORDKEEPING**

**1. E&SC Plan Documentation**

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be documented in the manner described:

Item to Document	Documentation Requirements
(a) Each E&SC Measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC Plan.	Initial and date each E&SC Measure on a copy of the approved E&SC Plan or complete, date and sign an inspection report that lists each E&SC Measure shown on the approved E&SC Plan. This documentation is required upon the initial installation of the E&SC Measures or if the E&SC Measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC Plan.	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC Measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC Measures.	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

**2. Additional Documentation**

In addition to the E&SC Plan documents above, the following items shall be kept on the site and available for agency inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

- (a) This general permit as well as the certificate of coverage, after it is received.
- (b) Records of inspections made during the previous 30 days. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.
- (c) All data used to complete the Notice of Intent and older inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

**PART III  
SELF-INSPECTION, RECORDKEEPING AND REPORTING**

**SECTION C: REPORTING**

**1. Occurrences that must be reported**

Permittees shall report the following occurrences:

- (a) Visible sediment deposition in a stream or wetland.
- (b) Oil spills if:
  - They are 25 gallons or more,
  - They are less than 25 gallons but cannot be cleaned up within 24 hours,
  - They cause sheen on surface waters (regardless of volume), or
  - They are within 100 feet of surface waters (regardless of volume).
- (a) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.
- (b) Anticipated bypasses and unanticipated bypasses.
- (c) Noncompliance with the conditions of this permit that may endanger health or the environment.

**2. Reporting Timeframes and Other Requirements**

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Division's Emergency Response personnel at (800) 662-7956, (800) 858-0368 or (919) 733-3300.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	<ul style="list-style-type: none"> <li>• <b>Within 24 hours</b>, an oral or electronic notification.</li> <li>• <b>Within 7 calendar days</b>, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis.</li> <li>• If the stream is named on the <a href="#">NC 303(d) list</a> as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.</li> </ul>
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	<ul style="list-style-type: none"> <li>• <b>Within 24 hours</b>, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.</li> </ul>
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	<ul style="list-style-type: none"> <li>• <b>A report at least ten days before the date of the bypass, if possible.</b> The report shall include an evaluation of the anticipated quality and effect of the bypass.</li> </ul>
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	<ul style="list-style-type: none"> <li>• <b>Within 24 hours</b>, an oral or electronic notification.</li> <li>• <b>Within 7 calendar days</b>, a report that includes an evaluation of the quality and effect of the bypass.</li> </ul>
(e) Noncompliance with the conditions of this permit that may endanger health or the environment [40 CFR 122.41(l)(7)]	<ul style="list-style-type: none"> <li>• <b>Within 24 hours</b>, an oral or electronic notification.</li> <li>• <b>Within 7 calendar days</b>, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6).</li> <li>• Division staff may waive the requirement for a written report on a case-by-case basis.</li> </ul>

**NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING**

EFFECTIVE: 04/01/19



JONATHAN CREEK SOIL RECLAMATION  
& DENNIS FARM BORROW AREA PROJECT  
**HAYWOOD COUNTY**  
HAYWOOD COUNTY, NORTH CAROLINA

JOB NO.: 18.00162  
DATE: APRIL 2019  
DESIGNED BY: TAH  
CADD BY: TAH  
DESIGN REVIEW:  
CONST. REVIEW:  
FILE NAME: 18.00162-J Creek  
Design-R.dwg

GENERAL NOTES

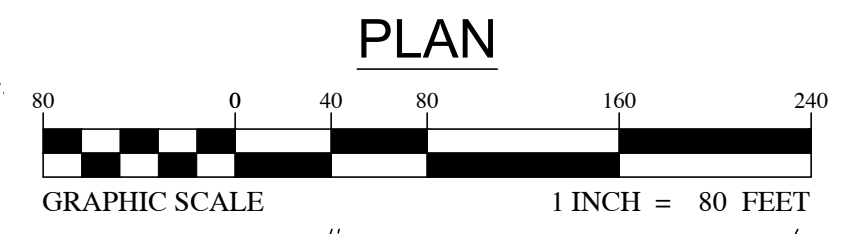
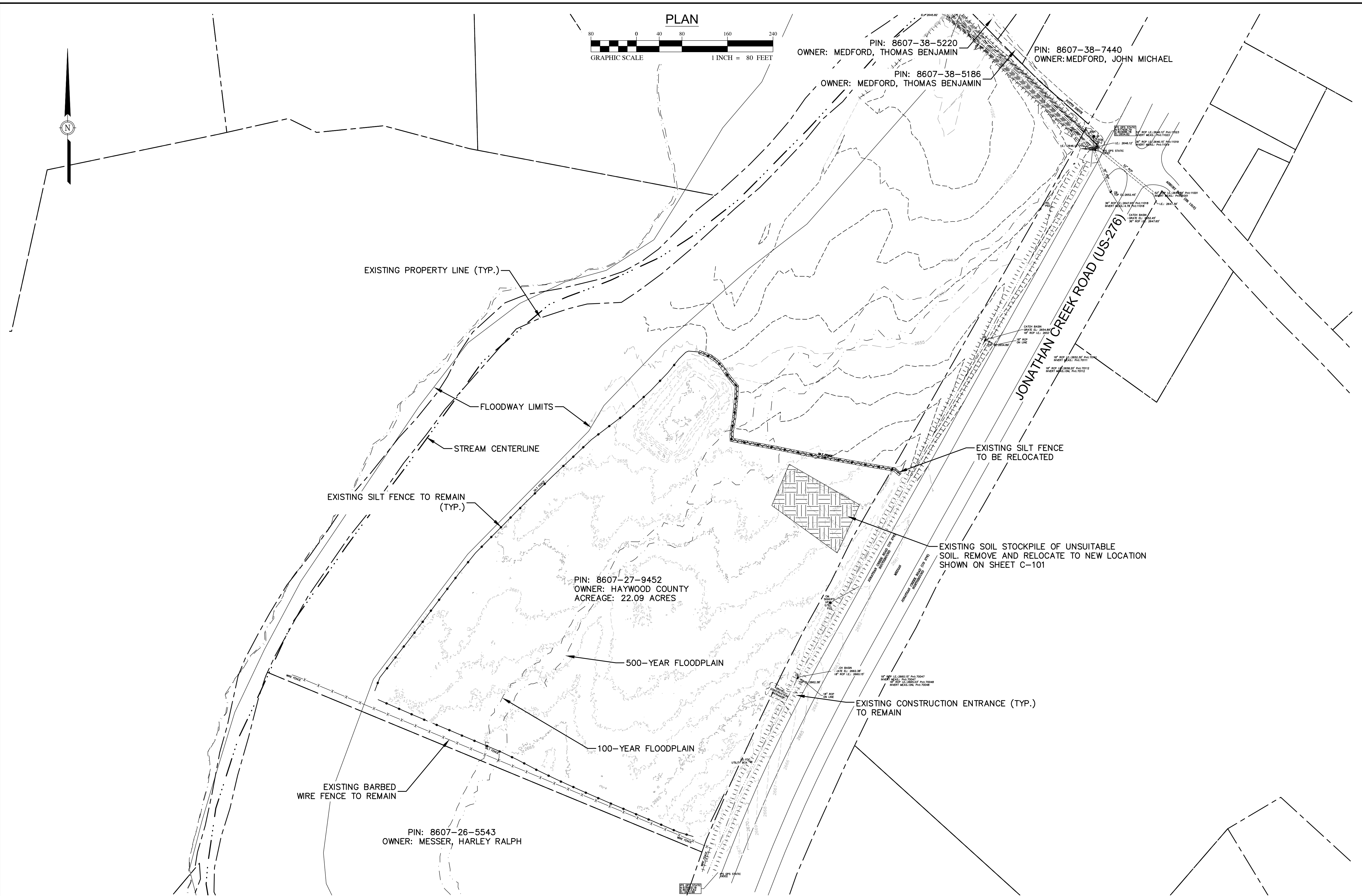
SHEET  
**G-004**

NO.	DATE	BY	REVISION DESCRIPTION

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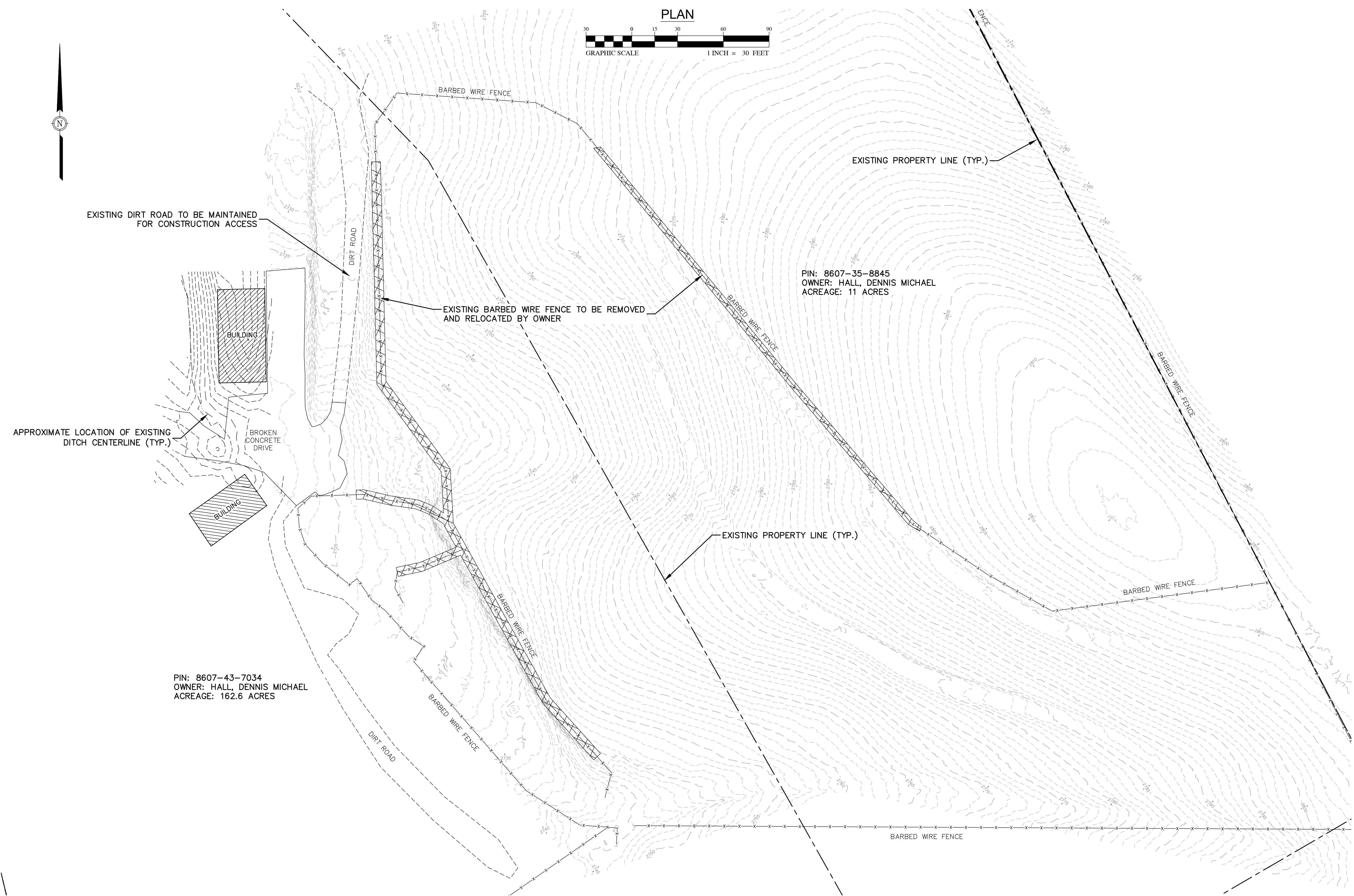
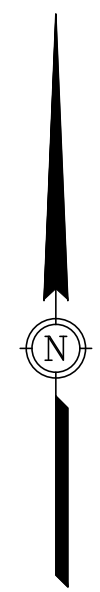
JONATHAN CREEK SOIL RECLAMATION  
& DENNIS FARM BORROW AREA PROJECT  
**HAYWOOD COUNTY**  
HAYWOOD COUNTY, NORTH CAROLINA

JOB NO.: 18.00162  
DATE: APRIL 2019  
DESIGNED BY: TAH  
CADD BY: TAH  
DESIGN REVIEW: ---  
CONST. REVIEW: ---  
FILE NAME: 18.00162-J\_Creek\_Design-R.dwg

JONATHAN CREEK -  
EXISTING CONDITIONS  
& DEMOLITION PLAN

SHEET  
**CD-101**

NO.	DATE	BY	REVISION DESCRIPTION



EXISTING DIRT ROAD TO BE MAINTAINED FOR CONSTRUCTION ACCESS

DIRT ROAD

BUILDING

BROKEN CONCRETE DRIVE

BUILDING

APPROXIMATE LOCATION OF EXISTING DITCH CENTERLINE (TYP.)

EXISTING BARBED WIRE FENCE TO BE REMOVED AND RELOCATED BY OWNER

PIN: 8607-35-8845  
OWNER: HALL, DENNIS MICHAEL  
ACREAGE: 11 ACRES

EXISTING PROPERTY LINE (TYP.)

PIN: 8607-43-7034  
OWNER: HALL, DENNIS MICHAEL  
ACREAGE: 162.6 ACRES

DIRT ROAD

BARBED WIRE FENCE

BARBED WIRE FENCE

BARBED WIRE FENCE

BARBED WIRE FENCE

BARBED WIRE FENCE

NO.	DATE	BY	REVISION DESCRIPTION

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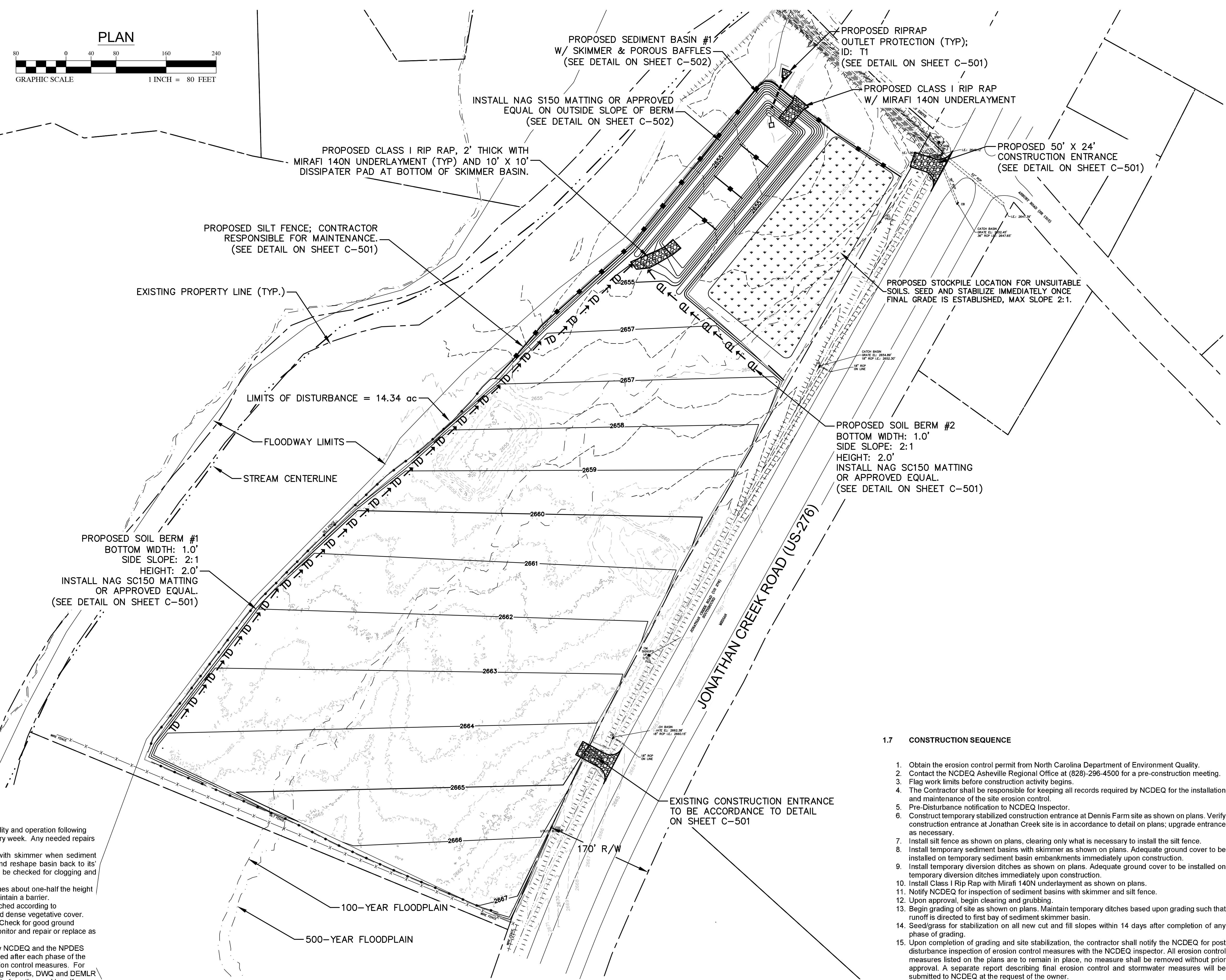
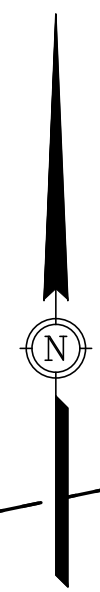
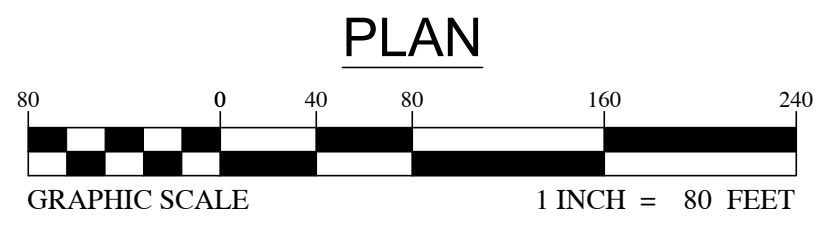
JONATHAN CREEK SOIL RECLAMATION  
& DENNIS FARM BORROW AREA PROJECT  
**HAYWOOD COUNTY**  
HAYWOOD COUNTY, NORTH CAROLINA

JOB NO.: 18.00162  
DATE: MARCH 2019  
DESIGNED BY: TAH  
CADD BY: TAH  
DESIGN REVIEW:  
CONST. REVIEW:  
FILE NAME: 18.00162-J. Creek Design-R.dwg

DENNIS FARM -  
EXISTING CONDITIONS  
& DEMOLITION PLAN

SHEET  
**CD-102**





**1.1 MAINTENANCE PLAN**

- All erosion and sediment control practices shall be checked for stability and operation following every runoff-producing rainfall but in no case not less than once every week. Any needed repairs shall be made immediately to maintain all practices as designed.
- Sediment shall be removed from the temporary sediment basin with skimmer when sediment accumulates to one-half the height of the first baffle. Clean out and reshape basin back to its' original dimensions. Repair any damaged baffles. Skimmers shall be checked for clogging and cleaned out.
- Sediment shall be removed from behind the silt fence when it becomes about one-half the height of the silt fence. The silt fence shall be repaired as necessary to maintain a barrier.
- All seeded areas shall be fertilized, reseeded as necessary and mulched according to specifications in the Seeding Specification to maintain a vigorous and dense vegetative cover.
- Maintain all matting that has been placed on slopes and in ditches. Check for good ground contact and for the occurrence of any erosion under the matting. Monitor and repair or replace as necessary.
- The Contractor shall maintain Self Inspection Reports as required by NCDEQ and the NPDES Construction Stormwater Permit. Self-Inspections are to be conducted after each phase of the project for the record of the installation and maintenance of the erosion control measures. For documentation of Self-Inspection reports and NPDES Self-Monitoring Reports, DWQ and DEMLR developed a combined form. The Self-Inspection program is separate from the weekly self-monitoring program of the NPDES Stormwater Permit for Construction Activities. The focus of the self-inspection report is the installation and maintenance of erosion and sedimentation control measures according to the approved plan. The inspections should be conducted after each phase of the project, and continued until permanent ground cover is established. The form can be accessed at: <https://deq.nc.gov/about/divisions/energy-mineral-land-resources/erosion-sediment-control/forms>

**1.7 CONSTRUCTION SEQUENCE**

- Obtain the erosion control permit from North Carolina Department of Environment Quality.
- Contact the NCDEQ Asheville Regional Office at (828)-296-4500 for a pre-construction meeting.
- Flag work limits before construction activity begins.
- The Contractor shall be responsible for keeping all records required by NCDEQ for the installation and maintenance of the site erosion control.
- Pre-Disturbance notification to NCDEQ Inspector.
- Construct temporary stabilized construction entrance at Dennis Farm site as shown on plans. Verify construction entrance at Jonathan Creek site is in accordance to detail on plans; upgrade entrance as necessary.
- Install silt fence as shown on plans, clearing only what is necessary to install the silt fence.
- Install temporary sediment basins with skimmer as shown on plans. Adequate ground cover to be installed on temporary sediment basin embankments immediately upon construction.
- Install temporary diversion ditches as shown on plans. Adequate ground cover to be installed on temporary diversion ditches immediately upon construction.
- Install Class I Rip Rap with Mirafi 140N underlayment as shown on plans.
- Notify NCDEQ for inspection of sediment basins with skimmer and silt fence.
- Upon approval, begin clearing and grubbing.
- Begin grading of site as shown on plans. Maintain temporary ditches based upon grading such that runoff is directed to first bay of sediment skimmer basin.
- Seed/grass for stabilization on all new cut and fill slopes within 14 days after completion of any phase of grading.
- Upon completion of grading and site stabilization, the contractor shall notify the NCDEQ for post disturbance inspection of erosion control measures with the NCDEQ inspector. All erosion control measures listed on the plans are to remain in place, no measure shall be removed without prior approval. A separate report describing final erosion control and stormwater measures will be submitted to NCDEQ at the request of the owner.

NO.	DATE	BY	REVISION DESCRIPTION

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**McGill**  
A SOCIATES  
ENGINEERING · PLANNING · FINANCE  
55 BROAD STREET ASHEVILLE, NC 28801 PH: (828) 252-0575 FIRM LICENSE # C0489



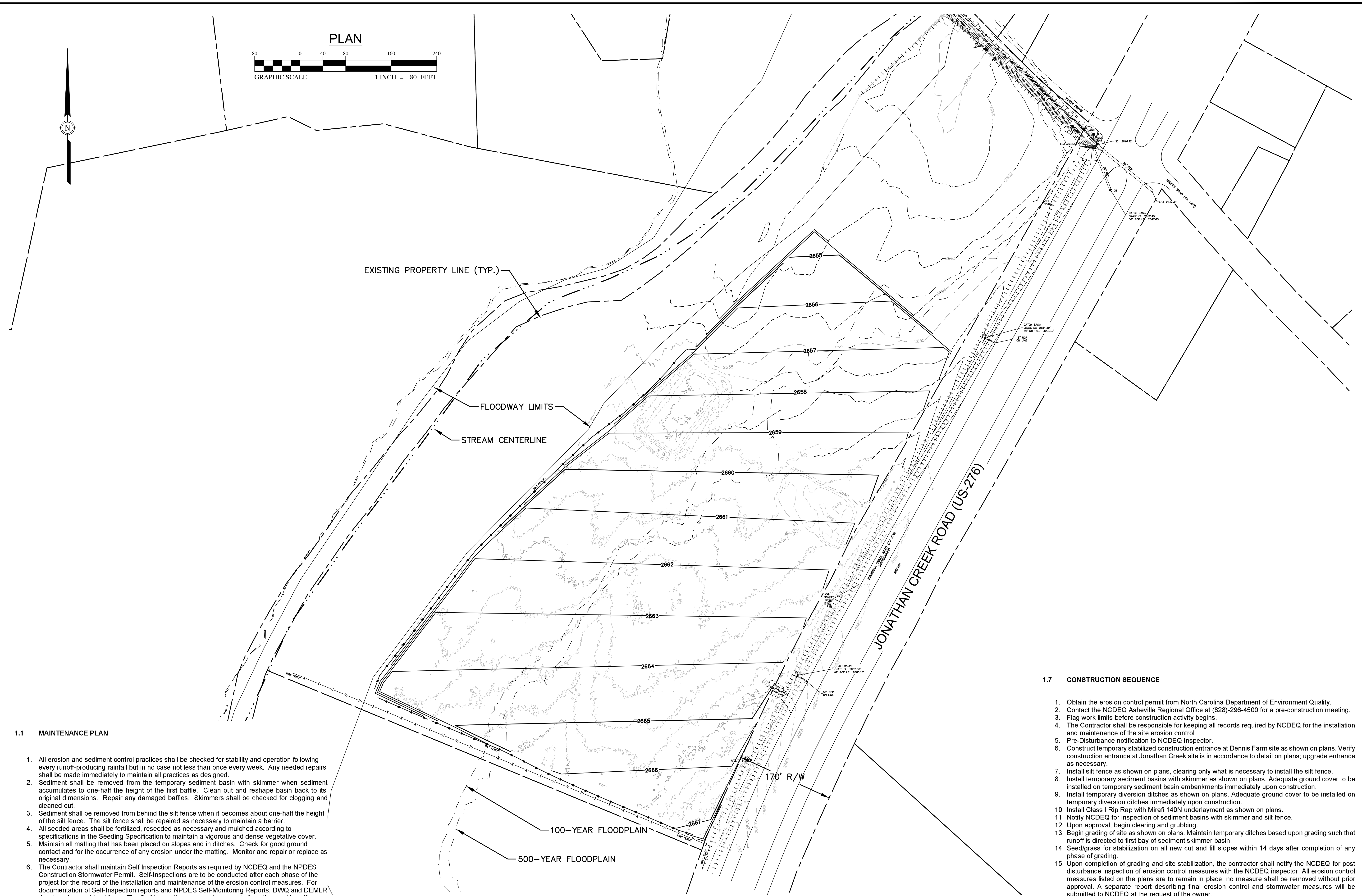
JONATHAN CREEK SOIL RECLAMATION  
& DENNIS FARM BORROW AREA PROJECT  
**HAYWOOD COUNTY**  
HAYWOOD COUNTY, NORTH CAROLINA

JOB NO.: 18.00162  
DATE: MARCH 2019  
DESIGNED BY: TAH  
CADD BY: TAH  
DESIGN REVIEW: ---  
CONST. REVIEW: ---  
FILE NAME: 18.00162-J. Creek  
Design-R.dwg

**JONATHAN CREEK -  
INITIAL GRADING &  
EROSION CONTROL  
PLAN**

**SHEET  
C-101**

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**1.1 MAINTENANCE PLAN**

- All erosion and sediment control practices shall be checked for stability and operation following every runoff-producing rainfall but in no case not less than once every week. Any needed repairs shall be made immediately to maintain all practices as designed.
- Sediment shall be removed from the temporary sediment basin with skimmer when sediment accumulates to one-half the height of the first baffle. Clean out and reshape basin back to its' original dimensions. Repair any damaged baffles. Skimmers shall be checked for clogging and cleaned out.
- Sediment shall be removed from behind the silt fence when it becomes about one-half the height of the silt fence. The silt fence shall be repaired as necessary to maintain a barrier.
- All seeded areas shall be fertilized, reseeded as necessary and mulched according to specifications in the Seeding Specification to maintain a vigorous and dense vegetative cover.
- Maintain all matting that has been placed on slopes and in ditches. Check for good ground contact and for the occurrence of any erosion under the matting. Monitor and repair or replace as necessary.
- The Contractor shall maintain Self-Inspection Reports as required by NCDEQ and the NPDES Construction Stormwater Permit. Self-Inspections are to be conducted after each phase of the project for the record of the installation and maintenance of the erosion control measures. For documentation of Self-Inspection reports and NPDES Self-Monitoring Reports, DWQ and DEMLR developed a combined form. The Self-Inspection program is separate from the weekly self-monitoring program of the NPDES Stormwater Permit for Construction Activities. The focus of the self-inspection report is the installation and maintenance of erosion and sedimentation control measures according to the approved plan. The inspections should be conducted after each phase of the project, and continued until permanent ground cover is established. The form can be accessed at: <https://deq.nc.gov/about/divisions/energy-mineral-land-resources/erosion-sediment-control/forms>

**1.7 CONSTRUCTION SEQUENCE**

- Obtain the erosion control permit from North Carolina Department of Environment Quality.
- Contact the NCDEQ Asheville Regional Office at (828)-296-4500 for a pre-construction meeting.
- Flag work limits before construction activity begins.
- The Contractor shall be responsible for keeping all records required by NCDEQ for the installation and maintenance of the site erosion control.
- Pre-Disturbance notification to NCDEQ Inspector.
- Construct temporary stabilized construction entrance at Dennis Farm site as shown on plans. Verify construction entrance at Jonathan Creek site is in accordance to detail on plans; upgrade entrance as necessary.
- Install silt fence as shown on plans, clearing only what is necessary to install the silt fence.
- Install temporary sediment basins with skimmer as shown on plans. Adequate ground cover to be installed on temporary sediment basin embankments immediately upon construction.
- Install temporary diversion ditches as shown on plans. Adequate ground cover to be installed on temporary diversion ditches immediately upon construction.
- Install Class I Rip Rap with Mirafi 140N underlayment as shown on plans.
- Notify NCDEQ for inspection of sediment basins with skimmer and silt fence.
- Upon approval, begin clearing and grubbing.
- Begin grading of site as shown on plans. Maintain temporary ditches based upon grading such that runoff is directed to first bay of sediment skimmer basin.
- Seed/grass for stabilization on all new cut and fill slopes within 14 days after completion of any phase of grading.
- Upon completion of grading and site stabilization, the contractor shall notify the NCDEQ for post disturbance inspection of erosion control measures with the NCDEQ inspector. All erosion control measures listed on the plans are to remain in place, no measure shall be removed without prior approval. A separate report describing final erosion control and stormwater measures will be submitted to NCDEQ at the request of the owner.

NO.	DATE	BY	REVISION DESCRIPTION

**McGill**  
 A S O C I A T E S  
 ENGINEERING · PLANNING · FINANCE  
 55 BROAD STREET ASHEVILLE, NC 28801 PH: (828) 252-0575 FIRM LICENSE # C0459



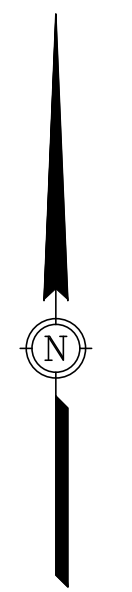
JONATHAN CREEK SOIL RECLAMATION  
 & DENNIS FARM BORROW AREA PROJECT  
**HAYWOOD COUNTY**  
 HAYWOOD COUNTY, NORTH CAROLINA

JOB NO.: 18.00162  
 DATE: APRIL 2019  
 DESIGNED BY: TAH  
 CADD BY: TAH  
 DESIGN REVIEW: ---  
 CONST. REVIEW: ---  
 FILE NAME: 18.00162-J\_Creek  
 Design-R.dwg

**JONATHAN CREEK -  
 FINAL GRADING PLAN**

**SHEET  
 C-102**





LIMITS OF DISTURBANCE = 2.89 ac

PROPOSED DIVERSION DITCH #3  
 BOTTOM WIDTH: 1'  
 DITCH DEPTH: 1.5'  
 SIDE SLOPES: 3:1  
 INSTALL NAG SC150 MATTING  
 OR APPROVED EQUAL.  
 (SEE DETAIL ON SHEET C-502)

PROPOSED CLASS I RIP RAP, 2' THICK WITH  
 MIRAFI 140N UNDERLAYMENT (TYP)

PROPOSED 16' X 50' CONSTRUCTION ENTRANCE  
 (SEE DETAIL ON SHEET C-502)

PROPOSED SILT FENCE,  
 CONTRACTOR RESPONSIBLE FOR  
 MAINTENANCE.  
 (SEE DETAIL ON SHEET C-501)

PROPOSED RIP RAP OULET  
 PROTECTION (TYP.)  
 ID: T2  
 (SEE DETAIL ON SHEET C-501)

INSTALL NAG SC150 MATTING OR APPROVED  
 EQUAL ON OUTSIDE SLOPE OF BERM

PROPOSED SKIMMER BASIN #2 W/  
 RISER & POROUS BAFFLES  
 (SEE DETAIL ON SHEET C-503)

PROPOSED CLASS I RIP RAP, 2' THICK WITH  
 MIRAFI 140N UNDERLAYMENT (TYP)

PROPOSED DIVERSION DITCH #4  
 BOTTOM WIDTH: 1'  
 DITCH DEPTH: 1.5'  
 SIDE SLOPES: 3:1  
 INSTALL NAG SC150 MATTING  
 OR APPROVED EQUAL.  
 (SEE DETAIL ON SHEET C-502)

PROPOSED DIVERSION DITCH #5  
 BOTTOM WIDTH: 1'  
 DITCH DEPTH: 1.5'  
 SIDE SLOPES: 3:1  
 INSTALL NAG SC150 MATTING  
 OR APPROVED EQUAL.  
 (SEE DETAIL ON SHEET C-502)

CONTRACTOR TO INSTALL SC150  
 OR APPROVED EQUAL ON 3:1  
 SLOPE. MATTING SHALL BE  
 INSTALLED EVERY 20 HORIZONTAL  
 FEET TO MINIMIZE EROSION.  
 (SEE DETAIL ON SHEET C-502)

**1.1 MAINTENANCE PLAN**

- All erosion and sediment control practices shall be checked for stability and operation following every runoff-producing rainfall but in no case not less than once every week. Any needed repairs shall be made immediately to maintain all practices as designed.
- Sediment shall be removed from the temporary sediment basin with skimmer when sediment accumulates to one-half the height of the first baffle. Clean out and reshape basin back to its' original dimensions. Repair any damaged baffles. Skimmers shall be checked for clogging and cleaned out.
- Sediment shall be removed from behind the silt fence when it becomes about one-half the height of the silt fence. The silt fence shall be repaired as necessary to maintain a barrier.
- All seeded areas shall be fertilized, reseeded as necessary and mulched according to specifications in the Seeding Specification to maintain a vigorous and dense vegetative cover.
- Maintain all matting that has been placed on slopes and in ditches. Check for good ground contact and for the occurrence of any erosion under the matting. Monitor and repair or replace as necessary.
- The Contractor shall maintain Self-Inspection Reports as required by NCDEQ and the NPDES Construction Stormwater Permit. Self-Inspections are to be conducted after each phase of the project for the record of the installation and maintenance of the erosion control measures. For documentation of Self-Inspection reports and NPDES Self-Monitoring Reports, DWQ and DEMLR developed a combined form. The Self-Inspection program is separate from the weekly self-monitoring program of the NPDES Stormwater Permit for Construction Activities. The focus of the self-inspection report is the installation and maintenance of erosion and sedimentation control measures according to the approved plan. The inspections should be conducted after each phase of the project, and continued until permanent ground cover is established. The form can be accessed at: <https://deq.nc.gov/about/divisions/energy-mineral-land-resources/erosion-sediment-control/forms>

**1.7 CONSTRUCTION SEQUENCE**

- Obtain the erosion control permit from North Carolina Department of Environment Quality.
- Contact the NCDEQ Asheville Regional Office at (828)-296-4500 for a pre-construction meeting.
- Flag work limits before construction activity begins.
- The Contractor shall be responsible for keeping all records required by NCDEQ for the installation and maintenance of the site erosion control.
- Pre-Disturbance notification to NCDEQ Inspector.
- Construct temporary stabilized construction entrance at Jonathan Creek site as shown on plans. Verify construction entrance at Jonathan Creek site is in accordance to detail on plans; upgrade entrance as necessary.
- Install silt fence as shown on plans, clearing only what is necessary to install the silt fence.
- Install temporary sediment basins with skimmer as shown on plans. Adequate ground cover to be installed on temporary sediment basin embankments immediately upon construction.
- Install temporary diversion ditches as shown on plans. Adequate ground cover to be installed on temporary diversion ditches immediately upon construction.
- Install Class I Rip Rap with Mirafi 140N underlayment as shown on plans.
- Notify NCDEQ for inspection of sediment basins with skimmer and silt fence.
- Upon approval, begin clearing and grubbing.
- Begin grading of site as shown on plans. Maintain temporary ditches based upon grading such that runoff is directed to first bay of sediment skimmer basin.
- Seed/grass for stabilization on all new cut and fill slopes within 14 days after completion of any phase of grading.
- Upon completion of grading and site stabilization, the contractor shall notify the NCDEQ for post disturbance inspection of erosion control measures with the NCDEQ inspector. All erosion control measures listed on the plans are to remain in place, no measure shall be removed without prior approval. A separate report describing final erosion control and stormwater measures will be submitted to NCDEQ at the request of the owner.

NO.	DATE	BY	REVISION DESCRIPTION

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JONATHAN CREEK SOIL RECLAMATION  
 & DENNIS FARM BORROW AREA PROJECT  
**HAYWOOD COUNTY**  
 HAYWOOD COUNTY, NORTH CAROLINA

JOB NO.: 18.00162  
 DATE: APRIL 2019  
 DESIGNED BY: TAH  
 CADD BY: TAH  
 DESIGN REVIEW: —  
 CONST. REVIEW: —  
 FILE NAME: 18.00162 - J. Creek Design-R.dwg

**DENNIS FARM -  
 INITIAL GRADING &  
 EROSION CONTROL  
 PLAN  
 OPTION 1**

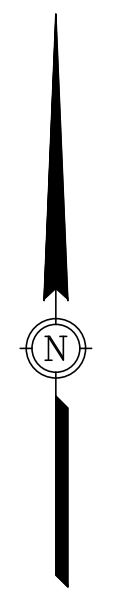
**SHEET  
 C-103**







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LIMITS OF DISTURBANCE = 3.37 ac

PROPOSED DIVERSION DITCH #3  
BOTTOM WIDTH: 1'  
DITCH DEPTH: 1.5'  
SIDE SLOPES: 3:1  
INSTALL NAG S150 MATTING  
OR APPROVED EQUAL.  
(SEE DETAIL ON SHEET C-502)

PROPOSED 16' X 50' CONSTRUCTION ENTRANCE  
(SEE DETAIL ON SHEET C-502)

PROPOSED SILT FENCE;  
CONTRACTOR RESPONSIBLE FOR  
MAINTENANCE.  
(SEE DETAIL ON SHEET C-501)

PROPOSED RIP RAP OUTLET  
PROTECTION (TYP.)  
ID: T2  
(SEE DETAIL ON SHEET C-501)

INSTALL NAG SC150 MATTING OR APPROVED  
EQUAL ON OUTSIDE SLOPE OF BERM

PROPOSED SKIMMER BASIN #2 W/  
RISER & POROUS BAFFLES  
(SEE DETAIL ON SHEET C-503)

PROPOSED CLASS I RIP RAP, 2' THICK WITH  
MIRAFI 140N UNDERLAYMENT (TYP) AND 10' X 10'  
DISSIPATER PAD AT BOTTOM OF SKIMMER BASIN.

PROPOSED DIVERSION DITCH #4  
BOTTOM WIDTH: 1'  
DITCH DEPTH: 1.5'  
SIDE SLOPES: 3:1  
INSTALL NAG S150 MATTING  
OR APPROVED EQUAL.  
(SEE DETAIL ON SHEET C-502)

PROPOSED DIVERSION DITCH #5  
BOTTOM WIDTH: 1'  
DITCH DEPTH: 1.5'  
SIDE SLOPES: 3:1  
INSTALL NAG S150 MATTING  
OR APPROVED EQUAL.  
(SEE DETAIL ON SHEET C-502)

**1.1 MAINTENANCE PLAN**

- All erosion and sediment control practices shall be checked for stability and operation following every runoff-producing rainfall but in no case not less than once every week. Any needed repairs shall be made immediately to maintain all practices as designed.
- Sediment shall be removed from the temporary sediment basin with skimmer when sediment accumulates to one-half the height of the first baffle. Clean out and reshape basin back to its' original dimensions. Repair any damaged baffles. Skimmers shall be checked for clogging and cleaned out.
- Sediment shall be removed from behind the silt fence when it becomes about one-half the height of the silt fence. The silt fence shall be repaired as necessary to maintain a barrier.
- All seeded areas shall be fertilized, reseeded as necessary and mulched according to specifications in the Seeding Specification to maintain a vigorous and dense vegetative cover.
- Maintain all matting that has been placed on slopes and in ditches. Check for good ground contact and for the occurrence of any erosion under the matting. Monitor and repair or replace as necessary.
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EXISTING PROPERTY LINE (TYP.)

CONTRACTOR TO INSTALL SC250  
OR APPROVED EQUAL ON 2:1  
SLOPE. MATTING SHALL BE  
INSTALLED EVERY 20 HORIZONTAL  
FEET TO MINIMIZE EROSION.  
(SEE DETAIL ON SHEET C-502)

EXISTING PROPERTY LINE (TYP.)

**1.7 CONSTRUCTION SEQUENCE**

- Obtain the erosion control permit from North Carolina Department of Environment Quality.
- Contact the NCDEQ Asheville Regional Office at (828)-296-4500 for a pre-construction meeting.
- Flag work limits before construction activity begins.
- The Contractor shall be responsible for keeping all records required by NCDEQ for the installation and maintenance of the site erosion control.
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- Upon approval, begin clearing and grubbing.
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- Upon completion of grading and site stabilization, the contractor shall notify the NCDEQ for post disturbance inspection of erosion control measures with the NCDEQ inspector. All erosion control measures listed on the plans are to remain in place, no measure shall be removed without prior approval. A separate report describing final erosion control and stormwater measures will be submitted to NCDEQ at the request of the owner.

NO.	DATE	BY	REVISION DESCRIPTION

**McGill**  
A SOCIATES  
ENGINEERING · PLANNING · FINANCE  
35 BROAD STREET ASHEVILLE, NC 28801 PH: (828) 252-0575 FIRM LICENSE # C0459



JONATHAN CREEK SOIL RECLAMATION  
& DENNIS FARM BORROW AREA PROJECT  
**HAYWOOD COUNTY**  
HAYWOOD COUNTY, NORTH CAROLINA

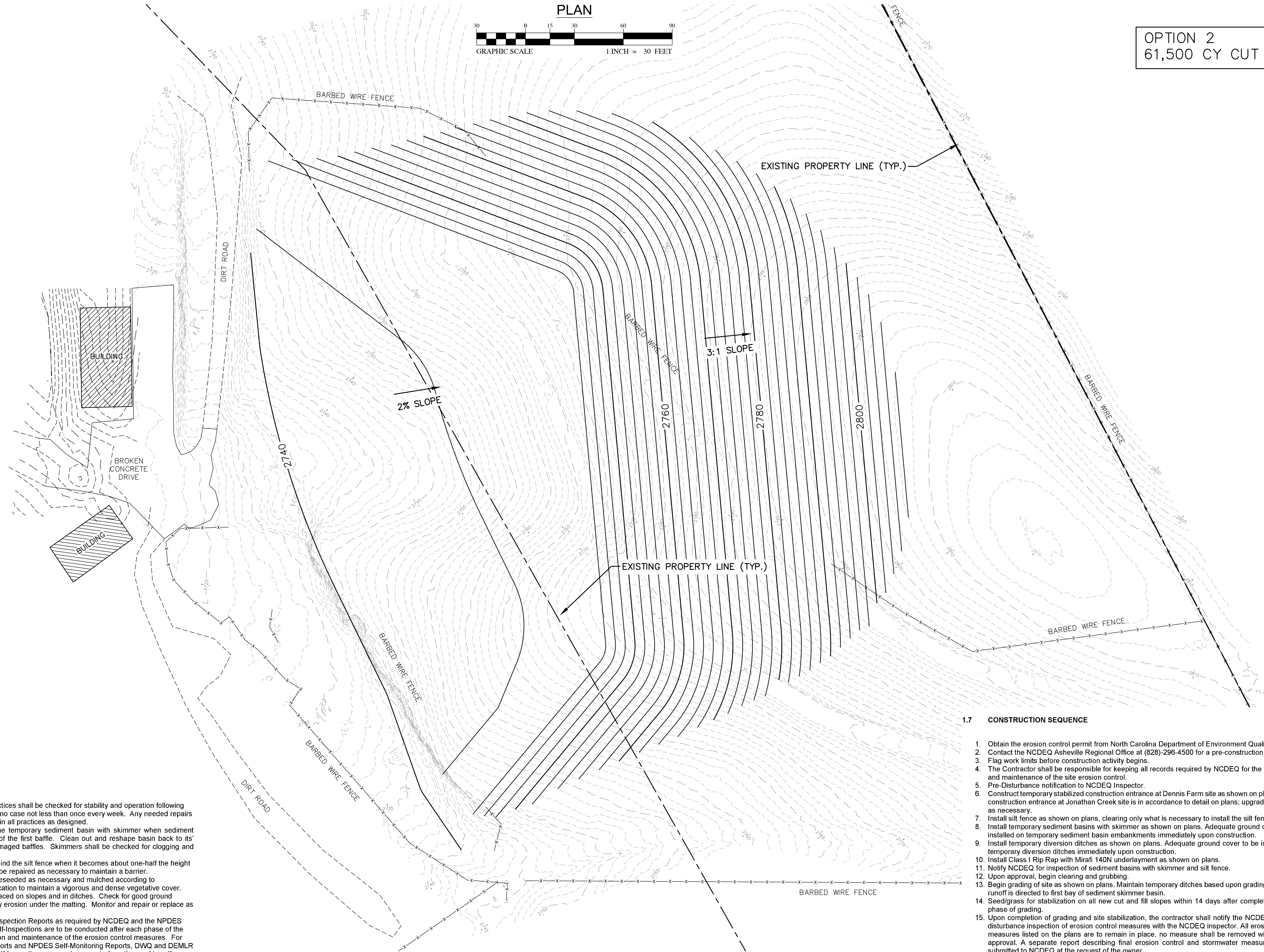
JOB NO.: 18.00162  
DATE: APRIL 2019  
DESIGNED BY: TAH  
CADD BY: TAH  
DESIGN REVIEW:  
CONST. REVIEW:  
FILE NAME:  
18.00162 - J. Creek  
Design-R.dwg

**DENNIS FARM - INITIAL  
GRADING & EROSION  
CONTROL PLAN  
OPTION 2**

**SHEET  
C-105**



OPTION 2  
61,500 CY CUT



1.1 MAINTENANCE PLAN

- All erosion and sediment control practices shall be checked for stability and operation following every runoff-producing rainfall but in no case not less than once every week. Any needed repairs shall be made immediately to maintain all practices as designed.
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- Sediment shall be removed from behind the silt fence when it becomes about one-half the height of the silt fence. The silt fence shall be repaired as necessary to maintain a barrier.
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1.7 CONSTRUCTION SEQUENCE

- Obtain the erosion control permit from North Carolina Department of Environment Quality.
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- Upon completion of grading and site stabilization, the contractor shall notify the NCDEQ for post disturbance inspection of erosion control measures with the NCDEQ inspector. All erosion control measures listed on the plans are to remain in place, no measure shall be removed without prior approval. A separate report describing final erosion control and stormwater measures will be submitted to NCDEQ at the request of the owner.

NO.	DATE	BY	REVISION DESCRIPTION

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**McGill**  
ASSOCIATES  
ENGINEERING · PLANNING · FINANCE



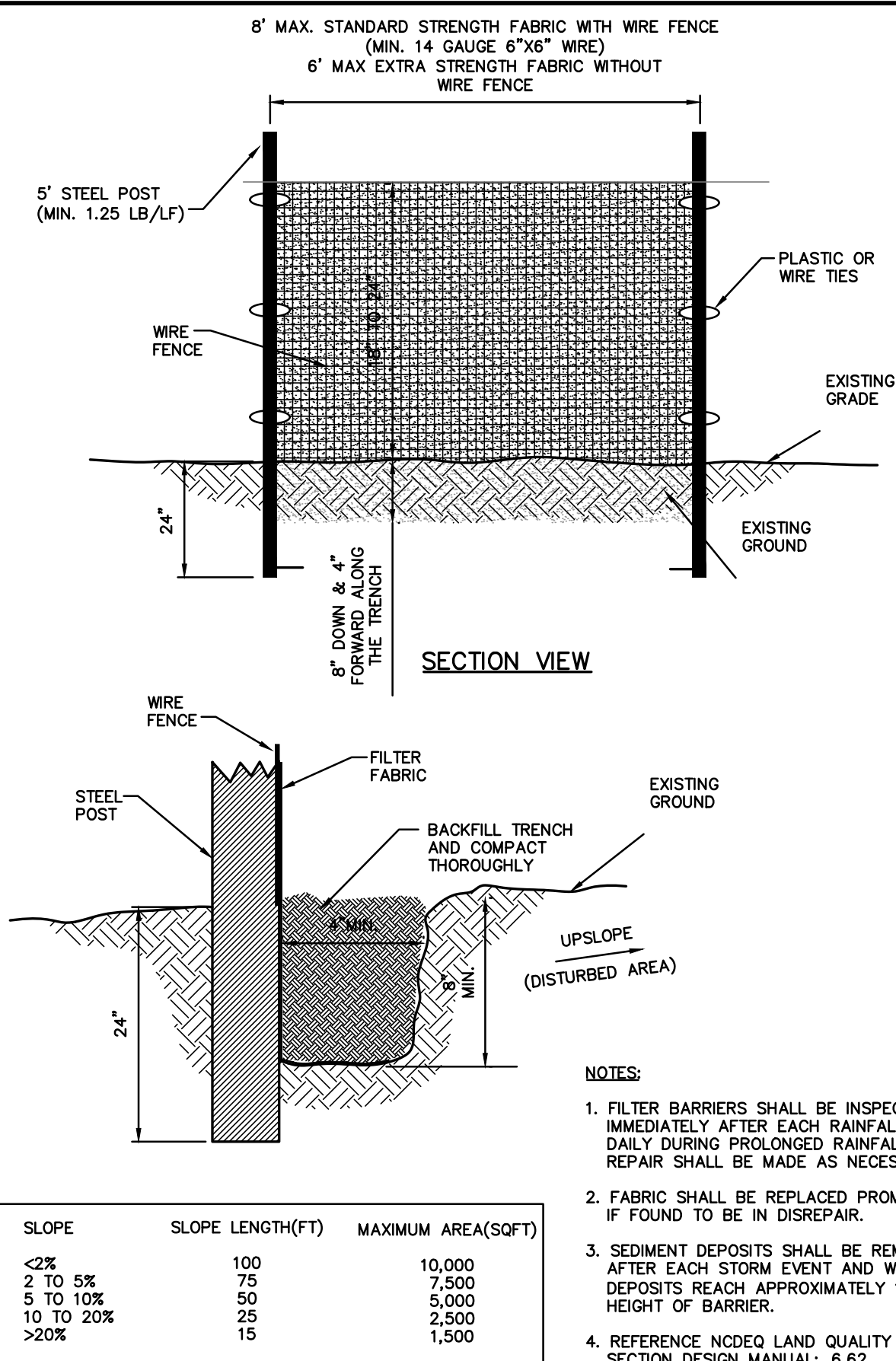
JONATHAN CREEK SOIL RECLAMATION  
& DENNIS FARM BORROW AREA PROJECT  
**HAYWOOD COUNTY**  
HAYWOOD COUNTY, NORTH CAROLINA

JOB NO.: 18.00162  
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DESIGN REVIEW: —  
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FILE NAME: 18.00162-J\_Creek\_Design-R.dwg

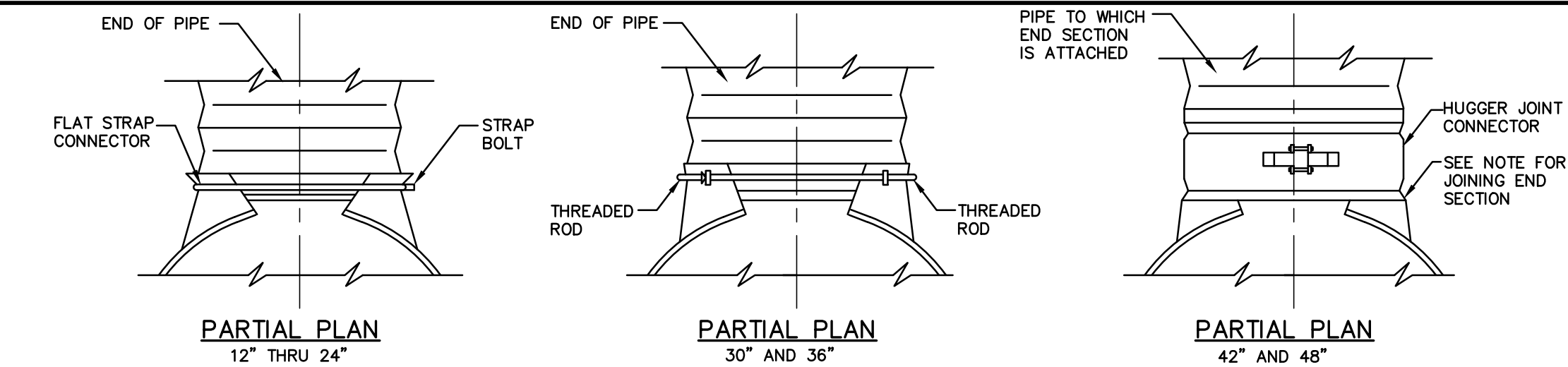
DENNIS FARM - FINAL  
GRADING PLAN  
OPTION 2

SHEET  
**C-106**





**EC 1** SILT FENCE  
 UPDATED MARCH, 2017  
 NOT TO SCALE



**ALUMINUM DIMENSIONS**

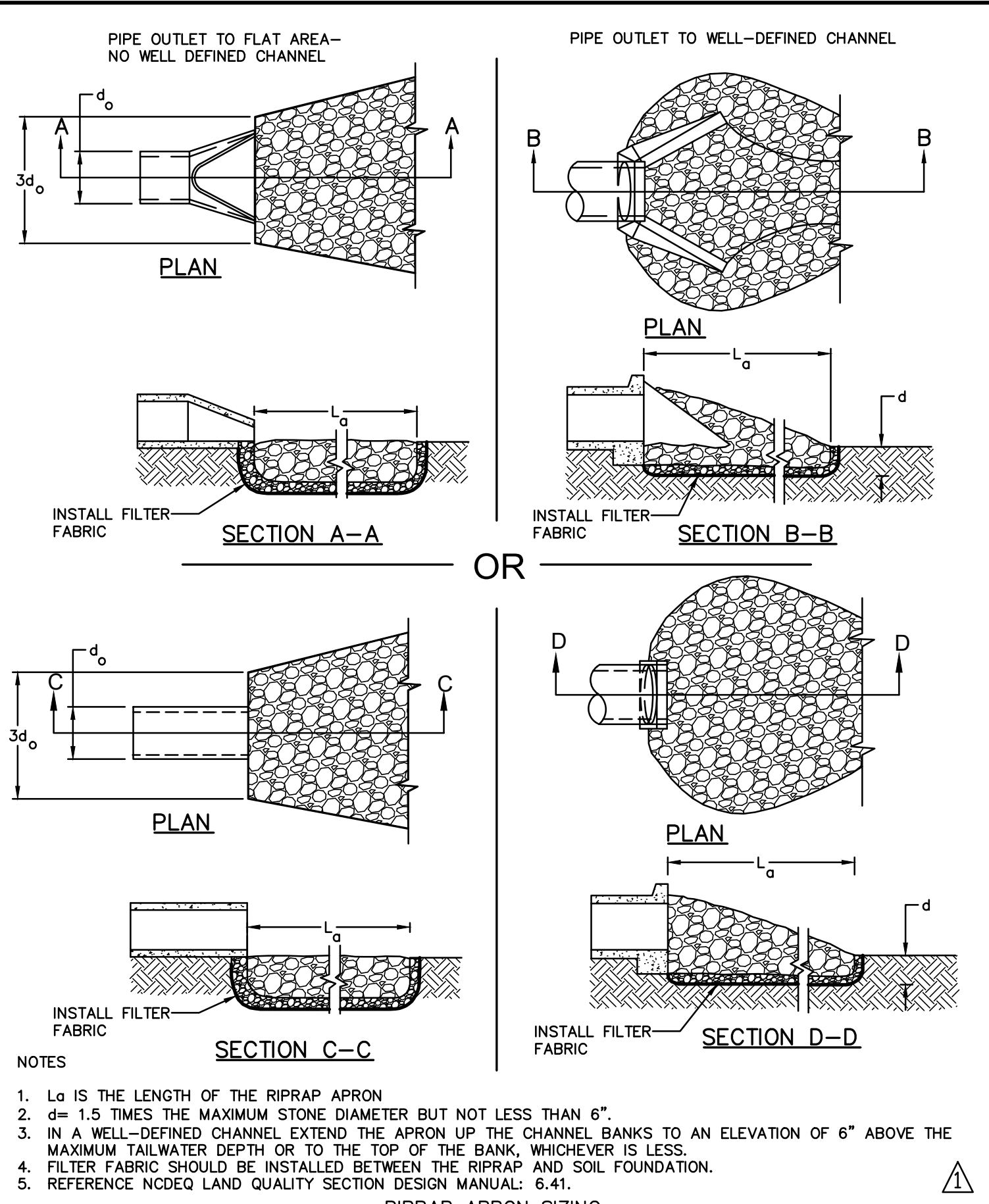
PIPE DIA.	THICKNESS	A	B	H	L	W
12"	0.060	6"	6"	6"	21"	24"
15"	0.060	7"	8"	6"	26"	30"
18"	0.060	8"	10"	6"	31"	36"
24"	0.075	10"	13"	6"	41"	48"
30"	0.075	12"	16"	8"	51"	60"
36"	0.105	14"	19"	9"	60"	72"
42"	0.105	16"	22"	11"	69"	84"
48"	0.105	18"	27"	12"	78"	90"

**STEEL DIMENSIONS**

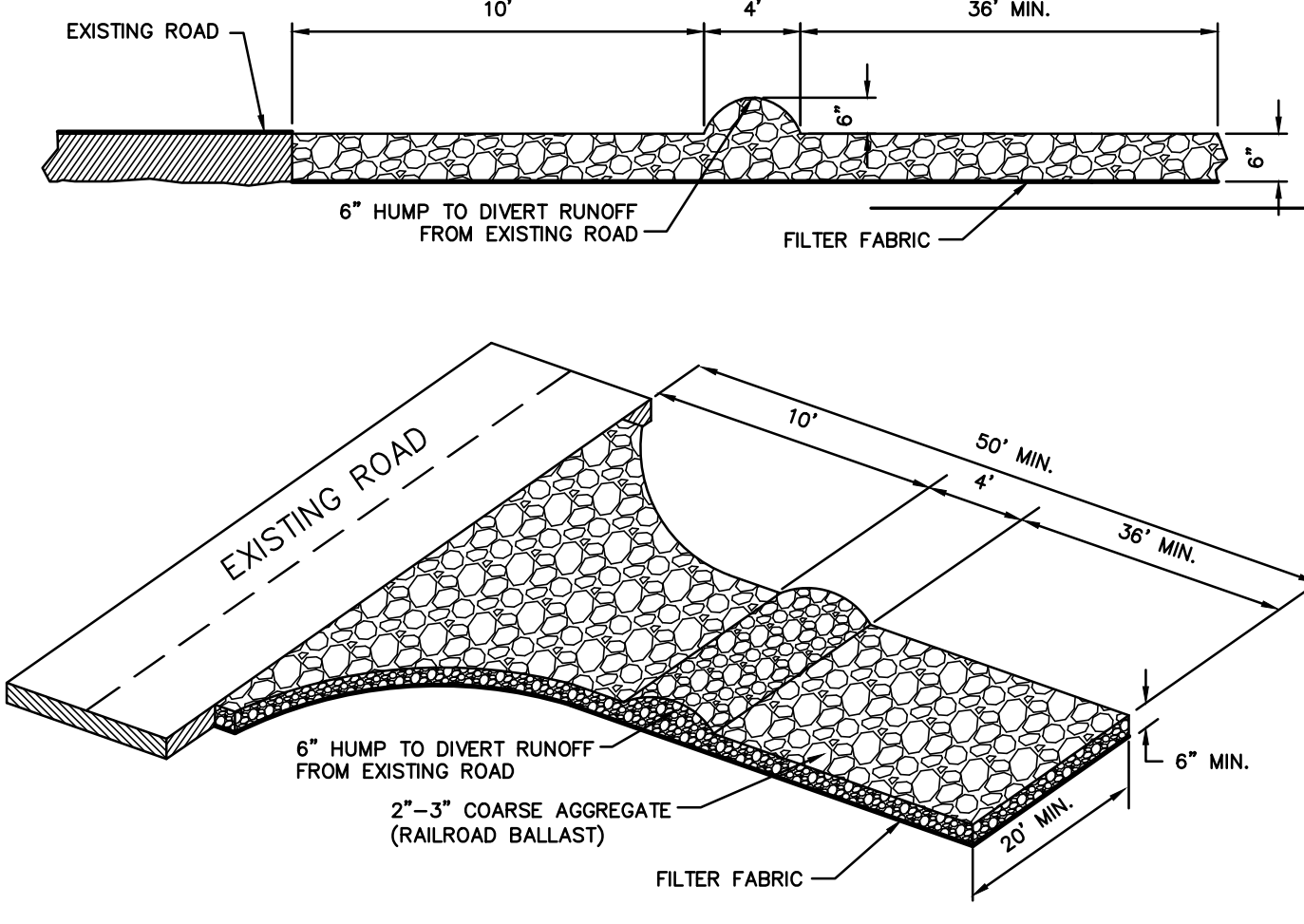
PIPE DIA.	THICKNESS	A	B	H	L	W
12"	0.064	6"	6"	6"	21"	24"
15"	0.064	7"	8"	6"	26"	30"
18"	0.064	8"	10"	6"	31"	36"
24"	0.064	10"	13"	6"	41"	48"
30"	0.079	12"	16"	8"	51"	60"
36"	0.079	14"	19"	9"	60"	72"
42"	0.109	16"	22"	11"	69"	84"
48"	0.109	18"	27"	12"	78"	90"

- NOTES:**
- CORRUGATED STEEL AND CORRUGATED ALUMINUM ALLOY FLARED END SECTION SHALL MEET THE REQUIREMENTS OF THIS DETAIL SHEET OR AN EQUIVALENT DESIGN APPROVED BY THE ENGINEER.
  - THE SKIRT SECTION OF THE FLARED END SECTION FOR 12" THROUGH 24" PIPE SHALL BE JOINED BY RIVETING, BOLTING, WELDING OR WITH ROD AND LUG BAND CONNECTOR.
  - THE SKIRT SECTION OF THE FLARED END SECTION FOR 30" AND 36" PIPE SHALL BE JOINED BY RIVETING, BOLTING, WELDING OR WITH THREADED ROD CONNECTOR.
  - THE SKIRT SECTION OF THE FLARED END SECTION FOR 42" AND 48" PIPE SHALL BE JOINED BY RIVETING, BOLTING, OR WELDING WITH A HUGGER JOINT CONNECTOR.
  - CORRUGATED ALUMINUM ALLOY FLARED END SECTION - THE ENTIRE ASSEMBLY SHALL BE FABRICATED FROM GALVANIZED STEEL MEETING THE SAME REQUIREMENTS AS THE PIPE MATERIALS. WHERE THE FLARED END SECTION IS TO BE CONNECTED TO BITUMINOUS COATED PIPE, THE BITUMINOUS COATING ON THE PIPE PORTION OF THE FLARED END SECTION SHALL MEET THE SAME COATING REQUIREMENTS AS THE PIPE TO WHICH IT IS CONNECTED.
  - CORRUGATED ALUMINUM ALLOY FLARED END SECTIONS - THE ENTIRE ASSEMBLY SHALL BE FABRICATED OF THE SAME MATERIAL REQUIRED FOR THE PIPE.
  - FLARED END SECTIONS ARE NORMALLY USED ON PIPE WITH SKEW ANGLES BETWEEN 75° AND 105°.

**SD 12** METAL FLARED END SECTION  
 UPDATED MARCH, 2017  
 NOT TO SCALE

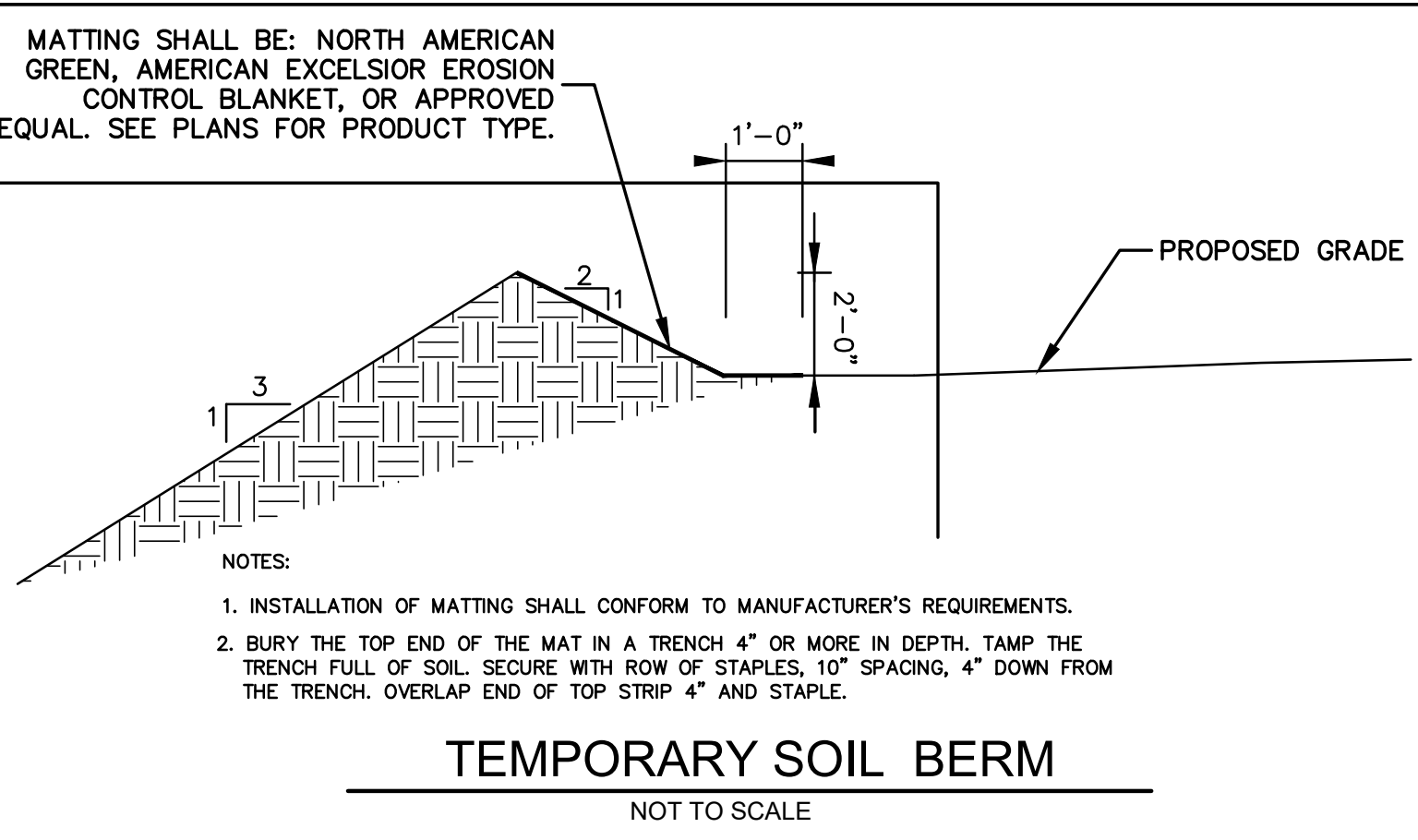


**2** PIPE OUTLET PROTECTION  
 UPDATED MARCH, 2017  
 NOT TO SCALE



- NOTES:**
- A STABILIZED PAD OF CRUSHED STONE SHALL BE LOCATED WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE TO OR FROM AN EXISTING ROAD.
  - STONE TO BE 2 - 3 INCH WASHED STONE RAILROAD BALLAST.
  - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC STREETS OR EXISTING PAVEMENT. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
  - ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC STREETS MUST BE REMOVED IMMEDIATELY.
  - WHEN NECESSARY WHEELS MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTERING A PUBLIC STREET, WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT BASIN.
  - REFERENCE NCDQ LAND QUALITY SECTION DESIGN MANUAL: 6.06.

**EC 24** TEMPORARY CONSTRUCTION ENTRANCE  
 UPDATED MARCH, 2017  
 NOT TO SCALE



- NOTES:**
- INSTALLATION OF MATTING SHALL CONFORM TO MANUFACTURER'S REQUIREMENTS.
  - BURY THE TOP END OF THE MAT IN A TRENCH 4" OR MORE IN DEPTH. TAMP THE TRENCH FULL OF SOIL. SECURE WITH ROW OF STAPLES, 10" SPACING, 4" DOWN FROM THE TRENCH. OVERLAP END OF TOP STRIP 4" AND STAPLE.

**TEMPORARY SOIL BERM**  
 NOT TO SCALE

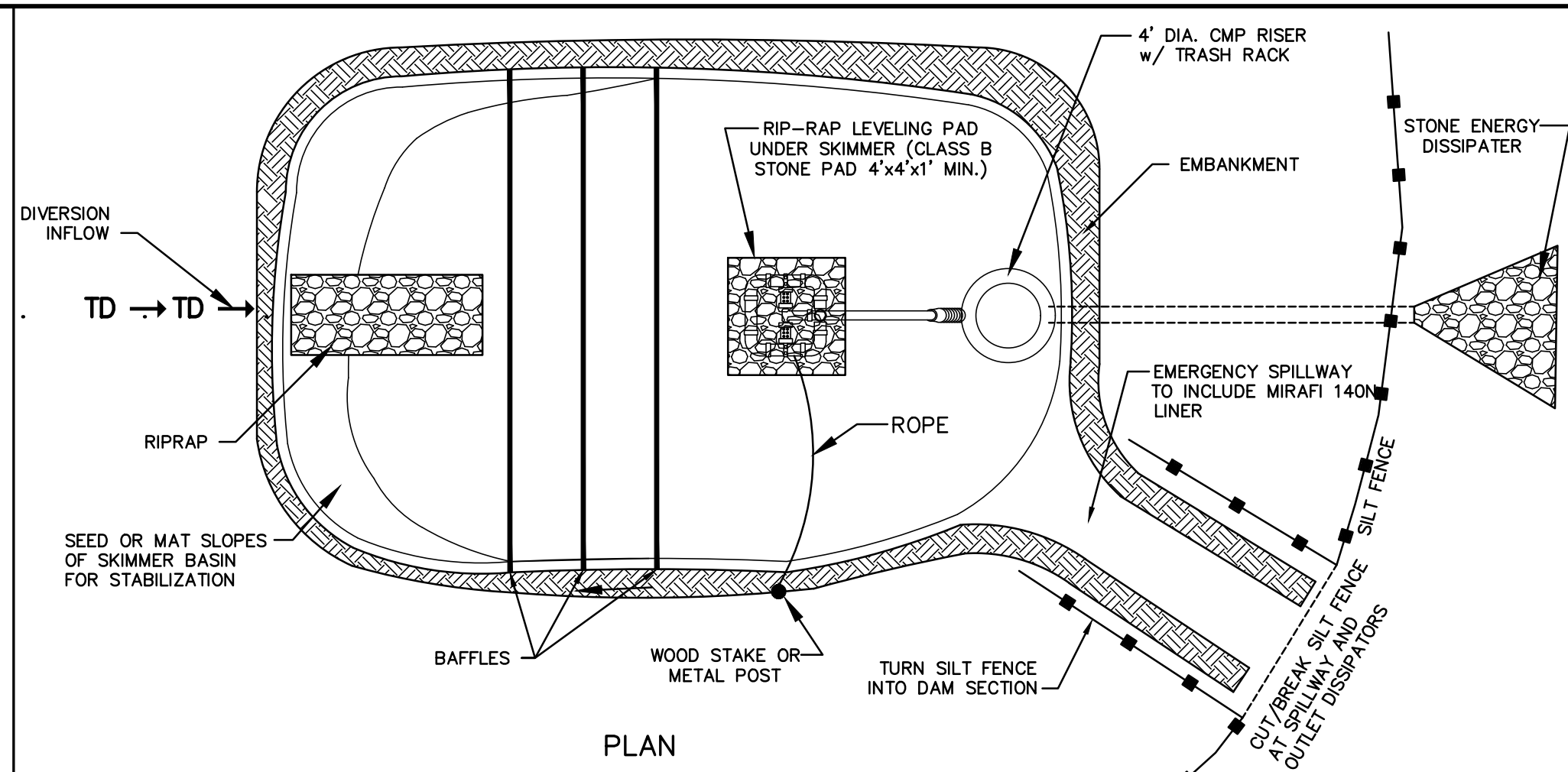
- NOTES:**
- ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF PRODUCING RAINFALL BUT IN NO CASE NOT LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
  - SEDIMENT SHALL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT BECOMES APPROX. 0.5 FEET DEEP AT THE SILT FENCE. THE SILT FENCE SHALL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER.
  - ALL SEEDING AREA SHALL BE FERTILIZED, RESEED AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS IN THE SEEDING SPECIFICATION TO MAINTAIN A VIGOROUS AND DENSE VEGETATIVE COVER.
  - MAINTAIN ALL MATTING THAT HAS BEEN PLACED ON SLOPES AND IN DITCHES. CHECK FOR GOOD GROUND CONTACT AND FOR THE OCCURRENCE OF ANY EROSION UNDER THE MATTING. MONITOR AND REPAIR OR REPLACE AS NECESSARY.
  - THE CONTRACTOR SHALL MAINTAIN SELF INSPECTION REPORTS AS REQUIRED BY NCDQ AND THE NPDES CONSTRUCTION STORMWATER PERMIT. SELF INSPECTIONS ARE TO BE CONDUCTED AFTER EACH PHASE OF THE PROJECT FOR THE RECORD OF THE INSTALLATION AND MAINTENANCE OF THE EROSION CONTROL MEASURES.
  - SEDIMENT SHALL BE REMOVED FROM THE TEMPORARY SKIMMER AND SEDIMENT BASINS WHEN SEDIMENT ACCUMULATES TO ONE-HALF THE HEIGHT OF THE FIRST BAFFLE. CLEAN OUT AND RESHAPE BASIN BACK TO THEIR ORIGINAL DIMENSIONS. SKIMMERS SHALL BE CHECK FOR CLOGGING AND CLEANED OUT. REPAIR OR REPLACE ANY DAMAGED BAFFLES.

**EC 45** MAINTENANCE PLAN  
 UPDATED MARCH, 2017

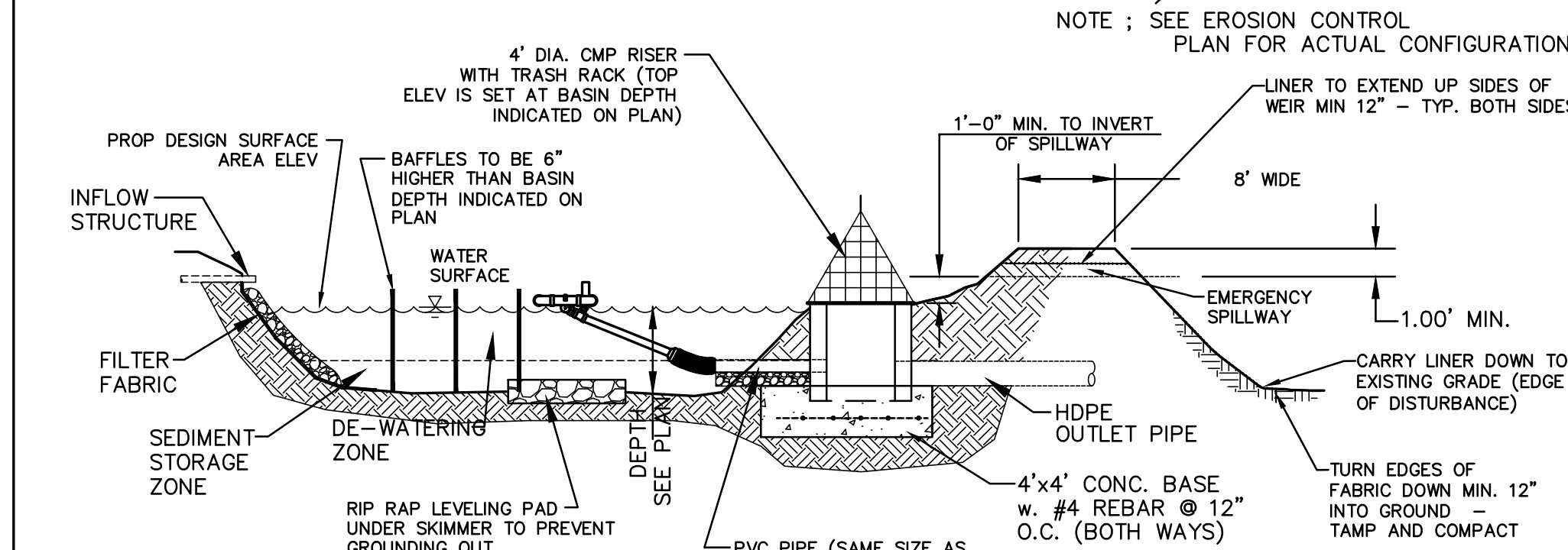


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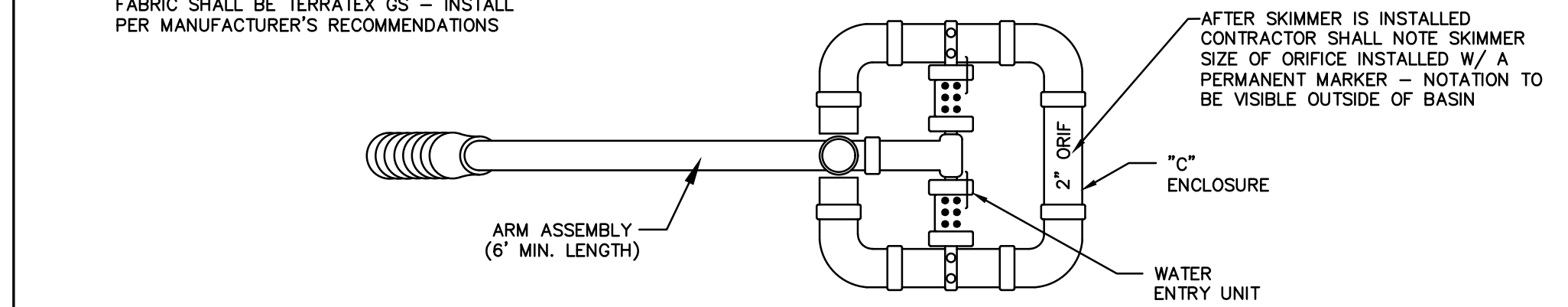
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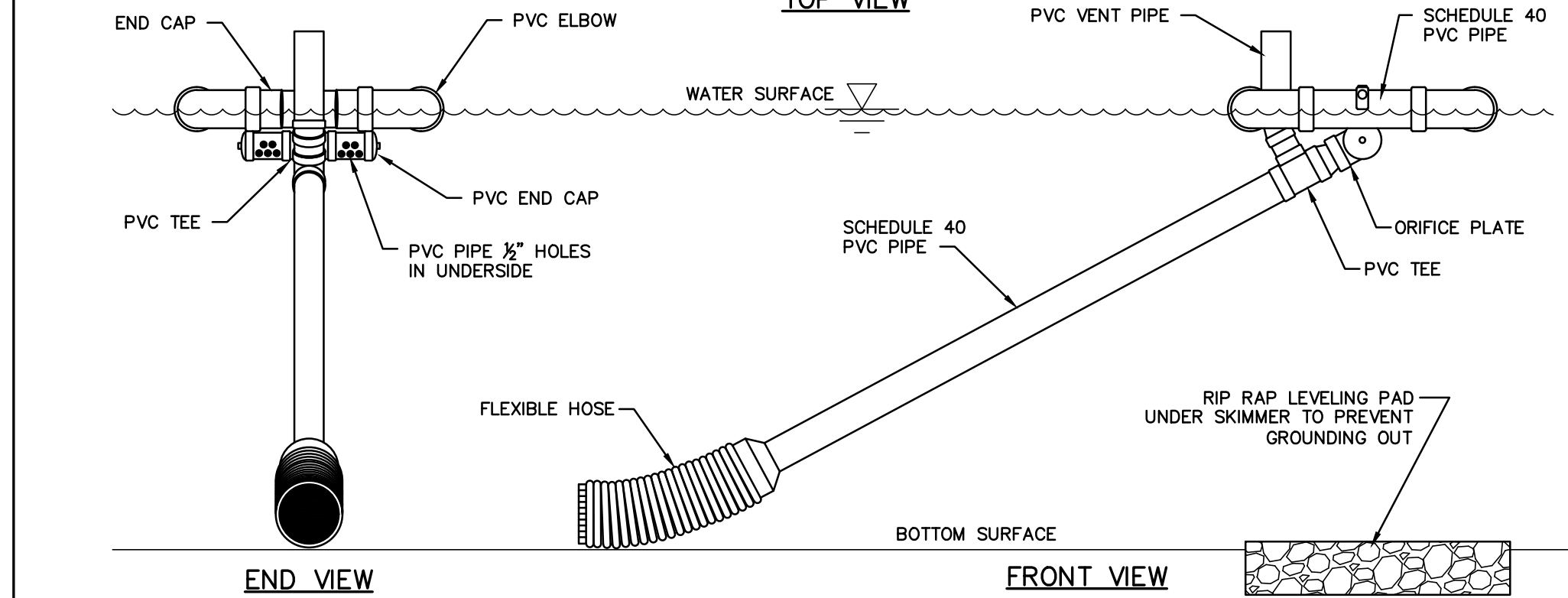
PLAN



SECTION



TOP VIEW



TEMPORARY SEDIMENT BASIN with SKIMMER (JONATHAN CREEK BASIN)

EC 28

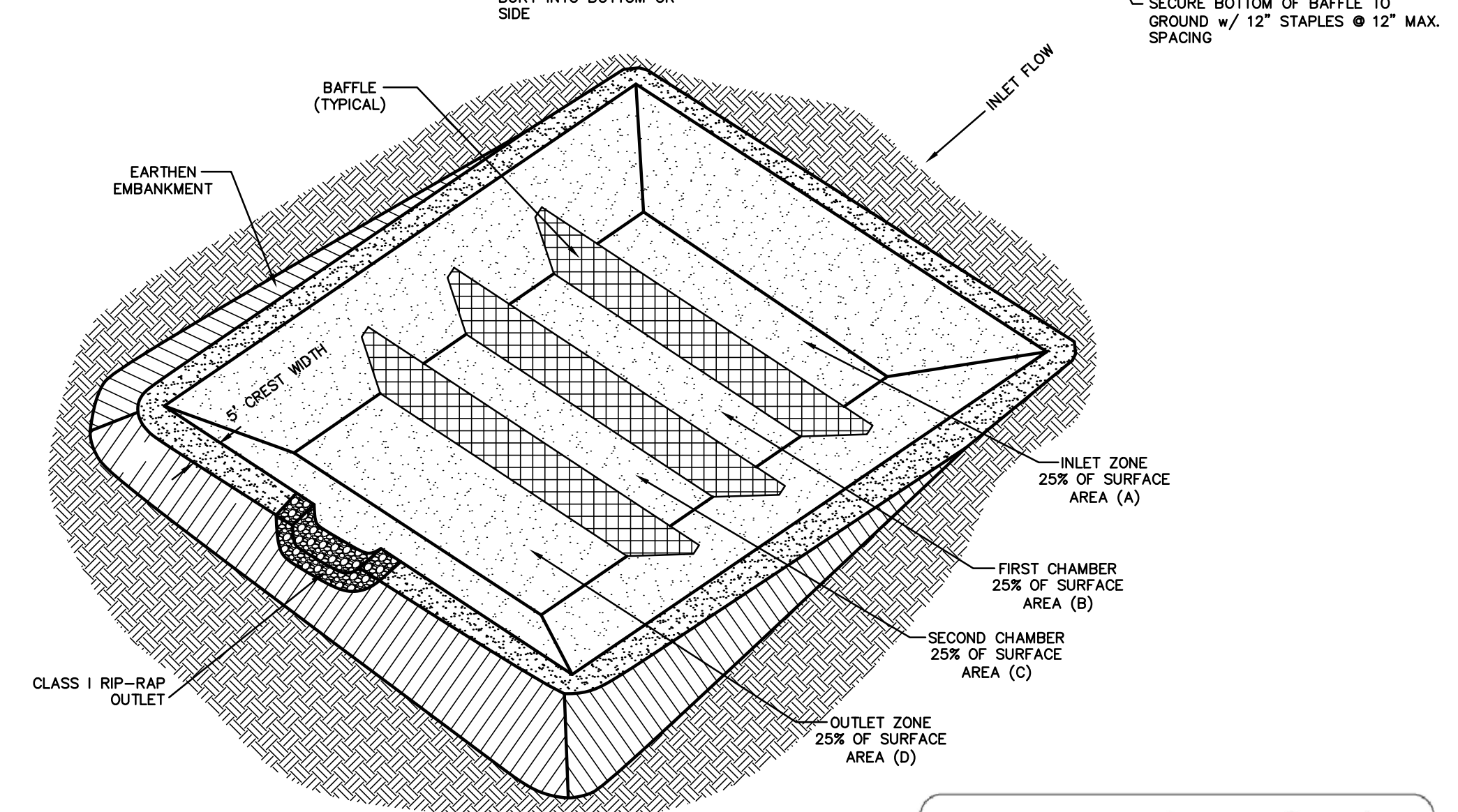
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**SEDIMENT BASIN SCHEDULE**

BASIN#	TOP BERM ELEV. (ft)	EMERGENCY SPILLWAY ELEV. (ft)	TOP OF RISER (ft)	EMERGENCY SPILLWAY (D x WIDTH)	BERM WIDTH (FT)	RISER SIZE	BARREL SIZE (inches)	BARREL INV. IN ELEV. (ft)	BARREL INV. OUT ELEV. (ft)	FLOTATION BLOCK DIMENSIONS (FT)	BASIN AVG. LENGTH (FT)	BASIN AVG. WIDTH (FT)	SKIMMER ORIFICE SIZE (IN)	SKIMMER INVERT ELEV. (FT)
1	2656.0	2655.0	2654.0	1' x 10'	8'	4' DIA.	30"	2651.0	2650.0	4'x4'x.75'	310'	82'	4.0"	2651.0

- NOTES:
- SPILLWAY SHALL BE CONSTRUCTED USING CLASS I RIP RAP WITH FILTER FABRIC UNDERLAYMENT AS SHOWN IN THE POROUS BAFFLE DETAIL.
  - LENGTH AND WIDTH ARE BASED ON DIMENSIONS AT THE ELEVATION OF THE PRIMARY SPILLWAY.

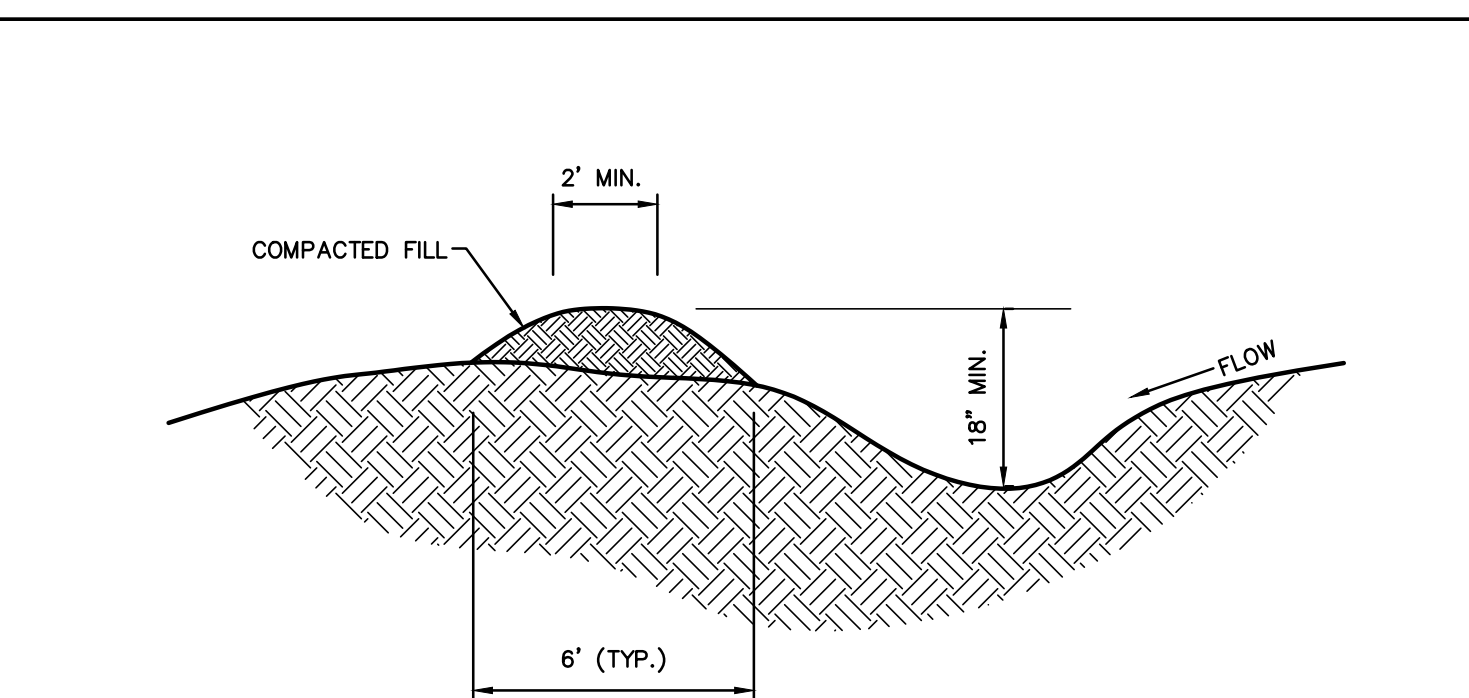
- NOTES:
- INLET ZONE (A) SHOULD HAVE 25% OF SURFACE AREA. FIRST CELL (B) SHOULD HAVE 25% OF SURFACE AREA. SECOND CELL (C) SHOULD HAVE 25% OF SURFACE AREA AND THE OUTLET ZONE (D) SHOULD HAVE 25% OF SURFACE AREA.
  - GRADE THE BASIN SO THAT THE BOTTOM IS LEVEL FRONT TO BACK AND SIDE TO SIDE.
  - STEEL POSTS SHOULD BE DRIVEN TO A DEPTH OF 24 INCHES, SPACED A MAXIMUM OF 4 FEET APART.
  - DO NOT SPLICE FABRIC. USE ONE CONTINUOUS PIECE ACROSS BASIN.
  - INSPECT BAFFLES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REPAIRS IMMEDIATELY. REMOVE SEDIMENT DEPOSITS WHEN IT REACHES HALF FULL.
  - REFERENCE NCDCE LAND QUALITY SECTION DESIGN MANUAL: 6.65.



EC 41 POROUS BAFFLE DETAIL

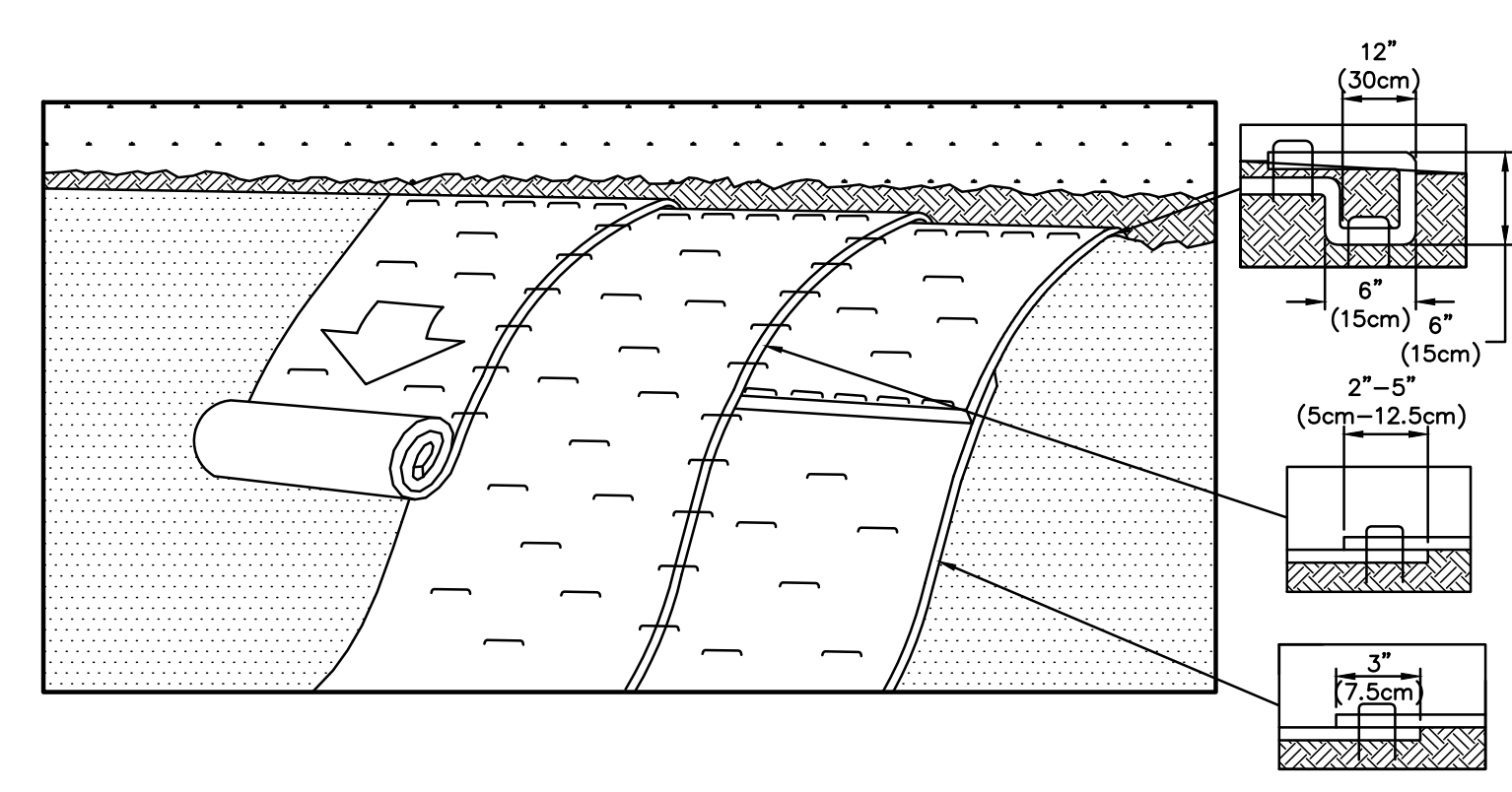
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- NOTES:
- BAFFLE SPACING OF 25% EACH PER NEW NCDCE RECOMMENDATIONS
  - BASINS LESS THAN 20' LONG REQUIRE TWO (2) COIR BAFFLES
  - SEE PLANS FOR BAFFLE SPACING



EC 4 TEMPORARY DIVERSION DITCH

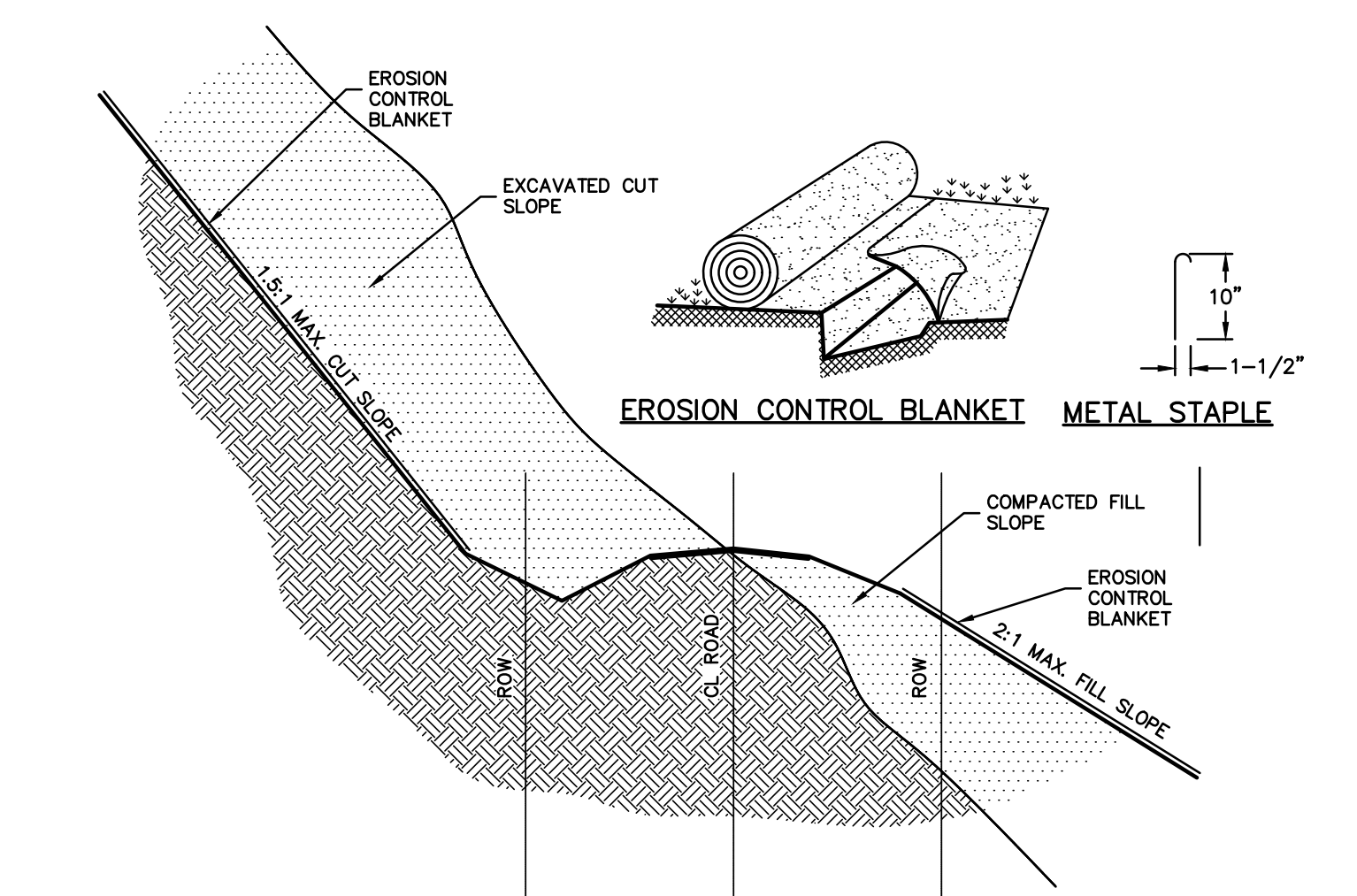
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EC 11 SLOPE MATTING INSTALLATION

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- NOTES:
- PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP'S), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
  - BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP'S IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECP'S EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP'S WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF RECP'S BACK OVER SEED AND COMPACTED SOIL. SECURE RECP'S OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE RECP'S.
  - ROLL THE RECP'S DOWN OR HORIZONTALLY ACROSS THE SLOPE. RECP'S WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP'S MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING AND SPACING STAPLES/STAKES IN APPROPRIATE LOCATIONS PER MANUFACTURER RECOMMENDATIONS.
  - THE EDGES OF PARALLEL RECP'S MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON RECP'S TYPE.
  - CONSECUTIVE RECP'S SPICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE RECP'S WIDTH.
  - IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE RECP'S.
  - INSTALLATION OF MATTING SHALL CONFORM TO MANUFACTURER'S REQUIREMENTS.
  - SEE GRADING PLAN FOR LOCATIONS OF CUT AND FILL SLOPES.
  - MATting SHALL BE : NORTH AMERICAN GREEN S150, AMERICAN EXCELSIOR EROSION CONTROL BLANKET, OR EQUAL. INSTALL ON ALL DISTURBED SLOPES (CHOSEN PRODUCT MUST BE RATED FOR SLOPES OF 2:1 OR 1:1). SEE PLAN FOR PRODUCT TYPE THAT MAY BE SPECIFIED
  - ALLOW 3" MIN. OVERLAP BETWEEN PARALLEL STRIPS. 11. BURY THE TOP OF THE MAT IN A TRENCH 4" OR MORE IN DEPTH. TAMP THE TRENCH FULL SOIL. SECURE WITH ROW OF STAPLES, 10" SPACING, 4" DOWN FROM THE TRENCH. OVERLAP END OF TOP STRIP 4" AND STAPLE.

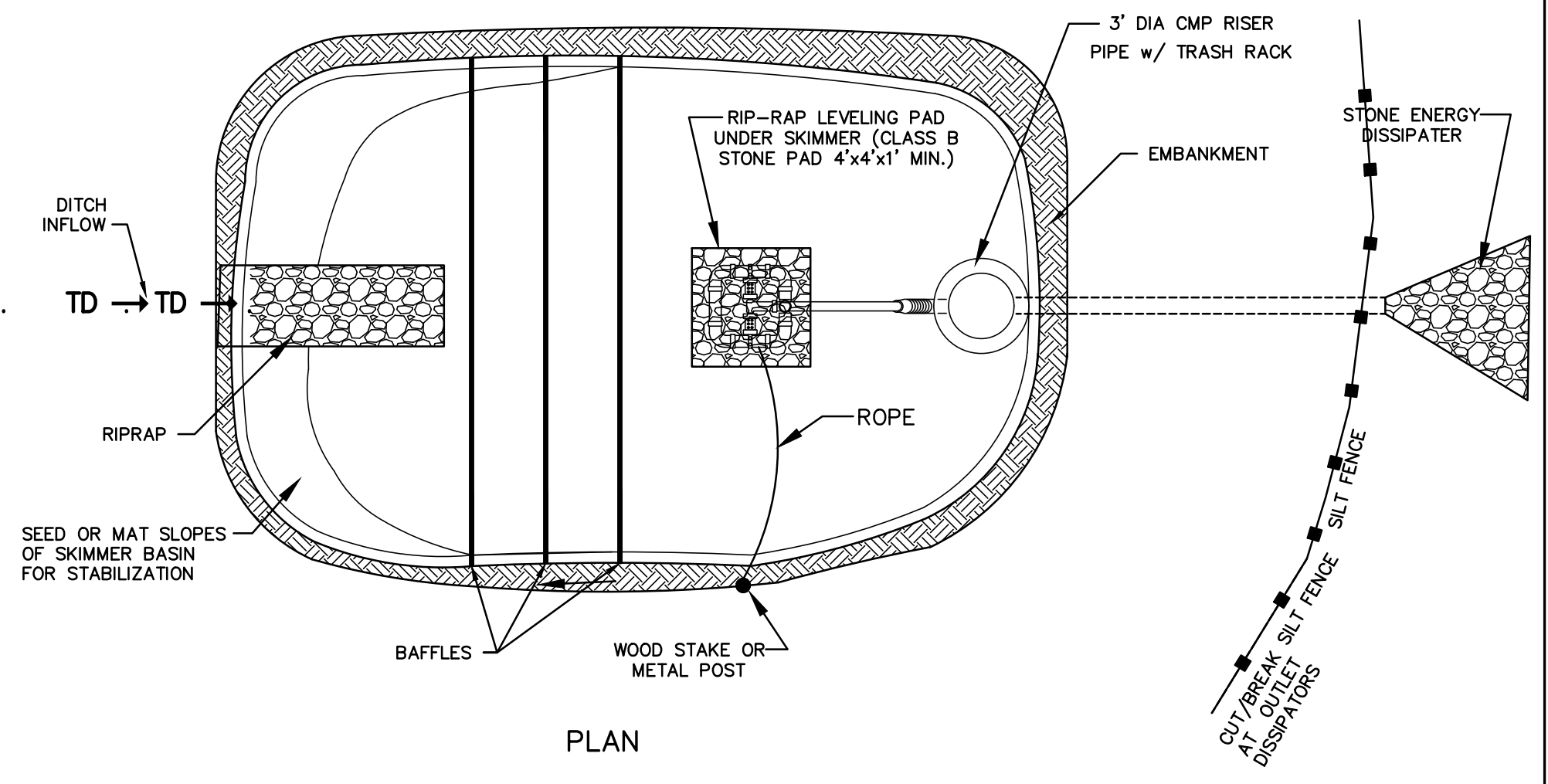


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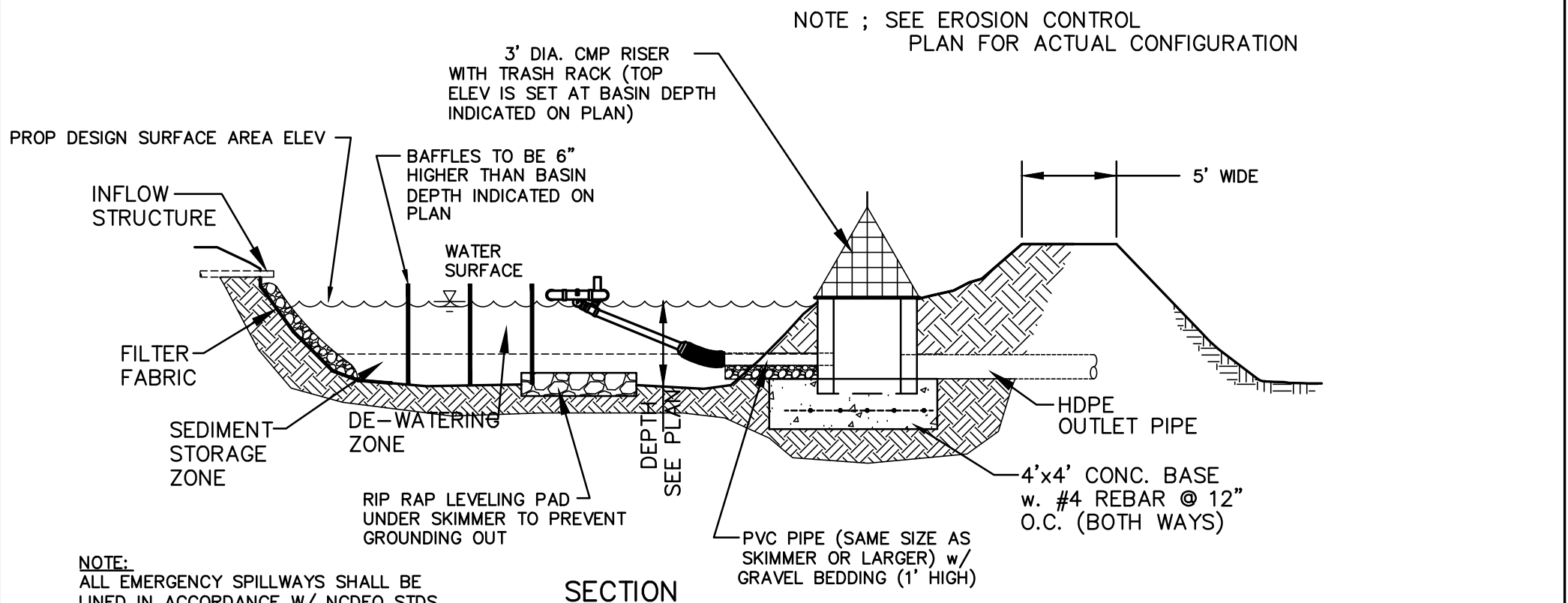
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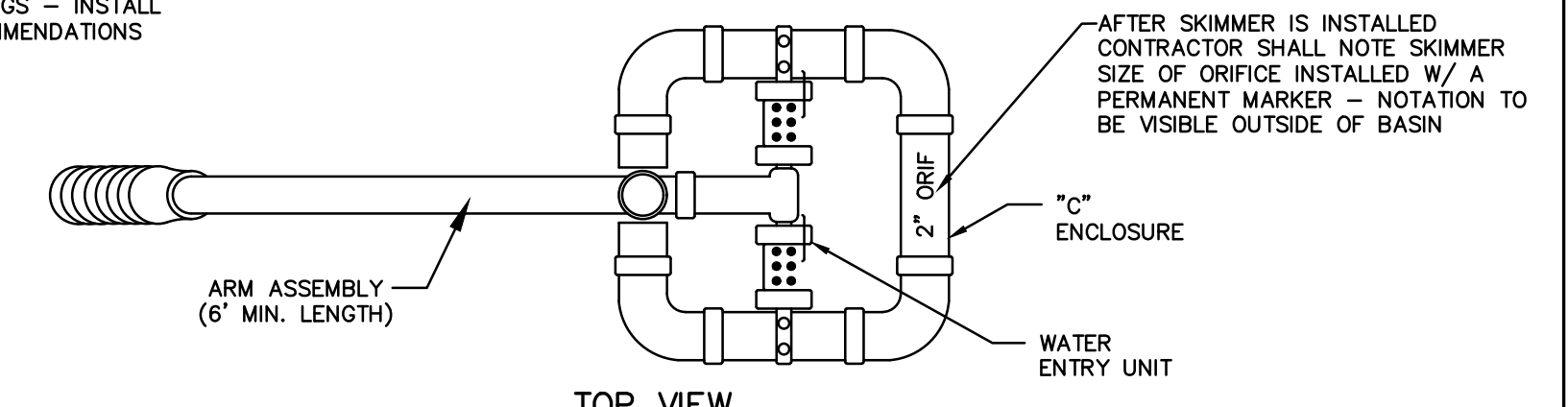




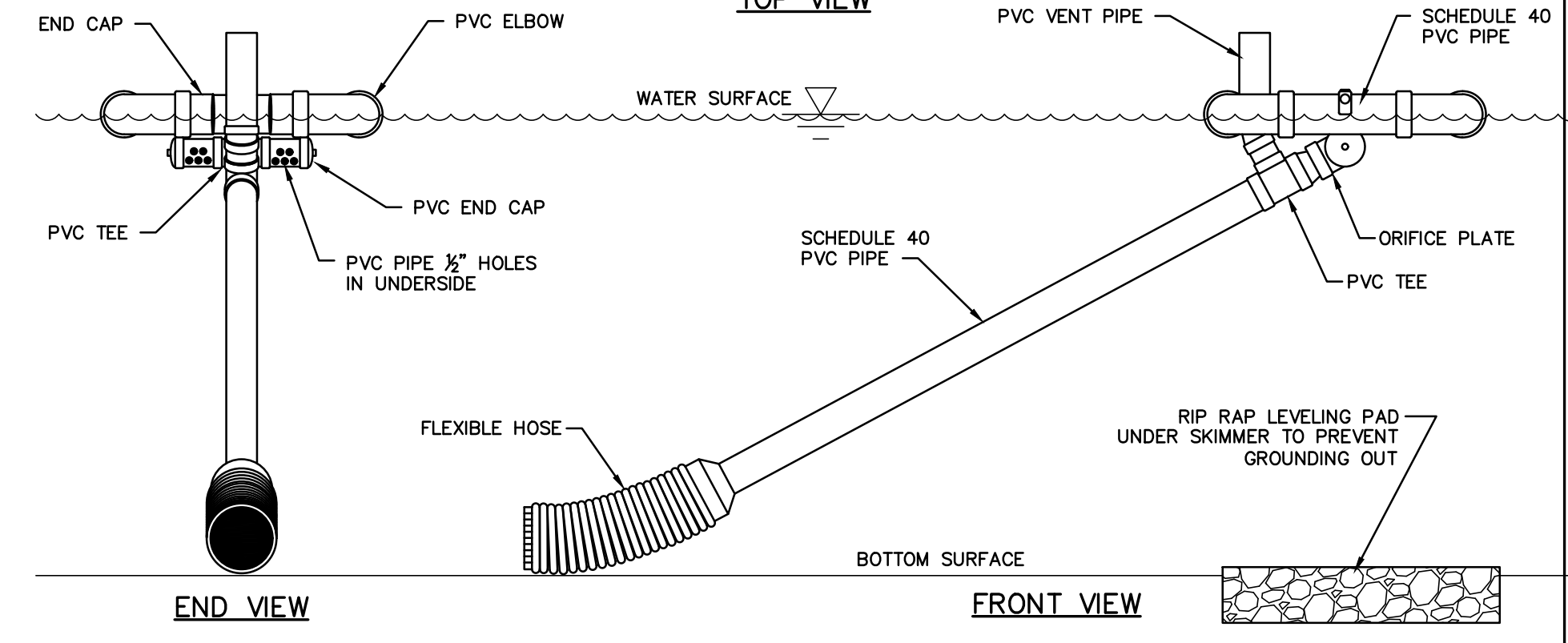
PLAN



SECTION



TOP VIEW



END VIEW

FRONT VIEW

**TEMPORARY SKIMMER BASIN with RISER  
(DENNIS FARM BASIN)**

EC  
28

UPDATED MARCH, 2017  
NOT TO SCALE

**SKIMMER SEDIMENT BASIN SCHEDULE**

BASIN#	TOP BERM ELEV. (ft)	TOP OF RISER (ft)	BERM WIDTH (FT)	RISER SIZE	BARREL SIZE (inches)	BARREL INV. IN ELEV. (ft)	BARREL INV. OUT ELEV. (ft)	FLOTATION BLOCK DIMENSIONS (FT)	BASIN AVG. LENGTH (FT)	BASIN AVG. WIDTH (FT)	SKIMMER ORIFICE SIZE (IN)	SKIMMER INVERT ELEV. (FT)
2	2734'	2731'	5.0'	3.0' DIA.	18"	2728'	2722'	4'x4'x1'	118'	30'	1.25"	2728'

NOTES:

1. LENGTH AND WIDTH ARE BASED ON DIMENSIONS AT THE ELEVATION OF THE PRIMARY SPILLWAY.
2. EMERGENCY SPILLWAY SHALL NOT BE INSTALLED.

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JONATHAN CREEK SOIL RECLAMATION  
& DENNIS FARM BORROW AREA PROJECT  
**HAYWOOD COUNTY**  
HAYWOOD COUNTY, NORTH CAROLINA

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MISCELLANEOUS  
DETAILS

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