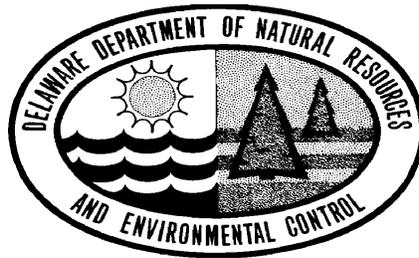


STATE OF DELAWARE

DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL

SITE INVESTIGATION AND RESTORATION SECTION
(DNREC-SIRS)



NVF YORKLYN SITE (DE-0071):
OU-1 WETLAND PROJECT

IN

New Castle County
Hockessin, Delaware

PREPARED BY
Black & Veatch

CONTRACT NO. NAT-16001HEAVYCONST

June 24, 2016

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LOCATION AND DIRECTIONS TO DNREC-SIRS
DNREC Program: Site Investigation and Restoration Section

Where: 391 Lukens Drive, New Castle, Delaware, 19720
Phone Number: (Office) 302.395.2600 (Fax) 302.395.2601
Section Administrator: Timothy Ratsep
Project Manager: John Cargill

Directions:

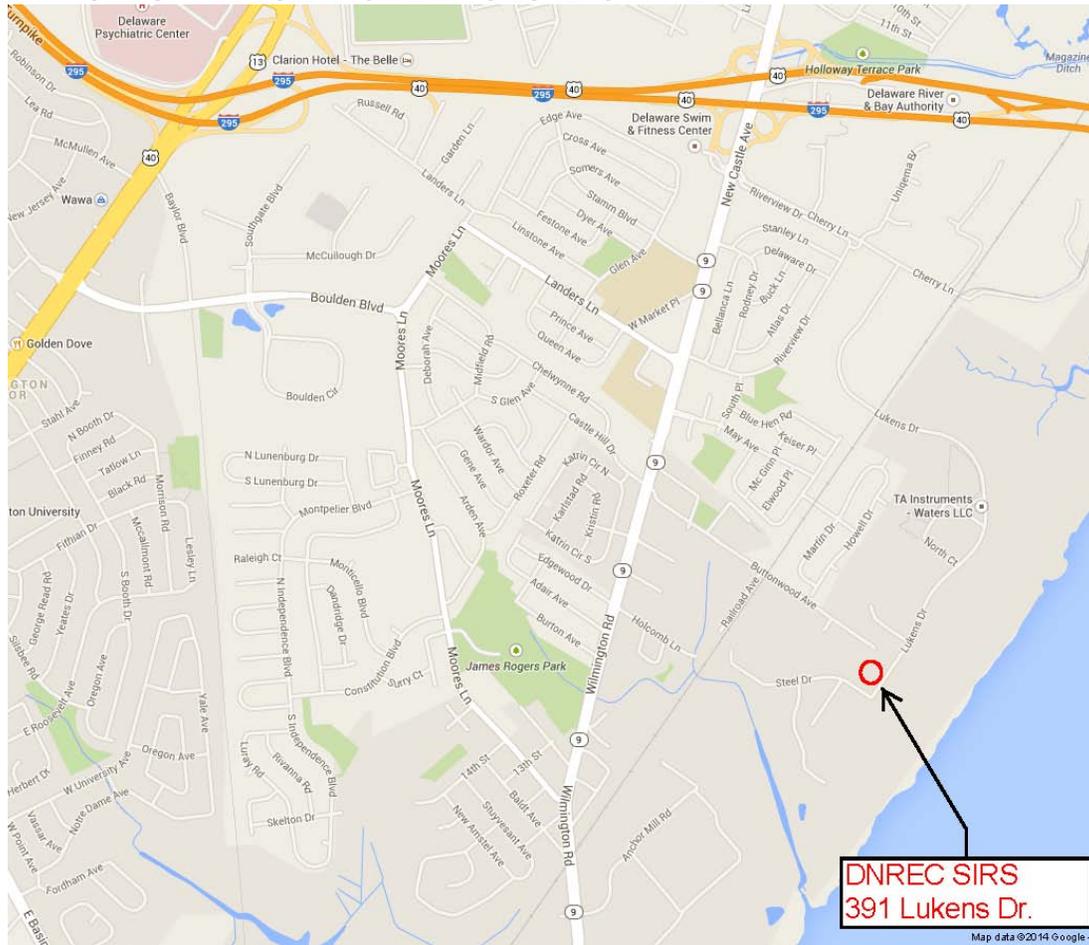
From I-95 or Rt 13/40

Take I-295 to Delaware Memorial Bridge. Exit at Rt 9 South (last exit before toll booths.) Proceed straight onto Cherry Lane from traffic light at Rt 9. Continue on Cherry Lane 0.4 miles and turn right into Lukens Drive (you may not see the sign for Lukens Dr. but you will see the sign for Riveredge Park). DNREC Office is 1.1 miles on the right across from a pond.

From New Jersey

Cross Delaware Memorial Bridge and take first exit onto Rt 9 South. Cross over I-295 and turn left onto Cherry Lane. Proceed as described above.

PARK IN FRONT OF THE BUILDING NEXT TO LUKENS DRIVE



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INVITATION TO BID

Sealed bids for OMB/DFM Contract No. NAT-16001HEAVYCONST will be received by the State of Delaware, Department of Natural Resources and Environmental Control, Site Investigation and Restoration Section (DNREC-SIRS), at 391 Lukens Drive, New Castle, Delaware, until 3:00pm local time on September 1, 2016, at which time they will be publicly opened and read aloud in the Conference Room. Bidder bears the risk of late delivery. Any bids received after the stated time will be returned unopened.

The project involves the excavation and off site removal of approximately 23,000 CY of contaminated soil from the site. The site will be capped with 18 inches (12 inches DelDOT type F fill and 6 inches of topsoil) of imported certified clean soil. The main area of excavation will be graded into a wetland along with a new stream alignment adjacent to the wetland.

Also included but not limited to are:

1. Erosion and Sediment control and clearing a grubbing.
2. Demolition of building pad, structures, utilities and associated debris within the limits of disturbance of OU-1 and removal from the Site.
3. The installation the appropriate erosion and sediment pollution controls.
4. The realignment of the unnamed tributary running through the NVF site, and extension of one existing culvert.
5. Excavation and removal of the contaminated soil material. Haul all materials offsite.
6. Placement of imported material and grading of the wetland area.
7. Final placement and grading of the soil cap throughout the site and final landscaping and stabilization.

Mandatory Provisions:

1. A **MANDATORY** Pre-Bid Meeting will be held on August 15, 2016, at 11:00AM at NVF Yorklyn Site for the purpose of establishing the listing of subcontractors and to answer questions. Representatives of each party to any Joint Venture must attend this meeting. **ATTENDANCE OF THIS MEETING IS A PREREQUISITE FOR BIDDING ON THIS CONTRACT.**
2. This project is being funded by the Clean Water State Revolving Fund loan funded from the State of Delaware's Department of Natural Resources and Environmental Control. Bidder must comply with the provisions that are in the contract.
3. The President's Executive Order No. 11246 that prohibits discrimination in employment regarding race, creed, color, sex or national origin.
4. The Delaware State Revolving Fund program's Disadvantaged Business Enterprise ("DBE") requirements.
 - a. The requirements of the DBE program regarding the "Good Faith Efforts" necessary to be deemed a responsive and responsible bidder. The Federal Register Part 40 CFR 33.301 requires these Good Faith Efforts in procurement actions to assure that DBEs are made aware of procurement opportunities in construction, equipment, services and supplies under EPA financial assistance agreements.
 - i. Ensure DBEs are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities by placing DBEs on solicitation lists whenever they are potential sources.
 - ii. Establish delivery schedules, where the requirements permits, to encourage participation by DBEs
 - iii. Divide the total requirements, when economically feasible, into small tasks or quantities, to permit maximum participation of DBEs
 - iv. Encourage contracting with a consortium of DBEs when a contract is too large for one of these forms to handle individually.

- v. Use the services of the DelDOT, the United States Small Business Administration ("SBA") and the Minority Business Development Agency ("MBDA") of the U.S. Department of Commerce.
 - vi. Require the prime contractor, if subcontracts are to be let, to take steps (i) – (v).
5. Follow Delaware Prevailing Wage Regulations and Davis-Bacon Acts Provisions and Procedures.
6. Buy American Requirements
 - a. Section 1605 of the American Recovery and Reinvestment Act of 2009 (Recovery Act; Pub. L. 111-5) sets forth the Buy American provisions for recipients of Recovery Act financial assistance.

Sealed bids shall be addressed to the DNREC-SIRS,
Dept. of Natural Resources & Environmental Control, Site Investigation and Restoration Section
391 Lukens Drive
New Castle, DE 19720
Attn: John Cargill
Phone No. 302-395-2600

The outer envelope should clearly indicate: **"OMB/DFM CONTRACT NO. NAT-16001HEAVYCONST-SEALED BID - DO NOT OPEN."**

A CD with the bidding documents must be obtained from the DNREC-SIRS office, 391 Lukens Drive, New Castle Delaware, 19720 in order to bid on this project. Please contact John Cargill (302-395-2600) to request a CD. Prime contractors must obtain a copy of the bid documents from DNREC-SIRS in order to bid on the project. Subcontractors do not need to obtain bid documents from DNREC-SIRS in order to bid on the project.

Bidders will not be subject to discrimination on the basis of race, creed, color, sex, sexual orientation, gender identity or national origin in consideration of this award, and Minority Business Enterprises, Disadvantaged Business Enterprises, Women-Owned Business Enterprises and Veteran-Owned Business Enterprises will be afforded full opportunity to submit bids on this contract. Each bid must be accompanied by a bid security equivalent to ten percent of the bid amount and all additive alternates. The successful bidder must post a performance bond and payment bond in a sum equal to 100 percent of the contract price upon execution of the contract. The Owner reserves the right to reject any or all bids and to waive any informalities therein. The Owner may extend the time and place for the opening of the bids from that described in the advertisement, with not less than two calendar days notice by certified delivery, facsimile machine or other electronic means to those bidders receiving plans.

END OF ADVERTISEMENT FOR BIDS

INSTRUCTIONS TO BIDDERS

TABLE OF ARTICLES

1. DEFINITIONS
2. BIDDER'S REPRESENTATION
3. BIDDING DOCUMENTS
4. BIDDING PROCEDURES
5. CONSIDERATION OF BIDS
6. POST-BID INFORMATION
7. PERFORMANCE BOND AND PAYMENT BOND
8. FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR
9. "GOOD FAITH EFFORTS" IN PROCUREMENT ACTIONS RELATED TO DISADVANTAGED BUSINESS ENTERPRISES

ARTICLE 1: GENERAL

1.1 DEFINITIONS

1.1.1 Whenever the following terms are used, their intent and meaning shall be interpreted as follows:

1.2 STATE: The State of Delaware.

1.3 AGENCY: Contracting State Agency as noted on cover sheet.

1.4 DESIGNATED OFFICIAL: The agent authorized to act for the Agency.

1.5 BIDDING DOCUMENTS: Bidding Documents include the Bidding Requirements and the proposed Contract Documents. The Bidding Requirements consist of the Advertisement for Bid, Invitation to Bid, Instructions to Bidders, General Conditions, Supplementary General Conditions, General Requirements, the Bid Form (including the Non-collusion Statement), and other sample bidding and contract forms. The proposed Contract Documents consist of the form of Agreement between the Owner and Contractor, as well as the Drawings, Specifications (Project Manual) and all Addenda issued prior to execution of the Contract.

1.6 CONTRACT DOCUMENTS: The Contract Documents consist of the, Instructions to Bidders, General Conditions, Supplementary General Conditions, General Requirements, the form of agreement between the Owner and the Contractor, Drawings, Specifications (Project Manual), and all addenda.

1.7 AGREEMENT: The form of the Agreement shall be AIA Document A101, Standard Form of Agreement between Owner and Contractor where the basis of payment is a STIPULATED SUM. In the case of conflict between the instructions contained therein and the General Requirements herein, these General Requirements shall prevail.

1.8 GENERAL REQUIREMENTS (or CONDITIONS): General Requirements (or conditions) are instructions pertaining to the Bidding Documents and to contracts in general. They contain, in summary, requirements of laws of the State; policies of the Agency and instructions to bidders.

1.9 SPECIAL PROVISIONS: Special Provisions are specific conditions or requirements peculiar to the bidding documents and to the contract under consideration and are supplemental to the General Requirements. Should the Special Provisions conflict with the General Requirements, the Special Provisions shall prevail.

1.10 ADDENDA: Written or graphic instruments issued by the Owner/Architect prior to the execution of the contract which modify or interpret the Bidding Documents by additions, deletions, clarifications or corrections.

1.11 BIDDER OR VENDOR: A person or entity who formally submits a Bid for the material or Work contemplated, acting directly or through a duly authorized representative who meets the requirements set forth in the Bidding Documents.

1.12 SUB-BIDDER: A person or entity who submits a Bid to a Bidder for materials or labor, or both for a portion of the Work.

1.13 BID: A complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

- 1.14 BASE BID: The sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents as the base, to which Work may be added or from which Work may be deleted for sums stated in Alternate Bids (if any are required to be stated in the bid).
- 1.15 ALTERNATE BID (or ALTERNATE): An amount stated in the Bid, where applicable, to be added to or deducted from the amount of the Base Bid if the corresponding change in the Work, as described in the Bidding Documents is accepted.
- 1.16 SURETY: The corporate body which is bound with and for the Contract, or which is liable, and which engages to be responsible for the Contractor's payments of all debts pertaining to and for his acceptable performance of the Work for which he has contracted.
- 1.17 BIDDER'S DEPOSIT: The security designated in the Bid to be furnished by the Bidder as a guaranty of good faith to enter into a contract with the Agency if the Work to be performed or the material or equipment to be furnished is awarded to him.
- 1.18 CONTRACT: The written agreement covering the furnishing and delivery of material or work to be performed.
- 1.19 CONTRACTOR: Any individual, firm or corporation with whom a contract is made by the Agency.
- 1.20 SUBCONTRACTOR: An individual, partnership or corporation which has a direct contract with a contractor to furnish labor and materials at the job site, or to perform construction labor and furnish material in connection with such labor at the job site.
- 1.21 CONTRACT BOND: The approved form of security furnished by the contractor and his surety as a guaranty of good faith on the part of the contractor to execute the work in accordance with the terms of the contract.

ARTICLE 2: BIDDER'S REPRESENTATIONS

- 2.1 PRE-BID MEETING
- 2.1.1 A MANDATORY Pre-Bid Meeting will be held on August 15, 2016, at 11:00AM at NVF Yorklyn Site. Attendance at this meeting is a pre-requisite for submitting a Bid.
- 2.2 By submitting a Bid, the Bidder represents that:
- 2.2.1 The Bidder has read and understands the Bidding Documents and that the Bid is made in accordance therewith.
- 2.2.2 The Bidder has visited the site, become familiar with existing conditions under which the Work is to be performed, and has correlated the Bidder's his personal observations with the requirements of the proposed Contract Documents.
- 2.2.3 The Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception.
- 2.3 JOINT VENTURE REQUIREMENTS
- 2.3.1 For Public Works Contracts, each Joint Venturer shall be qualified and capable to complete the Work with their own forces.
- 2.3.2 Included with the Bid submission, and as a requirement to bid, a copy of the executed Joint Venture Agreement shall be submitted and signed by all Joint Venturers involved.

- 2.3.3 All required Bid Bonds, Performance Bonds, Material and Labor Payment Bonds must be executed by both Joint Venturers and be placed in both of their names.
- 2.3.4 All required insurance certificates shall name both Joint Venturers.
- 2.3.5 Both Joint Venturers shall sign the Bid Form and shall submit a copy of a valid Delaware Business License with their Bid.
- 2.3.6 Both Joint Venturers shall include their Federal E.I. Number with the Bid.
- 2.3.7 In the event of a mandatory Pre-bid Meeting, each Joint Venturer shall have a representative in attendance.
- 2.3.8 Due to exceptional circumstances and for good cause shown, one or more of these provisions may be waived at the discretion of the State.

2.4 ASSIGNMENT OF ANTITRUST CLAIMS

- 2.4.1 As consideration for the award and execution by the Owner of this contract, the Contractor hereby grants, conveys, sells, assigns and transfers to the State of Delaware all of its right, title and interests in and to all known or unknown causes of action it presently has or may now or hereafter acquire under the antitrust laws of the United States and the State of Delaware, relating to the particular goods or services purchased or acquired by the Owner pursuant to this contract.

ARTICLE 3: BIDDING DOCUMENTS

3.1 COPIES OF BID DOCUMENTS

- 3.1.1 A CD with the bidding documents must be obtained from the DNREC-SIRS, 391 Lukens Drive, New Castle Delaware, 19720 in order to bid on this project. Prime contractors must obtain a copy of the bid documents from DNREC-SIRS in order to bid on the project. Subcontractors do not need to obtain bid documents from DNREC-SIRS in order to bid on the project.
- 3.1.2 Bidders shall use complete sets of Bidding Documents for preparation of Bids. The issuing Agency nor the Architect assumes no responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 3.1.3 Any errors, inconsistencies or omissions discovered shall be reported to the Architect immediately.
- 3.1.4 The Agency and Architect may make copies of the Bidding Documents available on the above terms for the purpose of obtaining Bids on the Work. No license or grant of use is conferred by issuance of copies of the Bidding Documents.

3.2 INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

- 3.2.1 The Bidder shall carefully study and compare the Bidding Documents with each other, and with other work being bid concurrently or presently under construction to the extent that it relates to the Work for which the Bid is submitted, shall examine the site and local conditions, and shall report any errors, inconsistencies, or ambiguities discovered to the Architect.

- 3.2.2 **Bidders or Sub-bidders requiring clarification or interpretation of the Bidding Documents shall make a written request to the Owner (Contact: John Cargill, (John.Cargill@state.de.us) at least seven days prior to the date for receipt of Bids.** Interpretations, corrections and changes to the Bidding Documents will be made by written Addendum. Interpretations, corrections, or changes to the Bidding Documents made in any other manner shall not be binding.
- 3.2.3 The apparent silence of the specifications as to any detail, or the apparent omission from it of detailed description concerning any point, shall be regarded as meaning that only the best commercial practice is to prevail and only material and workmanship of the first quality are to be used. Proof of specification compliance will be the responsibility of the Bidder.
- 3.2.4 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for all permits, labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for the proper execution and completion of the Work.
- 3.2.5 The Owner will bear the costs for all impact and user fees associated with the project.
- 3.3 **SUBSTITUTIONS**
- 3.3.1 The materials, products and equipment described in the Bidding Documents establish a standard of quality, required function, dimension, and appearance to be met by any proposed substitution. The specification of a particular manufacturer or model number is not intended to be proprietary in any way. Substitutions of products for those named will be considered, providing that the Vendor certifies that the function, quality, and performance characteristics of the material offered is equal or superior to that specified. It shall be the Bidder's responsibility to assure that the proposed substitution will not affect the intent of the design, and to make any installation modifications required to accommodate the substitution.
- 3.3.2 Requests for substitutions shall be made in writing to the Architect at least ten days prior to the date of the Bid Opening. Such requests shall include a complete description of the proposed substitution, drawings, performance and test data, explanation of required installation modifications due the substitution, and any other information necessary for an evaluation. The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval shall be final. The Architect is to notify Owner prior to any approvals.
- 3.3.3 If the Architect approves a substitution prior to the receipt of Bids, such approval shall be set forth in an Addendum. Approvals made in any other manner shall not be binding.
- 3.3.4 The Architect shall have no obligation to consider any substitutions after the Contract award.
- 3.4 **ADDENDA**
- 3.4.1 Addenda will be posted to the State of Delaware Bid Solicitation Directory Website: <http://www.bids.delaware.gov/>
- 3.4.2 Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.
- 3.4.3 **No Addenda will be issued later than 4 days prior to the date for receipt of Bids except an Addendum withdrawing the request for Bids or one which extends the time or changes the location for the opening of bids.**

- 3.4.4 Each bidder shall ascertain prior to submitting his Bid that they have received all Addenda issued, and shall acknowledge their receipt in their Bid in the appropriate space. Not acknowledging an issued Addendum could be grounds for determining a bid to be non-responsive.

ARTICLE 4: BIDDING PROCEDURES

4.1 PREPARATION OF BIDS

- 4.1.1 Submit the bids on the Bid Forms included with the Bidding Documents.
- 4.1.2 Submit the original Bid Form for each bid. Bid Forms may be removed from the project manual for this purpose.
- 4.1.3 Execute all blanks on the Bid Form in a non-erasable medium (typewriter or manually in ink).
- 4.1.4 Where so indicated by the makeup on the Bid Form, express sums in both words and figures, in case of discrepancy between the two, the written amount shall govern.
- 4.1.5 Interlineations, alterations or erasures must be initialed by the signer of the Bid.
- 4.1.6 BID ALL REQUESTED ALTERNATES AND UNIT PRICES, IF ANY. If there is no change in the Base Bid for an Alternate, enter "No Change". The Contractor is responsible for verifying that they have received all addenda issued during the bidding period. Work required by Addenda shall automatically become part of the Contract.
- 4.1.7 Make no additional stipulations on the Bid Form and do not qualify the Bid in any other manner.
- 4.1.8 Each copy of the Bid shall include the legal name of the Bidder and a statement whether the Bidder is a sole proprietor, a partnership, a corporation, or any legal entity, and each copy shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further give the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current Power of Attorney attached, certifying agent's authority to bind the Bidder.
- 4.1.9 Bidder shall complete the Non-Collusion Statement form included with the Bid Forms and include it with their Bid.
- 4.1.10 In the construction of all Public Works projects for the State of Delaware or any agency thereof, preference in employment of laborers, workers or mechanics shall be given to bona fide legal citizens of the State who have established citizenship by residence of at least 90 days in the State.
- 4.1.11 Each bidder shall include in their bid a copy of a valid Delaware Business License.
- 4.1.12 Each bidder shall include signed Affidavit(s) for the Bidder and each listed Subcontractor certifying compliance with OMB Regulation 4104- "Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on "Large Public Works Projects." "Large Public Works" is based upon the current threshold required for bidding Public Works as set by the Purchasing and Contracting Advisory Council.

4.2 BID SECURITY

4.2.1 All bids shall be accompanied by a deposit of either a good and sufficient bond to the agency for the benefit of the agency, with corporate surety authorized to do business in this State, the form of the bond and the surety to be approved by the agency, or a security of the bidder assigned to the agency, for a sum equal to at least 10% of the bid plus all add alternates, or in lieu of the bid bond a security deposit in the form of a certified check, bank treasurer's check, cashier's check, money order, or other prior approved secured deposit assigned to the State. The bid bond need not be for a specific sum, but may be stated to be for a sum equal to 10% of the bid plus all add alternates to which it relates and not to exceed a certain stated sum, if said sum is equal to at least 10% of the bid. The Bid Bond form used shall be the standard OMB form (attached).

4.2.2 The Agency has the right to retain the bid security of Bidders to whom an award is being considered until either a formal contract has been executed and bonds have been furnished or the specified time has elapsed so the Bids may be withdrawn or all Bids have been rejected.

4.2.3 In the event of any successful Bidder refusing or neglecting to execute a formal contract and bond within 20 days of the awarding of the contract, the bid bond or security deposited by the successful bidder shall be forfeited.

4.3 SUBCONTRACTOR LIST

4.3.1 As required by Delaware Code, Title 29, section 6962(d)(10)b, each Bidder shall submit with their Bid a completed List of Sub-Contractors included with the Bid Form. NAME ONLY ONE SUBCONTRACTOR FOR EACH TRADE. A Bid will be considered non-responsive unless the completed list is included.

4.3.2 Provide the Name and Address for each listed subcontractor. Addresses by City, Town or Locality, plus State, will be acceptable.

4.3.3 It is the responsibility of the Contractor to ensure that their Subcontractors are in compliance with the provisions of this law. Also, if a Contractor elects to list themselves as a Subcontractor for any category, they must specifically name themselves on the Bid Form and be able to document their capability to act as Subcontractor in that category in accordance with this law.

4.4 EQUALITY OF EMPLOYMENT OPPORTUNITY ON PUBLIC WORKS

4.4.1 During the performance of this contract, the contractor agrees as follows:

A. The Contractor will not discriminate against any employee or applicant for employment because of race, creed, sex, color, sexual orientation, gender identity or national origin. The Contractor will take affirmative action to ensure the applicants are employed, and that employees are treated during employment, without regard to their race, creed, sex, color, sexual orientation, gender identity or national origin. Such action shall include, but not be limited to, the following: Employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places available to employees and applicants for employment notices to be provided by the contracting agency setting forth this nondiscrimination clause.

B. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, sex, color, sexual orientation, gender identity or national origin."

4.5 PREVAILING WAGE REQUIREMENT

- 4.5.1 Wage Provisions: For renovation and new construction projects whose costs exceed the thresholds contained in Delaware Code, Title 29, Section 6960, the minimum wage rates for various classes of laborers and mechanics shall be as determined by the Department of Labor, Division of Industrial Affairs of the State of Delaware (Heavy Construction) **AND** the current Davis Bacon "Heavy" Wage Rates (DE160017, dated 5/6/2016). It will be the responsibility of the contractor to determine and use the higher rate for each classification of work.
- 4.5.2 The employer shall pay all mechanics and labors employed directly upon the site of work, unconditionally and not less often than once a week and without subsequent deduction or rebate on any account, the full amounts accrued at time of payment, computed at wage rates not less than those stated in the specifications, regardless of any contractual relationship which may be alleged to exist between the employer and such laborers and mechanics.
- 4.5.3 The scale of the wages to be paid shall be posted by the employer in a prominent and easily accessible place at the site of the work.
- 4.5.4 Every contract based upon these specifications shall contain a stipulation that sworn payroll information, as required by the Department of Labor, be furnished weekly. The Department of Labor shall keep and maintain the sworn payroll information for a period of 6 months from the last day of the work week covered by the payroll.

4.6 SUBMISSION OF BIDS

- 4.6.1 Enclose the Bid, the Bid Security, and any other documents required to be submitted with the Bid in a sealed opaque envelope. Address the envelope to the party receiving the Bids. Identify with the project name, project number, and the Bidder's name and address. If the Bid is sent by mail, enclose the sealed envelope in a separate mailing envelope with the notation "BID ENCLOSED" on the face thereof. The State is not responsible for the opening of bids prior to bid opening date and time that are not properly marked.
- 4.6.2 Deposit Bids at the designated location prior to the time and date for receipt of bids indicated in the Advertisement for Bids. Bids received after the time and date for receipt of bids will be marked "LATE BID" and returned.
- 4.6.3 Bidder assumes full responsibility for timely delivery at location designated for receipt of bids.
- 4.6.4 Oral, telephonic or telegraphic bids are invalid and will not receive consideration.
- 4.6.5 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids, provided that they are then fully in compliance with these Instructions to Bidders.

4.7 MODIFICATION OR WITHDRAW OF BIDS

- 4.7.1 Prior to the closing date for receipt of Bids, a Bidder may withdraw a Bid by personal request and by showing proper identification to the Architect. A request for withdraw by letter or fax, if the Architect is notified in writing prior to receipt of fax, is acceptable. A fax directing a modification in the bid price will render the Bid informal, causing it to be ineligible for consideration of award. Telephone directives for modification of the bid price shall not be permitted and will have no bearing on the submitted proposal in any manner.
- 4.7.2 Bidders submitting Bids that are late shall be notified as soon as practicable and the bid shall be returned.

- 4.7.3 A Bid may not be modified, withdrawn or canceled by the Bidder during a thirty (30) day period following the time and date designated for the receipt and opening of Bids, and Bidder so agrees in submitting their Bid. Bids shall be binding for 30 days after the date of the Bid opening.

ARTICLE 5: CONSIDERATION OF BIDS

5.1 OPENING/REJECTION OF BIDS

- 5.1.1 Unless otherwise stated, Bids received on time will be publicly opened and will be read aloud. An abstract of the Bids will be made available to Bidders.

- 5.1.2 The Agency shall have the right to reject any and all Bids. A Bid not accompanied by a required Bid Security or by other data required by the Bidding Documents, or a Bid which is in any way incomplete or irregular is subject to rejection.

- 5.1.3 If the Bids are rejected, it will be done within thirty (30) calendar day of the Bid opening.

5.2 COMPARISON OF BIDS

- 5.2.1 After the Bids have been opened and read, the bid prices will be compared and the result of such comparisons will be made available to the public. Comparisons of the Bids may be based on the Base Bid plus desired Alternates. The Agency shall have the right to accept Alternates in any order or combination.

- 5.2.2 The Agency reserves the right to waive technicalities, to reject any or all Bids, or any portion thereof, to advertise for new Bids, to proceed to do the Work otherwise, or to abandon the Work, if in the judgment of the Agency or its agent(s), it is in the best interest of the State.

- 5.2.3 An increase or decrease in the quantity for any item is not sufficient grounds for an increase or decrease in the Unit Price.

- 5.2.4 The prices quoted are to be those for which the material will be furnished F.O.B. Job Site and include all charges that may be imposed during the period of the Contract.

- 5.2.5 No qualifying letter or statements in or attached to the Bid, or separate discounts will be considered in determining the low Bid except as may be otherwise herein noted. Cash or separate discounts should be computed and incorporated into Unit Bid Price(s).

5.3 DISQUALIFICATION OF BIDDERS

- 5.3.1 An agency shall determine that each Bidder on any Public Works Contract is responsible before awarding the Contract. Factors to be considered in determining the responsibility of a Bidder include:

- A. The Bidder's financial, physical, personnel or other resources including Subcontracts;
- B. The Bidder's record of performance on past public or private construction projects, including, but not limited to, defaults and/or final adjudication or admission of violations of the Prevailing Wage Laws in Delaware or any other state;
- C. Whether the Bidder is qualified legally to contract with the State;
- D. Whether the Bidder supplied all necessary information concerning its responsibility; and,

- 5.3.2 If an agency determines that a Bidder is nonresponsive and/or nonresponsible, the determination shall be in writing and set forth the basis for the determination. A copy of the determination shall be sent to the affected Bidder within five (5) working days of said determination.
- 5.3.3 In addition, any one or more of the following causes may be considered as sufficient for the disqualification of a Bidder and the rejection of their Bid or Bids.
- 5.3.3.1 More than one Bid for the same Contract from an individual, firm or corporation under the same or different names.
- 5.3.3.2 Evidence of collusion among Bidders.
- 5.3.3.3 Unsatisfactory performance record as evidenced by past experience.
- 5.3.3.4 If the Unit Prices are obviously unbalanced either in excess or below reasonable cost analysis values.
- 5.3.3.5 If there are any unauthorized additions, interlineation, conditional or alternate bids or irregularities of any kind which may tend to make the Bid incomplete, indefinite or ambiguous as to its meaning.
- 5.3.3.6 If the Bid is not accompanied by the required Bid Security and other data required by the Bidding Documents.
- 5.3.3.7 If any exceptions or qualifications of the Bid are noted on the Bid Form.
- 5.4 ACCEPTANCE OF BID AND AWARD OF CONTRACT
- 5.4.1 A formal Contract shall be executed with the successful Bidder within twenty (20) calendar days after the award of the Contract.
- 5.4.2 Per Section 6962(d)(13) a., Title 29, Delaware Code, "The contracting agency shall award any public works contract within thirty (30) days of the bid opening to the lowest responsive and responsible Bidder, unless the Agency elects to award on the basis of best value, in which case the election to award on the basis of best value shall be stated in the Invitation To Bid."
- 5.4.3 Each Bid on any Public Works Contract must be deemed responsive by the Agency to be considered for award. A responsive Bid shall conform in all material respects to the requirements and criteria set forth in the Contract Documents and specifications.
- 5.4.4 The Agency shall have the right to accept Alternates in any order or combination, and to determine the low Bidder on the basis of the sum of the Base Bid, plus accepted Alternates.
- 5.4.5 The successful Bidder shall execute a formal contract, submit the required Insurance Certificate, and furnish good and sufficient bonds, unless specifically waived in the General Requirements, in accordance with the General Requirement, within twenty (20) days of official notice of contract award. The successful Bidder shall provide two business days prior to contract execution, copies of the Employee Drug Testing Program for the Bidder and all listed Subcontractors. Bonds shall be for the benefit of the Agency with surety in the amount of 100% of the total contract award. Said Bonds shall be conditioned upon the faithful performance of the contract. Bonds shall remain in affect for period of one year after the date of substantial completion.

- 5.4.6 If the successful Bidder fails to execute the required Contract and Bond, as aforesaid, within twenty (20) calendar days after the date of official Notice of the Award of the Contract, their Bid guaranty shall immediately be taken and become the property of the State for the benefit of the Agency as liquidated damages, and not as a forfeiture or as a penalty. Award will then be made to the next lowest qualified Bidder of the Work or readvertised, as the Agency may decide.
- 5.4.7 Each bidder shall supply with its bid its taxpayer identification number (i.e., federal employer identification number or social security number) and a copy of its Delaware business license, and should the vendor be awarded a contract, such vendor shall provide to the agency the taxpayer identification license numbers of such subcontractors. Such numbers shall be provided on the later of the date on which such subcontractor is required to be identified or the time the contract is executed. The successful Bidder shall provide to the agency to which it is contracting, within 30 days of entering into such public works contract, copies of all Delaware Business licenses of subcontractors and/or independent contractors that will perform work for such public works contract. However, if a subcontractor or independent contractor is hired or contracted more than 20 days after the Bidder entered the public works contract the Delaware Business license of such subcontractor or independent contractor shall be provided to the agency within 10 days of being contracted or hired.
- 5.4.8 The Bid Security shall be returned to the successful Bidder upon the execution of the formal contract. The Bid Securities of unsuccessful bidders shall be returned within thirty (30) calendar days after the opening of the Bids.

ARTICLE 6: POST-BID INFORMATION

- 6.1 CONTRACTOR'S QUALIFICATION STATEMENT
- 6.1.1 Bidders to whom award of a Contract is under consideration shall, if requested by the Agency, submit a properly executed AIA Document A305, Contractor's Qualification Statement, unless such a statement has been previously required and submitted.
- 6.2 BUSINESS DESIGNATION FORM
- 6.2.1 Successful bidder shall be required to accurately complete an Office of Management and Budget Business Designation Form for Subcontractors.

ARTICLE 7: PERFORMANCE BOND AND PAYMENT BOND

- 7.1 BOND REQUIREMENTS
- 7.1.1 The cost of furnishing the required Bonds, that are stipulated in the Bidding Documents, shall be included in the Bid.
- 7.1.2 If the Bidder is required by the Agency to secure a bond from other than the Bidder's usual sources, changes in cost will be adjusted as provide in the Contract Documents.
- 7.1.3 The Performance and Payment Bond forms used shall be the standard OMB forms (attached).
- 7.2 TIME OF DELIVERY AND FORM OF BONDS
- 7.2.1 The bonds shall be dated on or after the date of the Contract.
- 7.2.2 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix a certified and current copy of the power of attorney.

ARTICLE 8: FORM OF AGREEMENT BETWEEN AGENCY AND CONTRACTOR

- 8.1 Unless otherwise required in the Bidding Documents, the Agreement for the Work will be written on AIA Document A101, Standard Form of Agreement Between Owner and Contractor Where the Basis of Payment is a Stipulated Sum.

ARTICLE 9: GOOD FAITH EFFORTS IN PROCUREMENT ACTIONS RELATED TO DISADVANTAGED BUSINESS ENTERPRISES

- 9.1 This is to advise bidders of the requirements of this program regarding the "Good Faith Efforts" necessary to be deemed a responsive and responsible bidder. The Federal Register Part 40 CFR 33.301 requires these Good Faith Efforts in procurement actions to assure that Disadvantaged Business Enterprises (DBE) are made aware of procurement opportunities in construction, equipment, services and supplies under EPA financial assistant agreements.
- 9.2 Ensure DBE's are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities by placing qualified DBE's on solicitation lists whenever they are potential sources.
- 9.3 Establish delivery schedules, where the requirement permits to encourage participation by DBE's. The loan recipient should allow a 30-day minimum advertising period for bidding.
- 9.4 Dividing total requirements, when economically feasible, into small tasks or quantities, to permit maximum participation of DBE's.
- 9.5 Encourage contracting with a consortium of DBE's when a contract is too large for one of these firms to handle individually.
- 9.6 Using the services and of the Delaware Department of Transportation (DelDOT), the United States Small Business Administration (SBA), and the Minority Business Development Agency (MDBA) of the U.S. Department of Commerce.
- 9.7 Require the prime contractor, if subcontracts are to be let, to take steps 1-5.
- 9.8 Refer to Section 01 81 0 "DELAWARE WATER POLLUTION CONTROL REVOLVING LOAN FUND PROGRAM REQUIREMENTS" for more details.

END OF INSTRUCTIONS TO BIDDERS

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HOCKESSIN, DELAWARE
NAT-16001HEAVYCONST

seeded area provided by the contractor. Pricing included on this Bid Form for Alternate No. 2 must include all cost associated with supplying and installing FACW Wetland Meadow Mix in accordance with Specification Section 32 92 19 and in Section 01030.

Add: \$ _____ /SY * 52,200 SY = \$ _____
(\$ _____)

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NAT-16001HEAVYCONST

BID FORM

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for thirty (30) days from the date of opening of bids (60 days for School Districts and Department of Education), and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

Should I/We be awarded this contract, I/We pledge to achieve substantial completion of all the work within _____ calendar days of the Notice to Proceed.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

(State of Corporation)

Business Address: _____

Witness: _____ **By:** _____
(SEAL) (Authorized Signature)

(Title)
Date: _____

ATTACHMENTS

- Sub-Contractor List
- Non-Collusion Statement
- Affidavit(s) of Employee Drug Testing Program
- Bid Security
- Implementation of the American Iron and Steel Provisions of P.L. 113-76, Consolidations Appropriations Act, 2014 (Sec. 01 80 0)
- Delaware Water Pollution Control Revolving Loan Fund Program Requirements (Sec. 01 81 0)
- Certification of Non-segregated Facilities (Sec. 01 82 0)

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BID FORM

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor **must be listed for each category** where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the *Owner*, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.** This form must be filled out completely with no additions or deletions. **Note that all subcontractors listed below must have a signed Affidavit of Employee Drug Testing Program included with this bid.**

<u>Subcontractor Category</u>	<u>Subcontractor</u>	<u>Address (City & State)</u>	<u>Subcontractors tax payer ID # or Delaware Business license #</u>
1. Site Work/Demolition	_____	_____	_____
2. Earth Work/Excavation	_____	_____	_____
3. Surveyor	_____	_____	_____
4. Landscaping	_____	_____	_____

BID FORM
NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date DNREC-SIRS.

All the terms and conditions of NAT-16001HEAVYCONST have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

E-MAIL: _____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

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**AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM**

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

NVF YORKLN SITE: OU-1 WETLAND PROJECT
HOCKESSIN, DELAWARE
NAT-16001HEAVYCONST

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____
_____ of _____ in the County of _____
_____ and State of _____ as **Principal**, and _____
_____ of _____ in the County of _____
and State of _____ as **Surety**, legally authorized to do business in the State of Delaware
("State"), are held and firmly unto the **State** in the sum of _____
_____ Dollars (\$_____), or _____ percent not to exceed _____
_____ Dollars (\$_____)
of amount of bid on Contract No. _____, to be paid to the **State** for the use and
benefit of _____ DNREC-SIRS _____ for which payment well and truly to be made, we do bind ourselves,
our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the
whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bonded **Principal**
who has submitted to the _____ DNREC-SIRS _____ a certain proposal to enter into this contract for the
furnishing of certain material and/or services within the **State**, shall be awarded this Contract, and if said
Principal shall well and truly enter into and execute this Contract as may be required by the terms of this
Contract and approved by the _____ DNREC-SIRS _____ this Contract to be entered into within
twenty days after the date of official notice of the award thereof in accordance with the terms of said
proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____ seal and dated this _____ day of _____ in the year of our Lord two
thousand and _____ (2016).

SEALED, AND DELIVERED IN THE
Presence of

Name of Bidder (Organization)

Corporate
Seal

By:

Authorized Signature

Attest _____

Title

Name of Surety

Witness: _____

By:

Title

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STANDARD FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR A101-2007

The contract to be utilized on this project shall be the "Standard Form of Agreement Between Owner and Contractor" AIA Document A101-2007.

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AIA[®] Document A101™ – 2007

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

AGREEMENT made as of the _____ day of _____ in the year _____
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

DNREC - Site Investigation and Restoration Section
391 Lukens Drive
New Castle, Delaware 19720

and the Contractor:
(Name, legal status, address and other information)

TBD
TBD
TBD

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

AIA Document A201™–2007, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

for the following Project:
(Name, location and detailed description)

NVF Yorklyn Site (DE-0071): OU-1 Wetland Project
New Castle County
Hockessin, DE 19707

The Architect:
(Name, legal status, address and other information)

Black & Veatch
200 Bellevue Parkway, Suite 215
Wilmington, Delaware 19809

The Owner and Contractor agree as follows.

TABLE OF ARTICLES

1	THE CONTRACT DOCUMENTS
2	THE WORK OF THIS CONTRACT
3	DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
4	CONTRACT SUM
5	PAYMENTS
6	DISPUTE RESOLUTION
7	TERMINATION OR SUSPENSION
8	MISCELLANEOUS PROVISIONS
9	ENUMERATION OF CONTRACT DOCUMENTS
10	INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.

(Insert the date of commencement if it differs from the date of this Agreement or, if applicable, state that the date will be fixed in a notice to proceed.)

If, prior to the commencement of the Work, the Owner requires time to file mortgages and other security interests, the Owner's time requirement shall be as follows:

§ 3.2 The Contract Time shall be measured from the date of commencement.

§ 3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than (180) days from the date of commencement, or as follows:
(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work.)

Portion of the Work

Substantial Completion Date

, subject to adjustments of this Contract Time as provided in the Contract Documents.
(Insert provisions, if any, for liquidated damages relating to failure to achieve Substantial Completion on time or for bonus payments for early completion of the Work.)

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be

(\$ _____), subject to additions and deductions as provided in the Contract Documents. Dollars

§ 4.2 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

§ 4.3 Unit prices, if any:

(Identify and state the unit price; state quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit (\$0.00)
------	-----------------------	-------------------------

§ 4.4 Allowances included in the Contract Sum, if any:
(Identify allowance and state exclusions, if any, from the allowance price.)

Item

Price (\$0.00)

ARTICLE 5 PAYMENTS

§ 5.1 PROGRESS PAYMENTS

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the _____ day of a month, the Owner shall make payment of the certified amount to the Contractor not later than the _____ day of the (same) (following) month. If an Application for Payment is received by the Architect after the application date fixed above, payment shall be made by the Owner not later than _____ () days after the Architect receives the Application for Payment.
(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

- .1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of _____ percent (5 %). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201™-2007, General Conditions of the Contract for Construction;
- .2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of _____ percent (5 %);
- .3 Subtract the aggregate of previous payments made by the Owner; and
- .4 Subtract amounts, if any, for which the Architect has withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A201-2007.

§ 5.1.7 The progress payment amount determined in accordance with Section 5.1.6 shall be further modified under the following circumstances:

- .1 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the Architect shall determine for incomplete Work, retainage applicable to such work and unsettled claims; and
(Section 9.8.5 of AIA Document A201–2007 requires release of applicable retainage upon Substantial Completion of Work with consent of surety, if any.)
- .2 Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 9.10.3 of AIA Document A201–2007.

§ 5.1.8 Reduction or limitation of retainage, if any, shall be as follows:

(If it is intended, prior to Substantial Completion of the entire Work, to reduce or limit the retainage resulting from the percentages inserted in Sections 5.1.6.1 and 5.1.6.2 above, and this is not explained elsewhere in the Contract Documents, insert here provisions for such reduction or limitation.)

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 FINAL PAYMENT

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 12.2.2 of AIA Document A201–2007, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 INITIAL DECISION MAKER

The Architect will serve as Initial Decision Maker pursuant to Section 15.2 of AIA Document A201–2007, unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker.

(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

§ 6.2 BINDING DISPUTE RESOLUTION

For any Claim subject to, but not resolved by, mediation pursuant to Section 15.3 of AIA Document A201–2007, the method of binding dispute resolution shall be as follows:

(Check the appropriate box. If the Owner and Contractor do not select a method of binding dispute resolution below, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.)

- Arbitration pursuant to Section 15.4 of AIA Document A201–2007
- Litigation in a court of competent jurisdiction
- Other: *(Specify)*

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2007.

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2007.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2007 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located. *(Insert rate of interest agreed upon, if any.)*

§ 8.3 The Owner's representative:
(Name, address and other information)

John Cargill
DNREC-SIRS
391 Lukens Drive
New Castle, DE 19720
Phone No. 302-395-2622

§ 8.4 The Contractor's representative:
(Name, address and other information)

§ 8.5 Neither the Owner's nor the Contractor's representative shall be changed without ten days written notice to the other party.

§ 8.6 Other provisions:

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 9.1.1 The Agreement is this executed AIA Document A101–2007, Standard Form of Agreement Between Owner and Contractor.

§ 9.1.2 The General Conditions are AIA Document A201–2007, General Conditions of the Contract for Construction.

§ 9.1.3 The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
----------	-------	------	-------

§ 9.1.4 The Specifications:

(Either list the Specifications here or refer to an exhibit attached to this Agreement.)

Section	Title	Date	Pages
---------	-------	------	-------

See Table of Contents, Section 00 01 10 of these specifications

§ 9.1.5 The Drawings:

(Either list the Drawings here or refer to an exhibit attached to this Agreement.)

Number	Title	Date
See List of Drawing Sheets, Section 00 01 15 of these specifications		

§ 9.1.6 The Addenda, if any:

Number	Date	Pages
--------	------	-------

Portions of Addenda relating to bidding requirements are not part of the Contract Documents unless the bidding requirements are also enumerated in this Article 9.

§ 9.1.7 Additional documents, if any, forming part of the Contract Documents:

.1 AIA Document E201™-2007, Digital Data Protocol Exhibit, if completed by the parties, or the following:

.2 Other documents, if any, listed below:

(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201-2007 provides that bidding requirements such as advertisement or invitation to bid, Instructions to Bidders, sample forms and the Contractor's bid are not part of the Contract Documents unless enumerated in this Agreement. They should be listed here only if intended to be part of the Contract Documents.)

ARTICLE 10 INSURANCE AND BONDS

The Contractor shall purchase and maintain insurance and provide bonds as set forth in Article 11 of AIA Document A201-2007.

(State bonding requirements, if any, and limits of liability for insurance required in Article 11 of AIA Document A201-2007.)

Type of Insurance or Bond

Limit of Liability or Bond Amount (\$0.00)

This Agreement entered into as of the day and year first written above.

OWNER *(Signature)*

CONTRACTOR *(Signature)*

(Printed name and title)

(Printed name and title)

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SUPPLEMENT TO AGREEMENT BETWEEN OWNER AND CONTRACTOR A101-2007

The following supplements modify the "Standard Form of Agreement Between Owner and Contractor," AIA Document A101-2007. Where a portion of the Standard Form of Agreement is modified or deleted by the following, the unaltered portions of the Standard Form of Agreement shall remain in effect.

ARTICLE 5: PAYMENTS

5.1 PROGRESS PAYMENTS

5.1.3 Delete paragraph 5.1.3 in its entirety and replace with the following:

"Provided that a valid Application for Payment is received by the Architect that meets all requirements of the Contract, payment shall be made by the Owner not later than 30 days after the Owner receives the valid Application for Payment."

ARTICLE 6: DISPUTE RESOLUTION

6.2 BINDING DISPUTE RESOLUTION

Check Other – and add the following sentence:

"Any remedies available in law or in equity."

ARTICLE 8: MISCELLANEOUS PROVISIONS

8.2 Insert the following:

"Payments are due 30 days after receipt of a valid Application for Payment. After that 30 day period, interest may be charged at the rate of 1% per month not to exceed 12% per annum."

8.5 Delete paragraph 8.5 in its entirety and replace with the following:

"The Contractor's representative shall not be changed without ten days written notice to the Owner."

END OF SUPPLEMENT TO AGREEMENT BETWEEN OWNER AND CONTRACTOR

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PERFORMANCE BOND

Bond Number: _____

KNOW ALL PERSONS BY THESE PRESENTS, that we, _____, as principal (“**Principal**”), and _____, a _____ corporation, legally authorized to do business in the State of Delaware, as surety (“**Surety**”), are held and firmly bound unto the _____ DNREC-SIRS (“**Owner**”) in the amount of _____ (\$ _____), to be paid to **Owner**, for which payment well and truly to be made, we do bind ourselves, our and each and every of our heirs, executors, administrations, successors and assigns, jointly and severally, for and in the whole, firmly by these presents.

Sealed with our seals and dated this _____ day of _____, 2016.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH, that if **Principal**, who has been awarded by **Owner** that certain contract known as Contract No. _____ dated the _____ day of _____, 2016 (the “Contract”), which Contract is incorporated herein by reference, shall well and truly provide and furnish all materials, appliances and tools and perform all the work required under and pursuant to the terms and conditions of the Contract and the Contract Documents (as defined in the Contract) or any changes or modifications thereto made as therein provided, shall make good and reimburse **Owner** sufficient funds to pay the costs of completing the Contract that **Owner** may sustain by reason of any failure or default on the part of **Principal**, and shall also indemnify and save harmless **Owner** from all costs, damages and expenses arising out of or by reason of the performance of the Contract and for as long as provided by the Contract; then this obligation shall be void, otherwise to be and remain in full force and effect.

Surety, for value received, hereby stipulates and agrees, if requested to do so by **Owner**, to fully perform and complete the work to be performed under the Contract pursuant to the terms, conditions and covenants thereof, if for any cause **Principal** fails or neglects to so fully perform and complete such work.

Surety, for value received, for itself and its successors and assigns, hereby stipulates and agrees that the obligation of **Surety** and its bond shall be in no way impaired or affected by any extension of time, modification, omission, addition or change in or to the Contract or the work to be performed thereunder, or by any payment thereunder before the time required therein, or by any waiver of any provisions thereof, or by any assignment, subletting or other transfer thereof or of any work to be performed or any monies due or to become due thereunder; and **Surety** hereby waives notice of any and all such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts and transfers and hereby expressly stipulates and agrees that any and all things done and omitted to be done by and in relation to assignees, subcontractors, and other transferees shall have the same effect as to **Surety** as though done or omitted to be done by or in relation to **Principal**.

Surety hereby stipulates and agrees that no modifications, omissions or additions in or to the terms of the Contract shall in any way whatsoever affect the obligation of **Surety** and its bond.

Any proceeding, legal or equitable, under this Bond may be brought in any court of competent jurisdiction in the State of Delaware. Notices to **Surety** or Contractor may be mailed or delivered to them at their respective addresses shown below.

IN WITNESS WHEREOF, **Principal** and **Surety** have hereunto set their hand and seals, and such of them as are corporations have caused their corporate seal to be hereto affixed and these presents to be signed by their duly authorized officers, the day and year first above written.

PRINCIPAL

Name: _____

Witness or Attest: Address: _____

Name:

(Corporate Seal)

By: _____(SEAL)

Name:
Title:

SURETY

Name: _____

Witness or Attest: Address: _____

Name:

(Corporate Seal)

By: _____(SEAL)

Name:
Title:

PAYMENT BOND

Bond Number: _____

KNOW ALL PERSONS BY THESE PRESENTS, that we, _____, as principal (“**Principal**”), and _____, a _____ corporation, legally authorized to do business in the State of Delaware, as surety (“**Surety**”), are held and firmly bound unto the DNREC-SIRS (“**Owner**”), in the amount of _____ (\$ _____), to be paid to **Owner**, for which payment well and truly to be made, we do bind ourselves, our and each and every of our heirs, executors, administrations, successors and assigns, jointly and severally, for and in the whole firmly by these presents.

Sealed with our seals and dated this _____ day of _____, 2016.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH, that if **Principal**, who has been awarded by **Owner** that certain contract known as Contract No. _____ dated the _____ day of _____, 2016 (the “Contract”), which Contract is incorporated herein by reference, shall well and truly pay all and every person furnishing materials or performing labor or service in and about the performance of the work under the Contract, all and every sums of money due him, her, them or any of them, for all such materials, labor and service for which **Principal** is liable, shall make good and reimburse **Owner** sufficient funds to pay such costs in the completion of the Contract as **Owner** may sustain by reason of any failure or default on the part of **Principal**, and shall also indemnify and save harmless **Owner** from all costs, damages and expenses arising out of or by reason of the performance of the Contract and for as long as provided by the Contract; then this obligation shall be void, otherwise to be and remain in full force and effect.

Surety, for value received, for itself and its successors and assigns, hereby stipulates and agrees that the obligation of **Surety** and its bond shall be in no way impaired or affected by any extension of time, modification, omission, addition or change in or to the Contract or the work to be performed thereunder, or by any payment thereunder before the time required therein, or by any waiver of any provisions thereof, or by any assignment, subletting or other transfer thereof or of any work to be performed or any monies due or to become due thereunder; and **Surety** hereby waives notice of any and all such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts and transfers and hereby expressly stipulates and agrees that any and all things done and omitted to be done by and in relation to assignees, subcontractors, and other transferees shall have the same effect as to **Surety** as though done or omitted to be done by or in relation to **Principal**.

Surety hereby stipulates and agrees that no modifications, omission or additions in or to the terms of the Contract shall in any way whatsoever affect the obligation of **Surety** and its bond.

Any proceeding, legal or equitable, under this Bond may be brought in any court of competent jurisdiction in the State of Delaware. Notices to **Surety** or Contractor may be mailed or delivered to them at their respective addresses shown below.

IN WITNESS WHEREOF, **Principal** and **Surety** have hereunto set their hand and seals, and such of them as are corporations have caused their corporate seal to be hereto affixed and these presents to be signed by their duly authorized officers, the day and year first above written.

PRINCIPAL

Name: _____

Witness or Attest: Address: _____

Name:

(Corporate Seal)

By: _____(SEAL)
Name:
Title:

SURETY

Name: _____

Witness or Attest: Address: _____

Name:

(Corporate Seal)

By: _____(SEAL)
Name:
Title:

APPLICATION AND CERTIFICATE FOR PAYMENT FORMS

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AIA® Document G702™ – 1992

Application and Certificate for Payment

TO OWNER:	DNREC - Site Investigation and R 391 Lukens Drive New Castle, Delaware 19720	PROJECT:	NVF Yorklyn Site (DE-0071): OU-1 Wetland Project New Castle County	APPLICATION NO:	001	Distribution to:	<input type="checkbox"/> OWNER <input type="checkbox"/> ARCHITECT <input type="checkbox"/> CONTRACTOR <input type="checkbox"/> FIELD <input type="checkbox"/> OTHER
FROM:	TBD TBD	VIA:	Hockessin, DE 19707	PERIOD TO:		OWNER	<input type="checkbox"/>
CONTRACTOR:	TBD	ARCHITECT:	Black & Veatch 200 Bellevue Parkway, Suite 215 Wilmington, Delaware 19809	CONTRACT FOR:		ARCHITECT	<input type="checkbox"/>
				CONTRACT DATE:		CONTRACTOR	<input type="checkbox"/>
				PROJECT NOS:	/ /	FIELD	<input type="checkbox"/>

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract.
AIA Document G703™, Continuation Sheet, is attached.

1. ORIGINAL CONTRACT SUM \$ _____

2. NET CHANGE BY CHANGE ORDERS \$ _____

3. CONTRACT SUM TO DATE (Line 1 ± 2) \$ _____

4. TOTAL COMPLETED & STORED TO DATE (Column G on G703) \$ _____

5. RETAINAGE:

a. _____ % of Completed Work
(Columns D + E on G703) \$ _____

b. _____ % of Stored Material
(Column F on G703) \$ _____

Total Retainage (Lines 5a + 5b, or Total in Column I of G703) \$ _____

By: _____ Date: _____

State of: _____

County of: _____

Subscribed and sworn to before
me this _____ day of _____

Notary Public: _____

My commission expires: _____

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

6. TOTAL EARNED LESS RETAINAGE \$ _____
(Line 4 minus Line 5 Total)

7. LESS PREVIOUS CERTIFICATES FOR PAYMENT \$ _____
(Line 6 from prior Certificate)

8. CURRENT PAYMENT DUE \$ _____

9. BALANCE TO FINISH, INCLUDING RETAINAGE \$ _____
(Line 3 minus Line 6)

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner	\$ _____	\$ _____
Total approved this month	\$ _____	\$ _____
TOTAL	\$ _____	\$ _____
NET CHANGES by Change Order	\$ _____	\$ _____

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contract or is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED \$ _____

(Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

ARCHITECT:

By: _____ Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

GENERAL CONDITIONS

TO THE

CONTRACT

The General Conditions of this Contract are as stated in the American Institute of Architects Document AIA A201 (2007 Edition) entitled General Conditions of the Contract for Construction and is part of this project manual as if herein written in full.

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AIA Memorandum

Insurance Cancellation Notice Requirements

In September of 2009, the Association for Cooperative Operations Research and Development (ACORD) amended its Form 25 Certificate of Liability Insurance (ACORD Form 25) as it relates an insurer's duty to give notice of cancellation of an insurance policy. The changes, and related rulings by state insurance administrative agencies, make it difficult or impossible for construction industry professionals to satisfy some requirements found in several AIA Contract Documents. Due to these developments, edits may be required to the standard text of the following AIA Contract Documents:

A107-2007	Sections 17.1 and 17.3.2
A141-2004 Exhibit A	Sections A9.10.2, A11.2.3 and A.11.4.6
A142-2004 Exhibit A	Section A9.10.2
A142-2004 Exhibit E	Section E.1.3
A201-2007	Sections 9.10.2, 11.1.3 and 11.3.6
A201-2007 SP	Sections 9.10.2, 11.1.3 and 11.3.6
A232-2009	Sections 9.10.2, 11.1.3 and 11.3.6
A232-2009 SP	Sections 9.10.2, 11.1.3 and 11.3.6
A251-2007	Section 13.1.3
A295-2008	Sections 10.2.2, 11.1.3 and 11.3.6
A401-2007	Section 13.3
A401-2007 SP	Section 13.3
A441-2008	Section 13.3
C101-1993	Section 9.3
C191-2009 Exhibit A	Sections A12.9.2 and A14.1.3
C196-2008	Section 2.4.5
C197-2008	Section 2.7.5
C198-2010	Section 2.9.3
C199-2010 Exhibit A	Sections A.5.26.2.2, A6.1.3 and A6.3.6

For more information, please visit AIA.org and read a memorandum entitled "Changes in the Insurance Industry Impact Notice of Policy Cancellation." This memorandum (1) provides an overview of the ACORD Form 25 changes and related rulings by state agencies, and (2) suggests edits that users might incorporate into standard AIA Contract Documents to respond to these changes and rulings.

To read the memorandum, visit the AIA Contract Documents Reference Material Web site, www.aia.org/contractdocs/reference. At the bottom of the **Reference Material** page, click **Other Reference Material**. On the Other Reference Material page, the memorandum is listed under the subheading "Corrections, Modifications and Important Information."

You may also access the memorandum by typing the following URL into your Web browser:

www.aia.org/groups/aia/documents/pdf/aiab101644.pdf

AIA® Document A201™ – 2007

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

NVF Yorklyn Site (DE-0071): OU-1 Wetland Project
New Castle County
Hockessin, DE 19707

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

THE OWNER:

(Name, legal status and address)

DNREC - Site Investigation and Restoration Section
391 Lukens Srive
New Castle, DE 19720

THE ARCHITECT:

(Name, legal status and address)

Black & Veatch
200 Bellevue Parkway, Suite 215
Wilmington, DE 19809

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Init.

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

§ 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding requirements.

§ 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by separate contractors.

§ 1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

§ 1.1.6 THE SPECIFICATIONS

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 INSTRUMENTS OF SERVICE

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 INITIAL DECISION MAKER

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 CAPITALIZATION

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 INTERPRETATION

In the interest of brevity the Contract Documents frequently omit modifying words such as “all” and “any” and articles such as “the” and “an,” but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 1.5.1 The Architect and the Architect’s consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect’s or Architect’s consultants’ reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect’s consultants.

§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

ARTICLE 2 OWNER

§ 2.1 GENERAL

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner’s approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term “Owner” means the Owner or the Owner’s authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic’s lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner’s interest therein.

§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 2.2.1 Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner’s obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner’s ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.2 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.2.4 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.3 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

ARTICLE 3 CONTRACTOR

§ 3.1 GENERAL

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 LABOR AND MATERIALS

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 WARRANTY

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.6 TAXES

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 CONCEALED OR UNKNOWN CONDITIONS

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 ALLOWANCES

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents:

- .1 Allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 SUPERINTENDENT

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent or (2) that the Architect requires additional time to review. Failure of the Architect to reply within the 14 day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

§ 3.10.2 The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect's approval. The Architect's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is to demonstrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled

to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 3.13 USE OF SITE

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 CUTTING AND PATCHING

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

§ 3.15 CLEANING UP

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 ACCESS TO WORK

The Contractor shall provide the Owner and Architect access to the Work in preparation and progress wherever located.

§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.

§ 3.18 INDEMNIFICATION

§ 3.18.1 To the fullest extent permitted by law the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce

other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 GENERAL

§ 4.1.1 The Owner shall retain an architect lawfully licensed to practice architecture or an entity lawfully practicing architecture in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 4.1.2 Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Architect. Consent shall not be unreasonably withheld.

§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a successor architect as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the

Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals 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 of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 DEFINITIONS

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 SUBCONTRACTUAL RELATIONS

By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

§ 6.2 MUTUAL RESPONSIBILITY

§ 6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a separate contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a separate contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 OWNER'S RIGHT TO CLEAN UP

If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 GENERAL

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Architect; a Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

§ 7.2 CHANGE ORDERS

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 CONSTRUCTION CHANGE DIRECTIVES

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.7.

§ 7.3.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.6 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

- .1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- .2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and
- .5 Additional costs of supervision and field office personnel directly attributable to the change.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 MINOR CHANGES IN THE WORK

The Architect has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.

ARTICLE 8 TIME

§ 8.1 DEFINITIONS

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 PROGRESS AND COMPLETION

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be

furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation and arbitration; or by other causes that the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 CONTRACT SUM

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.2 SCHEDULE OF VALUES

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit to the Architect, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 9.3 APPLICATIONS FOR PAYMENT

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the

Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

§ 9.4 CERTIFICATES FOR PAYMENT

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a separate contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.3 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Architect will reflect such payment on the next Certificate for Payment.

§ 9.6 PROGRESS PAYMENTS

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor no later than seven days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.7 FAILURE OF PAYMENT

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 SUBSTANTIAL COMPLETION

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 FINAL COMPLETION AND FINAL PAYMENT

§ 9.10.1 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, 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 for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents; or
- .3 terms of special warranties required by the Contract Documents.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 SAFETY OF PERSONS AND PROPERTY

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 HAZARDOUS MATERIALS

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

§ 10.4 EMERGENCIES

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 CONTRACTOR'S LIABILITY INSURANCE

§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
- .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 Claims for damages insured by usual personal injury liability coverage;
- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7 Claims for bodily injury or property damage arising out of completed operations; and
- .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 11.2 OWNER'S LIABILITY INSURANCE

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

§ 11.3 PROPERTY INSURANCE

§ 11.3.1 Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's

risk “all-risk” or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

§ 11.3.1.1 Property insurance shall be on an “all-risk” or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect’s and Contractor’s services and expenses required as a result of such insured loss.

§ 11.3.1.2 If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

§ 11.3.1.3 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

§ 11.3.1.4 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

§ 11.3.2 BOILER AND MACHINERY INSURANCE

The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.

§ 11.3.3 LOSS OF USE INSURANCE

The Owner, at the Owner’s option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner’s property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner’s property, including consequential losses due to fire or other hazards however caused.

§ 11.3.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ 11.3.5 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

§ 11.3.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

§ 11.3.7 WAIVERS OF SUBROGATION

The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

§ 11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 UNCOVERING OF WORK

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

§ 12.2 CORRECTION OF WORK

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 ACCEPTANCE OF NONCONFORMING WORK

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 GOVERNING LAW

The Contract shall be governed by the law of the place where the Project is located except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 SUCCESSORS AND ASSIGNS

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

§ 13.3 WRITTEN NOTICE

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

§ 13.4 RIGHTS AND REMEDIES

§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

§ 13.4.2 No action or failure to act by the Owner, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach there under, except as may be specifically agreed in writing.

§ 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's services and expenses shall be at the Contractor's expense.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.5.5 If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.6 INTEREST

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

§ 13.7 TIME LIMITS ON CLAIMS

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the above reasons exist, the Owner, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 CLAIMS

§ 15.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 15.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker.

Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3 CONTINUING CONTRACT PERFORMANCE

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

§ 15.1.4 CLAIMS FOR ADDITIONAL COST

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.5 CLAIMS FOR ADDITIONAL TIME

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

§ 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 INITIAL DECISION

§ 15.2.1 Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 MEDIATION

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.6 shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 ARBITRATION

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 CONSOLIDATION OR JOINDER

§ 15.4.4.1 Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement.

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SUPPLEMENTARY GENERAL CONDITIONS A201-2007

The following supplements modify the "General Conditions of the Contract for Construction," AIA Document A201-2007. Where a portion of the General Conditions is modified or deleted by the Supplementary Conditions, the unaltered portions of the General Conditions shall remain in effect.

TABLE OF ARTICLES

1. GENERAL PROVISIONS
2. OWNER
3. CONTRACTOR
4. ADMINISTRATION OF THE CONTRACT
5. SUBCONTRACTORS
6. CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
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12. UNCOVERING AND CORRECTION OF WORK
13. MISCELLANEOUS PROVISIONS
14. TERMINATION OR SUSPENSION OF THE CONTRACT
15. CLAIMS AND DISPUTES

ARTICLE 1: GENERAL PROVISIONS

1.1 BASIC DEFINITIONS

1.1.1 THE CONTRACT DOCUMENTS

Delete the last sentence in its entirety and replace with the following:

“The Contract Documents also include Advertisement for Bid, Instructions to Bidder, sample forms, the Bid Form, the Contractor’s completed Bid and the Award Letter.”

Add the following Paragraph:

1.1.1.1 In the event of conflict or discrepancies among the Contract Documents, the Documents prepared by the State of Delaware, Division of Facilities Management shall take precedence over all other documents.

1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

Add the following Paragraphs:

1.2.4 In the case of an inconsistency between the Drawings and the Specifications, or within either document not clarified by addendum, the better quality or greater quantity of work shall be provided in accordance with the Architect’s interpretation.

1.2.5 The word “PROVIDE” as used in the Contract Documents shall mean “FURNISH AND INSTALL” and shall include, without limitation, all labor, materials, equipment, transportation, services and other items required to complete the Work.

1.2.6 The word “PRODUCT” as used in the Contract Documents means all materials, systems and equipment.

1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

Delete Paragraph 1.5.1 in its entirety and replace with the following:

“All pre-design studies, drawings, specifications and other documents, including those in electronic form, prepared by the Architect under this Agreement are, and shall remain, the property of the Owner whether the Project for which they are made is executed or not. Such documents may be used by the Owner to construct one or more like Projects without the approval of, or additional compensation to, the Architect. The Contractor, Subcontractors, Sub-subcontractors and Material or Equipment Suppliers are authorized to use and reproduce applicable portions of the Drawings, Specifications and other documents prepared by the Architect and the Architect’s consultants appropriate to and for use in the execution of their Work under the Contract Documents. They are not to be used by the Contractor or any Subcontractor, Sub-subcontractor or Material and Equipment Supplier on other Projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and Architect’s consultants.

The Architect shall not be liable for injury or damage resulting from the re-use of drawings and specifications if the Architect is not involved in the re-use Project. Prior to re-use of construction documents for a Project in which the Architect is not also involved, the Owner will remove from such documents all identification of the original Architect, including name, address and professional seal or stamp.”

Delete Paragraph 1.5.2 in its entirety.

ARTICLE 2: OWNER

2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

To Subparagraph 2.2.3 – Add the following sentence:

“The Contractor, at their expense shall bear the costs to accurately identify the location of all underground utilities in the area of their excavation and shall bear all cost for any repairs required, out of failure to accurately identify said utilities.”

Delete Subparagraph 2.2.5 in its entirety and substitute the following:

2.2.5 The Contractor shall be furnished free of charge up to five (5) sets of the Drawings and Project Manuals. Additional sets will be furnished at the cost of reproduction, postage and handling.

ARTICLE 3: CONTRACTOR

3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

Amend Paragraph 3.2.2 to state that any errors, inconsistencies or omissions discovered shall be reported to the Architect and Owner immediately.

Delete the third sentence in Paragraph 3.2.3.

3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

Add the following Paragraphs:

3.3.2.1 The Contractor shall immediately remove from the Work, whenever requested to do so by the Owner, any person who is considered by the Owner or Architect to be incompetent or disposed to be so disorderly, or who for any reason is not satisfactory to the Owner, and that person shall not again be employed on the Work without the consent of the Owner or the Architect.

3.3.4 The Contractor must provide suitable storage facilities at the Site for the proper protection and safe storage of their materials. Consult the Owner and the Architect before storing any materials.

3.3.5 When any room is used as a shop, storeroom, office, etc., by the Contractor or Subcontractor(s) during the construction of the Work, the Contractor making use of these areas will be held responsible for any repairs, patching or cleaning arising from such use.

3.4 LABOR AND MATERIALS

Add the Following Paragraphs:

3.4.4 Before starting the Work, each Contractor shall carefully examine all preparatory Work that has been executed to receive their Work. Check carefully, by whatever means are required, to insure that its Work and adjacent, related Work, will finish to proper contours, planes and levels. Promptly notify the General Contractor/Construction Manager of any defects or imperfections in preparatory Work which will in any way affect satisfactory completion of its Work. Absence of such notification will be construed as an acceptance of preparatory Work and later claims of defects will not be recognized.

3.4.5 Under no circumstances shall the Contractor's Work proceed prior to preparatory Work having been completely cured, dried and/or otherwise made satisfactory to receive this Work. Responsibility for timely installation of all materials rests solely with the Contractor responsible for that Work, who shall maintain coordination at all times.

3.5 WARRANTY

Add the following Paragraphs:

3.5.1 The Contractor will guarantee all materials and workmanship against original defects, except injury from proper and usual wear when used for the purpose intended, for two years after Acceptance by the Owner, and will maintain all items in perfect condition during the period of guarantee.

3.5.2 Defects appearing during the period of guarantee will be made good by the Contractor at his expense upon demand of the Owner, it being required that all work will be in perfect condition when the period of guarantee will have elapsed.

3.5.3 In addition to the General Guarantee there are other guarantees required for certain items for different periods of time than the two years as above, and are particularly so stated in that part of the specifications referring to same. The said guarantees will commence at the same time as the General Guarantee.

3.5.4 If the Contractor fails to remedy any failure, defect or damage within a reasonable time after receipt of notice, the Owner will have the right to replace, repair, or otherwise remedy the failure, defect or damage at the Contractor's expense.

3.11 DOCUMENTS AND SAMPLES AT THE SITE

Add the following Paragraphs:

3.11.1 During the course of the Work, the Contractor shall maintain a record set of drawings on which the Contractor shall mark the actual physical location of all piping, valves, equipment, conduit, outlets, access panels, controls, actuators, including all appurtenances that will be concealed once construction is complete, etc., including all invert elevations.

3.11.2 At the completion of the project, the Contractor shall obtain a set of reproducible drawings from the Architect, and neatly transfer all information outlined in 3.11.1 to provide a complete record of the as-built conditions.

- 3.11.3 The Contractor shall provide two (2) prints of the as-built conditions, along with the reproducible drawings themselves, to the Owner and one (1) set to the Architect. In addition, attach one complete set to each of the Operating and Maintenance Instructions/Manuals.

- 3.17 In the second sentence of the paragraph, insert "indemnify" between "shall" and "hold".

ARTICLE 4: ADMINISTRATION OF THE CONTRACT

4.2 ADMINISTRATION OF THE CONTRACT

Delete the first sentence of Paragraph 4.2.7 and replace with the following:

The Architect will review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples for the purpose of checking for conformance with the Contract Documents.

Delete the second sentence of Paragraph 4.2.7 and replace with the following:

The Architect's action will be taken with such reasonable promptness as to cause no delay in the Work in the activities of the Owner, Contractor or separate Contractors, while allowing sufficient time in the Owner's professional judgment to permit adequate review.

Add the following Paragraph:

- 4.2.10.1 There will be no full-time project representative provided by the Owner or Architect on this project.

Add to Paragraph 4.2.13 "and in compliance with all local requirements." to the end of the sentence

ARTICLE 5: SUBCONTRACTORS

5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

Delete Paragraph 5.2.3 in its entirety and replace with the following:

- 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection, subject to the statutory requirements of 29 Delaware Code § 6962(d)(10)b.3 and 4.

ARTICLE 6: CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

Delete Paragraph 6.1.4 in its entirety.

6.2 MUTUAL RESPONSIBILITY

- 6.2.3 In the second sentence, strike the word "shall" and insert the word "may".

ARTICLE 7: CHANGES IN THE WORK

(SEE ARTICLE 7: CHANGES IN WORK IN THE GENERAL REQUIREMENTS)

ARTICLE 8: TIME**8.2 PROGRESS AND COMPLETION**

Add the following Paragraphs:

8.2.1.1 Refer to Specification Section SUMMARY OF WORK for Contract time requirements.

8.2.4 If the Work falls behind the Progress Schedule as submitted by the Contractor, the Contractor shall employ additional labor and/or equipment necessary to bring the Work into compliance with the Progress Schedule at no additional cost to the Owner.

8.3 DELAYS AND EXTENSION OF TIME

8.3.1 Strike "arbitration" and insert "remedies at law or in equity".

Add the following Paragraph:

8.3.2.1 The Contractor shall update the status of the suspension, delay, or interruption of the Work with each Application for Payment. (The Contractor shall report the termination of such cause immediately upon the termination thereof.) Failure to comply with this procedure shall constitute a waiver for any claim for adjustment of time or price based upon said cause.

Delete Paragraph 8.3.3 in its entirety and replace with the following:

8.3.3 Except in the case of a suspension of the Work directed by the Owner, an extension of time under the provisions of Paragraph 8.3.1 shall be the Contractor's sole remedy in the progress of the Work and there shall be no payment or compensation to the Contractor for any expense or damage resulting from the delay.

Add the following Paragraph:

8.3.4 By permitting the Contractor to work after the expired time for completion of the project, the Owner does not waive their rights under the Contract.

ARTICLE 9: PAYMENTS AND COMPLETION**9.2 SCHEDULE OF VALUES**

Add the following Paragraphs:

9.2.1 The Schedule of Values shall be submitted using AIA Document G702, Continuation Sheet to G703.

9.2.2 The Schedule of Values is to include a line item for Project Closeout Document Submittal. The value of this item is to be no less than 1% of the initial contract amount.

9.3 APPLICATIONS FOR PAYMENT

Add the following Paragraph:

- 9.3.1.3 Application for Payment shall be submitted on AIA Document G702 "Application and Certificate for Payment", supported by AIA Document G703 "Continuation Sheet". Said Applications shall be fully executed and notarized.

Add the following Paragraphs:

- 9.3.4 Until Closeout Documents have been received and outstanding items completed the Owner will pay 95% (ninety-five percent) of the amount due the Contractor on account of progress payments.
- 9.3.5 The Contractor shall provide a current and updated Progress Schedule to the Architect with each Application for Payment. Failure to provide Schedule will be just cause for rejection of Application for Payment.

9.5 DECISIONS TO WITHHOLD CERTIFICATION

Add the following to 9.5.1:

- .8 failure to provide a current Progress Schedule;
- .9 a lien or attachment is filed;
- .10 failure to comply with mandatory requirements for maintaining Record Documents.

9.6 PROGRESS PAYMENTS

Delete Paragraph 9.6.1 in its entirety and replace with the following:

- 9.6.1 After the Architect has approved and issued a Certificate for Payment, payment shall be made by the Owner within 30 days after Owner's receipt of the Certificate for Payment.

9.7 FAILURE OF PAYMENT

In first sentence, strike "seven" and insert "thirty (30)". Also strike "binding dispute resolution" and insert "remedies at law or in equity".

9.8 SUBSTANTIAL COMPLETION

To Subparagraph 9.8.3 - Add the following sentence:

"If the Architect is required to make more than 2 inspections of the same portion of work, the Contractor shall be responsible for all costs associated with subsequent inspections including but not limited to any Architect's fees."

- 9.8.5 In the second sentence, strike "shall" and insert "may".

ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY

10.1 SAFETY PRECAUTIONS AND PROGRAMS

Add the following Paragraphs:

10.1.1.1.1 Each Contractor shall develop a safety program in accordance with the Occupational Safety and Health Act of 1970. A copy of said plan shall be furnished to the Owner and Architect prior to the commencement of that Contractor's Work.

10.1.2 Each Contractor shall appoint a Safety Representative. Safety Representatives shall be someone who is on site on a full time basis. If deemed necessary by the Owner or Architect, Contractor Safety meetings will be scheduled. The attendance of all Safety Representatives will be required. Minutes will be recorded of said meetings by the Contractor and will be distributed to all parties as well as posted in all job offices/trailers etc.

10.2 SAFETY OF PERSONS AND PROPERTY

Add the following Paragraph:

10.2.4.1 As required in the Hazardous Chemical Act of June 1984, all vendors supplying any material that may be defined as hazardous must provide Material Safety Data Sheets for those products. Any chemical product should be considered hazardous if it has a caution warning on the label relating to a potential physical or health hazard, if it is known to be present in the work place, and if employees may be exposed under normal conditions or in foreseeable emergency situations. Material Safety Data Sheets shall be provided directly to the Owner, along with the shipping slips that include those products.

10.3 HAZARDOUS MATERIALS

Delete Paragraph 10.3.3 in its entirety.

Delete Paragraph 10.3.6 in its entirety.

ARTICLE 11: INSURANCE AND BONDS

11.1 CONTRACTOR'S LIABILITY INSURANCE

11.1.4 Strike "the Owner" immediately following "(1)" and strike "and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations."

11.2 OWNER'S LIABILITY INSURANCE

Delete Paragraph 11.2 in its entirety.

11.3 PROPERTY INSURANCE

Delete Paragraph 11.3 in its entirety and replace with the following:

11.3 The State will not provide Builder's All Risk Insurance for the Project. The Contractor and all Subcontractors shall provide property coverage for their tools and equipment, as necessary. Any mandatory deductible required by the Contractor's Insurance shall be the responsibility of the Contractor.

11.4 PERFORMANCE BOND AND PAYMENT BOND

- 11.4.1 Add the following sentence: "The bonds will conform to those forms approved by the Office of Management and Budget."

ARTICLE 12: UNCOVERING AND CORRECTION OF WORK**12.2.2 AFTER SUBSTANTIAL COMPLETION**

Add the following Paragraph:

- 12.2.2.1.1 At any time during the progress of the Work, or in any case where the nature of the defects will be such that it is not expedient to have corrected, the Owner, at its option, will have the right to deduct such sum, or sums, of money from the amount of the Contract as it considers justified to adjust the difference in value between the defective work and that required under contract including any damage to the structure.
- 12.2.2.1 Strike "one" and insert "two".
- 12.2.2.2 Strike "one" and insert "two".
- 12.2.2.3 Strike "one" and insert "two".
- 12.2.5 In second sentence, strike "one" and insert "two".

ARTICLE 13: MISCELLANEOUS PROVISIONS**13.1 GOVERNING LAW**

Strike "except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4."

13.6 INTEREST

Strike "the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located." Insert "30 days of presentment of the authorized Certificate of Payment at the annual rate of 12% or 1% per month.

13.7 TIME LIMITS ON CLAIMS

Strike the last sentence.

Add the following Paragraph:

13.8 CONFLICTS WITH FEDERAL STATUTES OR REGULATIONS

- 13.8.1 If any provision, specifications or requirement of the Contract Documents conflict or is inconsistent with any statute, law or regulation of the government of the United State of America, the Contractor shall notify the Architect and Owner immediately upon discovery.

ARTICLE 14: TERMINATION OR SUSPENSION OF THE CONTRACT

14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

Delete Paragraph 14.4.3 in its entirety and replace with the following:

- 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and cost incurred by reason of such termination along with reasonable overhead.

ARTICLE 15: CLAIMS AND DISPUTES

- 15.1.2 Throughout the Paragraph strike "21" and insert "45".

15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

Delete Paragraph 15.1.6 in its entirety.

15.2 INITIAL DECISION

Delete Paragraph 15.2.5 in its entirety and replace with the following:

- 15.2.5 The Architect will approve or reject Claims by written decision, which shall state the reasons therefore and shall notify the parties of any change in the Contract Sum or Contract Time or both. The approval or rejection of a Claim by the Architect shall be subject to mediation and other remedies at law or in equity.

Delete Paragraph 15.2.6 and its subparagraphs in their entirety.

15.3 MEDIATION

- 15.3.1 Strike "binding dispute resolution" and insert "any or all remedies at law or in equity".

- 15.3.2 In the first sentence, delete "administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedure in effect on the date of the Agreement," Strike "binding dispute resolution" and insert "remedies at law and in equity".

15.4 ARBITRATION

Delete Paragraph 15.4 and its sub-sections in its entirety.

END OF SUPPLEMENTARY GENERAL CONDITIONS

WAGE RATE REQUIREMENTS

Approved by the Delaware Department of Labor – HEAVY CONSTRUCTION approved 03/28/16

AND

Davis Bacon, Heavy, General Decision Number: DE160017, 05/06/2016, DE17



STATE OF DELAWARE
DEPARTMENT OF LABOR
DIVISION OF INDUSTRIAL AFFAIRS
225 Corporate Boulevard, Suite 104
Newark, Delaware 19702

RECEIVED
MAR 30 2016
DNREC - SIRS

TELEPHONE (302) 761-8200
(302) 451-3423
Fax (302) 368-6604

Via Facsimile and Regular Mail

March 28, 2016

Mr. John Cargill
DNREC - SIRS
391 Lukens Drive
New Castle, DE 19720

Re: Contract # NAT-16-001HEAVYCONST, NVF Yorklyn OU-1 Wetland Project, New Castle County, DE

Dear Mr. Cargill:

I am responding to your request for a category determination for Contact # NAT-16-001HEAVYCONST, NVF Yorklyn OU-1 Wetland Project, which is a state funded construction project located in New Castle County, DE. The work consists of the building slab & contaminated soil will be excavated and removed off site. A 2 acre wetland will be constructed in the excavated area to provide flood storage. The remainder of the site will have 18" of soil removed and replace a clean 18" soil cap. The existing on site tributary will be realigned and stabilized. You estimate the total cost of construction for this project to be \$5,275,000.00.

Based upon the information you provided the Department of Labor has determined that this project is a Heavy Construction project.

Delaware's Prevailing Wage Regulations provide that the rates applicable to a project are the rates in effect on the date of publication of the specifications for that project. I have enclosed a certified copy of the March 15, 2016, prevailing wage rates for Heavy Construction to be included in your bid specification. However, please be advised that, in the event that a contract for a project is not executed within one hundred and twenty (120) days from the earliest date the specifications were published, the rates in effect at the time of the execution of the contract shall be the applicable rates for the project.

If you have any questions or I can provide any additional assistance, please do not hesitate to contact me at (302) 451-3406.

Sincerely,

David Burns
Labor Law Enforcement Officer
David.Burns@state.de.us

Enclosure

STATE OF DELAWARE
DEPARTMENT OF LABOR
DIVISION OF INDUSTRIAL AFFAIRS
OFFICE OF LABOR LAW ENFORCEMENT
PHONE: (302) 451-3423

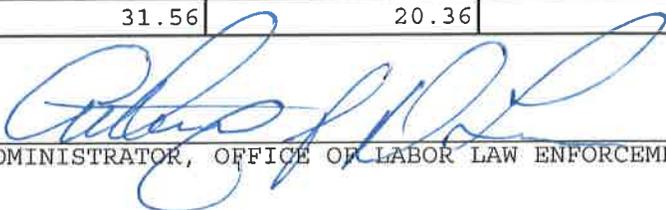
Mailing Address:
225 CORPORATE BOULEVARD
SUITE 104
NEWARK, DE 19702

Located at:
225 CORPORATE BOULEVARD
SUITE 104
NEWARK, DE 19702

PREVAILING WAGES FOR HEAVY CONSTRUCTION EFFECTIVE MARCH 15, 2016

CLASSIFICATION	NEW CASTLE	KENT	SUSSEX
ASBESTOS WORKERS	21.82	19.20	41.74
BOILERMAKERS	75.62	31.72	58.19
BRICKLAYERS	46.43	22.91	24.60
CARPENTERS	52.81	52.81	41.97
CEMENT FINISHERS	43.05	24.05	17.91
ELECTRICAL LINE WORKERS	72.73	27.89	63.84
ELECTRICIANS	65.10	65.10	65.10
GLAZIERS	20.17	17.51	11.85
INSULATORS	54.38	54.38	54.38
IRON WORKERS	60.19	60.19	57.58
LABORERS	43.60	43.60	43.60
MILLWRIGHTS	66.83	66.83	53.40
PAINTERS	75.26	75.26	75.26
PILEDRIVERS	72.97	38.86	30.25
PLASTERERS	18.99	16.49	11.15
PLUMBERS/PIPEFITTERS/STEAMFITTERS	82.03	76.87	17.67
POWER EQUIPMENT OPERATORS	61.36	61.36	61.36
SHEET METAL WORKERS	30.35	18.82	17.68
SPRINKLER FITTERS	32.70	12.38	10.25
TRUCK DRIVERS	31.56	20.36	21.99

CERTIFIED: 3/28/16

BY: 

ADMINISTRATOR, OFFICE OF LABOR LAW ENFORCEMENT

NOTE: THESE RATES ARE PROMULGATED AND ENFORCED PURSUANT TO THE PREVAILING WAGE REGULATIONS ADOPTED BY THE DEPARTMENT OF LABOR ON APRIL 3, 1992.

CLASSIFICATIONS OF WORKERS ARE DETERMINED BY THE DEPARTMENT OF LABOR. FOR ASSISTANCE IN CLASSIFYING WORKERS, OR FOR A COPY OF THE REGULATIONS OR CLASSIFICATIONS, PHONE (302) 451-3423.

NON-REGISTERED APPRENTICES MUST BE PAID THE MECHANIC'S RATE.

PROJECT: NAT-16-001HEAVYCONST NVF Yorklyn OU-1 Wetland Project , New Castle County

**Davis-Bacon and Related Acts (DBRA) Provisions and Procedures for EPA
Funded Projects Executed Between October 30, 2009 and September 30, 2010
or required under Continuing Resolution**

A Supplement to the CWSRF Program Requirements

January 28, 2010
Updated April 5, 2011

I. Introduction

The Davis Bacon Act requires that all contractors and subcontractors performing construction, alteration and repair work under federal contracts in excess of \$2,000 pay their laborers and mechanics not less than the prevailing wage and fringe benefits. Projects executed between October 30, 2009 and September 30, 2010 (or projects subject to Davis-Bacon under Continuing Resolution) are subject to the Davis-Bacon provisions through completion of construction and must comply with the following:

- A. This contract clause pertains to minimum wages for any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a public building or public work, or building or work financed in whole, or in part, from federal funds or in accordance with guarantees of a federal agency or financed from funds obtained by pledge of any contract of a federal agency to make a loan, grant or annual contribution.
 1. **Minimum wages.** All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account, the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor at the following web site www.wdol.gov/dba.aspx, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. A "wage determination" is the listing of wage and fringe benefit for each classification of laborers and mechanics which the Administrator of the Wage and Hour Division of the U.S. Department of Labor has determined to be prevailing in a given area for a particular type of construction (e.g., building, heavy, highway, or residential). The wage determination (including any additional classification and wage rates) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. The poster may be downloaded from: <http://www.dol.gov/esa/whd/regs/compliance/posters/fedprojc.pdf>
 2. **Withholding.** In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the regulations, the loan or grant recipient may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.
 3. **Payrolls and basic records.** Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of **three years** thereafter for all laborers and mechanics working at the site

of the work. The contractor shall submit weekly for each week in which any contract work is performed, a copy of all payrolls to the recipient, sponsor, or owner. The required weekly payroll information may be submitted in any form desired. A contractor may use Form WH-347 which is available from the Wage and Hour Division web site at: <http://www.dol.gov/esa/whd/forms/wh347.pdf>.

4. **Subcontracts.** The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with the requirements above, the requirements identified in the Davis Bacon Terms and Conditions of the EPA assistance agreement, and the contract clauses in 29 CFR 5.5, which can be found at <http://ecfr.gpoaccess.gov/>
- B. **Contract Work Hours and Safety Standards Act.** In any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act, the following clauses shall apply:
1. **Overtime requirements.** No contractor or subcontractor for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. The overtime rate of time and one half does not apply to fringe payments. For work in excess of forty hours, fringe payments should continue to be paid on a per hour worked basis.
 2. **Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in paragraph (B) (1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States government, for liquidated damages.
 3. **Withholding for unpaid wages and liquidated damages.** The recipient shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (B) (2) of this section.
 4. **Subcontracts.** The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (B) (1) through (4) of this section.
- C) In any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the contractor or subcontractor shall

maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of **three years**.

II. Davis Bacon Compliance Procedures

A. **Before Contract Award** - Once it is determined that Davis Bacon wage rates will apply to a construction contract, the recipient's contracting organization must state in the solicitation that Davis Bacon Prevailing wage rates are applicable, and bid packages must include the current Davis Bacon general wage determination for the area where construction will occur. To select the prevailing wage rate determination for a specific locality:

- (i) Go to website <http://www.wdol.gov/>
- (ii) Select "DBA WDs"
- (iii) Input the State and County where the construction site is located.
- (iv) Input the type of construction for the project as Building, Heavy, Highway or Residential.

B. **Before Bid Opening**- The wage determination website should be continually monitored by the contracting organization for modifications. Generally, the most current published wage determination at the time of contract award must be incorporated into the contract. A wage determination update issued less than 10 days before bid opening shall be in effect unless there is not a reasonable time to notify all prospective bidders. In these cases the relevant facts should be documented in the contract file

A convenient way to monitor potential wage determination modifications is to sign up for the alert service as shown on the website <http://www.wdol.gov/>

C. **After Contract Award** - After solicitation, bid opening and contractor selection by the recipient contracting organization, the prevailing wage determination shall be included in the final construction contract between the recipient, sub recipient or borrower and its contractor.

In the event the construction contract is not awarded within 90 days of the bid opening date, any modification to the prevailing wage determination published prior to award of the contract shall be effective and should be included in the award documents, or by modification to the contract documents.

III. Applicability of the Davis-Bacon and Related Acts to EPA programs

EPA capitalization grants to states, which provides loans to municipalities and other eligible entities for eligible projects, including wastewater water infrastructure projects, estuary projects, and non-point source projects.

General Decision Number: DE160017 05/06/2016 DE17

State: Delaware

Construction Type: Heavy

County: New Castle County in Delaware.

HEAVY CONSTRUCTION PROJECTS

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.15 for calendar year 2016 applies to all contracts subject to the Davis-Bacon Act for which the solicitation was issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.15 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2016. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	05/06/2016

CARP0626-007 05/01/2015

	Rates	Fringes
CARPENTER (Includes Form Work)...	\$ 30.87	21.69

ELEC0126-003 09/28/2015

	Rates	Fringes
LINE CONSTRUCTION (Lineman).....	\$ 43.38	26.25%+10.00

ENGI0542-009 05/01/2016

	Rates	Fringes
POWER EQUIPMENT OPERATOR (Crane, Forklift, and Scraper)...	\$ 38.30	24.66+A

FOOTNOTE: A. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, and Election Day (provided the employee works the

scheduled work day following the holiday.)

LABO0199-008 05/01/2016

	Rates	Fringes
LABORER		
Backfiller, Common or General, Pipelayer, and Tamper (Hand Held).....	\$ 24.80	19.30
Trencher Hand Guided.....	\$ 24.55	19.30

SUDE2014-008 01/20/2016

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 25.78	0.58
ELECTRICIAN.....	\$ 34.42	24.02
OPERATOR:		
Backhoe/Excavator/Trackhoe.....	\$ 34.29	16.18
OPERATOR: Bulldozer.....	\$ 27.09	18.20
OPERATOR: Loader.....	\$ 31.88	12.57
TRUCK DRIVER: Dump Truck.....	\$ 22.60	7.56

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

=====

Unlisted classifications needed for work not included within
the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses
(29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification
and wage rates that have been found to be prevailing for the
cited type(s) of construction in the area covered by the wage
determination. The classifications are listed in alphabetical

order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the

classifications was union data. EXAMPLE: UAVG-OH-0010
08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

GENERAL REQUIREMENTS

TABLE OF ARTICLES

1. GENERAL PROVISIONS
2. OWNER
3. CONTRACTOR
4. ADMINISTRATION OF THE CONTRACT
5. SUBCONTRACTORS
6. CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
7. CHANGES IN THE WORK
8. TIME
9. PAYMENTS AND COMPLETION
10. PROTECTION OF PERSONS AND PROPERTY
11. INSURANCE AND BONDS
12. UNCOVERING AND CORRECTION OF WORK
13. MISCELLANEOUS PROVISIONS
14. TERMINATION OR SUSPENSION OF THE CONTRACT

ARTICLE 1: GENERAL**1.1 CONTRACT DOCUMENTS**

1.1.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary and what is required by one shall be as binding as if required by all. Performance by the Contractor shall be required to an extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the intended results.

1.1.2 Work including material purchases shall not begin until the Contractor is in receipt of a bonafide State of Delaware Purchase Order. Any work performed or material purchases prior to the issuance of the Purchase Order is done at the Contractor's own risk and cost.

1.2 EQUALITY OF EMPLOYMENT OPPORTUNITY ON PUBLIC WORKS

1.2.1 For Public Works Projects financed in whole or in part by state appropriation the Contractor agrees that during the performance of this contract:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, creed, sex, color, sexual orientation, gender identity or national origin. The Contractor will take positive steps to ensure that applicants are employed and that employees are treated during employment without regard to their race, creed, sex, color, sexual orientation, gender identity or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places available to employees and applicants for employment notices to be provided by the contracting agency setting forth this nondiscrimination clause.
2. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, sex, color, sexual orientation, gender identity or national origin."

ARTICLE 2: OWNER

(NO ADDITIONAL GENERAL REQUIREMENTS – SEE SUPPLEMENTARY GENERAL CONDITIONS)

ARTICLE 3: CONTRACTOR

3.1 Schedule of Values: The successful Bidder shall within twenty (20) days after receiving notice to proceed with the work, furnish to the Owner a complete schedule of values on the various items comprising the work.

3.2 Subcontracts: Upon approval of Subcontractors, the Contractor shall award their Subcontracts as soon as possible after the signing of their own contract and see that all material, their own and those of their Subcontractors, are promptly ordered so that the work will not be delayed by failure of materials to arrive on time.

3.3 Before commencing any work or construction, the General Contractor is to consult with the Owner as to matters in connection with access to the site and the allocation of Ground Areas for the various features of hauling, storage, etc.

- 3.4 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions.
- 3.5 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Contract. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.
- 3.6 The Contractor warrants to the Owner that materials and equipment furnished will be new and of good quality, unless otherwise permitted, and that the work will be free from defects and in conformance with the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved, may be considered defective. If required by the Owner, the Contractor shall furnish evidence as to the kind and quality of materials and equipment provided.
- 3.7 Unless otherwise provided, the Contractor shall pay all sales, consumer, use and other similar taxes, and shall secure and pay for required permits, fees, licenses, and inspections necessary for proper execution of the Work.
- 3.8 The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations, and lawful orders of public authorities bearing on performance of the Work. The Contractor shall promptly notify the Owner if the Drawings and Specifications are observed to be at variance therewith.
- 3.9 The Contractor shall be responsible to the Owner for the acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons performing portions of the Work under contract with the Contractor.
- 3.10 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work the Contractor shall remove from and about the Project all waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials. The Contractor shall be responsible for returning all damaged areas to their original conditions.
- 3.11 STATE LICENSE AND TAX REQUIREMENTS
- 3.11.1 Each Contractor and Subcontractor shall be licensed to do business in the State of Delaware and shall pay all fees and taxes due under State laws. In conformance with Section 2503, Chapter 25, Title 30, Delaware Code, "the Contractor shall furnish the Delaware Department of Finance within ten (10) days after entering into any contract with a contractor or subcontractor not a resident of this State, a statement of total value of such contract or contracts together with the names and addresses of the contracting parties."
- 3.12 The Contractor shall comply with all requirements set forth in Section 6962, Chapter 69, Title 29 of the Delaware Code.

- 3.13 During the contract Work, the Contractor and each listed Subcontractor, shall implement an Employee Drug Testing Program in accordance with OMB Regulation 4104-“Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on “Large Public Works Projects”. “Large Public Works” is based upon the current threshold required for bidding Public Works as set by the Purchasing and Contracting Advisory Council.

ARTICLE 4: ADMINISTRATION OF THE CONTRACT

4.1 CONTRACT SURETY

4.1.1 PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND

- 4.1.2 All bonds will be required as follows unless specifically waived elsewhere in the Bidding Documents.

- 4.1.3 Contents of Performance Bonds – The bond shall be in the form approved by the Office of Management and Budget. The bond shall be conditioned upon the faithful compliance and performance by the successful bidder of each and every term and condition of the contract and the proposal, plans, specifications, and bid documents thereof. Each term and condition shall be met at the time and in the manner prescribed by the Contract, Bid documents and the specifications, including the payment in full to every person furnishing material or performing labor in the performance of the Contract, of all sums of money due the person for such labor and material. (The bond shall also contain the successful bidder’s guarantee to indemnify and save harmless the State and the agency from all costs, damages and expenses growing out of or by reason of the Contract in accordance with the Contract.)

- 4.1.4 Invoking a Performance Bond – The agency may, when it considers that the interest of the State so require, cause judgement to be confessed upon the bond.

- 4.1.5 Within twenty (20) days after the date of notice of award of contract, the Bidder to whom the award is made shall furnish a Performance Bond and Labor and Material Payment Bond, each equal to the full amount of the Contract price to guarantee the faithful performance of all terms, covenants and conditions of the same. The bonds are to be issued by an acceptable Bonding Company licensed to do business in the State of Delaware and shall be issued in duplicate.

- 4.1.6 Performance and Payment Bonds shall be maintained in full force (warranty bond) for a period of two (2) years after the date of the Certificate for Final Payment. The Performance Bond shall guarantee the satisfactory completion of the Project and that the Contractor will make good any faults or defects in his work which may develop during the period of said guarantees as a result of improper or defective workmanship, material or apparatus, whether furnished by themselves or their Sub-Contractors. The Payment Bond shall guarantee that the Contractor shall pay in full all persons, firms or corporations who furnish labor or material or both labor and material for, or on account of, the work included herein. The bonds shall be paid for by this Contractor. The Owner shall have the right to demand that the proof parties signing the bonds are duly authorized to do so.

4.2 FAILURE TO COMPLY WITH CONTRACT

4.2.1 If any firm entering into a contract with the State, or Agency that neglects or refuses to perform or fails to comply with the terms thereof, the Agency which signed the Contract may terminate the Contract and proceed to award a new contract in accordance with this Chapter 69, Title 29 of the Delaware Code or may require the Surety on the Performance Bond to complete the Contract in accordance with the terms of the Performance Bond. Nothing herein shall preclude the Agency from pursuing additional remedies as otherwise provided by law.

4.3 CONTRACT INSURANCE AND CONTRACT LIABILITY

4.3.1 In addition to the bond requirements stated in the Bid Documents, each successful Bidder shall purchase adequate insurance for the performance of the Contract and, by submission of a Bid, agrees to indemnify and save harmless and to defend all legal or equitable actions brought against the State, any Agency, officer and/or employee of the State, for and from all claims of liability which is or may be the result of the successful Bidder's actions during the performance of the Contract.

4.3.2 The purchase or nonpurchase of such insurance or the involvement of the successful Bidder in any legal or equitable defense of any action brought against the successful Bidder based upon work performed pursuant to the Contract will not waive any defense which the State, its agencies and their respective officers, employees and agents might otherwise have against such claims, specifically including the defense of sovereign immunity, where applicable, and by the terms of this section, the State and all agencies, officers and employees thereof shall not be financially responsible for the consequences of work performed, pursuant to said contract.

4.4 RIGHT TO AUDIT RECORDS

4.4.1 The Owner shall have the right to audit the books and records of a Contractor or any Subcontractor under any Contract or Subcontract to the extent that the books and records relate to the performance of the Contract or Subcontract.

4.4.2 Said books and records shall be maintained by the Contractor for a period of seven (7) years from the date of final payment under the Prime Contract and by the Subcontractor for a period of seven (7) years from the date of final payment under the Subcontract.

ARTICLE 5: SUBCONTRACTORS

5.1 SUBCONTRACTING REQUIREMENTS

5.1.1 All contracts for the construction, reconstruction, alteration or repair of any public building (not a road, street or highway) shall be subject to the following provisions:

1. A contract shall be awarded only to a Bidder whose Bid is accompanied by a statement containing, for each Subcontractor category, the name and address (city or town and State only – street number and P.O. Box addresses not required) of the subcontractor whose services the Bidder intends to use in performing the Work and providing the material for such Subcontractor category.

2. A Bid will not be accepted nor will an award of any Contract be made to any Bidder which, as the Prime Contractor, has listed itself as the Subcontractor for any Subcontractor unless:
 - A. It has been established to the satisfaction of the awarding Agency that the Bidder has customarily performed the specialty work of such Subcontractor category by artisans regularly employed by the Bidder's firm;
 - B. That the Bidder is duly licensed by the State to engage in such specialty work, if the State requires licenses; and
 - C. That the Bidder is recognized in the industry as a bona fide Subcontractor or Contractor in such specialty work and Subcontractor category.
- 5.1.2 The decision of the awarding Agency as to whether a Bidder who list itself as the Subcontractor for a Subcontractor category shall be final and binding upon all Bidders, and no action of any nature shall lie against any awarding agency or its employees or officers because of its decision in this regard.
- 5.1.3 After such a Contract has been awarded, the successful Bidder shall not substitute another Subcontractor for any Subcontractor whose name was set forth in the statement which accompanied the Bid without the written consent of the awarding Agency.
- 5.1.4 No Agency shall consent to any substitution of Subcontractors unless the Agency is satisfied that the Subcontractor whose name is on the Bidders accompanying statement:
 - A. Is unqualified to perform the work required;
 - B. Has failed to execute a timely reasonable Subcontract;
 - C. Has defaulted in the performance on the portion of the work covered by the Subcontract; or
 - D. Is no longer engaged in such business.
- 5.1.5 Should a Bidder be awarded a contract, such successful Bidder shall provide to the agency the taxpayer identification license numbers of such subcontractors. Such numbers shall be provided on the later of the date on which such subcontractor is required to be identified or the time the contract is executed. The successful Bidder shall provide to the agency to which it is contracting, within 30 days of entering into such public works contract, copies of all Delaware Business licenses of subcontractors and/or independent contractors that will perform work for such public works contract. However, if a subcontractor or independent contractor is hired or contracted more than 20 days after the Bidder entered the public works contract the Delaware Business license of such subcontractor or independent contractor shall be provided to the agency within 10 days of being contracted or hired.

5.2 PENALTY FOR SUBSTITUTION OF SUBCONTRACTORS

- 5.2.1 Should the Contractor fail to utilize any or all of the Subcontractors in the Contractor's Bid statement in the performance of the Work on the public bidding, the Contractor shall be penalized in the amount of (project specific amount*). The Agency may determine to deduct payments of the penalty from the Contractor or have the amount paid directly to the Agency. Any penalty amount assessed against the Contractor may be remitted or refunded, in whole or in part, by the Agency awarding the Contract, only if it is established to the satisfaction of the Agency that the Subcontractor in question has defaulted or is no longer engaged in such business. No claim for the remission or refund of any penalty shall be granted unless an application is filed within one year after the liability of the successful Bidder accrues. All penalty amounts assessed and not refunded or remitted to the contractor shall be reverted to the State.

*one (1) percent of contract amount not to exceed \$10,000

5.3 ASBESTOS ABATEMENT

- 5.3.1 The selection of any Contractor to perform asbestos abatement for State-funded projects shall be approved by the Office of Management and Budget, Division of Facilities Management pursuant to Chapter 78 of Title 16.

5.4 STANDARDS OF CONSTRUCTION FOR THE PROTECTION OF THE PHYSICALLY HANDICAPPED

- 5.4.1 All Contracts shall conform with the standard established by the Delaware Architectural Accessibility Board unless otherwise exempted by the Board.

5.5 CONTRACT PERFORMANCE

- 5.5.1 Any firm entering into a Public Works Contract that neglects or refuses to perform or fails to comply with its terms, the Agency may terminate the Contract and proceed to award a new Contract or may require the Surety on the Performance Bond to complete the Contract in accordance with the terms of the Performance Bond.

ARTICLE 6: CONSTRUCTION BY OWNER OR SEPARATE CONTRACTORS

- 6.1 The Owner reserves the right to simultaneously perform other construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other Projects at the same site.
- 6.2 The Contractor shall afford the Owner and other Contractors reasonable opportunity for access and storage of materials and equipment, and for the performance of their activities, and shall connect and coordinate their activities with other forces as required by the Contract Documents.

ARTICLE 7: CHANGES IN THE WORK

- 7.1 The Owner, without invalidating the Contract, may order changes in the Work consisting of Additions, Deletions, Modifications or Substitutions, with the Contract Sum and Contract completion date being adjusted accordingly. Such changes in the Work shall be authorized by written Change Order signed by the Professional, as the duly authorized agent, the Contractor and the Owner.

- 7.2 The Contract Sum and Contract Completion Date shall be adjusted only by a fully executed Change Order.
- 7.3 The additional cost, or credit to the Owner resulting from a change in the Work shall be by mutual agreement of the Owner, Contractor and the Architect. In all cases, this cost or credit shall be based on the 'DPE' wages required and the "invoice price" of the materials/equipment needed.
- 7.3.1 "DPE" shall be defined to mean "direct personnel expense". Direct payroll expense includes direct salary plus customary fringe benefits (prevailing wage rates, Delaware and Davis Bacon) and documented statutory costs such as workman's compensation insurance, Social Security/Medicare, and unemployment insurance (a maximum multiplier of 1.35 times DPE).
- 7.3.2 "Invoice price" of materials/equipment shall be defined to mean the actual cost of materials and/or equipment that is paid by the Contractor, (or subcontractor), to a material distributor, direct factory vendor, store, material provider, or equipment leasing entity. Rates for equipment that is leased and/or owned by the Contractor or subcontractor(s) shall not exceed those listed in the latest version of the "Means Building Construction Cost Data" publication.
- 7.3.3 In addition to the above, the General Contractor is allowed a fifteen percent (15%) markup for overhead and profit for additional work performed by the General Contractor's own forces. For additional subcontractor work, the Subcontractor is allowed a fifteen (15) percent overhead and profit on change order work above and beyond the direct costs stated previously. To this amount, the General Contractor will be allowed a mark-up not exceeding seven and one half percent (7.5%) on the subcontractors work. These mark-ups shall include all costs including, but not limited to: overhead, profit, bonds, insurance, supervision, etc. No markup is permitted on the work of the subcontractors subcontractor. No additional costs shall be allowed for changes related to the Contractor's onsite superintendent/staff, or project manager, unless a change in the work changes the project duration and is identified by the CPM schedule. There will be no other costs associated with the change order.

ARTICLE 8: TIME

- 8.1 Time limits, if any, are as stated in the Project Manual. By executing the Agreement, the Contractor confirms that the stipulated limits are reasonable, and that the Work will be completed within the anticipated time frame.
- 8.2 If progress of the Work is delayed at any time by changes ordered by the Owner, by labor disputes, fire, unusual delay in deliveries, abnormal adverse weather conditions, unavoidable casualties or other causes beyond the Contractor's control, the Contract Time shall be extended for such reasonable time as the Owner may determine.
- 8.3 Any extension of time beyond the date fixed for completion of the construction and acceptance of any part of the Work called for by the Contract, or the occupancy of the building by the Owner, in whole or in part, previous to the completion shall not be deemed a waiver by the Owner of his right to annul or terminate the Contract for abandonment or delay in the matter provided for, nor relieve the Contractor of full responsibility.

8.4 SUSPENSION AND DEBARMENT

8.4.1 Per Section 6962(d)(14), Title 29, Delaware Code, "Any Contractor who fails to perform a public works contract or complete a public works project within the time schedule established by the Agency in the Invitation To Bid, may be subject to Suspension or Debarment for one or more of the following reasons: a) failure to supply the adequate labor supply ratio for the project; b) inadequate financial resources; or, c) poor performance on the Project."

8.4.2 "Upon such failure for any of the above stated reasons, the Agency that contracted for the public works project may petition the Director of the Office of Management and Budget for Suspension or Debarment of the Contractor. The Agency shall send a copy of the petition to the Contractor within three (3) working days of filing with the Director. If the Director concludes that the petition has merit, the Director shall schedule and hold a hearing to determine whether to suspend the Contractor, debar the Contractor or deny the petition. The Agency shall have the burden of proving, by a preponderance of the evidence, that the Contractor failed to perform or complete the public works project within the time schedule established by the Agency and failed to do so for one or more of the following reasons: a) failure to supply the adequate labor supply ratio for the project; b) inadequate financial resources; or, c) poor performance on the project. Upon a finding in favor of the Agency, the Director may suspend a Contractor from Bidding on any project funded, in whole or in part, with public funds for up to 1 year for a first offense, up to 3 years for a second offense and permanently debar the Contractor for a third offense. The Director shall issue a written decision and shall send a copy to the Contractor and the Agency. Such decision may be appealed to the Superior Court within thirty (30) days for a review on the record."

8.5 RETAINAGE

8.5.1 Per Section 6962(d)(5) a.3, Title 29, Delaware Code: The Agency may at the beginning of each public works project establish a time schedule for the completion of the project. If the project is delayed beyond the completion date due to the Contractor's failure to meet their responsibilities, the Agency may forfeit, at its discretion, all or part of the Contractor's retainage.

8.5.2 This forfeiture of retainage also applies to the timely completion of the punchlist. A punchlist will only be prepared upon the mutual agreement of the Owner, Architect and Contractor. Once the punchlist is prepared, all three parties will by mutual agreement, establish a schedule for its completion. Should completion of the punchlist be delayed beyond the established date due to the Contractor's failure to meet their responsibilities, the Agency may hold permanently, at its discretion, all or part of the Contractor's retainage.

ARTICLE 9: PAYMENTS AND COMPLETION

9.1 APPLICATION FOR PAYMENT

9.1.1 Applications for payment shall be made upon AIA Document G702. There will be a five percent (5%) retainage on all Contractor's monthly invoices until completion of the project. This retainage may become payable upon receipt of all required closeout documentation, provided all other requirements of the Contract Documents have been met.

9.1.2 A date will be fixed for the taking of the monthly account of work done. Upon receipt of Contractor's itemized application for payment, such application will be audited, modified, if found necessary, and approved for the amount. Statement shall be submitted to the Owner.

9.1.3 Section 6516, Title 29 of the Delaware Code annualized interest is not to exceed 12% per annum beginning thirty (30) days after the "presentment" (as opposed to the date) of the invoice.

9.2 PARTIAL PAYMENTS

9.2.1 Any public works Contract executed by any Agency may provide for partial payments at the option of the Owner with respect to materials placed along or upon the sites or stored at secured locations, which are suitable for use in the performance of the contract.

9.2.2 When approved by the agency, partial payment may include the values of tested and acceptable materials of a nonperishable or noncontaminative nature which have been produced or furnished for incorporation as a permanent part of the work yet to be completed, provided acceptable provisions have been made for storage.

9.2.2.1 Any allowance made for materials on hand will not exceed the delivered cost of the materials as verified by invoices furnished by the Contractor, nor will it exceed the contract bid price for the material complete in place.

9.2.3 If requested by the Agency, receipted bills from all Contractors, Subcontractors, and material men, etc., for the previous payment must accompany each application for payment. Following such a request, no payment will be made until these receipted bills have been received by the Owner.

9.3 SUBSTANTIAL COMPLETION

9.3.1 When the building has been made suitable for occupancy, but still requires small items of miscellaneous work, the Owner will determine the date when the project has been substantially completed.

9.3.2 If, after the Work has been substantially completed, full completion thereof is materially delayed through no fault of the Contractor, and without terminating the Contract, the Owner may make payment of the balance due for the portion of the Work fully completed and accepted. Such payment shall be made under the terms and conditions governing final payment that it shall not constitute a waiver of claims.

9.3.3 On projects where commissioning is included, the commissioning work as defined in the specifications must be complete prior to the issuance of substantial completion.

9.4 FINAL PAYMENT

9.4.1 Final payment, including the five percent (5%) retainage if determined appropriate, shall be made within thirty (30) days after the Work is fully completed and the Contract fully performed and provided that the Contractor has submitted the following closeout documentation (in addition to any other documentation required elsewhere in the Contract Documents):

9.4.1.1 Evidence satisfactory to the Owner that all payrolls, material bills, and other indebtedness connected with the work have been paid,

9.4.1.2 An acceptable RELEASE OF LIENS,

9.4.1.3 Copies of all applicable warranties,

9.4.1.4 As-built drawings,

- 9.4.1.5 Operations and Maintenance Manuals,
- 9.4.1.6 Instruction Manuals,
- 9.4.1.7 Consent of Surety to final payment.
- 9.4.1.8 The Owner reserves the right to retain payments, or parts thereof, for its protection until the foregoing conditions have been complied with, defective work corrected and all unsatisfactory conditions remedied.

ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY

- 10.1 The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall take all reasonable precautions to prevent damage, injury or loss to: workers, persons nearby who may be affected, the Work, materials and equipment to be incorporated, and existing property at the site or adjacent thereto. The Contractor shall give notices and comply with applicable laws ordinances, rules regulations, and lawful orders of public authorities bearing on the safety of persons and property and their protection from injury, damage, or loss. The Contractor shall promptly remedy damage and loss to property at the site caused in whole or in part by the Contractor, a Subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable.
- 10.2 The Contractor shall notify the Owner in the event any existing hazardous material such as lead, PCBs, asbestos, etc. is encountered on the project. The Owner will arrange with a qualified specialist for the identification, testing, removal, handling and protection against exposure or environmental pollution, to comply with applicable regulation laws and ordinances. The Contractor and Architect will not be required to participate in or to perform this operation. Upon completion of this work, the Owner will notify the Contractor and Architect in writing the area has been cleared and approved by the authorities in order for the work to proceed. The Contractor shall attach documentation from the authorities of said approval.
- 10.3 As required in the Hazardous Chemical Information Act of June 1984, all vendors supplying any materials that may be defined as hazardous, must provide Material Safety Data Sheets for those products. Any chemical product should be considered hazardous if it has a warning caution on the label relating to a potential physical or health hazard, if it is known to be present in the work place, and if employees may be exposed under normal conditions or in any foreseeable emergency situation. Material Safety Data Sheets must be provided directly to the Owner along with the shipping slips that include those products.
- 10.4 The Contractor shall certify to the Owner that materials incorporated into the Work are free of all asbestos. This certification may be in the form of Material Safety Data Sheet (MSDS) provided by the product manufacturer for the materials used in construction, as specified or as provided by the Contractor.

ARTICLE 11: INSURANCE AND BONDS

- 11.1 The Contractor shall carry all insurance required by law, such as Unemployment Insurance, etc. The Contractor shall carry such insurance coverage as they desire on their own property such as a field office, storage sheds or other structures erected upon the project site that belong to them and for their own use. The Subcontractors involved with this project shall carry whatever insurance protection they consider necessary to cover the loss of any of their personal property, etc.

11.2 Upon being awarded the Contract, the Contractor shall obtain a minimum of two (2) copies of all required insurance certificates called for herein, and submit one (1) copy of each certificate, to the Owner, within 20 days of contract award.

11.3 Bodily Injury Liability and Property Damage Liability Insurance shall, in addition to the coverage included herein, include coverage for injury to or destruction of any property arising out of the collapse of or structural injury to any building or structure due to demolition work and evidence of these coverages shall be filed with and approved by the Owner.

11.4 The Contractor's Property Damage Liability Insurance shall, in addition to the coverage noted herein, include coverage on all real and personal property in their care, custody and control damaged in any way by the Contractor or their Subcontractors during the entire construction period on this project.

11.5 Builders Risk (including Standard Extended Coverage Insurance) on the existing building during the entire construction period, shall not be provided by the Contractor under this contract. The Owner shall insure the existing building and all of its contents and all this new alteration work under this contract during entire construction period for the full insurable value of the entire work at the site. Note, however, that the Contractor and their Subcontractors shall be responsible for insuring building materials (installed and stored) and their tools and equipment whenever in use on the project, against fire damage, theft, vandalism, etc.

11.6 Certificates of the insurance company or companies stating the amount and type of coverage, terms of policies, etc., shall be furnished to the Owner, within 20 days of contract award.

11.7 The Contractor shall, at their own expense, (in addition to the above) carry the following forms of insurance:

11.7.1 Contractor's Contractual Liability Insurance

Minimum coverage to be:

Bodily Injury	\$500,000 \$1,000,000 \$1,000,000	for each person for each occurrence aggregate
Property Damage	\$500,000 \$1,000,000	for each occurrence aggregate

11.7.2 Contractor's Protective Liability Insurance

Minimum coverage to be:

Bodily Injury	\$500,000 \$1,000,000 \$1,000,000	for each person for each occurrence aggregate
Property Damage	\$500,000 \$500,000	for each occurrence aggregate

11.7.3 Automobile Liability Insurance

Minimum coverage to be:

Bodily Injury	\$1,000,000	for each person
	\$1,000,000	for each occurrence
Property Damage	\$500,000	per accident

11.7.4 Prime Contractor's and Subcontractors' policies shall include contingent and contractual liability coverage in the same minimum amounts as 11.7.1 above.

11.7.5 Workmen's Compensation (including Employer's Liability):

11.7.5.1 Minimum Limit on employer's liability to be as required by law.

11.7.5.2 Minimum Limit for all employees working at one site.

11.7.6 Certificates of Insurance must be filed with the Owner guaranteeing fifteen (15) days prior notice of cancellation, non-renewal, or any change in coverages and limits of liability shown as included on certificates.

11.7.7 Social Security Liability

11.7.7.1 With respect to all persons at any time employed by or on the payroll of the Contractor or performing any work for or on their behalf, or in connection with or arising out of the Contractor's business, the Contractor shall accept full and exclusive liability for the payment of any and all contributions or taxes or unemployment insurance, or old age retirement benefits, pensions or annuities now or hereafter imposed by the Government of the United States and the State or political subdivision thereof, whether the same be measured by wages, salaries or other remuneration paid to such persons or otherwise.

11.7.7.2 Upon request, the Contractor shall furnish Owner such information on payrolls or employment records as may be necessary to enable it to fully comply with the law imposing the aforesaid contributions or taxes.

11.7.7.3 If the Owner is required by law to and does pay any and/or all of the aforesaid contributions or taxes, the Contractor shall forthwith reimburse the Owner for the entire amount so paid by the Owner.

ARTICLE 12: UNCOVERING AND CORRECTION OF WORK

12.1 The Contractor shall promptly correct Work rejected by the Owner or failing to conform to the requirements of the Contract Documents, whether observed before or after Substantial Completion and whether or not fabricated, installed or completed, and shall correct any Work found to be not in accordance with the requirements of the Contract Documents within a period of two years from the date of Substantial Completion, or by terms of an applicable special warranty required by the Contract Documents. The provisions of this Article apply to work done by Subcontractors as well as to Work done by direct employees of the Contractor.

12.2 At any time during the progress of the work, or in any case where the nature of the defects shall be such that it is not expedient to have them corrected, the Owner, at their option, shall have the right to deduct such sum, or sums, of money from the amount of the contract as they consider justified to adjust the difference in value between the defective work and that required under contract including any damage to the structure.

ARTICLE 13: MISCELLANEOUS PROVISIONS

13.1 CUTTING AND PATCHING

13.1.1 The Contractor shall be responsible for all cutting and patching. The Contractor shall coordinate the work of the various trades involved.

13.2 DIMENSIONS

13.2.1 All dimensions shown shall be verified by the Contractor by actual measurements at the project site. Any discrepancies between the drawings and specifications and the existing conditions shall be referred to the Owner for adjustment before any work affected thereby has been performed.

13.3 LABORATORY TESTS

13.3.1 Any specified laboratory tests of material and finished articles to be incorporated in the work shall be made by bureaus, laboratories or agencies approved by the Owner and reports of such tests shall be submitted to the Owner. The cost of the testing shall be paid for by the Contractor.

13.3.2 The Contractor shall furnish all sample materials required for these tests and shall deliver same without charge to the testing laboratory or other designated agency when and where directed by the Owner.

13.4 ARCHAEOLOGICAL EVIDENCE

13.4.1 Whenever, in the course of construction, any archaeological evidence is encountered on the surface or below the surface of the ground, the Contractor shall notify the authorities of the Delaware Archaeological Board and suspend work in the immediate area for a reasonable time to permit those authorities, or persons designated by them, to examine the area and ensure the proper removal of the archaeological evidence for suitable preservation in the State Museum.

13.5 GLASS REPLACEMENT AND CLEANING

13.5.1 The General Contractor shall replace without expense to the Owner all glass broken during the construction of the project. If job conditions warrant, at completion of the job the General Contractor shall have all glass cleaned and polished.

13.6 WARRANTY

13.6.1 For a period of two (2) years from the date of substantial completion, as evidenced by the date of final acceptance of the work, the contractor warrants that work performed under this contract conforms to the contract requirements and is free of any defect of equipment, material or workmanship performed by the contractor or any of his subcontractors or suppliers. However, manufacturer's warranties and guarantees, if for a period longer than two (2) years, shall take precedence over the above warranties. The contractor shall remedy, at his own expense, any such failure to conform or any such defect. The protection of this warranty shall be included in the Contractor's Performance Bond.

ARTICLE 14: TERMINATION OF CONTRACT

- 14.1 If the Contractor defaults or persistently fails or neglects to carry out the Work in accordance with the Contract Documents or fails to perform a provision of the Contract, the Owner, after seven days written notice to the Contractor, may make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor. Alternatively, at the Owner's option, and the Owner may terminate the Contract and take possession of the site and of all materials, equipment, tools, and machinery thereon owned by the Contractor and may finish the Work by whatever method the Owner may deem expedient. If the costs of finishing the Work exceed any unpaid compensation due the Contractor, the Contractor shall pay the difference to the Owner.
- 14.2 "If the continuation of this Agreement is contingent upon the appropriation of adequate state, or federal funds, this Agreement may be terminated on the date beginning on the first fiscal year for which funds are not appropriated or at the exhaustion of the appropriation. The Owner may terminate this Agreement by providing written notice to the parties of such non-appropriation. All payment obligations of the Owner will cease upon the date of termination. Notwithstanding the foregoing, the Owner agrees that it will use its best efforts to obtain approval of necessary funds to continue the Agreement by taking appropriate action to request adequate funds to continue the Agreement."

END OF GENERAL REQUIREMENTS

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EMPLOYEE DRUG TESTING REPORT FORM

Period Ending: _____

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors who work on Large Public Works Contracts funded all or in part with public funds submit Testing Report Forms to the Owner no less than quarterly.

Project Number: _____

Project Name: _____

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

Number of employees who worked on the jobsite during the report period: _____

Number of employees subject to random testing during the report period: _____

Number of Negative Results _____ Number of Positive Results _____

Action taken on employee(s) in response to a failed or positive random test:

Authorized Representative of Contractor/Subcontractor: _____
(typed or printed)

Authorized Representative of Contractor/Subcontractor: _____
(signature)

Date: _____

**EMPLOYEE DRUG TESTING
REPORT OF POSITIVE RESULTS**

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors who work on Large Public Works Contracts funded all or in part with public funds to notify the Owner in writing of a positive random drug test.

Project Number: _____

Project Name: _____

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

Name of employee with positive test result: _____

Last 4 digits of employee SSN: _____

Date test results received: _____

Action taken on employee in response to a positive test result:

Authorized Representative of Contractor/Subcontractor: _____
(typed or printed)

Authorized Representative of Contractor/Subcontractor: _____
(signature)

Date: _____

This form shall be sent by mail to the Owner within 24 hours of receipt of test results.

Enclose this test results form in a sealed envelope with the notation "Drug Testing Form – DO NOT OPEN" on the face thereof and place in a separate mailing envelope.

SECTION 01005 - ADMINISTRATIVE PROVISIONS

TABLE OF ARTICLES

1. WORK COVERED BY THE CONTRACT DOCUMENTS
2. CONTRACT METHOD
3. WORK SEQUENCE
4. CONTRACTOR USE OF PREMISES
5. OWNER OCCUPANCY
6. OWNER-FURNISHED PRODUCTS
7. ALLOWANCES
8. ALTERNATES
9. APPLICATIONS FOR PAYMENT
10. OWNER SUPPLIED CONSTRUCTION DOCUMENTS
11. COORDINATION
12. FIELD ENGINEERING
13. REFERENCE STANDARDS

ARTICLE 1: WORK COVERED BY CONTRACT DOCUMENTS

- 1.1 The project involves but is not necessarily limited to the excavation and off site removal of approximately 23,000 CY of contaminated soil from the site. The site will be capped with 18 inches (12 inches DeIDOT type F fill and 6 inches of topsoil) of imported certified clean soil. The main area of excavation will be graded into a wetland along with a new stream alignment adjacent to the wetland and all else required to complete the Project in accordance with the Drawings and Specifications.

ARTICLE 2: CONTRACT METHOD

- 2.1 Construct the Work under a single, Lump Sum Contract.
- 2.2 Items noted "NIC" (Not in Contract), will be furnished and installed by others.

ARTICLE 3: WORK SEQUENCE

- 3.1 Construct Work in stages to accommodate Owner's occupancy requirements during the construction period; coordinate construction schedule and operations.
- 3.2 Begin Work within seven (7) days after issuance of a State purchase order and Notice to Proceed and be Substantially Completed within 180 calendar days.

ARTICLE 4: CONTRACTOR USE OF PREMISES

- 4.1 Limit use of premises for work and for construction operations to allow for Owner occupancy.
- 4.2 Coordinate use of premises under direction of Owner.

ARTICLE 5: OWNER OCCUPANCY

- 5.1 Owner will occupy premises during entire period of construction for the conduct of his normal operations. Cooperate with Owner to minimize conflict, and to facilitate Owner's operations.

ARTICLE 6: OWNER-FURNISHED PRODUCTS

- 6.1 None

ARTICLE 7: ALLOWANCES

- 7.1 None

ARTICLE 8: ALTERNATES

- 8.1 Alternates quoted on Bid Forms will be exercised as Owner option. Accepted Alternates will be listed in Owner-Contractor agreement.
- 8.2 Coordinate related work and modify surrounding work affected by accepted Alternates as required to complete the work.
- 8.3 Schedule of Alternates: Refer to Bid Form and Section 01030 - Alternates

ARTICLE 9: APPLICATIONS FOR PAYMENT

- 9.1 Submit 3 copies of each application under procedures of Sections 00710 and 00800.
- 9.2 Content and Format: Use table of contents of Project Manual.

ARTICLE 10: OWNER SUPPLIED CONSTRUCTION DOCUMENTS

- 10.1 The Contractor will be furnished, free of charge, three (3) copies of Drawings and Project Manuals (or less if requested). Additional sets will be furnished at the cost of reproduction, postage and handling.

ARTICLE 11: COORDINATION

- 11.1 Coordinate Work of the various sections of Specifications to assure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items installed later.
- 11.2 Verify characteristics of elements of interrelated operating equipment are compatible; coordinate Work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- 11.3 Coordinate space requirements and installation of mechanical, electrical and plumbing work which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduits, as closely as practicable; make runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- 11.4 In finished areas (except as otherwise shown), conceal pipes, ducts, and wiring in the construction. Coordinate locations of fixtures and outlets with finish elements.
- 11.5 Execute cutting and patching to integrate elements of Work, uncover ill-timed defective and non-conforming work, provide openings for penetrations of existing surfaces, and provide samples for testing. Seal penetrations through floors, walls, and ceilings.

ARTICLE 12: FIELD ENGINEERING

- 12.1 Provide field engineering services; establish grades, lines, and levels, by use of recognized engineering survey practices.
- 12.2 Control datum for survey is that shown on drawings. Locate and protect control and reference

points.

ARTICLE 13: REFERENCE STANDARDS

- 13.1 For products specified by association or trade standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- 13.2 The date of the standard is that in effect as of the Bid date, except when a specific date is specified.
- 13.3 Obtain copies of standards when required by Contract Documents. Maintain copy at job site during progress of the specific work.

END OF SECTION 01005 – ADMINISTRATIVE PROVISIONS

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SECTION 01010 - SUMMARY OF WORK

TABLE OF ARTICLES

1. PROJECT DESCRIPTION
2. WORK SEQUENCE
3. CONTRACTOR USE OF PREMISES

ARTICLE 1: PROJECT DESCRIPTION

- 1.1 The Contractor for this Project shall furnish all labor, materials, equipment and services necessary for and reasonably incidental to fully perform all the Work indicated as their responsibility and as shown on the Drawings and specified in the Specifications.
- 1.2 The Work shall include the following:
NVF YORKLYN SITE: OU-1 WETLAND PROJECT as shown on the Drawings and as specified in the Specification Manual, including, but not necessarily limited to the following.
 - .1 Erosion and Sediment control and clearing a grubbing.
 - .2 Demolition of building pad, structures, utilities and associated debris within the limits of disturbance of OU-1 and removal from the site.
 - .3 The installation of the appropriate erosion and sediment pollution controls.
 - .4 The realignment of the unnamed tributary running through the NVF site and extension of the existing culvert in the realigned tributary.
 - .5 Excavation and removal of the contaminated soil material. Haul all materials offsite.
 - .6 Placement of imported material and grading of the wetland area.
 - .7 Final placement and grading of the soil cap throughout the site and final landscaping and stabilization.

ARTICLE 2: WORK SEQUENCE

- 2.1 The Work will be conducted in two phases to provide the least possible interference to the activities of the Owner's personnel and other working at the site, and to permit an orderly transfer of personnel and equipment to the new facilities.
 - .1 Phase 1: Excavation for the realignment of the existing unnamed tributary and all areas east of the tributary.
 - .2 Phase 2: Remainder of the Site excavation and soil removal.

ARTICLE 3: CONTRACTOR USE OF PREMISES

- 3.1 General: Limit use of the premises to construction activities in areas indicated.
 - .1 Confine operations to areas within Contract limits indicated.

END OF SECTION 01010 - SUMMARY OF WORK

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SECTION 01030 - ALTERNATES

TABLE OF ARTICLES

1. RELATED DOCUMENTS
2. SUMMARY
3. SCHEDULE OF ALTERNATES

ARTICLE 1: RELATED DOCUMENTS

- 1.1 Drawings and general provisions of the Contract, including General Conditions, Supplementary General Conditions, General Requirements, and other Division-1 Specification Sections, apply to this Section.

ARTICLE 2: SUMMARY

- 2.1 This Section specifies administrative and procedural requirements for Alternates.
- 2.2 Definition: An Alternate is an amount proposed by Bidders and stated on the Bid Form for certain construction activities defined in the bidding requirements that may be added to or deducted from Base Bid amount if the Owner decides to accept the corresponding change in either the amount of construction to be completed, or in the products, materials, equipment, systems or installation methods described in Contract Documents.
- 2.3 Coordination: Coordinate related Work and modify or adjust adjacent Work as necessary to ensure that Work affected by each accepted Alternate is complete and fully integrated into the Project.
- 2.4 Notification: Immediately following the award of the Contract, prepare and distribute to each party involved, notification of the status of each Alternate. Indicate whether Alternates have been accepted, rejected or deferred for consideration at a later date. Include a complete description of negotiated modifications to Alternates.
- 2.5 Schedule: A "Schedule of Alternates" is included at the end of this Section. Specification Sections in the Project Manual contain requirements for materials and methods necessary to achieve the Work described under each Alternate.
 - .1 Include as part of each Alternate, miscellaneous devices, accessory objects and similar items incidental to or required for a complete installation whether or not mentioned as part of the Alternate.

ARTICLE 3: SCHEDULE OF ALTERNATES:

Alternate No. 1: Excavation and Hauling

Additional excavation areas have been shown on Drawing A-100. Excavation will be conducted in these areas as directed by the Owner. Excavation will be to a maximum of 4 feet below existing grade.

Price for excavation must be included on the Bid Form. Price included on the Bid Form for Alternate No. 1 must include cost for excavation, transportation to one of the Fill Placement Areas shown on Drawing A-100, and stockpiling of the excavated material at this/these location(s). The location for stockpiling of the excavated material will be selected by the Owner. Contractor is responsible for surveying the excavation area before and after excavation to determine the actual quantity of material excavated.

Alternate No. 2: Seeding

Additional excavation areas shown on Drawing A-100, selected by the owner, will be seeded with the FACW Wetland Meadow Mix in accordance with Specification Section 32 92 19 after excavation. Pricing for seeding must be included on the Bid Form. Pricing included on the Bid Form for Alternate No. 2 must include all cost associated with supplying and installing FACW Wetland Meadow Mix in accordance with Specification Section 32 92 19.

END OF SECTION 01030 – ALTERNATES

SECTION 01040 - PROJECT COORDINATION

TABLE OF ARTICLES

1. RELATED DOCUMENTS
2. SUMMARY
3. COORDINATION
4. SUBMITTALS
5. GENERAL INSTALLATION PROVISIONS
6. CLEANING AND PROTECTION

ARTICLE 1: RELATED DOCUMENTS

- 1.1 Drawings and general provisions of the Contract, including General Conditions, Supplementary General Conditions, General Requirements, and other Division-1 Specification Sections, apply to this Section

ARTICLE 2: SUMMARY

- 2.1 This Section specifies administrative and supervisory requirements necessary for Project Coordination including, but not necessarily limited to:
 - .1 Coordination.
 - .2 Administrative and Supervisory Personnel.
 - .3 General Installation Provisions.
 - .4 Cleaning and Protection.
- 2.2 Field engineering is included in Section "Field Engineering".
- 2.3. Progress meetings, coordination meetings and pre-installation conferences are included in Section "Project Meetings".
- 2.4. Requirements for the Contractor's Construction Schedule are included in Section "Submittals".

ARTICLE 3: COORDINATION

- 3.1 Coordination: Coordinate construction activities included under various Sections of these Specifications to assure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections of the Specifications that are dependent upon each other for proper installation, connection, and operation.
 - .1 Where installation of one part of the Work is dependent on installation of other components, either before or after its own installation, schedule construction activities in the sequence required to obtain the best results.
 - .2 Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.
 - .3 Make adequate provisions to accommodate items scheduled for later installation.
- 3.2 Where necessary, prepare memoranda for distribution to each party involved outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.

- .1 Prepare similar memoranda for the Owner and separate Contractors where coordination of their Work is required.
- 3.3 Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - .1 Preparation of schedules.
 - .2 Installation and removal of temporary facilities.
 - .3 Delivery and processing of submittals.
 - .4 Progress meetings.
 - .5 Project Close-out activities.
- 3.4 Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.
 - .1 Salvage materials and equipment involved in performance of, but not actually incorporated in, the Work. Refer to other sections for disposition of salvaged materials that are designated as Owner's property.

ARTICLE 4: SUBMITTALS

- 4.1 Staff Names: Within 15 days of Notice to Proceed, submit a list of the Contractor's principal staff assignments, including the Superintendent and other personnel in attendance at the site; identify individuals, their duties and responsibilities; list their addresses and telephone numbers.
 - .1 40-hour training and most recent 8-hour refresher HAZWOPER Certifications
 - .2 Contractor Blue Card Certifications
 - .3 Certified Construction Review Certification
 - .4 Bog Turtle Surveyor Certification
 - Work in the (existing and proposed tributary) waters of the United States is to be avoided during April 1 - June 30 of any year. If work should need to occur during that period, the contractor shall have a qualified and approved bog turtle surveyor on site when heavy equipment is being used to inspect the work area to make sure it is protected and free of bog turtles. The existing and proposed tributary locations are marked on the drawings.

ARTICLE 5: GENERAL INSTALLATION PROVISIONS

- 5.1 Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.
- 5.2 Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Contract Documents.
- 5.3 Inspect materials or equipment immediately upon delivery and again prior to installation. Reject damaged and defective items.
- 5.4 Provide attachment and connection devices and methods necessary for securing Work. Secure Work true to line and level. Allow for expansion and building movement.
- 5.5 Visual Effects: Provide uniform joint widths in exposed Work. Arrange joints in exposed Work to obtain the best visual effect. Refer questionable choices to the Architect for final decision.

- 5.6 Recheck measurements and dimensions, before starting each installation.
- 5.7 Install each component during weather conditions and Project status that will ensure the best possible results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.
- 5.8 Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.
- 5.9 Mounting Heights: Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the Architect for final decision.

ARTICLE 6: CLEANING AND PROTECTION

- 6.1 During handling and installation, clean and protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- 6.2 Clean and maintain completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- 6.3 Limiting Exposures: Supervise construction activities to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period. Where applicable, such exposures include, but are not limited to, the following:
 - .1 Excessive static or dynamic loading.
 - .2 Excessive internal or external pressures.
 - .3 Excessively high or low temperatures.
 - .4 Thermal shock.
 - .5 Excessively high or low humidity.
 - .6 Air contamination or pollution.
 - .7 Water or ice.
 - .8 Solvents.
 - .9 Chemicals.
 - .10 Light.
 - .11 Radiation.
 - .12 Puncture.
 - .13 Abrasion.
 - .14 Heavy traffic.
 - .15 Soiling, staining and corrosion.
 - .16 Bacteria.
 - .17 Rodent and insect infestation.
 - .18 Combustion.
 - .19 Electrical current.
 - .20 High speed operation.
 - .21 Improper lubrication.
 - .22 Unusual wear or other misuse.
 - .23 Contact between incompatible materials.
 - .24 Destructive testing.
 - .25 Misalignment.
 - .26 Excessive weathering.
 - .27 Unprotected storage.

- .28 Improper shipping or handling.
- .29 Theft.
- .30 Vandalism.
- .31 Wind damage.

END OF SECTION 01040 - PROJECT COORDINATION

SECTION 01050 - FIELD ENGINEERING

TABLE OF ARTICLES

1. RELATED DOCUMENTS
2. SUMMARY
3. SUBMITTALS
4. QUALITY ASSURANCE
5. EXAMINATION
6. PERFORMANCE

ARTICLE 1: RELATED DOCUMENTS

- 1.1 Drawings and general provisions of the Contract, including General Conditions, Supplementary General Conditions, General Requirements, and other Division-1 Specification Sections, apply to this Section.

ARTICLE 2: SUMMARY

- 2.1 General: This Section specifies administrative and procedural requirements for Field Engineering services, including, but not necessarily limited to, the following:
 - .1 Land Survey Work

ARTICLE 3: SUBMITTALS

- 3.1 Certificates: Submit a certificate signed by the Land Surveyor certifying that the location and elevation of improvements comply with the Contract Documents.
- 3.2 Project Record Documents: Submit a record of Work performed and record survey data as required under provisions of Sections "Submittals" and "Project Closeout".

ARTICLE 4: QUALITY ASSURANCE

- 4.1 Surveyor: Engage a Professional Land Surveyor, licensed in the State of Delaware, to perform required surveying services to ensure that grades, lines, levels, and locations of the Work are in compliance with the Contract Documents.

ARTICLE 5: EXAMINATION

- 5.1 Verify layout information shown on the Drawings, in relation to the property survey and existing benchmarks before proceeding to layout the Work. Locate and protect existing benchmarks and control points. Preserve permanent reference points during construction.
 - .1 Do not change or relocate benchmarks or control points without prior written approval. Promptly report lost or destroyed reference points, or requirements to relocate reference points because of necessary changes in grades or locations.
 - .2 Promptly replace lost or destroyed Project control points. Base replacements on the original survey control points.
- 5.2 Establish and maintain a minimum of two permanent benchmarks on the site, referenced to data established by survey control points.

- .1 Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
- 5.3 Existing utilities and equipment: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction.

ARTICLE 6: PERFORMANCE

- 6.1 Working from lines and levels established by the property survey, establish benchmarks and markers to set lines and levels at each story of construction and elsewhere as needed to properly locate each element of the Project. Calculate and measure required dimensions within indicated or recognized tolerances. Do not scale Drawings to determine dimensions.
 - .1 Advise entities engaged in construction activities, of marked lines and levels provided for their use.
 - .2 As construction proceeds, check every major element for line, level and plumb.
- 6.2 Surveyor's Log: Maintain a surveyor's log of control and other survey Work. Make this log available for reference.
 - .1 Record deviations from required lines and levels, and advise the Architect when deviations that exceed indicated or recognized tolerances are detected. On Project Record Drawings, record deviations that are accepted and not corrected.
 - .2 On completion of foundation walls, major site improvements, and other Work requiring field engineering services, prepare a certified survey showing dimensions, locations, angles and elevations of construction and sitework.
- 6.3 Site Improvements: Locate and lay out site improvements, including pavements, stakes for grading, fill and topsoil placement, utility slopes and invert elevations by instrumentation and similar appropriate means.
- 6.4 Building Lines and Levels: Locate and lay out batter boards for structures, building foundations, column grids and locations, floor levels and control lines and levels required for mechanical and electrical work.

END OF SECTION 01050 - FIELD ENGINEERING

SECTION 01090 - DEFINITIONS AND STANDARDS

TABLE OF ARTICLES

1. DEFINITIONS
2. SPECIFICATION FORMAT AND CONTENT EXPLANATION
3. DRAWING OF SYMBOLS
4. INDUSTRY STANDARDS

ARTICLE 1: DEFINITIONS:

- 1.1 Basic Contract definitions are included in the General Conditions, Supplementary General Conditions, General Requirements, and Instructions to Bidders.
- 1.2 INDICATED refers to graphic representations, notes or schedules on Drawings, or Paragraphs or Schedules in Specifications, and similar requirements in Contract Documents. Where terms such as "shown", "noted", "scheduled", and "specified" are used, it is to help locate the reference.
- 1.3 DIRECTED: Terms such as "directed", "requested", "authorized", "selected", "approved", "required", and "permitted" mean "directed by the Engineer", "requested by the Engineer", and similar phrases. No implied meaning shall be interpreted to extend the Owner's Representative's responsibility into the Contractor's supervision of construction.
- 1.4 APPROVE, used in conjunction with action on submittals, applications, and requests, is limited to the Owner's Representative's duties and responsibilities stated in General Conditions and Supplementary General Conditions. Approval shall not release the Contractor from responsibility to fulfill Contract requirements.
- 1.5 REGULATION includes laws, ordinances, statutes and lawful orders issued by authorities having jurisdiction, and rules, conventions and agreements within the construction industry that control performance of the Work, whether lawfully imposed by authorities having jurisdiction or not.
- 1.6 FURNISH means "supply and deliver, ready for unloading, unpacking, assembly, installation, and similar operations."
- 1.7 INSTALL describes operations at the site including "unloading, unpacking, assembly, erection, anchoring, applying, working to dimension, protecting, cleaning and similar operations."
- 1.8 PROVIDE means "furnish and install, complete and ready for use."
- 1.9 INSTALLER: "Installer" is the Contractor or an entity engaged by the Contractor, as an employee, subcontractor or sub-subcontractor for performance of a particular construction activity, including installation, erection, application and similar operations. Installers are required to be experienced in the operations they are engaged to perform.
 - .1 The term "experienced", when used with "Installer" means having a minimum of 5 previous projects similar in size to this Project, and familiar with the precautions required, and with requirements of the authority having jurisdiction.
- 1.10 PROJECT SITE is the space available for construction activities, either exclusively or with others performing other construction on the Project. The extent of the Project Site shall be as directed by the Owner's Representative, and may or may not be identical with the description of the land upon which the Project is to be built.

- 1.11 TESTING LABORATORIES: A "testing laboratory" is an independent entity engaged to perform specific inspections or tests, at the Project Site or elsewhere, and to report on, and, if required, to interpret results of those inspections or tests.
- 1.12 WORKING DAY: Any calendar day, except: 1) Saturdays, Sundays, and holidays; 2) days where conditions identified in the Contract require the Contractor to suspend construction operations; 3) days with inclement weather that prevents prosecution of the scheduled work. On inclement weather days that result in partial prosecution of the work, partial working days will be charged as determined by the Engineer. Partial working days will be charged in one-quarter day increments. If the Contractor receives permission from the Engineer to work on a Sunday or holiday, full working days will be charged, weather permitting. No time charge will be assessed if the Contractor elects to work on Saturdays. Should the Contractor prepare to begin work on any day on which inclement weather prevents the work from beginning at the usual starting time and the crew is dismissed as a result, the Contractor will not be charged for a working day whether or not conditions change during the day and the rest of the day becomes suitable for construction operations.

ARTICLE 2: SPECIFICATION FORMAT AND CONTENT EXPLANATION

- 2.1 SPECIFICATION FORMAT: These specifications are organized into Divisions and Sections based on the Construction Specifications Institute's 16-Division format and MASTER FORMAT numbering system.
- 2.2 Language used in the Specifications is the abbreviated type. Implied words and meanings will be appropriately interpreted. Singular words will be interpreted as plural and plural words interpreted as singular where applicable and where the context so indicates.
- .1 IMPERATIVE LANGUAGE is used generally. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the text subjective language is used to describe responsibilities which must be fulfilled indirectly by the Contractor, or by others when so noted.
- .2 The words "shall be" shall be included by inference wherever a colon (:) is used within a sentence or phrase.
- 2.3 ASSIGNMENT OF SPECIALISTS: Certain construction activities shall be performed by specialists, recognized experts in the operations to be performed. Specialists must be engaged for those activities, and assignments are requirements over which the Contractor has no option. Nevertheless, the ultimate responsibility for fulfilling Contract requirements remains with the Contractor.

ARTICLE 3: DRAWING OF SYMBOLS

- 3.1 GENERAL: Noted in the Legend of the Construction Documents.

ARTICLE 4: INDUSTRY STANDARDS

- 4.1 APPLICABILITY OF STANDARDS: Except where the Contract Documents include more stringent requirements, applicable industry standards have the same force and effect as if bound or copied into Contract Documents. Such standards are part of the Contract Documents by reference. Individual Sections indicate standards the Contractor must keep available at the Project Site.
- 4.2 PUBLICATION DATES: Where the date of issue of a referenced standard is not specified,

comply with the standard in effect as of date of Contract Documents.

- .1 UPDATED STANDARDS: Submit a Change Order proposal where an applicable standard has been revised and reissued after the date of the Contract Documents and before performance of Work. The Engineer will decide whether to issue a Change Order to proceed with the updated standard.
- 4.3 CONFLICTING REQUIREMENTS: Where compliance with two or more standards that establish different or conflicting requirements for minimum quantities or quality levels, the most stringent requirement will be enforced. Refer uncertainties as to which quality level is more stringent to the Engineer for a decision before proceeding.
- .1 MINIMUM QUANTITIES OR QUALITY LEVELS: The quantity or quality shown or specified is the minimum to be provided or performed. Indicated values are minimum or maximum values, as appropriate for the requirements. Refer instances of uncertainty to the Engineer for decision before proceeding.
- 4.4 COPIES OF STANDARDS: Each entity engaged on the Project shall be familiar with standards applicable to that activity. Copies of applicable standards are not bound with the Contract Documents.
- .1 Where copies of standards are needed for performance of a required construction activity, the Contractor shall obtain copies directly from the publication source.
 - .2 Although copies of standards needed for enforcement of requirements may be part of submittals, the Owner's Representative reserves the right to require submittal of additional copies for enforcement of requirements.
- 4.5 ABBREVIATIONS AND NAMES: Where acronyms or abbreviations are used in the Specifications or other Contract Documents they mean the recognized name of the trade association, standards generating organization, authority having jurisdiction or other entity applicable. Refer to the "Encyclopedia of Associations", published by Gale, available in most libraries.
- 4.6 PERMITS, LICENSES, AND CERTIFICATES: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence and records established in conjunction with compliance with standards and regulations bearing upon performance of the Work.

END OF SECTION 01090 - DEFINITIONS AND STANDARDS

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SECTION 01091 - 2016 STATE HOLIDAYS

STATE OF DELAWARE 2016 Holidays		
In accordance with Title 1, Chapter 5, §501, Delaware Code, as amended, the following are legal holidays in the State of Delaware for Calendar Year 2016 :		
New Year's Day	January 1	Thursday
Martin Luther King Jr. Day	January 18	Monday
Good Friday	March 25	Friday
Memorial Day	May 30	Monday
Independence Day	July 4	Friday
Labor Day	September 5	Monday
Election Day	November 8	Tuesday
Returns Day	November 10	Thursday
Veterans Day	November 11	Friday
Thanksgiving Day	November 24	Thursday
Day After Thanksgiving	November 25	Friday
Christmas Day	December 26*	Monday

* The observed date may be different for employees in 24/7 operations/facilities

**The State of Delaware grants two floating holidays to eligible employees per fiscal year.

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SECTION 01200 - PROJECT MEETINGS

TABLE OF ARTICLES

1. RELATED DOCUMENTS
2. SUMMARY
3. PRE-CONSTRUCTION CONFERENCE
4. PRE-INSTALLATION CONFERENCES
5. COORDINATION MEETINGS
6. PROGRESS MEETINGS

ARTICLE 1: RELATED DOCUMENTS

- 1.1 Drawings and general provisions of the Contract, including General Conditions, Supplementary General Conditions, General Requirements, and other Division-1 Specification Sections, apply to this Section.

ARTICLE 2: SUMMARY

- 2.1 This Section specifies administrative and procedural requirements for Project Meetings including but not limited to:
 - .1 Pre-Construction Conference.
 - .2 Pre-Installation Conferences.
 - .3 Coordination Meetings.
 - .4 Progress Meetings.
- 2.2 Construction schedules are specified in another Division-1 Section.

ARTICLE 3: PRE-CONSTRUCTION CONFERENCE

- 3.1 Schedule a pre-construction conference and organizational meeting at the Project Site or other convenient location no later than 15 days after execution of the Agreement and prior to commencement of construction activities. Conduct the meeting to review responsibilities and personnel assignments.
- 3.2 Attendees: The Owner, Engineer and their consultants, the Contractor and their superintendent, major subcontractors, manufacturers, suppliers and other concerned parties shall each be represented at the conference by persons familiar with and authorized to conclude matters relating to the Work.
- 3.3 Agenda: Discuss items of significance that could affect progress including such topics as:
 - .1 Tentative construction schedule.
 - .2 Critical work sequencing.
 - .3 Designation of responsible personnel.
 - .4 Procedures for processing field decisions and Change Orders.
 - .5 Procedures for processing Applications for Payment.
 - .6 Distribution of Contract Documents.
 - .7 Submittal of Shop Drawings, Product Data and Samples.
 - .8 Preparation of record documents.
 - .9 Use of the premises.
 - .10 Parking availability
 - .11 Office, work and storage areas.
 - .12 Equipment deliveries and priorities.
 - .13 Safety procedures.

- .14 First aid.
- .15 Security.
- .16 Housekeeping.
- .17 Working hours.

ARTICLE 4: PRE-INSTALLATION CONFERENCES

- 4.1 Conduct a pre-installation conference at the site before each construction activity that requires coordination with other construction. The Installer and representatives of manufacturers and fabricators involved in or affected by the installation, and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise the Engineer of scheduled meeting dates.
 - .1 Review the progress of other construction activities and preparations for the particular activity under consideration at each pre-installation conference, including requirements for:
 - .1 Contract Documents.
 - .2 Options.
 - .3 Related Change Orders.
 - .4 Purchases
 - .5 Deliveries.
 - .6 Shop Drawings, Product Data and quality control Samples.
 - .7 Review of mockups
 - .8 Possible conflicts.
 - .9 Compatibility problems.
 - .10 Time schedules.
 - .11 Weather limitations.
 - .12 Manufacturer's recommendations.
 - .13 Warranty requirements.
 - .14 Compatibility of materials.
 - .15 Acceptability of substrates.
 - .16 Temporary facilities.
 - .17 Space and access limitations.
 - .18 Governing regulations.
 - .19 Safety.
 - .20 Inspection and testing requirements.
 - .21 Required performance results.
 - .22 Recording requirements.
 - .23 Protection.
- 4.2 Record significant discussions and agreements and disagreements of each conference, along with the approved schedule. Distribute the record of the meeting to everyone concerned, promptly, including the Owner and Engineer.
- 4.3 Do not proceed if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of Work and reconvene the conference at the earliest feasible date.

ARTICLE 5: COORDINATION MEETINGS

- 5.1 Conduct Project coordination meetings at regularly scheduled times convenient for all parties involved. Project coordination meetings are in addition to specific meetings held for other purposes, such as regular progress meetings and special pre-installation meetings.

- 5.2 Request representation at each meeting by every party currently involved in coordination or planning for the construction activities involved.
- 5.3 Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

ARTICLE 6: PROGRESS MEETINGS

- 6.1 Conduct progress meetings at the Project Site at regularly scheduled intervals. Notify the Owner and Engineer of scheduled meeting dates. Coordinate dates of meetings with preparation of the payment request.
- 6.2 Attendees: In addition to representatives of the Owner and Engineer, each subcontractor, supplier or other entity concerned with current progress or involved in planning, coordination or performance of future activities shall be represented at these meetings by persons familiar with the Project and authorized to conclude matters relating to progress.
- 6.3 Agenda: Review and correct or approve minutes of the previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the current status of the Project.
 - .1 Contractor's Construction Schedule: Review progress since the last meeting. Determine where each activity is in relation to the Contractor's Construction Schedule, whether on time or ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - .2 Review the present and future needs of each entity present, including such items as:
 - .1 Interface requirements.
 - .2 Time.
 - .3 Sequences.
 - .4 Deliveries.
 - .5 Off-site fabrication problems.
 - .6 Access.
 - .7 Site utilization.
 - .8 Temporary facilities and services.
 - .9 Hours of work.
 - .10 Hazards and risks.
 - .11 Housekeeping.
 - .12 Quality and work standards.
 - .13 Change Orders.
 - .14 Documentation of information for payment requests.
 - .15 Submittals and other items affecting progress of work.
- 6.4 Reporting: No later than 5 days after each progress meeting date, the Owner will distribute copies of minutes of the meeting to each party present and to other parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.
 - .1 Schedule Updating: Revise the construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule concurrently with the report of each meeting.

END OF SECTION 01200 - PROJECT MEETINGS

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SECTION 01300 - SUBMITTALS

TABLE OF ARTICLES

1. REQUIREMENTS INCLUDED
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3. CONSTRUCTION PROGRESS SCHEDULES
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5. SHOP DRAWINGS
6. PRODUCT DATA
7. MANUFACTURERS' INSTRUCTIONS
8. SAMPLES
9. FIELD SAMPLES
10. ITEMS TO BE SUBMITTED AT CONTRACT SIGNING
11. COLOR SELECTION
12. SUBMITTAL SCHEDULE

ARTICLE 1: REQUIREMENTS INCLUDED

- 1.1 Procedures.
- 1.2 Construction Progress Schedules.
- 1.3 Schedule of Values.
- 1.4 Shop Drawings.
- 1.5 Product Data.
- 1.6 Samples.
- 1.7 Manufacturers' Instructions.
- 1.8 Manufacturers' Certificates.
- 1.9 Submittal Schedule.

ARTICLE 2: PROCEDURES

- 2.1 Deliver submittals to Owner at 391 Lukens Drive, New Castle, Delaware, 19720.
- 2.2 Transmit each item under a transmittal. Identify Project, Contractor, subcontractor, major supplier; identify pertinent Drawing sheet and detail number, and Specification section number, as appropriate. Identify deviations from Contract Documents. Provide space for Contractor and Engineer review stamps. Allow 2 weeks for Engineer's initial processing of submittals requiring review and return. Submittals will be returned without action when received indirectly (not through the Contractor).
- 2.3 Submit initial progress schedules and schedule of values in duplicate within fourteen (14) days after award of Contract. After review by Engineer, revise and resubmit as required. Submit revised schedules reflecting changes since previous submittal.
- 2.4 Comply with progress schedule for submittals related to Work progress. Coordinate submittal of related items.
- 2.5 After Engineer's review of submittal, revise and resubmit as required, identifying changes made since previous submittal.
- 2.6 Distribute copies of reviewed submittals to concerned persons. Instruct recipients to promptly report any inability to comply with provisions.
- 2.7 Submit a complete schedule of submittals in duplicate within (20) days after award of Contract.

After review by Engineer, revise and resubmit as required. Submit revised schedules reflecting changes since previous submittal.

ARTICLE 3: CONSTRUCTION PROGRESS SCHEDULES

- 3.1 Submit horizontal bar chart with separate bar for each major trade or operation identifying first work day of each week.

ARTICLE 4: SCHEDULE OF VALUES

- 4.1 Submit typed schedule on AIA Form G703. Contractor's standard form or media-driven printout will be considered on request.
- 4.2 Format: Table of Contents of this Project Manual. Identify each line item with number and title of the major Specification sections.
- 4.3 Include in each line item amount of Allowances specified in Section 01020. For Unit Cost Allowances, give quantities measured from Contract Documents multiplied by the unit cost equal to the total for the item.
- 4.4 Include in each line item a directly proportional amount of Contractor's overhead and profit.
- 4.5 Revise schedule to list Change Orders, for each application for payment.

ARTICLE 5: SHOP DRAWINGS

- 5.1 Submit the number of opaque reproduces which Contractor requires, plus four (4) copies which will be retained by Engineer.

ARTICLE 6: PRODUCT DATA

- 6.1 Mark each copy to identify applicable products, models, options, and other data; supplement manufacturers' standard data to provide information unique to the Work. Include manufacturers' installation instructions when required by the Specification Section.
- 6.2 Submit the number of copies which Contractor requires, plus two (2) copies which will be retained by Engineer.

ARTICLE 7: MANUFACTURERS' INSTRUCTIONS

- 7.1 When required in individual Specification Section, submit manufacturer's printed instructions for delivery, storage, assembly, installation, adjusting, and finishing, in quantities specified for product data.

ARTICLE 8: SAMPLES

- 8.1 Submit full range of manufacturers' standard colors, textures, and patterns for Architect's selection. Submit samples for selection of finishes within thirty (30) days after date of Contract.
- 8.2 Submit Samples to illustrate functional characteristics of the Product, with integral parts and attachment devices. Coordinate submittal of different categories for interfacing work.
- 8.3 Include identification of each Sample, giving full information.
- 8.4 Submit the number specified in respective Specification Section; one will be retained by Engineer. Reviewed Samples which may be used in the Work are indicated in the Specification

Section.

ARTICLE 9: FIELD SAMPLES

- 9.1 Provide field samples of finishes at Project as required by individual Specifications Section. Install sample complete and finished. Acceptable samples in place may be retained in completed Work.

ARTICLE 10: ITEMS TO BE SUBMITTED AT CONTRACT SIGNING

- 10.1 Performance and Labor and Material Payment Bonds: One (1) copy of each bond for each copy of the Agreement, submit simultaneously with the signed Agreement.
- 10.2 Policies or Certificates of Insurance: One (1) copy of each policy or certificate for each copy of the Agreement, submit simultaneously with the signed Agreement.

ARTICLE 11: COLOR SELECTION

- 11.1 Submit all items requiring color selection together (at one time) to facilitate color coordination by Architect.

ARTICLE 12: SUBMITTAL SCHEDULE

- 12.1 Provide the following information:
- .1 Scheduled date for the first submittal.
 - .2 Related Section number.
 - .3 Submittal category (Shop Drawings, Product Data, or Samples).
 - .4 Name of Subcontractor.
 - .5 Description of the part of the Work covered.

END OF SECTION 01300 - SUBMITTALS

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SECTION 01400 - QUALITY CONTROL

TABLE OF ARTICLES

1. REQUIREMENTS INCLUDED
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3. QUALITY CONTROL, GENERAL
4. WORKMANSHIP
5. MANUFACTURER'S INSTRUCTIONS
6. MANUFACTURER'S CERTIFICATES
7. MOCK-UPS
8. MANUFACTURER'S FIELD SERVICES
9. TESTING LABORATORY SERVICES

ARTICLE 1: REQUIREMENTS INCLUDED

- 1.1 General Quality Control.
- 1.2 Workmanship.
- 1.3 Manufacturer's Instructions.
- 1.4 Manufacturer's Certificates.
- 1.5 Mock-ups.
- 1.6 Manufacturer's Field Services.
- 1.7 Testing Laboratory Services.

ARTICLE 2: RELATED REQUIREMENTS

- 2.1 Section 00700 - General Conditions and Section 00710 - General Requirements: Inspection and testing required by governing authorities.

ARTICLE 3: QUALITY CONTROL, GENERAL

- 3.1 Maintain quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.

ARTICLE 4: WORKMANSHIP

- 4.1 Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.
- 4.2 Perform Work by persons qualified to produce workmanship of specified quality.
- 4.3 Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.

ARTICLE 5: MANUFACTURER'S INSTRUCTIONS

- 5.1 Comply with instructions in full detail, including each step in sequence. Should instructions conflict with Contract Documents, request clarification from Architect before proceeding.

ARTICLE 6: MANUFACTURER'S CERTIFICATES

- 6.1 When required by individual Specifications Section, submit manufacturer's certificate, in duplicate, that products meet or exceed specified requirements.

ARTICLE 7: MOCK-UPS

- 7.1 When required by individual Specifications Section, erect complete, full-scale mockup of assembly at Project Site.

ARTICLE 8: MANUFACTURER'S FIELD SERVICES

- 8.1 When specified in respective Specification Sections, require manufacturer to provide qualified personnel to observe field conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to make appropriate recommendations.
- 8.2 Representative shall submit written report to Owner listing observations and recommendations.

ARTICLE 9: TESTING LABORATORY SERVICES

- 9.1 Contractor shall employ and pay for services of an Independent Testing Laboratory to perform inspections, tests, and other services required by various Specification Sections.
- 9.2 Services will be performed in accordance with requirements of governing authorities and with specified standards.
- 9.3 Reports will be submitted to Owner in triplicate giving observations and results of tests, indicating compliance or noncompliance with specified standards and with Contract Documents.
- 9.4 Contractor shall cooperate with Testing Laboratory personnel; furnish tools, samples of materials, design mix, equipment, storage and assistance as requested.
 - .1 Notify Owner and Testing Laboratory 24 hours prior to expected time for operations requiring testing services.
 - .2 Make arrangements with Testing Laboratory and pay for additional samples and tests for Contractor's convenience.
- 9.5 Any item found unsatisfactory by the testing agency shall be removed, replaced and retested at no additional cost to the Owner.

END OF SECTION 01400 - QUALITY CONTROL

SECTION 01500 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS**TABLE OF ARTICLES**

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5. TEMPORARY ELECTRICITY AND LIGHTING
6. TEMPORARY TELEPHONE SERVICE
7. TEMPORARY WATER
8. TEMPORARY SANITARY FACILITIES
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10. BARRIERS
11. HEAT, VENTILATION
12. ENCLOSURES
13. PROTECTION OF INSTALLED WORK
14. WATER CONTROL
15. CLEANING DURING CONSTRUCTION
16. PROJECT IDENTIFICATION
17. FIELD OFFICES AND SHEDS
18. REMOVAL OF CONSTRUCTION FACILITIES AND RESTORATION OF SITE
19. SECURITY
20. ACCESS ROADS AND PARKING AREAS
21. TEMPORARY CONTROLS
22. TRAFFIC REGULATION

ARTICLE 1: GENERAL PROVISIONS

- 1.1 The general provisions of the Contract, including the conditions of the Contract (General Conditions, Supplementary General Conditions, General Requirements, and other Conditions, if any) and Division 1 as appropriate, apply to the Work specified in this Section.

ARTICLE 2: REQUIREMENTS INCLUDED

- 2.1 Temporary Electricity and Lighting
- 2.2 Temporary Telephone Service
- 2.3 Temporary Water
- 2.4 Temporary Sanitary Facilities
- 2.5 Construction Aids
- 2.6 Barriers
- 2.7 Temporary Heat and Ventilation
- 2.8 Temporary Enclosures
- 2.9 Protection of Installed Work
- 2.10 Water Control
- 2.11 Cleaning During Construction
- 2.12 Project Identification
- 2.13 Field Offices and Sheds
- 2.14 Removal of Construction Facilities and Restoration of Site
- 2.15 Security
- 2.16 Access Roads and Parking Areas
- 2.17 Temporary Controls
- 2.18 Traffic Regulation

ARTICLE 3: GENERAL

- 3.1 Comply with National Electric Code.
- 3.2 Comply with Federal, State and local codes and regulations and with utility company requirements.
- 3.3 Coordinate Work with Owner's requirements.

ARTICLE 4: MATERIALS

- 4.1 Materials must be new and must be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.

ARTICLE 5: TEMPORARY ELECTRICITY AND LIGHTING

- 5.1 Provide temporary electric power and power distribution system as needed to perform the Work.

ARTICLE 6: TEMPORARY TELEPHONE SERVICE

- 6.1 Provide telephone service as necessary to properly conduct the Work and to comply with applicable regulations.
- 6.2 At each telephone, post a list of important telephone numbers.

ARTICLE 7: TEMPORARY WATER

- 7.1 Provide potable water for drinking and construction purposes.
- 7.2 The Contractor shall make all necessary arrangements for temporary water service for construction purposes, and furnish at his own expense all piping and accessories required.
- 7.3 Take positive measures to preclude cross-connections and backflow.
- 7.4 The Contractor will assume the cost of water consumed if responsible care and restraint are not exercised by the Contractor in its use.

ARTICLE 8: TEMPORARY SANITARY FACILITIES

- 8.1 Provide sanitary facilities in compliance with laws and regulations.
- 8.2 Service, clean and maintain facilities and enclosures.

ARTICLE 9: CONSTRUCTION AIDS

- 9.1 Each Subcontractor shall provide construction aids and equipment required by his personnel and to facilitate execution of his Work. Examples are scaffolds, staging, ladders, stairs, ramps, runways, platforms, railings, hoists, cranes, chutes and other such facilities and equipment.
- 9.2 Mutual use may be arranged by the Contractor where applicable.

ARTICLE 10: BARRIERS

- 10.1 Materials at Contractor's option, as appropriate to serve required purpose.

ARTICLE 11: HEAT, VENTILATION

(Not Used)

ARTICLE 12: ENCLOSURES

(Not Used)

ARTICLE 13: PROTECTION OF INSTALLED WORK

- 13.1 Provide temporary protection for installed products. Control traffic in immediate area to minimize damage.
- 13.2 Prohibit traffic and storage on waterproofed and roofed surfaces, on lawn and landscaped areas.

ARTICLE 14: WATER CONTROL

- 14.1 Maintain excavations free of water. Provide and operate pumping equipment as needed. Grade site to drain.

ARTICLE 15: CLEANING DURING CONSTRUCTION

- 15.1 Control accumulation of waste materials and rubbish; periodically dispose of legally off site.
- 15.2 Clean interior areas prior to start of finish work, maintain areas free of dust and other contaminants during finishing operations.

ARTICLE 16: PROJECT IDENTIFICATION

(Not Used)

ARTICLE 17: FIELD OFFICES AND SHEDS

- 17.1 Field offices and sheds are to be provided by the Contractor as necessary to properly conduct the Work and associated activities such as progress meetings, maintaining as-built drawings, and storage of materials.

ARTICLE 18: REMOVAL OF CONSTRUCTION FACILITIES AND RESTORATION OF SITE

- 18.1 Remove temporary materials, equipment, services, and construction prior to Substantial Completion Inspection.
- 18.2 Clean and repair damage caused by installation or use of temporary facilities. Remove underground installations to a depth of two (2) feet; grade site as indicated.

ARTICLE 19: SECURITY

- 19.1 Security of persons and property in areas under control of the Contractor shall be the Contractor's exclusive responsibility.
- 19.2 The Contractor, at this own expense, shall initiate whatever programs that are necessary to execute his responsibility.
- 19.3 Control of access to the areas under his control shall be maintained. Visitors shall be required to report immediately to the Contractor's Superintendent and to produce full identification which will be recorded in the Contractor's Daily Log, along with the purpose of the visit.

ARTICLE 20: ACCESS ROADS AND PARKING AREAS

- 20.1 Provide and maintain uninterrupted vehicular access to site and within it:
- .1 To temporary construction facilities, storage and work areas.
 - .2 For use by persons and equipment involved in construction of project.
- 20.2 Maintain traffic areas free as possible of excavated materials, construction equipment, products, snow, ice and debris.
- 20.3 Keep fire hydrants and water control valves free from obstruction and accessible for use.
- 20.4 Designated areas of existing parking facilities may be used for parking of construction personnel's private vehicles and of Contractor's light-weight vehicles.

ARTICLE 21: TEMPORARY CONTROLS

- 21.1 Provide the following Temporary Controls:
- .1 Control of noise.
 - .2 Control of dust, both on site and within building.
 - .3 Control of surface water to prevent damage to the project, the site or adjacent properties.
 - .4 Control of pests and rodents to prevent infestation of construction or storage areas.
 - .5 Control of debris.
 - .6 Control of pollution of soil, water or atmosphere in accordance with applicable laws.
 - .7 Control of erosion in accordance with applicable laws.
 - .8 Control of mud and snow, including removal where necessary to construction operations.
Remove any mud tracked from site onto public roads or streets.

ARTICLE 22: TRAFFIC REGULATION

- 22.1 Obtain all temporary permits for access to, and use of public roads and streets for construction and hauling purposes. Comply with traffic control regulations applying to permit issuance.
- 22.2 Provide all markers, signs, lights and barriers on, and near the site to safely control construction traffic and public access.

END OF SECTION 01500 – CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

SECTION 01600 - MATERIALS AND EQUIPMENT

TABLE OF ARTICLES

1. GENERAL CONDITIONS
2. REQUIREMENTS INCLUDED
3. MANUFACTURER'S INSTRUCTIONS
4. TRANSPORTATION AND HANDLING
5. STORAGE AND PROTECTION
6. SUBSTITUTIONS AND PRODUCT OPTIONS

ARTICLE 1: GENERAL CONDITIONS

- 1.1 The general provisions of the Contract, including the conditions of the Contract (General Conditions, Supplementary General Conditions, General Requirements, and other Conditions, if any) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Where Work is to be executed under Separate Prime Contracts, the provisions of this Section apply to each contract.

ARTICLE 2: REQUIREMENTS INCLUDED

- 2.1 All material and equipment incorporated into the Work shall:
 - .1 Conform to applicable specifications and standards.
 - .2 Comply with size, make, type and quality specified, or as specifically approved in writing by the Architect.
- 2.2 Manufactured and Fabricated Products shall conform to the following requirements:
 - .1 Design, fabricate and assemble in accordance with the best engineering and shop practices.
 - .2 Manufacture like parts of duplicate units to standard sizes and gauges, to be interchangeable.
 - .3 Two or more items of the same kind shall be identical, by the same manufacturer.
 - .4 Products shall be suitable for service conditions.
 - .5 Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.
- 2.3 Do not use material or equipment for any purpose other than that for which it is designated or is specified.
- 2.4 Materials removed from existing structures shall not be re-used in the completed Work unless specifically indicated or specified.
- 2.5 For material and equipment specifically indicated or specified to be re-used in the Work:
 - .1 Use special care in removal, handling, storage and reinstallation, to assure proper function in the completed Work.

- .2 Arrange for transportation, storage and handling of products which require off-site storage, restoration or renovation. Pay all costs for such work.

ARTICLE 3: MANUFACTURER'S INSTRUCTIONS

- 3.1 When Contract Documents require that installation of Work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in the installation, including two copies to Engineer.
 - .1 Maintain one set of complete instructions at the job site during installation and until completion.
- 3.2 Handle, install, connect, clean, condition and adjust products in strict accord with such instructions and in conformity with specified requirements.
 - .1 Should job conditions or specified requirements conflict with manufacturer's instructions, consult with Architect for further instructions.
 - .2 Do not proceed with Work without clear instructions.
- 3.3 Perform Work in accord with manufacturer's instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.

ARTICLE 4: TRANSPORTATION AND HANDLING

- 4.1 Arrange deliveries of products in accord with construction schedules, coordinate to avoid conflict with Work and conditions at the site.
 - .1 Deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
 - .2 Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals, and that products are properly protected and undamaged.
- 4.2 Provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.

ARTICLE 5: STORAGE AND PROTECTION

- 5.1 Store products in accord with manufacturer's instructions, with seals and labels intact and legible.
 - .1 Store products subject to damage by the elements in weather-tight enclosures.
 - .2 Maintain temperature and humidity within the ranges required by manufacturer's instructions.
- 5.2 Exterior Storage.
 - .1 Store fabricated products above the ground, on blocking or skids, prevent soiling or staining. Cover products which are subject to deterioration with impervious sheet coverings; provide adequate ventilation to avoid condensation.
 - .2 Store loose granular materials in a well-drained area on solid surfaces to prevent mixing

with foreign matter.

- 5.3 Arrange storage in a manner to provide easy access for inspection. Make periodic inspection of stored products to assure that products are maintained under specified conditions, and free from damage or deterioration.
- 5.4 Store flammable materials so as to prevent contact with flames and fire. Conform with manufacturer's recommendations and local laws. Pay particular attention to storage of:
 - .1 Paint materials.
 - .2 Cleaning and other solvents.
 - .3 Fuels.
- 5.5 Protection After Installation:
 - .1 Provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. Remove when no longer needed.

ARTICLE 6: SUBSTITUTIONS AND PRODUCT OPTIONS

- 6.1 Product List.
 - .1 Within 14 days after date of Owner-Contractor Agreement, submit a complete list of major products proposed for use, with the name of the manufacturer, trade name, and model number of each product and the installing subcontractor.
- 6.2 Contractor's Options.
 - .1 For products specified only by reference standard, select any product meeting that standard.
 - .2 For products specified by naming several products or manufacturers, select any one of the products or manufacturers named which complies with the specifications.
 - .3 For products specified by naming one or more products or manufacturers and "or equal", bidders must, during the bidding period, submit a request for substitutions for any product or manufacturer not specifically named. See provisions in Article 6, paragraph 6.3.
 - .4 For products specified by naming only one product and manufacturer, there is no option.
- 6.3 Substitutions.
 - .1 Requests for substitutions shall be made in writing and received by the Owner before 4:30 p.m., 10 calendar days prior to bid opening. Subsequently, substitutions will be considered only when a Product becomes unavailable due to no fault of the Contractor. The Architect will review requests and will notify bidders in an Addendum if the requested substitution is acceptable.
 - .2 Submit a separate request for each product, supported with complete data, with drawings and samples as appropriate, including:
 - .1 Comparison of the qualities of the proposed substitution with that specified.
 - .2 Changes required in other elements of the work because of the substitution.
 - .3 Effect on the construction schedule.
 - .4 Cost data comparing the proposed substitution with the product specified.
 - .5 Any required license fees or royalties.

- .6 Availability of maintenance service, and source of replacement materials.
- .3 Engineer shall be the judge of the acceptability of the proposed substitution.
- .4 A request for a substitution constitutes a representation that Bidder:
 - .1 Has investigated the proposed product and determined that it is equal to or superior in all respects to that specified.
 - .2 Will provide the same warranties or bonds for the substitution as for the product specified.
 - .3 Will coordinate the installation of an accepted substitution into the Work, and make such other changes as may be required to make the Work complete in all respects.
 - .4 Waives all claims for additional costs, under his responsibility, which may subsequently become apparent.

END OF SECTION 01600 – MATERIALS AND EQUIPMENT

SECTION 01700 - CONTRACT CLOSEOUT

TABLE OF ARTICLES

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2. RELATED REQUIREMENTS
3. CLOSEOUT PROCEDURES
4. FINAL CLEANING
5. OPERATION AND MAINTENANCE DATA
6. WARRANTIES AND BONDS
7. SPARE PARTS AND MAINTENANCE MATERIALS

ARTICLE 1: REQUIREMENTS INCLUDED

- 1.1 Closeout Procedures.
- 1.2 Final Cleaning.
- 1.3 Operation and Maintenance Data.
- 1.4 Warranties and Bonds.
- 1.5 Spare Parts and Maintenance Materials.

ARTICLE 2: RELATED REQUIREMENTS

- 2.1 Drawings and general provisions of the Contract, including General Conditions, Supplementary General Conditions, General Requirements, and other Division-1 Specification Sections, apply to this Section.
 - .1 Fiscal provisions, legal submittals, and other administrative requirements.
- 2.2 Section 00600 - Bonds, Certificates and Administrative Forms (AIA Documents), applies to this Section.

ARTICLE 3: CLOSEOUT PROCEDURES

- 3.1 Comply with procedures stated in General Conditions of the Contract for issuance of Certificate of Substantial Completion.
- 3.2 When Contractor considers Work has reached final completion, submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Owner's inspection.
- 3.3 In addition to submittals required by the conditions of the Contract, provide submittals required by governing authorities, and submit a final statement of accounting giving total adjusted Contract Sum, previous payments, and sum remaining due.
- 3.4 Owner will issue a final Change Order reflecting approved adjustments to Contract Sum not previously made by Change Order.

ARTICLE 4: FINAL CLEANING

- 4.1 Execute prior to final inspection.
- 4.2 Clean interior and exterior surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum soft surfaces. Clean equipment and fixtures to a sanitary condition, clean or replace filters of mechanical equipment.

Clean roofs, gutters, downspouts, and drainage systems.

- 4.3 Clean site: Sweep paved areas, rake clean other surfaces.
- 4.4 Remove waste and surplus materials, rubbish, and construction facilities from the Project and from the Site. Provide final cleaning.

ARTICLE 5: OPERATION AND MAINTENANCE DATA

- 5.1 Provide data for:
 - .1 Mechanical equipment and controls.
 - .2 Electrical equipment and controls.
- 5.2 Submit three (3) sets prior to final inspection, bound in 8-1/2 x 11 inch (216 x 279 mm) three-ring side binders with durable plastic covers.
- 5.3 Provide a separate volume for each system, with a table of contents and index tabs for each volume.
- 5.4 Part 1: Directory, listing names, addresses, and telephone number of: Suppliers and Contractor.
- 5.5 Part 2: Operation and maintenance instructions, arranged by Specification Division. For each Specification give names, addresses, and telephone number of Subcontractors and Suppliers.

List:

- .1 Appropriate design criteria.
- .2 List of equipment.
- .3 Parts list.
- .4 Operating instructions.
- .5 Maintenance instructions, equipment.
- .6 Maintenance instructions, finishes.
- .7 Shop Drawings and Product Data.
- .8 Warranties.

ARTICLE 6: WARRANTIES AND BONDS

- 6.1 Provide duplicate, notarized copies. Execute Contractor's submittals and assemble documents executed by subcontractors, suppliers, and manufacturers. Provide table of contents and assemble in binder with durable plastic cover.
- 6.2 Submit material prior to final application for payment. For equipment put into use with Owner's written permission during construction, submit within seven (7) days after first operation. For items of work delayed materially beyond date of Substantial Completion, provide updated submittal within ten (10) days after acceptance, listing date of acceptance as start of warranty period.

ARTICLE 7: SPARE PARTS AND MAINTENANCE MATERIALS

- 7.1 Provide products, spare parts, and maintenance materials in quantities specified in each Section, in addition to that used for construction of Work. Coordinate with Owner, deliver to Project Site and obtain receipt prior to final payment.

END OF SECTION 01700 - CONTRACT CLOSEOUT

SECTION 01720 - PROJECT RECORD DOCUMENTS

TABLE OF ARTICLES

1. REQUIREMENTS INCLUDED
2. MAINTENANCE OF DOCUMENTS AND SAMPLES
3. MARKING DEVICES
4. RECORDING
5. SUBMITTAL

ARTICLE 1: REQUIREMENTS INCLUDED

- 1.1 Maintain at the site for the Owner one (1) record copy of:
 - .1 Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Change Orders and other Modifications to the Contract.
 - .5 Engineer Field Orders or Written Instructions.
 - .6 Approved Shop Drawings, Product Data and Samples.
 - .7 Field Test Records.

ARTICLE 2: MAINTENANCE OF DOCUMENTS AND SAMPLES

- 2.1 Store documents and samples in Contractor's field office apart from documents used for construction.
- 2.2 File documents and samples in accordance with CSI format.
- 2.3 Maintain documents in a clean, dry, legible condition and in good order. Do not use record documents for construction purposes.
- 2.4 Make documents and samples available at all times for inspection by Owner's representative.

ARTICLE 3: MARKING DEVICES

- 3.1 Provide felt tip marking pens for recording information in the code designated by Owner's representative.

ARTICLE 4: RECORDING

- 4.1 Label each document "PROJECT RECORD" in neat large printed letters.
- 4.2 Record information concurrently with construction progress.
 - .1 Do not conceal any work until required information is recorded.
- 4.3 Drawings: Legibly mark to record actual construction:
 - .1 Depths of various elements of foundation in relation to finish first floor datum.
 - .2 Horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.

- .3 Location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.
 - .4 Field changes of dimension and detail.
 - .5 Changes made by Change Order.
 - .6 Details not on original Contract Drawings.
- 4.4 Specifications and Addenda: Legibly mark each Section to record:
- .1 Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.
 - .2 Changes made by Change Order.

ARTICLE 5: SUBMITTAL

- 5.1 Prior to contract close-out, Contractor shall submit record documents as specified for Owner's review and acceptance, Contractor shall submit a set of reproducible sepias for Owner's use.
- 5.2 Accompany submittal with transmittal letter in duplicate, containing:
- .1 Date.
 - .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Title and number of each record document.
 - .5 Signature of Contractor or his authorized representative.

ARTICLE 6: EXCAVATION CLOSURE REPORT

- 6.1 Submit three copies of a Closure Report within 14 calendar days of completing work at the site. The report shall be labeled with the contract number, project name, location, date, and name of general Contractor. The Closure Report shall include the following information as a minimum:
- 1. A cover letter signed by a responsible company official certifying that all services involved have been performed in accordance with the terms and conditions of the contract documents and regulatory requirements.
 - 2. A narrative report including, but not limited to, the following:
 - a. site conditions, ground water elevation, and cleanup criteria;
 - b. quantity of materials removed from each area of contamination;
 - c. sample chain-of-custody forms; and
 - d. source of backfill.
 - 3. Copies of all backfill chemical and physical test results.
 - 4. Copies of all manifests and land disposal restriction notifications.

5. Copies of all certifications of final disposal signed by the
6. responsible disposal facility official.
7. Waste profile sheets.
8. Scale drawings showing limits of each excavation.

END OF SECTION 01720 – PROJECT RECORD DOCUMENTS

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CONSTRUCTION WASTE MANAGEMENT

PART 1 – GENERAL

1.1 SUMMARY

- A. Section includes: Administrative and procedural requirements for construction waste management activities.

1.2 DEFINITIONS

- A. Construction, Demolition, and Land clearing (CDL) Waste: Includes all non-hazardous solid wastes resulting from construction, remodeling, alterations, repair, demolition and land clearing. Includes material that is recycled, reused, salvaged or disposed as garbage.
- B. Salvage: Recovery of materials for on-site reuse, sale or donation to a third party.
- C. Reuse: Making use of a material without altering its form. Materials can be reused on-site or reused on other projects off-site. Examples include, but are not limited to the following: Crushing or grinding of concrete for use as sub-base material. Chipping of land clearing debris for use as mulch.
- D. Recycling: The process of sorting, cleaning, treating, and reconstituting materials for the purpose of using the material in the manufacture of a new product.
- E. Source-Separated CDL Recycling: The process of separating recyclable materials in separate containers as they are generated on the job-site. The separated materials are hauled directly to a recycling facility or transfer station.
- F. Co-mingled CDL Recycling: The process of collecting mixed recyclable materials in one container on-site. The container is taken to a material recovery facility where materials are separated for recycling.
- G. Approved Recycling Facility: Any of the following:
 - 1. A facility that can legally accept CDL waste materials for the purpose of processing the materials into an altered form for the manufacture of a new product.
 - 2. Material Recovery Facility: A general term used to describe a waste-sorting facility. Mechanical, hand-separation, or a combination of both procedures, are used to recover recyclable materials.

1.3 SUBMITTALS

- A. Contractor shall develop a Waste Management Plan: Submit 3 copies of plan within 14 days of date established for the **Notice to Proceed**.
- B. Contractor shall provide Waste Management Report: Concurrent with each Application for Payment, submit **3** copies of report.

1.4 PERFORMANCE REQUIREMENTS

- A. General: Divert a minimum of **75%** CDL waste, by weight, from the landfill by one, or a combination of the following activities:
1. Salvage
 2. Reuse
 3. Source-Separated CDL Recycling
 4. Co-mingled CDL Recycling
- B. CDL waste materials that can be salvaged, reused or recycled include, but are not limited to, the following:
1. Acoustical ceiling tiles
 2. Asphalt
 3. Asphalt shingles
 4. Cardboard packaging
 5. Carpet and carpet pad
 6. Concrete
 7. Drywall
 8. Fluorescent lights and ballasts
 9. Land clearing debris (vegetation, stumpage, dirt)
 10. Metals
 11. Paint (through hazardous waste outlets)
 12. Wood
 13. Plastic film (sheeting, shrink wrap, packaging)
 14. Window glass
 15. Wood
 16. Field office waste, including office paper, aluminum cans, glass, plastic, and office cardboard.

1.4 QUALITY ASSURANCE

- A. Waste Management Coordinator Qualifications: Experienced firm, with a record of successful waste management coordination of projects with similar requirements, that employs a LEED Accredited Professional, certified by the USGBC as waste management coordinator.
- B. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.
- C. Regulatory Requirements: Conduct construction waste management activities in accordance with hauling and disposal regulations of all authorities having jurisdiction and all other applicable laws and ordinances.
- D. Preconstruction Conference: Schedule and conduct meeting at Project site prior to construction activities.
1. Attendees: Inform the following individuals, whose presence is required, of date and time of meeting.
 - a. Owner
 - b. Architect
 - c. Contractor's superintendent
 - d. Major subcontractors
 - e. Waste Management Coordinator
 - f. Other concerned parties

2. Agenda Items: Review methods and procedures related to waste management including, but not limited to, the following:
 - a. Review and discuss waste management plan including responsibilities of Waste Management Coordinator.
 - b. Review requirements for documenting quantities of each type of waste and its disposition.
 - c. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
 - d. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
 - e. Review waste management requirements for each trade.
3. Minutes: Record discussion. Distribute meeting minutes to all participants.
Note: If there is a Project Architect, they will perform this role.

1.5 WASTE MANAGEMENT PLAN – Contactor shall develop and document the following:

- A. Develop a plan to meet the requirements listed in this section at a minimum. Plan shall consist of waste identification, waste reduction plan and cost/revenue analysis. Distinguish between demolition and construction waste. Indicate quantities by weight throughout the plan.
- B. Indicate anticipated types and quantities of demolition, site-cleaning and construction waste generated by the project. List all assumptions made for the quantities estimates.
- C. List each type of waste and whether it will be salvaged, recycled, or disposed of in an landfill. The plan should included the following information:
 1. Types and estimated quantities, by weight, of CDL waste expected to be generated during demolition and construction.
 2. Proposed methods for CDL waste salvage, reuse, recycling and disposal during demolition including, but not limited to, one or more of the following:
 - a. Contracting with a deconstruction specialist to salvage materials generated,
 - b. Selective salvage as part of demolition contractor's work,
 - c. Reuse of materials on-site or sale or donation to a third party.
 3. Proposed methods for salvage, reuse, recycling and disposal during construction including, but not limited to, one or more of the following:
 - a. Requiring subcontractors to take their CDL waste to a recycling facility;
 - b. Contracting with a recycling hauler to haul recyclable CDL waste to an approved recycling or material recovery facility;
 - c. Processing and reusing materials on-site;
 - d. Self-hauling to a recycling or material recovery facility.
 4. Name of recycling or material recovery facility receiving the CDL wastes.
 5. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on project site where materials separation will be located.

- D. Cost/Revenue Analysis: Indicate total cost of waste disposal as if there was no waste management plan and net additional cost or net savings resulting from implementing waste management plan. Include the following:
1. Total quantity of waste.
 2. Estimated cost of disposal (cost per unit). Include hauling and tipping fees and cost of collection containers for each type of waste.
 3. Total cost of disposal (with no waste management).
 4. Revenue from salvaged materials.
 5. Revenue from recycled materials.
 6. Savings in hauling and tipping fees by donating materials.
 7. Savings in hauling and tipping fees that are avoided.
 8. Handling and transportation costs. Including cost of collection containers for each type of waste.
 9. Net additional cost or net savings from waste management plan.

PART 2 - PRODUCTS (Not Used)

PART 3 – EXECUTION

3.1 CONSTRUCTION WASTE MANAGEMENT, GENERAL

- A. Provide containers for CDL waste that is to be recycled clearly labeled as such with a list of acceptable and unacceptable materials. The list of acceptable materials must be the same as the materials recycled at the receiving material recovery facility or recycling processor.
- B. The collection containers for recyclable CDL waste must contain no more than 10% non-recyclable material, by volume.
- C. Provide containers for CDL waste that is disposed in a landfill clearly labeled as such.
- D. Use detailed material estimates to reduce risk of unplanned and potentially wasteful cuts.
- E. To the greatest extent possible, include in material purchasing agreements a waste reduction provision requesting that materials and equipment be delivered in packaging made of recyclable material, that they reduce the amount of packaging, that packaging be taken back for reuse or recycling, and to take back all unused product. Insure that subcontractors require the same provisions in their purchase agreements.
- F. Conduct regular visual inspections of dumpsters and recycling bins to remove contaminants.

3.2 SOURCE SEPARATION

- A. General: Contractor shall separate recyclable materials from CDL waste to the maximum extent possible.

Separate recyclable materials by type.

1. Provide containers, clearly labeled, by type of separated materials or provide other storage method for managing recyclable materials until they are removed from Project site.
2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water and to minimize pest attraction. Cover to prevent windblown dust.\

3. Stockpile materials away from demolition area. Do not store within drip line of remaining trees.
4. Store components off the ground and protect from weather.

3.3 CO-MINGLED RECYCLING

- A. General: Do not put CDL waste that will be disposed in a landfill into a co-mingled CDL waste recycling container.

REMOVAL OF CONSTRUCTION WASTE MATERIALS

- A. Remove CDL waste materials from project site on a regular basis. Do not allow CDL waste to accumulate on-site.
- B. Transport CDL waste materials off Owner's property and legally dispose of them.
- C. Burning of CDL waste is not permitted.

END OF SECTION

WASTE MANAGEMENT PROGRESS REPORT				
MATERIAL CATEGORY	DISPOSED IN MUNICIPAL SOLID WASTE LANDFILL	DIVERTED FROM LANDFILL BY RECYCLING, SALVAGE OR REUSE		
		Recycled	Salvaged	Reused
1. Acoustical Ceiling Tiles				
2. Asphalt				
3. Asphalt Shingles				
4. Cardboard Packaging				
5. Carpet and Carpet Pad				
6. Concrete				
7. Drywall				
8. Fluorescent Lights and Ballasts				
9. Land Clearing Debris (vegetation, stumpage, dirt)				
10. Metals				
11. Paint (through hazardous waste outlets)				
12. Wood				
13. Plastic Film (sheeting, shrink wrap, packaging)				
14. Window Glass				
15. Field Office Waste (office paper, aluminum cans, glass, plastic, and coffee cardboard)				
16. Other (insert description)				
17. Other (insert description)				
Total (In Weight)		(TOTAL OF ALL ABOVE VALUES – IN WEIGHT)		
		Percentage of Waste Diverted	(TOTAL WASTE DIVIDED BY TOTAL DIVERTED)	

**IMPLEMENTATION OF AMERICAN IRON AND STEEL PROVISIONS OF P.L. 113-76,
CONSOLIDATION APPROPRIATIONS ACT, 2014**



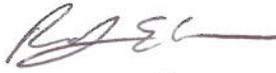
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

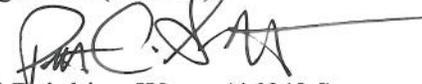
MAR 20 2014

OFFICE OF WATER

MEMORANDUM

SUBJECT: Implementation of American Iron and Steel provisions of P.L. 113-76,
Consolidated Appropriations Act, 2014

FROM: For Andrew D. Sawyers, Director 
Office of Wastewater Management (4201M)

Peter C. Grevatt, Director 
Office of Ground Water and Drinking Water (4601M)

TO: Water Management Division Directors
Regions I - X

P.L. 113-76, Consolidated Appropriations Act, 2014 (Act), includes an “American Iron and Steel (AIS)” requirement in section 436 that requires Clean Water State Revolving Loan Fund (CWSRF) and Drinking Water State Revolving Loan Fund (DWSRF) assistance recipients to use iron and steel products that are produced in the United States for projects for the construction, alteration, maintenance, or repair of a public water system or treatment works if the project is funded through an assistance agreement executed beginning January 17, 2014 (enactment of the Act), through the end of Federal Fiscal Year 2014.

Section 436 also sets forth certain circumstances under which EPA may waive the AIS requirement. Furthermore, the Act specifically exempts projects where engineering plans and specifications were approved by a State agency prior to January 17, 2014.

The approach described below explains how EPA will implement the AIS requirement. The first section is in the form of questions and answers that address the types of projects that must comply with the AIS requirement, the types of products covered by the AIS requirement, and compliance. The second section is a step-by-step process for requesting waivers and the circumstances under which waivers may be granted.

Implementation

The Act states:

Sec. 436. (a)(1) None of the funds made available by a State water pollution control revolving fund as authorized by title VI of the Federal Water Pollution Control Act (33 U.S.C. 1381 et seq.) or made available by a drinking water treatment revolving loan fund as authorized by section 1452 of the Safe Drinking Water Act (42 U.S.C. 300j-12) shall be used for a project for the construction, alteration, maintenance, or repair of a public water system or treatment works unless all of the iron and steel products used in the project are produced in the United States.

(2) In this section, the term “iron and steel products” means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials.

(b) Subsection (a) shall not apply in any case or category of cases in which the Administrator of the Environmental Protection Agency (in this section referred to as the “Administrator”) finds that—

(1) applying subsection (a) would be inconsistent with the public interest;

(2) iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or

(3) inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

(c) If the Administrator receives a request for a waiver under this section, the Administrator shall make available to the public on an informal basis a copy of the request and information available to the Administrator concerning the request, and shall allow for informal public input on the request for at least 15 days prior to making a finding based on the request. The Administrator shall make the request and accompanying information available by electronic means, including on the official public Internet Web site of the Environmental Protection Agency.

(d) This section shall be applied in a manner consistent with United States obligations under international agreements.

(e) The Administrator may retain up to 0.25 percent of the funds appropriated in this Act for the Clean and Drinking Water State Revolving Funds for carrying out

the provisions described in subsection (a)(1) for management and oversight of the requirements of this section.

(f) This section does not apply with respect to a project if a State agency approves the engineering plans and specifications for the project, in that agency's capacity to approve such plans and specifications prior to a project requesting bids, prior to the date of the enactment of this Act.

The following questions and answers provide guidance for implementing and complying with the AIS requirements:

Project Coverage

1) What classes of projects are covered by the AIS requirement?

All treatment works projects funded by a CWSRF assistance agreement, and all public water system projects funded by a DWSRF assistance agreement, from the date of enactment through the end of Federal Fiscal Year 2014, are covered. The AIS requirements apply to the entirety of the project, no matter when construction begins or ends. Additionally, the AIS requirements apply to all parts of the project, no matter the source of funding.

2) Does the AIS requirement apply to nonpoint source projects or national estuary projects?

No. Congress did not include an AIS requirement for nonpoint source and national estuary projects unless the project can also be classified as a 'treatment works' as defined by section 212 of the Clean Water Act.

3) Are any projects for the construction, alteration, maintenance, or repair of a public water system or treatment works excluded from the AIS requirement?

Any project, whether a treatment works project or a public water system project, for which engineering plans and specifications were approved by the responsible state agency prior to January 17, 2014, is excluded from the AIS requirements.

4) What if the project does not have approved engineering plans and specifications but has signed an assistance agreement with a CWSRF or DWSRF program prior to January 17, 2014?

The AIS requirements do not apply to any project for which an assistance agreement was signed prior to January 17, 2014.

5) What if the project does not have approved engineering plans and specifications, but bids were advertised prior to January 17, 2014 and an assistance agreement was signed after January 17, 2014?

If the project does not require approved engineering plans and specifications, the bid advertisement date will count in lieu of the approval date for purposes of the exemption in section 436(f).

6) What if the assistance agreement that was signed prior to January 17, 2014, only funded a part of the overall project, where the remainder of the project will be funded later with another SRF loan?

If the original assistance agreement funded any construction of the project, the date of the original assistance agreement counts for purposes of the exemption. If the original assistance agreement was only for planning and design, the date of that assistance agreement will count for purposes of the exemption only if there is a written commitment or expectation on the part of the assistance recipient to fund the remainder of the project with SRF funds.

7) What if the assistance agreement that was signed prior to January 17, 2014, funded the first phase of a multi-phase project, where the remaining phases will be funded by SRF assistance in the future?

In such a case, the phases of the project will be considered a single project if all construction necessary to complete the building or work, regardless of the number of contracts or assistance agreements involved, are closely related in purpose, time and place. However, there are many situations in which major construction activities are clearly undertaken in phases that are distinct in purpose, time, or place. In the case of distinct phases, projects with engineering plans and specifications approval or assistance agreements signed prior to January 17, 2014 would be excluded from AIS requirements while those approved/signed on January 17, 2014, or later would be covered by the AIS requirements.

8) What if a project has split funding from a non-SRF source?

Many States intend to fund projects with “split” funding, from the SRF program and from State or other programs. Based on the Act language in section 436, which requires that American iron and steel products be used in any project for the construction, alteration, maintenance, or repair of a public water system or treatment works receiving SRF funding between and including January 17, 2014 and September 30, 2014, any project that is funded in whole or in part with such funds must comply with the AIS requirement. A “project” consists of all construction necessary to complete the building or work regardless of the number of contracts or assistance agreements involved so long as all contracts and assistance agreements awarded are closely related in purpose, time and place. This precludes the intentional splitting of SRF projects into separate and smaller contracts or assistance agreements to avoid AIS coverage on some portion of a larger

project, particularly where the activities are integrally and proximately related to the whole. However, there are many situations in which major construction activities are clearly undertaken in separate phases that are distinct in purpose, time, or place, in which case, separate contracts or assistance agreement for SRF and State or other funding would carry separate requirements.

9) What about refinancing?

If a project began construction, financed from a non-SRF source, prior to January 17, 2014, but is refinanced through an SRF assistance agreement executed on or after January 17, 2014 and prior to October 1, 2014, AIS requirements will apply to all construction that occurs on or after January 17, 2014, through completion of construction, unless, as is likely, engineering plans and specifications were approved by a responsible state agency prior to January 17, 2014. There is no retroactive application of the AIS requirements where a refinancing occurs for a project that has completed construction prior to January 17, 2014.

10) Do the AIS requirements apply to any other EPA programs, besides the SRF program, such as the Tribal Set-aside grants or grants to the Territories and DC?

No, the AIS requirement only applies to funds made available by a State water pollution control revolving fund as authorized by title VI of the Federal Water Pollution Control Act (33 U.S.C. 1381 et seq.) or made available by a drinking water treatment revolving loan fund as authorized by section 1452 of the Safe Drinking Water Act (42 U.S.C. 300j-12)

Covered Iron and Steel Products

11) What is an iron or steel product?

For purposes of the CWSRF and DWSRF projects that must comply with the AIS requirement, an iron or steel product is one of the following made primarily of iron or steel that is permanently incorporated into the public water system or treatment works:

- Lined or unlined pipes or fittings;
- Manhole Covers;
- Municipal Castings (defined in more detail below);
- Hydrants;
- Tanks;
- Flanges;
- Pipe clamps and restraints;
- Valves;
- Structural steel (defined in more detail below);
- Reinforced precast concrete; and
- Construction materials (defined in more detail below).

12) What does the term ‘primarily iron or steel’ mean?

‘Primarily iron or steel’ places constraints on the list of products above. For one of the listed products to be considered subject to the AIS requirements, it must be made of greater than 50% iron or steel, measured by cost. The cost should be based on the material costs.

13) Can you provide an example of how to perform a cost determination?

For example, the iron portion of a fire hydrant would likely be the bonnet, body and shoe, and the cost then would include the pouring and casting to create those components. The other material costs would include non-iron and steel internal workings of the fire hydrant (i.e., stem, coupling, valve, seals, etc). However, the assembly of the internal workings into the hydrant body would not be included in this cost calculation. If one of the listed products is not made primarily of iron or steel, United States (US) provenance is not required. An exception to this definition is reinforced precast concrete, which is addressed in a later question.

14) If a product is composed of more than 50% iron or steel, but is not listed in the above list of items, must the item be produced in the US? Alternatively, must the iron or steel in such a product be produced in the US?

The answer to both question is no. Only items on the above list must be produced in the US. Additionally, the iron or steel in a non-listed item can be sourced from outside the US.

15) What is the definition of steel?

Steel means an alloy that includes at least 50 percent iron, between .02 and 2 percent carbon, and may include other elements. Metallic elements such as chromium, nickel, molybdenum, manganese, and silicon may be added during the melting of steel for the purpose of enhancing properties such as corrosion resistance, hardness, or strength. The definition of steel covers carbon steel, alloy steel, stainless steel, tool steel and other specialty steels.

16) What does ‘produced in the United States’ mean?

Production in the United States of the iron or steel products used in the project requires that all manufacturing processes, including application of coatings, must take place in the United States, with the exception of metallurgical processes involving refinement of steel additives. All manufacturing processes includes processes such as melting, refining, forming, rolling, drawing, finishing, fabricating and coating. Further, if a domestic iron and steel product is taken out of the US for any part of the manufacturing process, it becomes foreign source material. However, raw materials such as iron ore, limestone and iron and steel scrap are not covered by the AIS requirement, and the

material(s), if any, being applied as a coating are similarly not covered. Non-iron or steel components of an iron and steel product may come from non-US sources. For example, for products such as valves and hydrants, the individual non-iron and steel components do not have to be of domestic origin.

17) Are the raw materials used in the production of iron or steel required to come from US sources?

No. Raw materials, such as iron ore, limestone, scrap iron, and scrap steel, can come from non-US sources.

18) If an above listed item is primarily made of iron or steel, but is only at the construction site temporarily, must such an item be produced in the US?

No. Only the above listed products made primarily of iron or steel, permanently incorporated into the project must be produced in the US. For example trench boxes, scaffolding or equipment, which are removed from the project site upon completion of the project, are not required to be made of U.S. Iron or Steel.

19) What is the definition of ‘municipal castings’?

Municipal castings are cast iron or steel infrastructure products that are melted and cast. They typically provide access, protection, or housing for components incorporated into utility owned drinking water, storm water, wastewater, and surface infrastructure. They are typically made of grey or ductile iron, or steel. Examples of municipal castings are:

- Access Hatches;
- Ballast Screen;
- Benches (Iron or Steel);
- Bollards;
- Cast Bases;
- Cast Iron Hinged Hatches, Square and Rectangular;
- Cast Iron Riser Rings;
- Catch Basin Inlet;
- Cleanout/Monument Boxes;
- Construction Covers and Frames;
- Curb and Corner Guards;
- Curb Openings;
- Detectable Warning Plates;
- Downspout Shoes (Boot, Inlet);
- Drainage Grates, Frames and Curb Inlets;
- Inlets;
- Junction Boxes;
- Lampposts;
- Manhole Covers, Rings and Frames, Risers;

Meter Boxes;
Service Boxes;
Steel Hinged Hatches, Square and Rectangular;
Steel Riser Rings;
Trash receptacles;
Tree Grates;
Tree Guards;
Trench Grates; and
Valve Boxes, Covers and Risers.

20) What is ‘structural steel’?

Structural steel is rolled flanged shapes, having at least one dimension of their cross-section three inches or greater, which are used in the construction of bridges, buildings, ships, railroad rolling stock, and for numerous other constructional purposes. Such shapes are designated as wide-flange shapes, standard I-beams, channels, angles, tees and zees. Other shapes include H-piles, sheet piling, tie plates, cross ties, and those for other special purposes.

21) What is a ‘construction material’ for purposes of the AIS requirement?

Construction materials are those articles, materials, or supplies made primarily of iron and steel, that are permanently incorporated into the project, not including mechanical and/or electrical components, equipment and systems. Some of these products may overlap with what is also considered “structural steel”. This includes, but is not limited to, the following products: wire rod, bar, angles, concrete reinforcing bar, wire, wire cloth, wire rope and cables, tubing, framing, joists, trusses, fasteners (i.e., nuts and bolts), welding rods, decking, grating, railings, stairs, access ramps, fire escapes, ladders, wall panels, dome structures, roofing, ductwork, surface drains, cable hanging systems, manhole steps, fencing and fence tubing, guardrails, doors, and stationary screens.

22) What is not considered a ‘construction material’ for purposes of the AIS requirement?

Mechanical and electrical components, equipment and systems are not considered construction materials. Mechanical equipment is typically that which has motorized parts and/or is powered by a motor. Electrical equipment is typically any machine powered by electricity and includes components that are part of the electrical distribution system.

The following examples (including their appurtenances necessary for their intended use and operation) are NOT considered construction materials: pumps, motors, gear reducers, drives (including variable frequency drives (VFDs)), electric/pneumatic/manual accessories used to operate valves (such as electric valve actuators), mixers, gates, motorized screens (such as traveling screens), blowers/aeration equipment, compressors, meters, sensors, controls and switches, supervisory control and

data acquisition (SCADA), membrane bioreactor systems, membrane filtration systems, filters, clarifiers and clarifier mechanisms, rakes, grinders, disinfection systems, presses (including belt presses), conveyors, cranes, HVAC (excluding ductwork), water heaters, heat exchangers, generators, cabinetry and housings (such as electrical boxes/enclosures), lighting fixtures, electrical conduit, emergency life systems, metal office furniture, shelving, laboratory equipment, analytical instrumentation, and dewatering equipment.

23) If the iron or steel is produced in the US, may other steps in the manufacturing process take place outside of the US, such as assembly?

No. Production in the US of the iron or steel used in a listed product requires that all manufacturing processes must take place in the United States, except metallurgical processes involving refinement of steel additives.

24) What processes must occur in the US to be compliant with the AIS requirement for reinforced precast concrete?

While reinforced precast concrete may not be at least 50% iron or steel, in this particular case, the reinforcing bar and wire must be produced in the US and meet the same standards as for any other iron or steel product. Additionally, the casting of the concrete product must take place in the US. The cement and other raw materials used in concrete production are not required to be of domestic origin.

If the reinforced concrete is cast at the construction site, the reinforcing bar and wire are considered to be a construction material and must be produced in the US.

Compliance

25) How should an assistance recipient document compliance with the AIS requirement?

In order to ensure compliance with the AIS requirement, specific AIS contract language must be included in each contract, starting with the assistance agreement, all the way down to the purchase agreements. Sample language for assistance agreements and contracts can be found in Appendix 3 and 4.

EPA recommends the use of a step certification process, similar to one used by the Federal Highway Administration. The step certification process is a method to ensure that producers adhere to the AIS requirement and assistance recipients can verify that products comply with the AIS requirement. The process also establishes accountability and better enables States to take enforcement actions against violators.

Step certification creates a paper trail which documents the location of the manufacturing process involved with the production of steel and iron materials. A step certification is a process under which each handler (supplier, fabricator, manufacturer,

processor, etc) of the iron and steel products certifies that their step in the process was domestically performed. Each time a step in the manufacturing process takes place, the manufacturer delivers its work along with a certification of its origin. A certification can be quite simple. Typically, it includes the name of the manufacturer, the location of the manufacturing facility where the product or process took place (not its headquarters), a description of the product or item being delivered, and a signature by a manufacturer's responsible party. Attached, as Appendix 5, are sample certifications. These certifications should be collected and maintained by assistance recipients.

Alternatively, the final manufacturer that delivers the iron or steel product to the worksite, vendor, or contractor, may provide a certification asserting that all manufacturing processes occurred in the US. While this type of certification may be acceptable, it may not provide the same degree of assurance. Additional documentation may be needed if the certification is lacking important information. Step certification is the best practice.

26) How should a State ensure assistance recipients are complying with the AIS requirement?

In order to ensure compliance with the AIS requirement, States SRF programs must include specific AIS contract language in the assistance agreement. Sample language for assistance agreements can be found in Appendix 3.

States should also, as a best practice, conduct site visits of projects during construction and review documentation demonstrating proof of compliance which the assistance recipient has gathered.

27) What happens if a State or EPA finds a non-compliant iron and/or steel product permanently incorporated in the project?

If a potentially non-compliant product is identified, the State should notify the assistance recipient of the apparent unauthorized use of the non-domestic component, including a proposed corrective action, and should be given the opportunity to reply. If unauthorized use is confirmed, the State can take one or more of the following actions: request a waiver where appropriate; require the removal of the non-domestic item; or withhold payment for all or part of the project. Only EPA can issue waivers to authorize the use of a non-domestic item. EPA may use remedies available to it under the Clean Water Act, the Safe Drinking Water Act, and 40 CFR part 31 grant regulations, in the event of a violation of a grant term and condition.

It is recommended that the State work collaboratively with EPA to determine the appropriate corrective action, especially in cases where the State is the one who identifies the item in noncompliance or there is a disagreement with the assistance recipient.

If fraud, waste, abuse, or any violation of the law is suspected, the Office of Inspector General (OIG) should be contacted immediately. The OIG can be reached at 1-

888-546-8740 or OIG_Hotline@epa.gov. More information can be found at this website: <http://www.epa.gov/oig/hotline.htm>.

28) How do international trade agreements affect the implementation of the AIS requirements?

The AIS provision applies in a manner consistent with United States obligations under international agreements. Typically, these obligations only apply to direct procurement by the entities that are signatories to such agreements. In general, SRF assistance recipients are not signatories to such agreements, so these agreements have no impact on this AIS provision. In the few instances where such an agreement applies to a municipality, that municipality is under the obligation to determine its applicability and requirements and document the actions taken to comply for the State.

Waiver Process

The statute permits EPA to issue waivers for a case or category of cases where EPA finds (1) that applying these requirements would be inconsistent with the public interest; (2) iron and steel products are not produced in the US in sufficient and reasonably available quantities and of a satisfactory quality; or (3) inclusion of iron and steel products produced in the US will increase the cost of the overall project by more than 25 percent.

In order to implement the AIS requirements, EPA has developed an approach to allow for effective and efficient implementation of the waiver process to allow projects to proceed in a timely manner. The framework described below will allow States, on behalf of the assistance recipients, to apply for waivers of the AIS requirement directly to EPA Headquarters. Only waiver requests received from states will be considered. Pursuant to the Act, EPA has the responsibility to make findings as to the issuance of waivers to the AIS requirements.

Definitions

The following terms are critical to the interpretation and implementation of the AIS requirements and apply to the process described in this memorandum:

Reasonably Available Quantity: The quantity of iron or steel products is available or will be available at the time needed and place needed, and in the proper form or specification as specified in the project plans and design.

Satisfactory Quality: The quality of iron or steel products, as specified in the project plans and designs.

Assistance Recipient: A borrower or grantee that receives funding from a State CWSRF or DWSRF program.

Step-By-Step Waiver Process

Application by Assistance Recipient

Each local entity that receives SRF water infrastructure financial assistance is required by section 436 of the Act to use American made iron and steel products in the construction of its project. However, the recipient may request a waiver. Until a waiver is granted by EPA, the AIS requirement stands, except as noted above with respect to municipalities covered by international agreements.

The waiver process begins with the SRF assistance recipient. In order to fulfill the AIS requirement, the assistance recipient must in good faith design the project (where applicable) and solicit bids for construction with American made iron and steel products. It is essential that the assistance recipient include the AIS terms in any request for proposals or solicitations for bids, and in all contracts (see Appendix 3 for sample construction contract language). The assistance recipient may receive a waiver at any point before, during, or after the bid process, if one or more of three conditions is met:

1. Applying the American Iron and Steel requirements of the Act would be inconsistent with the public interest;
2. Iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or
3. Inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

Proper and sufficient documentation must be provided by the assistance recipient. A checklist detailing the types of information required for a waiver to be processed is attached as Appendix 1.

Additionally, it is strongly encouraged that assistance recipients hold pre-bid conferences with potential bidders. A pre-bid conference can help to identify iron and steel products needed to complete the project as described in the plans and specifications that may not be available from domestic sources. It may also identify the need to seek a waiver prior to bid, and can help inform the recipient on compliance options.

In order to apply for a project waiver, the assistance recipient should email the request in the form of a Word document (.doc) to the State SRF program. It is strongly recommended that the State designate a single person for all AIS communications. The State SRF designee will review the application for the waiver and determine whether the necessary information has been included. Once the waiver application is complete, the State designee will forward the application to either of two email addresses. For CWSRF waiver requests, please send the application to: cwsrfwaiver@epa.gov. For DWSRF waiver requests, please send the application to: dwsrfwaiver@epa.gov.

Evaluation by EPA

After receiving an application for waiver of the AIS requirements, EPA Headquarters will publish the request on its website for 15 days and receive informal comment. EPA Headquarters will then use the checklist in Appendix 2 to determine whether the application properly and adequately documents and justifies the statutory basis cited for the waiver – that it is quantitatively and qualitatively sufficient – and to determine whether or not to grant the waiver.

In the event that EPA finds that adequate documentation and justification has been submitted, the Administrator may grant a waiver to the assistance recipient. EPA will notify the State designee that a waiver request has been approved or denied as soon as such a decision has been made. Granting such a waiver is a three-step process:

1. Posting – After receiving an application for a waiver, EPA is required to publish the application and all material submitted with the application on EPA’s website for 15 days. During that period, the public will have the opportunity to review the request and provide informal comment to EPA. The website can be found at: http://water.epa.gov/grants_funding/aisrequirement.cfm
2. Evaluation – After receiving an application for waiver of the AIS requirements, EPA Headquarters will use the checklist in Appendix 2 to determine whether the application properly and adequately documents and justifies the statutory basis cited for the waiver – that it is quantitatively and qualitatively sufficient – and to determine whether or not to grant the waiver.
3. Signature of waiver approval by the Administrator or another agency official with delegated authority – As soon as the waiver is signed and dated, EPA will notify the State SRF program, and post the signed waiver on our website. The assistance recipient should keep a copy of the signed waiver in its project files.

Public Interest Waivers

EPA has the authority to issue public interest waivers. Evaluation of a public interest waiver request may be more complicated than that of other waiver requests so they may take more time than other waiver requests for a decision to be made. An example of a public interest waiver that might be issued could be for a community that has standardized on a particular type or manufacturer of a valve because of its performance to meet their specifications. Switching to an alternative valve may require staff to be trained on the new equipment and additional spare parts would need to be purchased and stocked, existing valves may need to be unnecessarily replaced, and portions of the system may need to be redesigned. Therefore, requiring the community to install an alternative valve would be inconsistent with public interest.

EPA also has the authority to issue a public interest waiver that covers categories of products that might apply to all projects.

EPA reserves the right to issue national waivers that may apply to particular classes of assistance recipients, particular classes of projects, or particular categories of iron or steel products. EPA may develop national or (US geographic) regional categorical waivers through the identification of similar circumstances in the detailed justifications presented to EPA in a waiver request or requests. EPA may issue a national waiver based on policy decisions regarding the public's interest or a determination that a particular item is not produced domestically in reasonably available quantities or of a sufficient quality. In such cases, EPA may determine it is necessary to issue a national waiver.

If you have any questions concerning the contents of this memorandum, you may contact us, or have your staff contact Jordan Dorfman, Attorney-Advisor, State Revolving Fund Branch, Municipal Support Division, at dorfman.jordan@epa.gov or (202) 564-0614 or Kiri Anderer, Environmental Engineer, Infrastructure Branch, Drinking Water Protection Division, at anderer.kirsten@epa.gov or (202) 564-3134.

Attachments

Appendix 1: Information Checklist for Waiver Request

The purpose of this checklist is to help ensure that all appropriate and necessary information is submitted to EPA. EPA recommends that States review this checklist carefully and provide all appropriate information to EPA. This checklist is for informational purposes only and does not need to be included as part of a waiver application.

Items	✓	Notes
<p>General</p> <ul style="list-style-type: none"> • Waiver request includes the following information: <ul style="list-style-type: none"> — Description of the foreign and domestic construction materials — Unit of measure — Quantity — Price — Time of delivery or availability — Location of the construction project — Name and address of the proposed supplier — A detailed justification for the use of foreign construction materials • Waiver request was submitted according to the instructions in the memorandum • Assistance recipient made a good faith effort to solicit bids for domestic iron and steel products, as demonstrated by language in requests for proposals, contracts, and communications with the prime contractor 		
<p>Cost Waiver Requests</p> <ul style="list-style-type: none"> • Waiver request includes the following information: <ul style="list-style-type: none"> — Comparison of overall cost of project with domestic iron and steel products to overall cost of project with foreign iron and steel products — Relevant excerpts from the bid documents used by the contractors to complete the comparison — Supporting documentation indicating that the contractor made a reasonable survey of the market, such as a description of the process for identifying suppliers and a list of contacted suppliers 		
<p>Availability Waiver Requests</p> <ul style="list-style-type: none"> • Waiver request includes the following supporting documentation necessary to demonstrate the availability, quantity, and/or quality of the materials for which the waiver is requested: <ul style="list-style-type: none"> — Supplier information or pricing information from a reasonable number of domestic suppliers indicating availability/delivery date for construction materials — Documentation of the assistance recipient's efforts to find available domestic sources, such as a description of the process for identifying suppliers and a list of contacted suppliers. — Project schedule — Relevant excerpts from project plans, specifications, and permits indicating the required quantity and quality of construction materials • Waiver request includes a statement from the prime contractor and/or supplier confirming the non-availability of the domestic construction materials for which the waiver is sought • Has the State received other waiver requests for the materials described in this waiver request, for comparable projects? 		

Appendix 2: HQ Review Checklist for Waiver Request

Instructions: To be completed by EPA. Review all waiver requests using the questions in the checklist, and mark the appropriate box as Yes, No or N/A. Marks that fall inside the shaded boxes may be grounds for denying the waiver. If none of your review markings fall into a shaded box, the waiver is eligible for approval if it indicates that one or more of the following conditions applies to the domestic product for which the waiver is sought:

1. The iron and/or steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality.
2. The inclusion of iron and/or steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

Review Items	Yes	No	N/A	Comments
Cost Waiver Requests <ul style="list-style-type: none"> • Does the waiver request include the following information? <ul style="list-style-type: none"> — Comparison of overall cost of project with domestic iron and steel products to overall cost of project with foreign iron and steel products — Relevant excerpts from the bid documents used by the contractors to complete the comparison — A sufficient number of bid documents or pricing information from domestic sources to constitute a reasonable survey of the market • Does the Total Domestic Project exceed the Total Foreign Project Cost by more than 25%? 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Availability Waiver Requests <ul style="list-style-type: none"> • Does the waiver request include supporting documentation sufficient to show the availability, quantity, and/or quality of the iron and/or steel product for which the waiver is requested? <ul style="list-style-type: none"> — Supplier information or other documentation indicating availability/delivery date for materials — Project schedule — Relevant excerpts from project plans, specifications, and permits indicating the required quantity and quality of materials • Does supporting documentation provide sufficient evidence that the contractors made a reasonable effort to locate domestic suppliers of materials, such as a description of the process for identifying suppliers and a list of contacted suppliers? • Based on the materials delivery/availability date indicated in the supporting documentation, will the materials be unavailable when they are needed according to the project schedule? (By item, list schedule date and domestic delivery quote date or other relevant information) • Is EPA aware of any other evidence indicating the non-availability of the materials for which the waiver is requested? Examples include: <ul style="list-style-type: none"> — Multiple waiver requests for the materials described in this waiver request, for comparable projects in the same State — Multiple waiver requests for the materials described in this waiver request, for comparable projects in other States — Correspondence with construction trade associations indicating the non-availability of the materials • Are the available domestic materials indicated in the bid documents of inadequate quality compared those required by the project plans, specifications, and/or permits? 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Appendix 3: Example Loan Agreement Language

ALL ASSISTANCE AGREEMENT MUST HAVE A CLAUSE REQUIRING COMPLIANCE WITH THE AIS REQUIREMENT. THIS IS AN EXAMPLE OF WHAT COULD BE INCLUDED IN SRF ASSISTANCE AGREEMENTS. EPA MAKES NO CLAIMS REGARDING THE LEGALITY OF THIS CLAUSE WITH RESPECT TO STATE LAW:

Comply with all federal requirements applicable to the Loan (including those imposed by the 2014 Appropriations Act and related SRF Policy Guidelines) which the Participant understands includes, among other, requirements that all of the iron and steel products used in the Project are to be produced in the United States (“American Iron and Steel Requirement”) unless (i) the Participant has requested and obtained a waiver from the Agency pertaining to the Project or (ii) the Finance Authority has otherwise advised the Participant in writing that the American Iron and Steel Requirement is not applicable to the Project.

Comply with all record keeping and reporting requirements under the Clean Water Act/Safe Drinking Water Act, including any reports required by a Federal agency or the Finance Authority such as performance indicators of program deliverables, information on costs and project progress. The Participant understands that (i) each contract and subcontract related to the Project is subject to audit by appropriate federal and state entities and (ii) failure to comply with the Clean Water Act/Safe Drinking Water Act and this Agreement may be a default hereunder that results in a repayment of the Loan in advance of the maturity of the Bonds and/or other remedial actions.

Appendix 4: Sample Construction Contract Language

ALL CONTRACTS MUST HAVE A CLAUSE REQUIRING COMPLIANCE WITH THE AIS REQUIREMENT. THIS IS AN EXAMPLE OF WHAT COULD BE INCLUDED IN ALL CONTRACTS IN PROJECTS THAT USE SRF FUNDS. EPA MAKES NO CLAIMS REGARDING THE LEGALITY OF THIS CLAUSE WITH RESPECT TO STATE OR LOCAL LAW:

The Contractor acknowledges to and for the benefit of the City of _____ (“Purchaser”) and the _____ (the “State”) that it understands the goods and services under this Agreement are being funded with monies made available by the Clean Water State Revolving Fund and/or Drinking Water State Revolving Fund that have statutory requirements commonly known as “American Iron and Steel;” that requires all of the iron and steel products used in the project to be produced in the United States (“American Iron and Steel Requirement”) including iron and steel products provided by the Contractor pursuant to this Agreement. The Contractor hereby represents and warrants to and for the benefit of the Purchaser and the State that (a) the Contractor has reviewed and understands the American Iron and Steel Requirement, (b) all of the iron and steel products used in the project will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirement, unless a waiver of the requirement is approved, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the American Iron and Steel Requirement, as may be requested by the Purchaser or the State. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Purchaser or State to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney’s fees) incurred by the Purchaser or State resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the State or any damages owed to the State by the Purchaser). While the Contractor has no direct contractual privity with the State, as a lender to the Purchaser for the funding of its project, the Purchaser and the Contractor agree that the State is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the State.

Appendix 5: Sample Certifications

The following information is provided as a sample letter of **step** certification for AIS compliance. Documentation must be provided on company letterhead.

Date

Company Name

Company Address

City, State Zip

Subject: American Iron and Steel Step Certification for Project (XXXXXXXXXX)

I, (company representative), certify that the (melting, bending, coating, galvanizing, cutting, etc.) process for (manufacturing or fabricating) the following products and/or materials shipped or provided for the subject project is in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

Item, Products and/or Materials:

1. XXXX
2. XXXX
3. XXXX

Such process took place at the following location:

If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the engineer.

Signed by company representative

The following information is provided as a sample letter of certification for AIS compliance. Documentation must be provided on company letterhead.

Date

Company Name

Company Address

City, State Zip

Subject: American Iron and Steel Certification for Project (XXXXXXXXXXXX)

I, (company representative), certify that the following products and/or materials shipped/provided to the subject project are in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

Item, Products and/or Materials:

1. XXXX
2. XXXX
3. XXXX

Such process took place at the following location:

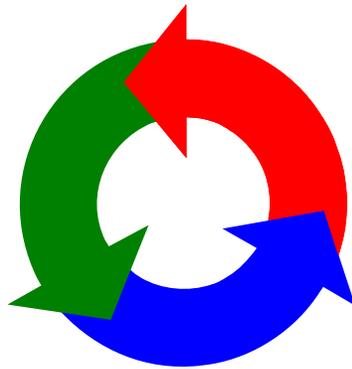
If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the engineer.

Signed by company representative

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**DELAWARE WATER POLLUTION CONTROL REVOLVING LOAN FUND PROGRAM
REQUIREMENTS**

DELAWARE WATER POLLUTION CONTROL REVOLVING LOAN FUND



PROGRAM REQUIREMENTS

Department of Natural Resources and Environmental Control
Division of Water Resources
Financial Assistance Branch
89 Kings Highway
Dover, DE 19901

Last revision: February 2010

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SUBPART A
Delaware Prevailing Wage Regulations

The Project or Program to which the work covered by this contract pertains to is being assisted by the State of Delaware and the following provisions are included in this Contract pursuant to the provisions applicable to such Clean Water State Revolving Loan Fund (CWSRF) Program. Loan recipients or engineering representatives are to verify with the State of Delaware Department of Labor to the appropriate wage determination before they go out for competitive bidding.

Delaware Prevailing Wage Regulations, Worker Classifications, Current Prevailing Wage Rates and forms may be found at:

<http://www.delawareworks.com/industrialaffairs/services/LaborLawEnforcementInfo.shtml#pw1>

or by contacting:

State of Delaware
Department of Labor
Division of Industrial Affairs
225 Corporate Blvd. Suite 104
Newark, DE 19702
Telephone No. (302) 761-8200

Weekly sworn payroll forms are also to be submitted to the same address.

**SUBPART B:
Equal Opportunity Clause (41 CFR 60-1.4)**

A. Executive Order 11246 (Applicable to Contracts/subcontracts above \$10,000).

1. During the performance of this contract the contractor and all subcontractors agree as follows:
 - a. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin, such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection of training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
 - b. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.
 - c. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
 - d. The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
 - e. The contractor will furnish all information and reports required by the Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
 - f. In the event of the contractors' noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be cancelled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

- g. The contractor will include the portion of the sentence immediately preceding Paragraph (1) and the provisions of Paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event a contractor becomes involved in, or is threatened with litigation with a subcontractor or vendor as a result of such direction by the administering agency the contractor may request the United States to enter into such litigation to protect the interests of the United States.

SUBPART C:
Certification of Non-segregated Facilities (41 CFR 60-1.8)

Bidders and offerers are cautioned as follows: By signing this bid or offer, the bidder or offerers will be deemed to have signed and agreed to the provisions of the "Certification of Nonsegregated Facilities" in this solicitation. The certification provides that the bidder or offerer does not maintain or provide for his employees facilities which are segregated on a basis of race, creed, color, or national origin, whether such facilities are segregated by directive or on a de facto basis. The certification also provides that he will not maintain such segregated facilities.

SUBPART D

Disadvantaged Business Enterprise Regulations for Loan Recipients, Prime Contractors and Subcontractors (CFR Title 40, Part 33)

A. Introduction

EPA's Disadvantaged Business Enterprise (DBE) rule applies to procurement actions funded in part by EPA assistance agreements awarded after May 27, 2008. Loan recipients, their prime contractors and DBE subcontractors are responsible for complying with these regulations during procurement of construction contracts, equipment purchase orders, service agreements (engineering, inspection, legal, etc) and supplies. A list of Fair Share Objectives, the Six Good Faith Efforts, responsibilities for loan recipients, prime contractors and DBE subcontractors and appendices A, B, C and D are as follows:

B. Fair Share Objectives

The DBE fair share objectives for the loan recipients and prime contractors of the Delaware State Revolving Fund Program (SRF) which includes Minority Business Enterprises (MBEs) and Women's Business Enterprises (WBEs) is as follows:

	<u>MBE - %</u>	<u>WBE - %</u>
1. Construction	2.49	3.69
2. Goods/Equipment Combined	11.69	12.62
3. Services	4.85	3.62
4. Supplies	2.41	2.41

The above goals are not a quota and apply to DBE participation only.

C. Six Good Faith Efforts:

1. Ensure DBEs are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities; including placing qualified DBEs on solicitation lists and soliciting them whenever they are potential sources.
2. Make information on forthcoming opportunities available to DBEs. Adjust time frames and delivery schedules to encourage participation by DBEs. Advertise for bids and proposals for at least 30 calendar days before bid closing date, unless circumstances require a shorter advertising period.
3. Divide total requirements of the project, when economically feasible, to permit maximum DBE participation.

4. Encourage contracting with a consortium of DBE's when a contract is too large for one of these firms to handle individually.
5. To obtain lists of DBE firms, use the services of the Delaware Department of Transportation (DelDOT), the United States Small Business Administration (SBA), and the Minority Business Development Agency (MDBA) of the U.S. Department of Commerce.
6. Require the prime contractor to follow steps 1 through 5, if prime contractor will be sub-contracting parts of the contract work.

D. Loan Recipient's Responsibilities

1. Adopt the fair share objectives of the State of Delaware revolving loan fund (SRF) or conduct an Availability Analysis of local DBE resources and negotiate fair share objectives with EPA Region III Office of Policy and Management. Loan recipients who receive a loan of \$250,000 or less are exempt from adopting fair share objectives. This exemption from adopting fair share objectives does NOT exempt a loan recipient from the other DBE responsibilities.
2. Include a copy of Appendix A from the DBE regulations in each contract with prime contractor (for construction, engineering, equipment purchases, etc) which is fully or partially funded with a SRF loan subjective to DBE requirements.
3. Apply the six good faith efforts during procurement of construction, equipment, services, and supplies in each contract which is fully or partially funded with a SRF loan subjective to DBE requirements.
4. Require the prime contractor to complete all applicable items on the lists of Prime Contractor's Pre-award and Post-Award Responsibilities under section E of this subpart. In addition, the request for bids/proposal should define which items need to be included in the bid opening envelope and if necessary, a time frame for submitting additional forms to complete the bid package. State procurement laws and policies may define the bidding requirements that need to be followed by the recipient.
5. Report semiannually DBE participation achievements to the State of Delaware SRF using EPA form 5700-52A, even if the reports are negative reports. Reports are due no more than 30 days after March 31 and September 30. Report must be submitted until the final loan payment is made.

6. Maintain records documenting compliance achieved with the requirements of the DBE regulations, including documentation of the SRF loan recipient and its prime contractor's good faith efforts. Documents to be maintained include solicitation lists, evidence of contacts with DBEs (copies of letters, telephone memos, e-mails), explanations of decisions, EPA forms 6100-3 and EPA 6100-4, bidders list for designated SRF projects, copy of advertisements and copies of EPA forms 5700-52A.
7. Maintain a list of all firms (not just DBEs) that bid or provided a quote on prime contracts and subcontracts. The list must include:
 - (a) Entity's name and point of contact;
 - (b) Mailing address, telephone number, e-mail address;
 - (c) The procurement on which the entity bid or quoted and when the bid or quote was provided;
 - (d) Entity's status as a DBE or non-DBE

The list must be maintained until the end of the project period (e.g., construction period or as long as receiving funds from the SRF).

E. Prime Contractor Pre-Award Responsibilities

1. Apply the six good faith efforts, if the prime contractor awards subcontracts.
2. Continue to apply the six good faith efforts even if the prime contractor has achieved the fair share objectives.
3. Provide EPA form number 6100-2 –*DBE Program Subcontractor Participation Form* and EPA form number 6100-3 –*DBE Program Subcontractor Performance Form* to each DBE subcontractor selected. These forms are included in Appendix D of this subpart or may be downloaded from EPA's Office of Small Business Programs website: <http://www.epa.gov/osbp/grants.htm>. EPA form number 6100-3 must be completed by each selected DBE subcontractor and submitted back to the prime contractor so the form can be included in the bid package.
4. Complete EPA form number 6100-4 - *DBE Program Subcontractor Utilization Form*. This form is also included in Appendix D of this subpart or may be downloaded from EPA's Office of Small Business Programs website: <http://www.epa.gov/osbp/grants.htm>. EPA form number 6100-4 must be completed by the prime contractor and included in the bid package.
5. Submit EPA form 6100-3 and 6100-4 to SRF loan recipient with bid package or proposal.

F. Prime Contractor Post-Award Responsibilities

1. Pay subcontractors for satisfactory performance no more than 30 days from the prime contractor's receipt of payment from the SRF loan recipient.
2. Notify the SRF loan recipient in writing prior to termination for convenience of a DBE subcontractor.
3. Employ the six good faith efforts if soliciting a replacement subcontractor after a DBE subcontractor fails to complete work under the subcontract for any reason.
4. Semiannually (on March 31 and September 30) inform the SRF loan recipient of DBE participation achieved for the required reporting.
5. Maintain records documenting compliance with DBE regulations, including documentation of the contractors good faith efforts

G. DBE Subcontractor's Responsibilities

1. Obtain certification as a DBE. Self certification is NOT acceptable for EPAs DBE program. DBE firms may be certified by the Small Business Administration (SBA), the State of Delaware Department of Transportation (DeIDOT), or by a State, locality or independent private organization provided their applicable criteria match SBA applicable Business Development Program regulations.
2. May submit EPA form 6100-2-*DBE Subcontractor Participation Form* to Ms. Romona McQueen, EPA region III DBE Coordinator. This form gives a DBE an opportunity to describe the work they received from the prime contractor, how they were paid and any other concerns they may have.
3. Must complete EPA form 6100-3-*DBE Program Subcontractor Performance Form*, and submit it to the prime contractor soliciting services from the subcontractor.

APPENDIX A:
DBE Rule Term and Condition

The following term and condition must be included in each procurement contract signed by an EPA loan recipient and their contractors:

The contractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 40 CFR part 33 in the award and administration of contracts awarded under EPA financial assistance agreements. Failure by the contractor to carry out these requirements is a material breach of this contract which may result in termination of this contract or other legally available remedies.

Contractor: _____

Authorized Representative: _____

Date: _____

APPENDIX B

Examples of Good Faith Efforts

A. Loan Recipient

1. **Effort 1:** Awareness covers a variety of activities, including direct solicitation through mailings, phone calls or e-mails, advertizing through publications (newspapers, journals or Dodge reports) and/or listing on websites. Loan recipients should maintain the solicitation list and a narrative statement which explains how the contacts were selected as part of their DBE documentation.
2. **Effort 2:** Soliciting (advertizing) should include a minimum 30-calender days advertizing period. A publisher's affidavit is typically used to document the 30-day advertizing period. If the recipient deviates from this minimum, they should document the reasons for a shorter solicitation period.
3. **Effort 3:** Dividing the total project into smaller tasks is an option that needs to be considered on a project by project basis. A \$100 million waste water treatment plant project may have no economic advantage if it is broken down into smaller contracts whereas a \$10 million sewer collection system project may easily be broken down into several contracts. Dividing a project based on contractors discipline such as electrical HVAC (Heating, Ventilation and Air Conditioning) would be a measure of compliance with this effort.
4. **Effort 4:** Encouraging contracting with DBE consortium could be as simple as stating this option in the bid advertisement (newspaper notice), solicitation letters to DBEs, and/or in the instruction to bidders section of the specifications.
5. **Effort 5:** Contacting the State of Delaware DOT (DeIDOT) or any State of Delaware Certifying Office for a list of certified DBE firms would be appropriate.
6. **Effort 6:** This part may be complied with by incorporating the SPECIAL NOTICE – Appendix C into the bidding documents.

B. Prime Contractors, if Subcontracting

1. **Effort 1:** The prime contract will place DBE's on the solicitation list. A prime contractor may have a limited amount of time to solicit subcontractors because of the 30-day advertisement period for the prime contract. The new regulations require the prime contractor to submit EPA forms 6100-3 and 6100-4 with the bid package. These forms will be part of the contractor's Good Faith Effort documentation.

2. **Effort 2:** The prime contractor will determine the time frames and delivery schedules for the contract. The prime contractor may have less than 30-days to solicit subcontractors. Depending upon the type of work being subcontracted, the time frame and delivery schedules can determine the availability of DBEs.
3. **Effort 3:** The prime contractor has to determine if the total requirements can be divided to allow smaller DBE firms to compete for the work.
4. **Effort 4:** Encouraging contracting with a consortium of DBEs when a subcontract is too large for one DBE firm to handle.
5. **Effort 5:** Prime contractors should be in contact with the State of Delaware DOT (DelDOT), Small Business Administration (SBA) and other Certifying Offices to develop their solicitation lists.
6. **Effort 6:** Not applicable to prime contractors.

APPENDIX C:

SPECIAL NOTICE: Insert into the Instructions for Bidders

- A. This is to advise bidders of the requirements of this program regarding the “Good Faith Efforts” necessary to be deemed a responsive and responsible bidder. The Federal Register Part 40 CFR 33.301 requires these Good Faith Efforts in procurement actions to assure that Disadvantaged Business Enterprises (DBE) are made aware of procurement opportunities in construction, equipment, services and supplies under EPA financial assistant agreements.
1. Ensure DBE’s are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities by placing qualified DBE’s on solicitation lists whenever they are potential sources.
 2. Establish delivery schedules, where the requirement permits to encourage participation by DBE’s. The loan recipient should allow a 30-day minimum advertising period for bidding.
 3. Dividing total requirements, when economically feasible, into small tasks or quantities, to permit maximum participation of DBE’s.
 4. Encourage contracting with a consortium of DBE’s when a contract is too large for one of these firms to handle individually.
 5. Using the services and of the Delaware Department of Transportation (DelDOT), the United States Small Business Administration (SBA), and the Minority Business Development Agency (MDBA) of the U.S. Department of Commerce.
 6. Require the prime contractor, if subcontracts are to be let, to take steps 1-5.

APPENDIX D: EPA FORMS

- A. DBE Subcontractor Participation Form – **EPA FORM 6100-2**
- B. DBE Subcontractor Performance Form- **EPA FORM 6100-3**
- C. DBE Subcontractor Utilization Form- **EPA FORM 6100-4**



Environmental
Protection Agency

OMB Control No: 2090-0030
Approved: 05/01/2008
Approval Expires: 01/31/2011

**Disadvantaged Business Enterprise Program
DBE Subcontractor Participation Form**

NAME OF SUBCONTRACTOR¹	PROJECT NAME
ADDRESS	CONTRACT NO.
TELEPHONE NO.	EMAIL ADDRESS
PRIME CONTRACTOR NAME	

Please use the space below to report any concerns regarding the above EPA-funded project (e.g., reason for termination by prime contractor, late payment, etc.).

CONTRACT ITEM NO.	ITEM OF WORK OR DESCRIPTION OF SERVICES RECEIVED FROM THE PRIME CONTRACTOR	AMOUNT SUBCONTRACTOR WAS PAID BY PRIME CONTRACTOR

_____	_____
Subcontractor Signature	Title/Date

¹Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.



Environmental
Protection Agency

OMB Control No: 2090-0030
Approved: 05/01/2008
Approval Expires: 01/31/2011

Disadvantaged Business Enterprise Program DBE Subcontractor Participation Form

The public reporting and recordkeeping burden for this collection of information is estimated to average fifteen (15) minutes. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed EPA DBE Subcontractor Participation Form to this address.



Environmental
Protection Agency

OMB Control No: 2090-0030
Approved: 05/01/2008
Approval Expires: 01/31/2011

**Disadvantaged Business Enterprise Program
DBE Subcontractor Performance Form**

NAME OF SUBCONTRACTOR ¹		PROJECT NAME
ADDRESS		BID/PROPOSAL NO.
TELEPHONE NO.		E-MAIL ADDRESS
PRIME CONTRACTOR NAME		
CONTRACT ITEM NO.	ITEM OF WORK OR DESCRIPTION OF SERVICES BID TO PRIME	PRICE OF WORK SUBMITTED TO PRIME CONTRACTOR
<p>Currently certified as an MBE or WBE under EPA's DBE Program? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Signature of Prime Contractor Date _____ Print Name Title _____</p> <p>Signature of Subcontractor Date _____ Print Name Title _____</p>		

¹Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.



Environmental
Protection Agency

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Disadvantaged Business Enterprise Program DBE Subcontractor Performance Form

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Environmental
Protection Agency

OMB Control No: 2090-0030
Approved: 05/01/2008
Approval Expires: 01/31/2011

**Disadvantaged Business Enterprise Program
DBE Subcontractor Utilization Form**

BID/PROPOSAL NO.	PROJECT NAME
NAME OF PRIME BIDDER/PROPOSER	E-MAIL ADDRESS
ADDRESS	
TELEPHONE NO.	FAX NO.

The following subcontractors¹ will be used on this project:

COMPANY NAME, ADDRESS, PHONE NUMBER, AND E-MAIL ADDRESS	TYPE OF WORK TO BE PERFORMED	ESTIMATE D DOLLAR AMOUNT	CURRENTLY CERTIFIED AS AN MBE OR WBE?

I certify under penalty of perjury that the forgoing statements are true and correct. In the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302(c).

Signature of Prime Contractor

Date

Print Name

Title

¹Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.



Environmental
Protection Agency

OMB Control No: 2090-0030
Approved: 05/01/2008
Approval Expires: 01/31/2011

Disadvantaged Business Enterprise Program DBE Subcontractor Utilization Form

The public reporting and recordkeeping burden for this collection of information is estimated to average fifteen (15) minutes. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed EPA DBE Subcontractor Utilization Form to this address.

SUBPART E

Civil Rights Act of 1964

The contractor and any subcontractors shall not, on the grounds of race, color, or national origin, or sex, exclude from participation in, deny the benefits of, or subject to discrimination any person under any program or activity receiving Federal financial assistance.

SUBPART F

Section 13 of PL 92-500; Under the Federal Water Pollution Control Act; Rehabilitation Act of 1973; PL 93-112; and Age Discrimination Act of 1975

The contractor and any subcontractors shall not on the ground of race, color, national origin, or sex, exclude from participation in, deny the benefits of, or subject to discrimination any person or activity funded in whole or in part with Federal funds. Any prohibition against discrimination on the basis of age under the Age Discrimination Act of 1975, or with respect to any otherwise qualified handicapped individual as provided in Section 504 of the Rehabilitation Act of 1973 shall also apply to any such program of activity.

SUBPART G

Required Provisions of 40 CFR Part 31 Subpart C

A. Contracts awarded in excess of \$10,000

1. Equal Employment Opportunity Clause

- a. The contractor agrees to comply with Executive Order 11246, entitled Equal Employment Opportunity, "as amended by Executive Order 11375, and as supplemented in Department of Labor regulations (41 CFR Part 60).

B. Contracts awarded in Excess of \$100,000

1. Violating Facilities Clause

- a. The contractor agrees to comply with all applicable standards, orders or requirements issued under section 306 of the Clean Air Act (42 U.S.C 1857 (h), section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and EPA regulations (40 CFR Part 15) which prohibits the award of this contract to facilities included on the EPA List of Violating Facilities. The contractor shall report violations to EPA.

SUBPART H

Suspension and Debarment and Other Responsibility Matters

The Project or Program to which the work covered by this contract pertains to is being assisted by the State of Delaware and the following provision is included in this Contract pursuant to the provisions applicable to such SRF Program. Loan Recipients or engineering representatives are to refer to the “List of parties excluded from Federal Procurement and Nonprocurement Programs” to insure that the contractor or subcontracts are not on this list. A copy of the list may be obtained from the World Wide Web at www.epls.gov or by calling (202) 512-1800 or by writing to this address:

Superintendent of Documents
U.S. Government Printing Office
Washington, DC
20402

ACCESS TO PROJECT SITE

The Contractor shall allow representatives of U.S. EPA and the State of Delaware DNREC access to the project site.

PROJECT SIGN

The contractor shall provide and erect a sign at a prominent location at each construction site. The sign and location shall be approved by the Engineer. The sign shall be prepared in accordance with the attached detailed instructions. It shall be the responsibility of the Contractor to maintain the sign in good condition throughout the life of the project.

The sign wording shown on Figure 1 is an example only and must be adapted to suit each project. The Contractor shall be responsible for obtaining the appropriate wording from the Engineer.

**WORKING FOR YOU TO PROVIDE CLEAN WATER
FOR TODAY & TOMORROW**

NAME OF PROJECT

**PROJECT NO. xxxx-xx
Name of Engineering Firm**

FUNDING PROVIDED BY:

**Funding Source
Funding Source
Funding Source
Total Project Costs**

DIVISION OF WATER RESOURCES

**\$xx,xxx,xxx
\$xx,xxx,xxx
\$xx,xxx,xxx
\$xx,xxx,xxx**



CONSTRUCTION SITE SIGN REQUIREMENTS

Sign Dimensions: 1200 x 2400 x 19 mm (4' x 8' x 3/4") Exterior Plywood (A-B Grade).

1st four lines are 4 inches in height; remaining lines are 2 inches in height.

DNREC Logo is to be the standard colors – decal to be provided by the Financial Assistance Branch.

Black letters on white background with 3 inch border around the perimeter in dark blue. Place bottom of sign 36 inches to 48 inches above grade to permit public viewing.

Provide adequate support for sign.

**EXAMPLE
Figure 1**

CERTIFICATION OF NON-SEGREGATED FACILITIES

COMPLIANCE STATEMENT

This statement relates to a proposed contract with _____

(Name of borrower or grantee)

who expects to finance the contract with assistance from either the Delaware Water Pollution Control Revolving Fund or Delaware 21st Century Fund (whether by a loan, grant, loan insurance, guarantee, or other form of financial assistance). I am the undersigned bidder or prospective contractor, I represent that:

1. I have, have not, participated in a previous contract or subcontract subject to Executive Order 11246 (regarding equal employment opportunity) or a preceding similar Executive Order.
2. If I have participated in such a contract or subcontract, I have, have not, filed all compliance reports that have been required to file in connection with the contract or subcontract.

If the proposed contract is for \$50,000 or more and I have 50 or more employees, I also represent that:

3. I have, have not previously had contracts subject to the written affirmative action programs requirements of the Secretary of Labor.
4. If I have participated in such a contract or subcontract, I have, have not developed and placed on file at each establishment affirmative action programs as required by the rules and regulations of the Secretary of Labor.

I understand that if I have failed to file any compliance reports that have been required of me, I am not eligible and will not be eligible to have my bid considered or to enter into the proposed contract unless and until I make an arrangement regarding such reports that is satisfactory to either the DNREC, or to the office where the reports are required to be filed.

I also certify that I do not maintain or provide for my employees any segregated facilities at any of my establishments, and that I do not permit my employees to perform their services at any location, under my control, where segregated facilities are maintained. I certify further that I will not maintain or provide for my employees any segregated facilities at any of my establishments, and that I will not permit my employees to perform their services at any location, under my control, where segregated facilities are maintained. I agree that a breach of this certification is a violation of the Equal Opportunity clause in my contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and wash rooms, restaurants and other eating areas time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, creed, color, or national origin, because of habit, local custom, or otherwise. I further agree that (except where I have obtained identical certifications for proposed subcontractors for specific time periods) I will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity clause; that I will retain such certifications in my files; and that I will forward the following notice to such proposed subcontractors (except where the proposed subcontractors have submitted identical certifications for specific time periods):

**NOTICE TO PROSPECTIVE SUBCONTRACTORS OF REQUIREMENTS FOR
CERTIFICATIONS OF NON-SEGREGATED FACILITIES**

A certification of Nonsegregated Facilities, as required by the May 9, 1967, order (32F.R. 7439, may 19, 1967) on Elimination of Segregated Facilities, by the Secretary of Labor, must be submitted prior to the award of a subcontract exceeding \$ 10,000 which is not exempt from the provisions of the Equal Opportunity clause. The certification may be submitted either for each subcontract or for all subcontracts during a period (i.e., quarterly, semiannually, or annually).

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

(Signature)

(Date)

(Name and Title of Signer – Please Type)

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**NATIONAL PRODUCT WAIVER FOR PIG IRON AND DIRECT REDUCED IRON
FOR STATE REVOLVING FUND PROJECTS**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FEB 18 2015

OFFICE OF WATER

DECISION MEMORANDUM

SUBJECT: National Product Waiver for Pig Iron and Direct Reduced Iron for State Revolving Fund Projects

FROM: *for Ellen Delaney*
Kenneth J. Kopocis
Deputy Assistant Administrator

The U.S. Environmental Protection Agency is hereby granting a national product waiver pursuant to the "American Iron and Steel" provisions of the Clean Water Act and Public Law 113-235, the "Consolidated and Further Continuing Appropriations Act, 2015," for certain intermediate goods used in the manufacture of iron and steel products.¹ This waiver permits the use of pig iron and direct reduced iron manufactured outside of the United States in domestic manufacturing processes for iron and steel products used in projects funded by a Clean Water or Drinking Water State Revolving Fund that may otherwise be prohibited absent this waiver. The waiver is retroactive and thus also applies to the use of non-domestic pig iron and direct reduced iron before the signature date.

Background: Pig iron and direct reduced iron are intermediate products of iron and steel manufacturing used as material feed sources in iron and steel foundries and steel mills. Pig iron is a product of iron ore smelting in a blast furnace. It is made from molten iron, which has been cast in the shape of "pigs" as it comes from the blast furnace. Direct reduced iron ore is produced from iron ore, pellets or fines, which are reduced in a solid state using natural gas. Hot briquetted iron, or HBI, is a compacted form of direct reduced iron with enhanced physical characteristics for shipment and storage.

Coverage: This waiver permits the use of iron and steel products that were manufactured using non-domestic pig iron and direct reduced iron in projects that receive funds from either the CWSRF or DWSRF. Any project that received or will receive funds from the CWSRF or DWSRF beginning with the enactment of P.L. 113-76, the "Consolidated Appropriations Act, 2014," may use this waiver for iron and steel that use these intermediate goods.

Rationale: The AIS provisions require CWSRF and DWSRF assistance recipients to use specific domestic iron and steel products that are produced in the United States if the project is funded

¹Absent a waiver, all treatment works and drinking water facilities that are constructed, in whole or in part, with funds from the CWSRF or the DWSRF, must use American made iron and steel. EPA is allowed under certain circumstances to provide waivers of this requirement.

through an SRF assistance agreement unless the Agency determines that it is necessary to waive this requirement. EPA has authority to issue waivers in accordance with Section 608(c)(2) of the Clean Water Act and the AIS provisions extended by P.L. 113-235, the “Consolidated and Further Continuing Appropriations Act, 2015,” under the authority of Section 424(b)(2). The provision states in part: “[the requirements] shall not apply in any case or category of cases in which the Administrator of the Environmental Protection Agency...finds that – iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality.”

Product manufacturers and suppliers informed EPA of concerns about the sufficient availability of domestically produced pig iron and direct reduced iron. The iron and steel products produced at steel mills and foundries that use non-domestic intermediate goods are not compliant with the AIS requirements. AIS compliant products used at water and wastewater projects could be in extremely short supply should a waiver of the intermediate goods not be available.

EPA conducted extensive market research on the supply of pig iron and direct reduced iron and found that domestic supplies of these goods sold on the open market are generally not available. There are three major types of facilities that manufacture iron and steel finished products: basic oxygen furnace steel mills (BOF), electric arc furnace steel mills (EAF) and foundries. BOF steel mills undertake both iron making and steel making, as molten iron from the blast furnace is the required feedstock for BOF steel production. EAF steel mills and foundries, on the other hand, use iron and steel scrap as their principal feedstock, which must be supplemented with the use of pig iron and/or direct reduced iron in their manufacturing processes to achieve required steel qualities.

EPA market research has shown that BOF steel mills are able to produce adequate amounts of pig iron to meet their own demands, but these mills use the bulk of this production for their own processes and do not sell pig iron on the open market in sufficient quantities. At this time, there is only one producer of direct reduced iron operating in the U.S. and the company uses the output internally for EAF steel production. Therefore, EAF steel mills and foundries must import pig iron and direct reduced iron to meet their iron needs.

At least 60 percent of the nation’s steel production comes from the EAF steel mills that use non-domestic pig iron and direct reduced iron in their manufacturing processes. Consequently, the majority of steel used in water and wastewater projects would not be compliant with the AIS requirements absent this waiver. Similarly, most, if not all, of the iron foundries in the United States use non-domestic pig iron and direct reduced iron to produce cast and ductile iron products used by water and wastewater projects. Therefore, the majority of iron used in water and wastewater projects would not be compliant with the AIS requirements absent this waiver. Hence, EPA is hereby providing a nationwide waiver pursuant to AIS requirements to cover the non-domestic intermediate iron goods used in the manufacture of iron and/or steel components and products for water and wastewater projects.

Public Comments: EPA requested comments on the draft national waiver and a majority of the comments received were supportive of a national waiver. The commenters in support of the waiver agreed with the Agency’s conclusion that pig iron and direct reduced iron are not

produced in the United States in sufficient and reasonably available quantities to meet the needs of many domestic foundries and steel mills. These commenters believe that the waiver will ensure that pig iron and direct reduced iron are treated similarly to raw material inputs in iron and steel manufacturing and by doing so the EPA will preserve the viability of the AIS requirement. These commenters also state that the waiver would treat pig iron and direct reduced iron in a manner consistent with the implementation of other similar federal laws such as the Federal Highway Administration's Buy America requirement. The FHWA issued a similar nationwide waiver of the Buy America requirements in 1995 for pig iron and processed, pelletized and reduced iron ore.

A few commenters challenged the Agency's issuance of a nationwide waiver of the AIS requirements for pig iron and direct reduced iron. These commenters disagreed with the Agency's interpretation of the AIS requirements and stated that raw materials used in iron and steel production must also be produced in the United States. In addition, the commenters questioned whether the Agency could exempt iron and steel products that are composed of non-domestic materials.

The statutory language lists the categories of products that are considered "iron and steel products." The statutory requirements include provisions that allow the EPA to issue waivers under defined conditions, including the case where iron and steel products are not produced in the United States in sufficient and reasonably available quantities. The Agency's market research, supported by comments from manufacturers, has shown that pig iron and direct reduced iron are not produced in the United States in sufficient and reasonably available quantities. Therefore the Agency is authorized to issue a waiver for iron and steel products composed of non-domestic pig iron and direct reduced iron.

Legal Authority: Legal authority for the AIS requirements for CWSRF projects is included under Sec. 608(c)(2) of the Clean Water Act and previously under P.L. 113-76, the "Consolidated Appropriations Act, 2014," under the authority of Section 436(b)(2). Legal authority for the AIS requirements for DWSRF projects is included under P.L. 113-235, the "Consolidated and Further Continuing Appropriations Act, 2015," under the authority of Section 424(b)(2) and also previously under P.L. 113-76. This waiver will continue in force for DWSRF projects under any continuing resolutions or statutes that use similar language as in Section 424 of the "Consolidated and Further Continuing Appropriations Act, 2015."

If you have questions concerning the contents of this memorandum, please contact Timothy Connor, Chemical Engineer, Municipal Support Division, at connor.timothy@epa.gov or (202) 566-1059 or Kiri Anderer, Environmental Engineer, Drinking Water Protection Division, at anderer.kirsten@epa.gov or (202) 564-3134.

SHORT-TERM NATIONAL PRODUCT WAIVER FOR STAINLESS STEEL NUTS AND BOLTS USED IN PIPE COUPLINGS, RESTRAINTS, JOINTS, FLANGES, AND SADDLES FOR STATE REVOLVING FUND PROJECTS



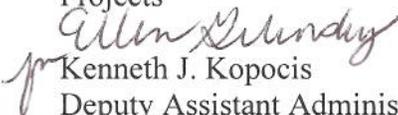
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FEB 18 2015

OFFICE OF WATER

DECISION MEMORANDUM

SUBJECT: Short-Term National Product Waiver for Stainless Steel Nuts and Bolts used in Pipe Couplings, Restraints, Joints, Flanges, and Saddles for State Revolving Fund Projects

FROM: 
Kenneth J. Kopocis
Deputy Assistant Administrator

The U.S. Environmental Protection Agency is hereby granting a national product waiver pursuant to the “American Iron and Steel” provisions of the Clean Water Act and Public Law 113-235, the “Consolidated and Further Continuing Appropriations Act, 2015.”¹ The waiver permits the use of non-domestically produced stainless steel nuts and bolts in bolting-type pipe couplings, restraints, joints, flanges and repair saddles in iron and steel products for projects funded by a Clean Water or Drinking Water State Revolving Fund that may otherwise be prohibited absent this waiver. This national product waiver is short-term, applying to the covered products if those products are purchased up until one year after the waiver’s signature date. The waiver is retroactive and also applies to products purchased before the signature date. Covered products purchased prior to the waiver’s signature date or within the one-year period may be used subsequent to the waiver expiration date.

Coverage: The specific product categories covered by this waiver include bolted expansion joints, bolted dismantling joints, bolted pipe couplings, bolted pipe restraints, bolted pipe flanges, bolted flange adapters, bolted pipe repair or service saddles, bolted mechanical joints, and pipe hangers and supports. Non-domestic stainless steel nuts and bolts may be incorporated into these specific products; however, all other iron and steel components in these products, unless subject to a waiver, must still meet the AIS requirements. In other words, this waiver does not exempt the whole product, or any of the main iron or steel components such as the ring, sleeve, body, flange spool or mechanical joint, from the AIS requirements just because stainless steel nuts and bolts are used. Any project that receives funds from the CWSRF or DWSRF since the enactment of P.L. 113-76, the “Consolidated Appropriations Act, 2014,” is required to comply with the AIS provisions.

¹ Absent a waiver, all treatment works and drinking water facilities that are constructed, in whole or in part, with funds from the CWSRF or the DWSRF, must use American made iron and steel. EPA is allowed under certain circumstances to provide waivers of this requirement.

Rationale: The AIS provisions require CWSRF and DWSRF assistance recipients to use specific domestic iron and steel products that are produced in the United States if the project is funded through an SRF assistance agreement unless the Agency determines that it is necessary to waive this requirement. EPA has authority to issue waivers in accordance with Section 608(c)(2) of the Clean Water Act and the AIS provisions extended by P.L. 113-235, the “Consolidated and Further Continuing Appropriations Act, 2015,” under the authority of Section 424(b)(2). The provision states in part: “[the requirements] shall not apply in any case or category of cases in which the Administrator of the Environmental Protection Agency... finds that – iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality.”

Product manufacturers and suppliers informed EPA of concerns about insufficient availability of appropriate domestically produced stainless steel nuts and bolts for use in their bolting-type products. They noted concerns about both delivery (up to six-month delays) and pricing (as much as ten-fold increases per fastener piece).

EPA conducted extensive research and outreach into the market supply of the required parts and determined that, at the time of this waiver, the current manufacturers and suppliers of domestic stainless steel nuts and bolts used in the products identified above are not able to deliver sufficient and reasonably available quantities and sizes of stainless steel nuts and bolts for the products needed. Although special-order stainless steel nuts and bolts might be obtainable for select requests, the lag-time for delivery of these products does not meet the requirements of most projects or suppliers. However, one supplier informed EPA that it is in the process of increasing its supply of domestic nuts and bolts and expects to be providing increased supply within several months. Hence, EPA is providing a national product waiver for one year. Prior to the expiration of the waiver, EPA intends to reassess the market and supply for stainless steel nuts and bolts for the products of interest and will reassess the need for reissuing this waiver.

Public Comments: EPA received comments generally in favor of issuing a waiver. Several commenters requested that EPA include additional types of stainless steel bolts and rods within purview of this waiver, as follows: threaded U-bolts used as a part of a pipe saddle; the restraint rod in bolted pipe restraints; joint harness tie bolts; threaded hook rods in adjustable beam clamps; and pipe hanger rods. EPA is declining to include these products in this waiver. The pipe hanger rods and threaded hook rods are not integral to the coupling products covered by this waiver. Additionally, market research shows that the requested additional rods/U-bolts/harness tie bolts integrated within the couplings covered by this waiver are all domestically available. Their availability is in sufficient quantity to differentiate them from the covered stainless steel bolts and nuts covered herein.

Some commenters requested that EPA make the waiver a permanent action. EPA has decided to issue the waiver for a one-year term. Prior to the expiration of the waiver, EPA will reassess the product market for any changes in domestic availability. As noted above, EPA learned that at least one domestic manufacturer has expressed interest in producing AIS compliant products that would meet the need addressed by this waiver. Hence, EPA has determined that it will not issue a permanent waiver at this time.

Other commenters requested that EPA clarify the coverage of this waiver for past and future products, in other words explain whether products purchased prior to enactment of this waiver would be covered. As noted above, the waiver is retroactive. Recipients thus may use products covered by this waiver that were purchased prior to the signature date.

Finally, one commenter suggested that all fasteners (regardless of whether or not they are stainless steel) be excluded from the AIS requirement. EPA declines to act on this recommendation. While EPA understands that for some manufacturers there is significant burden to track, obtain, store and manage separate stocks of domestic and foreign fasteners within their product lines, it does not consider this waiver to be the appropriate means to address this issue. EPA understands that domestic fastener manufacturers can provide most of the types and sizes of non-stainless steel fasteners needed for covered projects and therefore EPA will not include all fasteners.

Legal Authority: Legal authority for the AIS requirements for CWSRF projects is included under Sec. 608(c)(2) of the Clean Water Act and previously under P.L. 113-76, the “Consolidated Appropriations Act, 2014,” under the authority of Section 436(b)(2). Legal authority for the AIS requirements for DWSRF projects is included under P.L. 113-235, the “Consolidated and Further Continuing Appropriations Act, 2015,” under the authority of Section 424(b)(2) and also previously under P.L. 113-76. This waiver will continue in force for DWSRF projects under any continuing resolutions or statutes that use similar language as in Section 424 of the “Consolidated and Further Continuing Appropriations Act, 2015.”

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SECTION 01 35 29.13

HEALTH, SAFETY, AND EMERGENCY RESPONSE PROCEDURES FOR CONTAMINATED SITES

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

INTERNATIONAL SAFETY EQUIPMENT ASSOCIATION (ISEA)

ANSI/ISEA Z358.1 (2014) American National Standard for
Emergency Eyewash and Shower Equipment

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

NIOSH 85-115 (1985) Occupational Safety and Health
Guidance Manual for Hazardous Waste Site
Activities

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (2014) Safety and Health Requirements
Manual

ER 385-1-95 (2007; Errata 2007) Safety -- Safety and
Health Requirements for Munitions and
Explosives of Concern (MEC) Operations

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1904 Recording and Reporting Occupational
Injuries and Illnesses

29 CFR 1910 Occupational Safety and Health Standards

29 CFR 1910.120 Hazardous Waste Operations and Emergency
Response

29 CFR 1926 Safety and Health Regulations for
Construction

29 CFR 1926.65 Hazardous Waste Operations and Emergency
Response

1.2 DESCRIPTION OF WORK

This section requires Contractors to implement practices and procedures for working safely and in compliance with OSHA and DNREC regulation while performing cleanup activities on uncontrolled hazardous waste sites.

1.3 SUBMITTALS

SD-03 Product Data

Amendments to the APP/SSHP
Employee Certificates
Certificate of Worker/Visitor Acknowledgement
Safety and Health Phase-Out Report

1.4 REGULATORY REQUIREMENTS

Comply with EM 385-1-1, OSHA requirements in 29 CFR 1910 and 29 CFR 1926 with work performed under this contract, especially OSHA's Standards 29 CFR 1926.65 and 29 CFR 1910.120 and state specific OSHA requirements where applicable. Submit to the DNREC representative for resolution matters of interpretation of standards before starting work. The most stringent requirements apply where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary.

1.5 PRECONSTRUCTION SAFETY CONFERENCE

Conduct a preconstruction safety conference prior to the start of site activities and after submission of the Contractor's APP/SSHP. The objective of the meeting will be to discuss health and safety concerns related to the impending work, discuss project health and safety organization and expectations, review and answer comments and concerns regarding the APP/SSHP or other health and safety concerns the Contractor may have. Ensure that those individuals responsible for health and safety at the project level are available and attend this meeting.

1.6 ACCIDENT PREVENTION PLAN/SITE SAFETY AND HEALTH PLAN (APP/SSHP)

Develop and implement a Site Safety and Health Plan and attach to the Accident Prevention Plan (APP) as an appendix (APP/SSHP). Address all occupational safety and health hazards (traditional construction as well as contaminant-related hazards) associated with cleanup operations within the APP/SSHP. Cover each SSHP element in section 28.A.01 of EM 385-1-1 and each APP element in Appendix A of EM 385-1-1. There are overlapping elements in Section 28.A.01 and Appendix A of EM 385-1-1. SSHP appendix elements that overlap with APP elements need not be duplicated in the APP/SSHP provided each SOH issue receives adequate attention and is documented in the APP/SSHP. The APP/SSHP is a dynamic document, subject to change as project operations/execution change. The APP/SSHP will require modification to address changing and previously unidentified health and safety conditions. It is the Contractor's responsibility to ensure that the APP/SSHP is updated accordingly. Submit amendments to the APP/SSHP to the COR as the APP/SSHP is updated. For long duration projects resubmit the APP/SSHP to the COR annually for review. The APP/SSHP must contain all updates.

1.6.1 Acceptance and Modifications

Prior to submittal, the APP/SSHP must be signed and dated by the Safety and Health Manager and the Site Superintendent. Submit for review 7 days prior to the Preconstruction Safety Conference. Deficiencies in the APP/SSHP will be discussed at the preconstruction safety conference, and be revised to correct the deficiencies and resubmitted for acceptance. Onsite work must not begin until the plan has been accepted. Maintain a

copy of the written APP/SSHP onsite. Changes and modifications to must be made with the knowledge and concurrence of the Safety and Health Manager, the Site Superintendent, and the DNREC representative. Bring to the attention of the Safety and Health Manager, the Site Superintendent, and the DNREC representative any unforeseen hazard that becomes evident during the performance of the work, through the Site Safety and Health Officer (SSHO) for resolution as soon as possible. In the interim, take necessary action to re-establish and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public, and the environment. Disregard for the provisions of this specification or the accepted APP/SSHP will be cause for stopping work until the matter has been rectified.

1.6.2 Availability

Make available the APP/SSHP in accordance with 29 CFR 1910.120, (b)(1)(v) and 29 CFR 1926.65, (b)(1)(v).

1.7 SITE DESCRIPTION AND CONTAMINATION CHARACTERIZATION

1.7.1 Project/Site Conditions

The Site has been used historically for paper making, paper vulcanization (with zinc chloride) and for associated zinc reclamation. National Vulcanized Fiber went bankrupt in 2008/2009. The properties were subsequently purchased by a private developer who partnered with the State of Delaware for clean-up/redevelopment of the properties. Although the plant is no longer actively producing vulcanized paper products, the zinc reclamation equipment is currently being operated by the State of Delaware for reclaiming zinc from groundwater beneath the former plant sites.

Many previous environmental investigations have occurred at the Site between 1986 and 2014, and are summarized in the 2015 Remedial Investigation/Feasibility Study Report. During these investigations, regulated compounds including volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides and metals were detected in soil, groundwater, surface water and/or sediment. These contaminants are attributed to historic operations at the Site. Asbestos containing materials (ACMs) have also been documented within the older buildings and structures at the Site. As noted above, DNREC is currently operating a zinc groundwater recovery system at the NVF-Yorklyn Site to reduce discharge of zinc to the adjacent Red Clay Creek.

Specifically within OU-1, and as summarized in the 2015 Remedial Investigation/Feasibility Study Report, polynuclear aromatic hydrocarbons (PAHs) and metals were detected in the surface and subsurface soil samples at concentrations that exceeded human health and/or ecological remedial goal objectives (RGOs) established through a site specific risk assessment. In addition, semivolatile organic compounds (SVOCs) and metals were detected in surface water and/or sediment samples at concentrations that exceed RGOs developed for protection of human health and/or ecological receptors in the onsite ditch and Red Clay Creek. Lastly, metals were detected in shallow groundwater beneath the Site at concentrations that exceed human health and ecological RGOs.

The complete file on the Site including the December 2015 Remedial Investigation/Feasibility Study Report and the various other historic reports are available at the DNREC office, 391 Lukens Drive in New Castle, 19720. Most documents are also found on:

<http://www.nav.dnrec.delaware.gov/DEN3/>

Stop work and contact the DNREC representative if ordnance and explosives (OE), explosive media or chemical agent contaminated media (CACM) are discovered during hazardous waste site cleanup activities. Proceed with work after the CO gives permission and, according to ER 385-1-95 requirements.

1.8 TASK SPECIFIC HAZARDS, INITIAL PPE, HAZWOPER MEDICAL SURVEILLANCE AND TRAINING APPLICABILITY

Task specific occupational hazards, task specific HAZWOPER medical surveillance and training applicability and task specific initial PPE requirements for the project are listed on the Task Hazard and Control Sheets at the end of this section. It is the Contractor's responsibility to reevaluate occupational safety and health hazards as the work progresses and to adjust the PPE and onsite operations, if necessary, so that the work is performed safely and in compliance with occupational safety and health regulations.

1.9 STAFF ORGANIZATION, QUALIFICATION AND RESPONSIBILITIES

1.9.1 Safety and Health Manager

1.9.1.1 Responsibilities and Duties

The Safety and Health Manager shall:

- a. Be responsible for the development, implementation, oversight, and enforcement of the APP/SSHP.
- b. Sign and date the APP/SSHP prior to submittal.
- c. Conduct initial site-specific training.
- d. Be available for consultation during remedial activities and at the startup of each new major phase of work.
- e. Visit the site as needed and at least once per week for the duration of activities, to audit the effectiveness of the APP/SSHP.
- f. Be available for emergencies.
- g. Provide onsite consultation as needed to ensure the APP/SSHP is fully implemented.
- h. Coordinate any modifications to the APP/SSHP with the Site Superintendent, the SSHO, and the DNREC representative.
- i. Provide continued support for upgrading/downgrading of the level of personal protection.
- j. Be responsible for evaluating air monitoring data and recommending changes to engineering controls, work practices, and PPE.
- k. Review accident reports and results of daily inspections.
- l. Serve as a member of the Contractor's quality control staff.

1.9.2 Site Safety and Health Officer

Designate an individual as the Site Safety and Health Officer (SSHO). The name, qualifications (education and training summary and documentation), and include work experience of the Site Safety and Health Officer in the APP/SSHP.

1.9.2.1 Qualifications

The SSHO shall meet the following qualifications:

- a. A minimum of 1 year experience in implementing safety and health programs in the hazardous waste disposal industry where modified Level D personal protective equipment was required.
- b. Documented experience in construction techniques and construction safety procedures.
- c. Working knowledge of Federal and state occupational safety and health regulations.
- d. Specific training in personal and respiratory protective equipment, confined space entry and in the proper use of air monitoring instruments and air sampling methods including monitoring for ionizing radiation.

1.9.2.2 Responsibilities and Duties

The Site Safety and Health Officer shall:

- a. Assist and represent the Safety and Health Manager in onsite training and the day to day onsite implementation and enforcement of the accepted APP/SSHP.
- b. Be assigned to the site on a full time basis for the duration of field activities. The SSHO can have collateral duties in addition to Safety and Health related duties. If operations are performed during more than 1 work shift per day, a site Safety and Health Officer must be present for each shift and when applicable, act as the radiation safety officer (RSO) as defined in paragraph 06.E.02 of EM 385-1-1 on radioactive waste cleanup projects.
- c. Have authority to ensure site compliance with specified safety and health requirements, Federal, state and OSHA regulations and all aspects of the APP/SSHP including, but not limited to, activity hazard analyses, air monitoring, monitoring for ionizing radiation, use of PPE, decontamination, site control, standard operating procedures used to minimize hazards, safe use of engineering controls, the emergency response plan, confined space entry procedures, spill containment program, and preparation of records by performing a daily safety and health inspection and documenting results on the Daily Safety Inspection Log in accordance with 29 CFR 1904.
- d. Have authority to stop work if unacceptable health or safety conditions exist, and take necessary action to re-establish and maintain safe working conditions.
- e. Consult with and coordinate any modifications to the APP/SSHP with the Safety and Health Manager, the Site Superintendent, and the DNREC

representative.

- f. Serve as a member of the Contractor's quality control staff on matters relating to safety and health.
- g. Conduct accident investigations and prepare accident reports.
- h. Conduct daily safety inspection and document safety and health findings into the Daily Safety Inspection Log. Track noted safety and health deficiencies to ensure that they are corrected.
- i. In coordination with site management and the Safety and Health Manager, recommend corrective actions for identified deficiencies and oversee the corrective actions.

1.9.3 Persons Certified in First Aid and CPR

At least two persons who are currently certified in first aid and CPR by the American Red Cross or other approved agency must be onsite at all times during site operations. They must be trained in universal precautions and the use of PPE as described in the Bloodborne Pathogens Standard of 29 CFR 1910, Section .1030. These persons may perform other duties but will be immediately available to render first aid when needed.

1.9.4 Safety and Health Technicians

For each work crew in the exclusion zone, one person, designated as a Safety and Health technician, must perform activities such as air monitoring, decontamination, and safety oversight on behalf of the SSHO. They must have appropriate training equivalent to the SSHO in each specific area for which they have responsibility and report to and be under the supervision of the SSHO.

1.10 TRAINING

Meet the following requirements in the Contractor's training program for workers performing cleanup operations and who will be exposed to contaminants.

1.10.1 General Hazardous Waste Operations Training

All Personnel performing duties with potential for exposure to onsite contaminants must meet and maintain the following 29 CFR 1910.120/29 CFR 1926.65 (e) training requirements:

- a. 40 hours of off site hazardous waste instruction.
- b. 3 days actual field experience under the direct supervision of a trained, experienced supervisor.
- c. 8 hours refresher training annually.

Onsite supervisors must have an additional 8 hours management and supervisor training specified in 29 CFR 1910.120/29 CFR 1926.65 (e) (4).

1.10.2 Periodic Sessions

Conduct periodic onsite training by the SSHO at least weekly for personnel assigned to work at the site during the following week. Address safety

and health procedures, work practices, any changes in the APP/SSHP, activity hazard analyses, work tasks, or schedule; results of previous week's air monitoring, review of safety discrepancies and accidents. Convene a meeting prior to implementation of the change must be convened should an operational change affecting onsite field work be made, to explain safety and health procedures. Conduct a site-specific training sessions for new personnel, visitors, and suppliers by the SSHO using the training curriculum outlines developed by the Safety and Health Manager. Each employee must sign a training log to acknowledge attendance and understanding of the training.

1.11 PERSONAL PROTECTIVE EQUIPMENT

1.11.1 Site Specific PPE Program

Provide onsite personnel exposed to contaminants with appropriate personal protective equipment. Components of levels of protection (B, C, D and modifications) must be relevant to site-specific conditions, including heat and cold stress potential and safety hazards. Use only respirators approved by NIOSH. Commercially available PPE, used to protect against chemical agent, must be approved by the Health and Safety Manager. Keep protective equipment and clothing clean and well maintained. Include site-specific procedures to determine PPE program effectiveness and for onsite fit-testing of respirators, cleaning, maintenance, inspection, and storage of PPE within the PPE section of the APP/SSHP.

1.11.2 Levels of Protection

The Safety and Health Manager must establish and evaluate as the work progresses the levels of protection for each work activity. Also establish action levels for upgrade or downgrade in levels of PPE. Describe in the SSHP the protocols and the communication network for changing the level of protection. Address air monitoring results, potential for exposure, changes in site conditions, work phases, job tasks, weather, temperature extremes, individual medical considerations, etc. within the PPE evaluation protocol.

1.11.2.1 Initial PPE Components

The following items constitute initial minimum protective clothing and equipment ensembles.

a. Level D

- (1) Boots with steel toe.
- (2) Outer gloves, leather or cotton.
- (3) Hard hat.
- (4) Safety glasses (when necessary).
- (5) Hearing protection (when necessary).
- (6) Blaze orange safety vest (if working near traffic).

1.12 MEDICAL SURVEILLANCE PROGRAM

Meet 29 CFR 1910.120/29 CFR 1926.65 (f) and the following requirements for medical surveillance program for workers performing cleanup operations and who will be exposed to contaminants. Assure the Occupational Physician or the physician's designee performs the physical examinations and reviews examination results. Participation in the medical surveillance program will be without cost to the employee, without loss of pay and at a

reasonable time and place.

1.12.1 Frequency of Examinations

Medical surveillance program participants must receive medical examinations and consultations on the following schedule:

- a. Every 12 months
- b. If and when the participant develops signs and symptoms indicating a possible overexposure due to an uncontrolled release of a hazardous substance on the project.
- c. Upon termination or reassignment to a job where medical surveillance program participation is not required, unless his/her previous annual examination/consultation was less than 6 months prior to reassignment or termination.
- d. On a schedule specified by the occupational physician.

1.12.2 Content of Physical Examinations/Consultation

Verify the following information about medical surveillance program participants:

- a. Baseline health conditions and exposure history.
- b. Allergies/sensitivity/susceptibility to hazardous substances exposure.
- c. Ability to wear personal protective equipment inclusive of NIOSH certified respirators under extreme temperature conditions.
- d. Fitness to perform assigned duties.

Provide the occupational physician with the following information for each medical surveillance program participant:

- a. Information on the employee's anticipated or measured exposure.
- b. A description of any PPE used or to be used.
- c. A description of the employee's duties as they relate to the employee's exposures (including physical demands on the employee and heat/cold stress).
- d. A copy of 29 CFR 1910.120, or 29 CFR 1926.65.
- e. Information from previous examinations not readily available to the examining physician.
- f. A copy of Section 5.0 of NIOSH 85-115.
- g. Information required by 29 CFR 1910 Section .134.

1.12.3 Physician's Written Opinion

Obtain and furnish to the Safety and Health Manager; and the employee before work begins, a copy of the physician's written opinion for each employee. Address the employee's ability to perform hazardous waste site

remediation work and containing the following:

- a. The physician's verification of the employee's fitness to perform duties as well as recommended limitations upon the employee's assigned work and/or PPE usage.
- b. The physician's opinion about increased risk to the employee's health resulting from work; and
- c. A statement that the employee has been informed and advised about the results of the examination.

1.12.4 Employee Certificates

Provided on employee certificates for each worker performing cleanup operations with potential for contaminant-related occupational exposure signed by the safety and health manager and the occupational physician indicating the workers meet the training and medical surveillance requirements of this contract.

1.13 HEAT STRESS MONITORING AND MANAGEMENT

Document in the APP/SSHP and implement the procedures and practices in section 06.J. in EM 385-1-1 to monitor and manage heat stress.

1.14 EMERGENCY EQUIPMENT AND FIRST AID REQUIREMENTS

Maintain, as a minimum, the following items onsite and available for immediate use:

- a. First aid equipment and supplies approved by the consulting physician.
- b. Emergency eyewashes that comply with ANSI/ISEA Z358.1.
- c. Provide fire extinguishers of sufficient size and type at site facilities and in all vehicles and at any other site locations where flammable or combustible materials present a fire risk.

1.15 EMERGENCY RESPONSE AND CONTINGENCY PROCEDURES

An Emergency Response Plan, that meets the requirements of 29 CFR 1910.120 (1) and 29 CFR 1926.65 (1), must be developed and implemented as a section of the APP/SSHP. In the event of any emergency associated with remedial action, without delay, alert all onsite employees and as necessary offsite emergency responders that there is an emergency situation; take action to remove or otherwise minimize the cause of the emergency; alert the DNREC representative; and institute measures necessary to prevent repetition of the conditions or actions leading to, or resulting in, the emergency. Train employees that are required to respond to hazardous emergency situations to their level of responsibility according to 29 CFR 1910.120 (q) and 29 CFR 1926.65 (q) requirements. Rehearse the plan regularly as part of the overall training program for site operations. Review the plan periodically and revised as necessary to reflect new or changing site conditions or information. Provide copies of the Emergency Response Portion of the accepted APP/SSHP to the affected local emergency response agencies. Address, as a minimum, the following elements in the plan:

- a. Pre-emergency planning. Coordinate with local emergency response providers during preparation of the Emergency Response Plan. At a

- minimum, coordinate with local fire, rescue, hazardous materials response teams, police and emergency medical providers to assure all organizations are capable and willing to respond to and provide services for on-site emergencies. Ensure the Emergency Response Plan for the site is compatible and integrated with the local fire, rescue, medical and police security services available from local emergency response planning agencies.
- b. Personnel roles, lines of authority, communications for emergencies.
 - c. Emergency recognition and prevention.
 - d. Site topography, layout, and prevailing weather conditions.
 - e. Criteria and procedures for site evacuation (emergency alerting procedures, employee alarm system, emergency PPE and equipment, safe distances, places of refuge, evacuation routes, site security and control).
 - f. Specific procedures for decontamination and medical treatment of injured personnel.
 - g. Route maps to nearest prenotified medical facility. Site-support vehicles must be equipped with maps. At the beginning of project operations, drivers of the support vehicles must become familiar with the emergency route and the travel time required.
 - h. Emergency alerting and response procedures including posted instructions and a list of names and telephone numbers of emergency contacts (physician, nearby medical facility, fire and police departments, ambulance service, Federal, state, and local environmental agencies; as well as Safety and Health Manager, the Site Superintendent, the DNREC representative and/or their alternates).
 - i. Criteria for initiating community alert program, contacts, and responsibilities.
 - j. Procedures for reporting incidents to appropriate government agencies. In the event that an incident such as an explosion or fire, or a spill or release of toxic materials occurs during the course of the project, the appropriate government agencies must be immediately notified. In addition, verbally notify the DNREC representative and the local district safety office immediately and receive a written notification within 24 hours. Include within the report the following items:
 - (1) Name, organization, telephone number, and location of the Contractor.
 - (2) Name and title of the person(s) reporting.
 - (3) Date and time of the incident.
 - (4) Location of the incident, i.e., site location, facility name.
 - (5) Brief summary of the incident giving pertinent details including type of operation ongoing at the time of the incident.
 - (6) Cause of the incident, if known.

- (7) Casualties (fatalities, disabling injuries).
- (8) Details of any existing chemical hazard or contamination.
- (9) Estimated property damage, if applicable.
- (10) Nature of damage, effect on contract schedule.
- (11) Action taken to ensure safety and security.
- (12) Other damage or injuries sustained, public or private.

k. Procedures for critique of emergency responses and follow-up.

1.16 CERTIFICATE OF WORKER/VISITOR ACKNOWLEDGEMENT

A copy of a Contractor-generated certificate of worker/visitor acknowledgement must be completed and submitted for each visitor allowed to enter contamination reduction or exclusion zones, and for each employee, following the Example Certificate Of Worker/Visitor Acknowledgement at the end of this section.

1.17 SAFETY AND HEALTH PHASE-OUT REPORT

Submit a Safety and Health Phase-Out Report in conjunction with the project close out report and will be received prior to final acceptance of the work. Include the following minimum information :

- a. Summary of the overall performance of safety and health (accidents or incidents including near misses, unusual events, lessons learned, etc.).
- b. Final decontamination documentation including procedures and techniques used to decontaminate equipment, vehicles, and on site facilities.
- c. Summary of exposure monitoring and air sampling accomplished during the project.
- d. Signatures of Safety and Health Manager and SSHO.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --

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SECTION 02 41 00

DEMOLITION

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN SOCIETY OF SAFETY ENGINEERS (ASSE/SAFE)

ASSE/SAFE A10.6 (2006) Safety Requirements for Demolition Operations

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (2014) Safety and Health Requirements Manual

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

40 CFR 61 National Emission Standards for Hazardous Air Pollutants

1.2 PROJECT DESCRIPTION

1.2.1 Demolition/Deconstruction Plan

Prepare a Demolition Plan and submit proposed demolition and removal procedures for approval before work is started. Include in the plan procedures for careful removal and disposition of materials specified to be salvaged, coordination with other work in progress, a disconnection schedule of utility services, and a detailed description of methods and equipment to be used for each operation and of the sequence of operations. Identify components and materials to be salvaged for reuse or recycling with reference to paragraph Existing Facilities to be Removed. Append tracking forms for all removed materials indicating type, quantities, condition, destination, and end use. Coordinate with Waste Management Plan. Provide procedures for safe conduct of the work in accordance with EM 385-1-1. Plan shall be approved by DNREC Representative prior to work beginning.

1.2.2 General Requirements

Do not begin demolition or deconstruction until authorization is received from the DNREC Representative. The work of this section is to be performed in a manner that maximizes the value derived from the salvage and recycling of materials. Remove rubbish and debris from the project site; do not allow accumulations inside or outside the buildings. In the interest of occupational safety and health, perform the work in accordance with EM 385-1-1, Section 23, Demolition, and other applicable Sections.

1.3 ITEMS TO REMAIN IN PLACE

Take necessary precautions to avoid damage to existing items to remain in place, to be reused, or to remain the property of the Government. Repair or replace damaged items as approved by the DNREC Representative. Coordinate the work of this section with all other work indicated. Construct and maintain shoring, bracing, and supports as required. Ensure that structural elements are not overloaded. Increase structural supports or add new supports as may be required as a result of any cutting, removal, deconstruction, or demolition work performed under this contract. Do not overload pavements to remain. Provide new supports and reinforcement for existing construction weakened by demolition, deconstruction, or removal work. Repairs, reinforcement, or structural replacement require approval by the DNREC Representative prior to performing such work.

1.3.1 Existing Construction Limits and Protection

Do not disturb existing construction beyond the extent indicated or necessary for installation of new construction. Provide temporary shoring and bracing for support of building components to prevent settlement or other movement. Provide protective measures to control accumulation and migration of dust and dirt in all work areas. Remove dust, dirt, and debris from work areas daily.

1.3.2 Weather Protection

For portions of the building to remain, protect building interior and materials and equipment from the weather at all times. Where removal of existing roofing is necessary to accomplish work, have materials and workmen ready to provide adequate and temporary covering of exposed areas.

1.3.3 Trees

Protect trees within the project site which might be damaged during demolition or deconstruction, and which are indicated to be left in place, by a 6 foot high fence. Erect and secure fence a minimum of 5 feet from the trunk of individual trees or follow the outer perimeter of branches or clumps of trees. Replace any tree designated to remain that is damaged during the work under this contract with like-kind or as approved by the DNREC Representative.

1.3.4 Utility Service

Maintain existing utilities indicated to stay in service and protect against damage during demolition and deconstruction operations. Prior to start of work, utilities serving each area of alteration or removal will be shut off by the Government and disconnected and sealed by the Contractor.

1.3.5 Facilities

Protect electrical and mechanical services and utilities. Where removal of existing utilities and pavement is specified or indicated, provide approved barricades, temporary covering of exposed areas, and temporary services or connections for electrical and mechanical utilities. Floors, roofs, walls, columns, pilasters, and other structural components that are designed and constructed to stand without lateral support or shoring, and are determined to be in stable condition, must remain standing without additional bracing, shoring, or lateral support until demolished or

deconstructed, unless directed otherwise by the DNREC Representative. Ensure that no elements determined to be unstable are left unsupported and place and secure bracing, shoring, or lateral supports as may be required as a result of any cutting, removal, deconstruction, or demolition work performed under this contract.

1.4 BURNING

The use of burning at the project site for the disposal of refuse and debris will not be permitted.

1.5 SUBMITTALS

SD-01 Preconstruction Submittals

Demolition Plan
Existing Conditions

SD-07 Certificates

Notification

1.6 QUALITY ASSURANCE

Submit timely notification of demolition projects to Federal, State, regional, and local authorities in accordance with 40 CFR 61, Subpart M. Notify the State's environmental protection agency and the DNREC Representative in writing 10 working days prior to the commencement of work in accordance with 40 CFR 61, Subpart M. Comply with federal, state, and local hauling and disposal regulations. In addition to the requirements of the "Contract Clauses," conform to the safety requirements contained in ASSE/SAFE A10.6. Comply with the Environmental Protection Agency requirements specified. Use of explosives will not.

1.6.1 Dust Control

Prevent the spread of dust and debris and avoid the creation of a nuisance or hazard in the surrounding area. Do not use water if it results in hazardous or objectionable conditions such as, but not limited to, ice, flooding, or pollution.

1.7 PROTECTION

1.7.1 Traffic Control Signs

a. Where pedestrian and driver safety is endangered in the area of removal work, use traffic barricades with flashing lights.

1.7.2 Protection of Personnel

Before, during and after the demolition work continuously evaluate the condition of the structure being demolished and take immediate action to protect all personnel working in and around the project site. No area, section, or component of floors, roofs, walls, columns, pilasters, or other structural element will be allowed to be left standing without sufficient bracing, shoring, or lateral support to prevent collapse or failure while workmen remove debris or perform other work in the immediate area.

1.8 EXISTING CONDITIONS

Before beginning any demolition or deconstruction work, survey the site and examine the drawings and specifications to determine the extent of the work. Record existing conditions in the presence of the DNREC Representative showing the condition of structures and other facilities adjacent to areas of alteration or removal. Photographs sized 4 inch will be acceptable as a record of existing conditions. Include in the record the elevation of the top of foundation walls, finish floor elevations, possible conflicting electrical conduits, plumbing lines, alarms systems, the location and extent of existing cracks and other damage and description of surface conditions that exist prior to before starting work. It is the Contractor's responsibility to verify and document all required outages which will be required during the course of work, and to note these outages on the record document. Submit survey results.

PART 2 PRODUCTS

PART 3 EXECUTION

3.1 EXISTING FACILITIES TO BE REMOVED

Inspect and evaluate existing structures onsite for reuse. Existing construction scheduled to be removed for reuse shall be disassembled. Dismantled and removed materials are to be separated, set aside, and prepared as specified, and stored or delivered to a collection point for reuse, remanufacture, recycling, or other disposal, as specified. Materials shall be designated for reuse onsite whenever possible.

3.1.1 Utilities and Related Equipment

3.1.1.1 General Requirements

Do not interrupt existing utilities serving occupied or used facilities, except when authorized in writing by the DNREC Representative. Do not interrupt existing utilities serving facilities occupied and used by the Government except when approved in writing and then only after temporary utility services have been approved and provided. Do not begin demolition or deconstruction work until all utility disconnections have been made. Shut off and cap utilities for future use, as indicated.

3.1.1.2 Disconnecting Existing Utilities

Remove existing utilities , as indicated or uncovered by work and terminate in a manner conforming to the nationally recognized code covering the specific utility and approved by the DNREC Representative. When utility lines are encountered but are not indicated on the drawings, notify the DNREC Representative prior to further work in that area. Remove meters and related equipment and deliver to a location in accordance with instructions of the DNREC Representative.

3.1.2 Paving and Slabs

Remove concrete and asphaltic concrete paving and slabs including aggregate base as indicated to a depth of 6 inches below new finish grade. Provide neat sawcuts at limits of pavement removal as indicated. Pavement and slabs designated to be recycled and utilized in this project shall be moved, ground and stored as directed by the DNREC Representative. Pavement and slabs not to be used in this project shall be removed from

the Installation at Contractor's expense.

3.1.3 Concrete

Saw concrete along straight lines to a depth of a minimum 2 inch. Make each cut in walls perpendicular to the face and in alignment with the cut in the opposite face. Break out the remainder of the concrete provided that the broken area is concealed in the finished work, and the remaining concrete is sound. At locations where the broken face cannot be concealed, grind smooth or saw cut entirely through the concrete.

3.1.4 Items With Unique/Regulated Disposal Requirements

Remove and dispose of items with unique or regulated disposal requirements in the manner dictated by law or in the most environmentally responsible manner.

3.2 CONCURRENT EARTH-MOVING OPERATIONS

Do not begin excavation, filling, and other earth-moving operations that are sequential to demolition or deconstruction work in areas occupied by structures to be demolished or deconstructed until all demolition and deconstruction in the area has been completed and debris removed. Fill holes, open basements and other hazardous openings.

3.3 DISPOSITION OF MATERIAL

3.3.1 Title to Materials

Except for salvaged items specified in related Sections, and for materials or equipment scheduled for salvage, all materials and equipment removed and not reused or salvaged, shall become the property of the Contractor and shall be removed from Government property. Title to materials resulting from demolition and deconstruction, and materials and equipment to be removed, is vested in the Contractor upon approval by the DNREC Representative of the Contractor's demolition, deconstruction, and removal procedures, and authorization by the DNREC Representative to begin demolition and deconstruction. The Government will not be responsible for the condition or loss of, or damage to, such property after contract award. Showing for sale or selling materials and equipment on site is prohibited.

3.4 CLEANUP

Remove debris and rubbish from basement and similar excavations. Remove and transport the debris in a manner that prevents spillage on streets or adjacent areas. Apply local regulations regarding hauling and disposal.

3.5 DISPOSAL OF REMOVED MATERIALS

3.5.1 Regulation of Removed Materials

Dispose of debris, rubbish, scrap, and other nonsalvageable materials resulting from removal operations with all applicable federal, state and local regulations as contractually specified. Storage of removed materials on the project site is prohibited.

3.5.2 Burning on Government Property

Burning of materials removed from demolished and deconstructed structures will not be permitted on Government property.

-- End of Section --

SECTION 02 61 13

EXCAVATION AND HANDLING OF CONTAMINATED MATERIAL

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
(AASHTO)

AASHTO M 57	(1980; R 2012) Standard Specification for Materials for Embankments and subgrades
AASHTO M 145	(1991; R 2012) Standard Specification for Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes
AASHTO M 146	(1991; R 2012) Standard Specification for Terms Relating to Subgrade, Soil-Aggregate, and fill Materials
AASHTO M 147	(1965; R 2008) Standard Specification for Materials for Aggregate and Soil-Aggregate Subbase, Base, and Surface Courses
AASHTO T 180	(2010) Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop

ASTM INTERNATIONAL (ASTM)

ASTM D1556	(2007) Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D2167	(2008) Density and Unit Weight of Soil in Place by the Rubber Balloon Method
ASTM D6938	(2010) Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
ASTM D698	(2012; E 2014) Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/cu. ft. (600 kN-m/cu. m.))

DELAWARE DEPARTMENT OF TRANSPORTATION (DELDOT)

DELDOT

(2001) Specifications for Road and Bridge
Construction

1.2 DESCRIPTION OF WORK

The work consists of excavation and removal of approximately 23,000 cubic yards of contaminated material. Approximate locations of contaminated material are shown on the drawings. Characterization data on the nature and extent of the contaminated material is shown in the "NVF Site: Contaminated Materials Management Plan (CMMP)", dated January 2015. Submit a Work Plan as specified below. Notify the DNREC Representative within 72 hours, and before excavation, if contaminated material is discovered that has not been previously identified or if other discrepancies between data provided and actual field conditions are discovered. Backfill material is not available onsite. Ground water is approximately 7 feet below pre-excavation ground surface.

1.2.1 Scheduling

Notify the DNREC Representative 3 calendar days prior to the start of excavation of contaminated material. The Contractor shall be responsible for contacting regulatory agencies in accordance with the applicable reporting requirements.

1.2.2 Work Plan

Submit a Work Plan within 30 calendar days after notice to proceed. No work at the site, with the exception of site inspections and surveys, shall be performed until the Work Plan is approved. Allow 7 calendar days in the schedule for the Government's review. No adjustment for time or money will be made if resubmittals of the Work Plan are required due to deficiencies in the plan. At a minimum, the Work Plan shall include:

- a. Schedule of activities.
- b. Method of excavation and equipment to be used.
- c. Dewatering plan.
- d. Storage methods and locations for liquid and solid contaminated material.
- e. Borrow sources and haul routes.
- f. Decontamination procedures.
- g. Spill contingency plan.

1.3 SUBMITTALS

SD-02 Shop Drawings

Surveys

SD-03 Product Data

Work Plan

Closure Report

SD-06 Test Reports

Backfill
Surveys
Compaction

1.4 REGULATORY REQUIREMENTS

1.4.1 Permits

All permits (Erosion and Sediment Control, Wetland and Subaqueous, and USACE) for excavation and storage of contaminated materials (limited to temporary stockpiles) have been obtained by the owner. Permits can be provided to the contractor upon request.

PART 2 PRODUCTS

2.1 SPILL RESPONSE MATERIALS

Provide appropriate spill response materials including, but not limited to the following: containers, adsorbents, shovels, and personal protective equipment. Spill response materials shall be available at all times when contaminated materials/wastes are being handled or transported. Spill response materials shall be compatible with the type of materials and contaminants being handled.

2.2 BACKFILL

Backfill material shall be obtained from offsite sources approved by the DNREC Representative.

Fill Material:

- a. Comply with excavating, backfilling, and compacting procedures for soils used as backfill material to fill voids, depressions or excavations resulting from demolition or deconstruction of structures.
- b. The uses, classifications, characteristics, and definitions of terms for borrow materials shall be in accordance with the requirements of AASHTO M 57, modified; AASHTO M 145, modified; AASHTO M 146, and AASHTO M 147, modified.

Allowable fill materials are as follows:

1. DELDOT Borrow Type C (Utility Backfill). This material shall have between 85 and 100 percent inclusive, by dry weight, passing a 1 inch (25 mm) sieve and a maximum of 25 percent, by dry weight, passing a No. 200 (75 micrometers) sieve.
2. DELDOT Borrow Type F (Common Fill). This material shall meet the general requirements as specified in DELDOT Standards and Specifications Subsection 209.02.

Unless otherwise directed, all materials having the following properties shall be excluded from use:

1. Material with a maximum dry weight less than 90 lb/ft³ (1440

kg/m3).

2. Material with a liquid limit greater than 40 or a plasticity index great than 10.

3. Material containing any percentage of frozen material, rubbish, boulders in excess of 6 inches (150 mm) in any direction, or an organic matter percentage greater than 2 percent (including leaves, roots, grass, or sewage.)

c. Proposed fill material must be sampled and tested by an approved soil testing laboratory, as follows:

1. Soil classification AASHTO M 145.

2. Moisture-density relations AASHTO T 180, Method B or D.

3. DNREC, Policy Soil/Material Re-use Policy at HSCA Regulated Sites, dated May 19, 2010.

PART 3 EXECUTION

3.1 SURVEYS

Perform surveys immediately prior to and after excavation of contaminated material to determine the volume of contaminated material removed. Also, perform surveys immediately after backfill of each excavation. Provide cross-sections on 25 foot intervals and at break points for all excavated areas. All surveys are to be performed by a PLS licensed in the state of Delaware.

3.2 EXISTING STRUCTURES AND UTILITIES

No excavation shall be performed until site utilities have been field located. Take the necessary precautions to ensure no damage occurs to existing structures and utilities. Damage to existing structures and utilities resulting from the Contractor's operations shall be repaired at no additional cost to the Government. Utilities encountered that were not previously shown or otherwise located shall not be disturbed without approval from the DNREC Representative.

3.3 CLEARING

Clearing shall be performed to the limits shown on the drawings in accordance with Section 31 11 00 CLEARING AND GRUBBING.

3.4 CONTAMINATED MATERIAL REMOVAL

3.4.1 Excavation

Areas of contamination shall be excavated to the depth and extent shown on the drawings and not more than 0.2 ft beyond the depth and extent shown on the drawings unless directed by the DNREC Representative. Excavation shall be performed in a manner that will limit spills and the potential for contaminated material to be mixed with uncontaminated material.

3.4.2 Dewatering

Surface water shall be diverted to prevent entry into the excavation.

Dewatering shall be limited to that necessary to assure adequate access, a safe excavation, prevent the spread of contamination, and to ensure that compaction requirements can be met.

3.5 CONTAMINATED MATERIAL STORAGE

Material shall be placed in temporary storage immediately after excavation, unless being direct loaded for transportation to disposal facility. Material shall be stored in accordance with the CMMP.

3.6 BACKFILLING

3.6.1 Compaction

Place approved backfill in lifts with a maximum loose thickness of 8 inches. Compact soil to 85 percent of ASTM D698 maximum dry density. Perform density tests at a frequency of once per 10,000 square feet per lift. conduct a minimum of one density test on each lift of backfill placed. Determine field in-place dry density in accordance with ASTM D1556, ASTM D2167, or ASTM D6938. If ASTM D6938 is used, a minimum of one in ten tests shall be checked using ASTM D1556 or ASTM D2167. Test results from ASTM D1556 or ASTM D2167 shall govern if there is a discrepancy with the ASTM D6938 test results.

3.7 DISPOSAL REQUIREMENTS

Offsite disposal of contaminated material shall be in accordance with the CMMP.

3.8 CLOSURE REPORT

Submit three copies of a Closure Report within 14 calendar days of completing work at the site. See Section 01720 PROJECT RECORD DOCUMENTS (Article 6) for details.

-- End of Section --

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SECTION 31 00 00

EARTHWORK

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
(AASHTO)

AASHTO M 57	(1980; R 2012) Standard Specification for Materials for Embankments and subgrades
AASHTO M 145	(1991; R 2012) Standard Specification for Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes
AASHTO M 146	(1991; R 2012) Standard Specification for Terms Relating to Subgrade, Soil-Aggregate, and fill Materials
AASHTO M 147	(1965; R 2008) Standard Specification for Materials for Aggregate and Soil-Aggregate Subbase, Base, and Surface Courses
AASHTO T 180	(2010) Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop
AASHTO T 224	(2010) Standard Method of Test for Correction for Coarse Particles in the Soil Compaction Test

AMERICAN WATER WORKS ASSOCIATION (AWWA)

AWWA C600	(2010) Installation of Ductile-Iron Water Mains and Their Appurtenances
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ASTM INTERNATIONAL (ASTM)

ASTM C136/C136M	(2014) Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
ASTM D1556	(2007) Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D1557	(2012) Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft ³) (2700 kN-m/m ³)

ASTM D6938 (2010) Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

ASTM D698 (2012; E 2014) Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/cu. ft. (600 kN-m/cu. m.))

DELAWARE DEPARTMENT OF TRANSPORTATION (DELDOT)

DELDOT (2001) Specifications for Road and Bridge Construction

1.2 ALLOWABLE IMPORTED FILL MATERIALS

The uses, classifications, characteristics, and definitions of terms for imported fill materials shall be in accordance with the requirements of AASHTO M 57, modified; AASHTO M 145, modified; AASHTO M 146, modified; and AASHTO M 147, modified; and Section 209 of DELDOT.

Allowable imported fill materials are as follows:

a. DELDOT Borrow Type C (Utility Backfill). This material shall meet the general requirements as specified in DELDOT Subsection 209.4 and have between 85 and 100 percent inclusive, by dry weight, passing a 1 inch (25.0 mm) sieve and a maximum of 25 percent, by dry weight, passing a No. 200 (75 micrometers) sieve.

b. DELDOT Borrow Type F (Common Fill). This material shall meet the general requirements as specified in DELDOT Subsection 209.2.

Unless otherwise directed, all materials having the following properties shall be excluded from use:

1. Material with a maximum dry weight less than 90 lb/ft³ (1440 kg/m³).

2. Material with a liquid limit greater than 40 or a plasticity index greater than 10.

3. Material containing any percentage of frozen material, rubbish, boulders in excess of 6 inches (150 mm) in any direction, or an organic matter percentage greater than 2 percent (including leaves, roots, grass, or sewage).

Materials which do not comply with the requirements above are unsatisfactory. Unsatisfactory materials also include man-made fills, trash, refuse, backfills from previous construction, and material classified as satisfactory which contains root and other organic matter or frozen material. Notify the DNREC Representative when encountering any contaminated materials.

All imported fill materials used for site grading shall be DELDOT Type F unless specifically called out on the plans.

1.2.1 Degree of Compaction

Degree of compaction required, except as noted in the second sentence, is expressed as a percentage of the maximum density obtained by the test procedure presented in ASTM D1557 abbreviated as a percent of laboratory maximum density. Since ASTM D1557 applies only to soils that have 30 percent or less by weight of their particles retained on the 3/4 inch sieve, express the degree of compaction for material having more than 30 percent by weight of their particles retained on the 3/4 inch sieve as a percentage of the maximum density in accordance with AASHTO T 180 and corrected with AASHTO T 224. To maintain the same percentage of coarse material, use the "remove and replace" procedure as described in NOTE 8 of Paragraph 7.2 in AASHTO T 180.

1.2.2 Topsoil

Material suitable for topsoils obtained from offsite areas is defined as: Natural, friable soil representative of productive, well-drained soils in the area, free of subsoil, stumps, rocks larger than one inch diameter, brush, weeds, toxic substances, and other material detrimental to plant growth. Amend topsoil pH range to obtain a pH of 5.5 to 7.

1.2.3 Hard/Unyielding Materials

Hard/Unyielding materials comprise weathered rock, dense consolidated deposits, or conglomerate materials which are not included in the definition of "rock" with stones greater than 3 inch in any dimension or as defined by the pipe manufacturer, whichever is smaller. These materials usually require the use of heavy excavation equipment, ripper teeth, or jack hammers for removal.

1.2.4 Unstable Material

Unstable materials are too wet to properly support the utility pipe, conduit, or appurtenant structure.

1.3 SYSTEM DESCRIPTION

The subsoil investigation report and samples of materials taken from subsurface investigations may be examined in the CMMP. This data represent the best subsurface information available; however, variations may exist in the subsurface between boring locations.

1.3.1 Classification of Excavation

No consideration will be given to the nature of the materials, and all excavation will be designated as unclassified excavation. Contractor should expect to encounter concrete slabs, footers, and other structural and non-structural members. Encountering these materials will not constitute a change in conditions.

1.3.2 Blasting

Blasting will not be permitted.

1.3.3 Dewatering Plan

Submit procedures for accomplishing dewatering work.

1.4 SUBMITTALS

SD-01 Preconstruction Submittals

Dewatering Plan

SD-03 Product Data

Disposal Facility for Excavated Materials

SD-06 Test Reports

Imported Fill Testing

Within 24 hours of conclusion of physical tests, submit 3 copies of test results, including calibration curves and results of calibration tests.

SD-07 Certificates

Testing

PART 2 PRODUCTS

2.1 REQUIREMENTS FOR IMPORTED FILL

Material shall be in accordance with paragraph ALLOWABLE IMPORTED FILL MATERIALS and the DNREC Policy Soil/Material Re-use Policy at HSCA Regulated Sites.

Submit imported fill testing results to Owner.

2.2 MATERIAL FOR RIP-RAP

Provide Filter fabric and rock conforming to DNREC State Standard for construction indicated. See details in Section 31 32 11 SOIL SURFACE EROSION CONTROL.

PART 3 EXECUTION

3.1 STRIPPING OF TOPSOIL

Existing topsoil will not be reused on site. It will be transported off site to a permitted disposal facility.

3.2 GENERAL EXCAVATION

Perform excavation of every type of material encountered within the limits of the project to the lines, grades, and elevations indicated and as specified. Perform the grading in accordance with the typical sections shown and the tolerances specified in paragraph FINISHING. During construction, perform excavation and fill in a manner and sequence that will provide proper drainage at all times.

3.2.1 Drainage

Provide for the collection and disposal of surface and subsurface water encountered during construction. Completely drain construction site during periods of construction to keep soil materials sufficiently dry.

Construct storm drainage features (ponds/basins) at the earliest stages of site development, and throughout construction grade the construction area to provide positive surface water runoff away from the construction activity or provide temporary ditches, swales, and other drainage features and equipment as required to maintain dry soils. When unsuitable working platforms for equipment operation and unsuitable soil support for subsequent construction features develop, remove unsuitable material and provide new soil material as specified herein. It is the responsibility of the Contractor to assess the soil and ground water conditions presented by the plans and specifications and to employ necessary measures to permit construction to proceed.

3.2.2 Dewatering

Control groundwater flowing toward or into excavations to prevent sloughing of excavation slopes and walls, boils, uplift and heave in the excavation and to eliminate interference with orderly progress of construction. Do not permit French drains, sumps, ditches or trenches within 3 feet of the foundation of any structure, except with specific written approval, and after specific contractual provisions for restoration of the foundation area have been made. Take control measures by the time the excavation reaches the water level in order to maintain the integrity of the in situ material. Operate dewatering system continuously until construction work below existing water levels is complete. Submit performance records weekly.

3.2.3 Trench Excavation Requirements

Excavate the trench as recommended by the manufacturer of the pipe to be installed. Slope trench walls below the top of the pipe, or make vertical, and of such width as recommended in the manufacturer's printed installation manual. Provide vertical trench walls where no manufacturer's printed installation manual is available. Excavate trench walls which are cut back to at least the angle of repose of the soil. Give special attention to slopes which may be adversely affected by weather or moisture content. Do not exceed the trench width below the pipe top of 24 inches plus pipe outside diameter (O.D.) for pipes of less than 24 inches inside diameter, and do not exceed 36 inches plus pipe outside diameter for sizes larger than 24 inches inside diameter. Where recommended trench widths are exceeded, provide redesign, stronger pipe, or special installation procedures by the Contractor. The Contractor is responsible for the cost of redesign, stronger pipe, or special installation procedures without any additional cost to the Government.

3.2.3.1 Bottom Preparation

Grade the bottoms of trenches accurately to provide uniform bearing and support for the bottom quadrant of each section of the pipe. Excavate bell holes to the necessary size at each joint or coupling to eliminate point bearing. Remove stones of 3 inch or greater in any dimension, or as recommended by the pipe manufacturer, whichever is smaller, to avoid point bearing.

3.2.3.2 Removal of Unyielding Material

Where overdepth is not indicated and unyielding material is encountered in the bottom of the trench, remove such material 12 inches below the required grade and replaced with suitable materials as provided in paragraph BACKFILLING AND COMPACTION.

3.2.3.3 Removal of Unstable Material

Where unstable material is encountered in the bottom of the trench, remove such material to the depth directed and replace it to the proper grade with select granular material as provided in paragraph BACKFILLING AND COMPACTION. When removal of unstable material is required due to the Contractor's fault or neglect in performing the work, the Contractor is responsible for excavating the resulting material and replacing it without additional cost to the Government.

3.2.4 Underground Utilities

The Contractor is responsible for movement of construction machinery and equipment over pipes and utilities during construction. Perform work adjacent to non-Government utilities as necessary to not damage utilities.

Excavation made with power-driven equipment is not permitted within 2 feet of known Government-owned utility or subsurface construction. For work immediately adjacent to or for excavations exposing a utility or other buried obstruction, excavate by hand. Start hand excavation on each side of the indicated obstruction and continue until the obstruction is uncovered or until clearance for the new grade is assured. Support uncovered lines or other existing work affected by the contract excavation until approval for backfill is granted by the DNREC Representative. Report damage to utility lines or subsurface construction immediately to the DNREC Representative.

3.3 SELECTION OF IMPORTED FILL

Select fill material to meet the requirements and conditions of the particular fill or embankment for which it is to be used. Obtain fill material from approved private sources.

3.4 GRADING AREAS

Where indicated, divide work into grading areas within which satisfactory excavated material will be placed in embankments, fills, and required backfills. Do not haul material excavated in one grading area to another grading area except when so directed in writing. Place and grade stockpiles of excavated materials as specified.

3.5 GROUND SURFACE PREPARATION

3.5.1 General Requirements

Scarify the surface to a depth of 6 inches before the fill is started. Plow, step, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so that the fill material will bond with the existing material. When subgrades are less than the specified density, break up the ground surface to a minimum depth of 6 inches, pulverizing, and compacting to the specified density. When the subgrade is part fill and part excavation or natural ground, scarify the excavated or natural ground portion to a depth of 12 inches and compact it as specified for the adjacent fill.

3.5.2 Frozen Material

Do not place material on surfaces that are muddy, frozen, or contain frost. Finish compaction by sheepsfoot rollers, pneumatic-tired rollers,

steel-wheeled rollers, or other approved equipment well suited to the soil being compacted. Moisten material as necessary to provide the moisture content that will readily facilitate obtaining the specified compaction with the equipment used.

3.6 DISPOSAL FACILITY FOR EXCAVATED MATERIALS

All excavated material shall be transported off-site to an approved disposal facility in accordance with the CMMP.

3.7 BACKFILLING AND COMPACTION

Place backfill adjacent to any and all types of structures, and compact to at least 95 percent laboratory maximum density. Prepare ground surface on which backfill is to be placed and provide compaction requirements for backfill materials in conformance with the applicable portions of paragraphs GROUND SURFACE PREPARATION. Finish compaction by sheepsfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, vibratory compactors, or other approved equipment.

3.7.1 Trench Backfill

Backfill trenches to the grade shown.

3.7.1.1 Replacement of Unyielding Material

Replace unyielding material removed from the bottom of the trench with select granular material or initial backfill material.

3.7.1.2 Replacement of Unstable Material

Replace unstable material removed from the bottom of the trench or excavation with select granular material placed in layers not exceeding 6 inches loose thickness.

3.7.1.3 Bedding and Initial Backfill

Place initial backfill material and compact it with approved tampers to a height of at least one foot above the utility pipe or conduit. Bring up the backfill evenly on both sides of the pipe for the full length of the pipe. Take care to ensure thorough compaction of the fill under the haunches of the pipe. Except as specified otherwise in the individual piping section, provide bedding for buried piping in accordance with AWWA C600, Type 4, except as specified herein. Compact backfill to top of pipe to 95 percent of ASTM D698 maximum density. Provide plastic piping with bedding to spring line of pipe. Provide materials as follows:

3.8 SPECIAL REQUIREMENTS

Special requirements for both excavation and backfill relating to the specific utilities are as follows:

3.8.1 Rip-Rap Construction

Construct rip-rap on filter fabric in the areas indicated. Trim and dress indicated areas to conform to cross sections, lines and grades shown within a tolerance of 0.1 foot.

3.8.1.1 Bedding Placement

Spread bedding material uniformly to a thickness of at least 6 inches on prepared subgrade as indicated.

3.8.1.2 Stone Placement

Place rock for rip-rap on prepared bedding material to produce a well graded mass with the minimum practicable percentage of voids in conformance with lines and grades indicated. Distribute larger rock fragments, with dimensions extending the full depth of the rip-rap throughout the entire mass and eliminate "pockets" of small rock fragments. Rearrange individual pieces by mechanical equipment or by hand as necessary to obtain the distribution of fragment sizes specified above.

3.9 EMBANKMENTS

3.9.1 Earth Embankments

Construct earth embankments from DELDOT Type F materials. Place the material in successive horizontal layers of loose material not more than 12 inches in depth. Spread each layer uniformly on a soil surface that has been moistened or aerated as necessary, and scarified or otherwise broken up so that the fill will bond with the surface on which it is placed. After spreading, plow, disk, or otherwise break up each layer; moisten or aerate as necessary; thoroughly mix; and compact to at least 95 percent laboratory maximum density.

3.10 SUBGRADE PREPARATION

3.10.1 Construction

Shape subgrade to line, grade, and cross section, and compact as specified. Include plowing, disking, and any moistening or aerating required to obtain specified compaction for this operation. Remove soft material and replace with other approved material as directed. Excavate rock encountered in the cut section to a depth of 6 inches below finished grade for the subgrade. Bring up low areas resulting from removal of unsatisfactory material or excavation of rock to required grade with borrow materials, and shape the entire subgrade to line, grade, and cross section and compact as specified. Do not vary the elevation of the finish subgrade more than 0.05 foot from the established grade and cross section.

3.10.2 Compaction

Finish compaction by sheepsfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, vibratory compactors, or other approved equipment. Compact each layer of the embankment to at least 95 percent of laboratory maximum density.

3.11 FINISHING

Finish the surface of excavations, embankments, and subgrades to a smooth and compact surface in accordance with the lines, grades, and cross sections or elevations shown. Provide the degree of finish for graded areas within 0.1 foot of the grades and elevations indicated except that the degree of finish for subgrades specified in paragraph SUBGRADE PREPARATION. Finish gutters and ditches in a manner that will result in effective drainage. Finish the surface of areas to be turfed from

settlement or washing to a smoothness suitable for the application of turbing materials. Repair graded, topsoiled, or backfilled areas prior to acceptance of the work, and re-established grades to the required elevations and slopes.

3.11.1 Subgrade and Embankments

During construction, keep embankments and excavations shaped and drained. Maintain ditches and drains along subgrade to drain effectively at all times. Do not disturb the finished subgrade by traffic or other operation. Protect and maintain the finished subgrade in a satisfactory condition until ballast, subbase, base, or pavement is placed. Do not permit the storage or stockpiling of materials on the finished subgrade. Do not lay subbase, base course, ballast, or pavement until the subgrade has been checked and approved, and in no case place subbase, base, surfacing, pavement, or ballast on a muddy, spongy, or frozen subgrade.

3.11.2 Grading Around Structures

Construct areas within 5 feet outside of each building and structure line true-to-grade, shape to drain, and maintain free of trash and debris until final inspection has been completed and the work has been accepted.

3.12 PLACING TOPSOIL

On areas to receive topsoil, prepare the compacted subgrade soil to a 2 inches depth for bonding of topsoil with subsoil. Spread topsoil evenly to a thickness of 6 inch and grade to the elevations and slopes shown. Do not spread topsoil when frozen or excessively wet or dry. Obtain material required for topsoil in excess of that produced by excavation within the grading limits from offsite areas.

3.13 TESTING

Perform testing by a DNREC validated commercial testing laboratory or the Contractor's validated testing facility. Submit qualifications of the DNREC validated commercial testing laboratory or the Contractor's validated testing facilities.

- a. Determine field in-place density in accordance with ASTM D1556.
- b. Check the calibration curves furnished with the moisture gauges along with density calibration checks as described in ASTM D6938; check the calibration of both the density and moisture gauges at the beginning of a job on each different type of material encountered and at intervals as directed by the DNREC Representative. When test results indicate, as determined by the DNREC Representative, that compaction is not as specified, remove the material, replace and recompact to meet specification requirements.
- c. Perform tests on recompacted areas to determine conformance with specification requirements. Appoint a registered professional civil engineer to certify inspections and test results. These certifications shall state that the tests and observations were performed by or under the direct supervision of the engineer and that the results are representative of the materials or conditions being certified by the tests. The following number of tests, if performed at the appropriate time, will be the minimum acceptable for each type operation.

3.13.1 Fill and Backfill Material Gradation

One test per 1000 cubic yards stockpiled or in-place source material. Determine gradation of fill and backfill material in accordance with ASTM C136/C136M.

3.13.2 In-Place Densities

- a. One test per 1,000 square feet, or fraction thereof, of each lift of fill or backfill areas compacted by other than hand-operated machines.
- b. One test per 1,000 square feet, or fraction thereof, of each lift of fill or backfill areas compacted by hand-operated machines.

3.13.3 Optimum Moisture and Laboratory Maximum Density

Perform tests for each type material or source of material including borrow material to determine the optimum moisture and laboratory maximum density values. One representative test per 1000 cubic yards of fill and backfill, or when any change in material occurs which may affect the optimum moisture content or laboratory maximum density.

3.13.4 Tolerance Tests for Subgrades

Perform continuous checks on the degree of finish specified in paragraph SUBGRADE PREPARATION during construction of the subgrades.

-- End of Section --

SECTION 31 11 00

CLEARING AND GRUBBING

PART 1 GENERAL

1.1 DELIVERY, STORAGE, AND HANDLING

Deliver materials to store at the site, and handle in a manner which will maintain the materials in their original manufactured or fabricated condition until ready for use.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 PROTECTION

3.1.1 Roads and Walks

Keep roads and walks free of dirt and debris at all times.

3.1.2 Trees, Shrubs, and Existing Facilities

Protect trees and vegetation to be left standing from damage incident to clearing, grubbing, and construction operations by the erection of barriers or by such other means as the circumstances require.

3.1.3 Utility Lines

Protect existing utility lines that are indicated to remain from damage. Notify the DNREC Representative immediately of damage to or an encounter with an unknown existing utility line. The Contractor is responsible for the repairs of damage to existing utility lines that are indicated or made known to the Contractor prior to start of clearing and grubbing operations. When utility lines which are to be removed are encountered within the area of operations, notify the DNREC Representative in ample time to minimize interruption of the service.

3.2 CLEARING

Clearing shall consist of the felling, trimming, and cutting of trees into sections and the satisfactory disposal of the trees and other vegetation designated for removal, including downed timber, snags, brush, and rubbish occurring within the areas to be cleared. Clearing shall also include the removal and disposal of structures that obtrude, encroach upon, or otherwise obstruct the work. Trees, stumps, roots, brush, and other vegetation in areas to be cleared shall be cut off flush with or below the original ground surface, except such trees and vegetation as may be indicated or directed to be left standing. Trees designated to be left standing within the cleared areas shall be trimmed of dead branches 1-1/2 inches or more in diameter and shall be trimmed of all branches the heights indicated or directed. Limbs and branches to be trimmed shall be neatly cut close to the bole of the tree or main branches. Cuts more than

1-1/2 inches in diameter shall be painted with an approved tree-wound paint.

3.3 TREE REMOVAL

Where indicated or directed, trees and stumps that are designated as trees shall be removed from areas outside those areas designated for clearing and grubbing. This work shall include the felling of such trees and the removal of their stumps and roots as specified in paragraph GRUBBING. Trees shall be disposed of as specified in paragraph DISPOSAL OF MATERIALS.

3.4 PRUNING

Prune trees designated to be left standing within the cleared areas of dead branches 1-1/2 inches or more in diameter; and trim branches to heights and in a manner as indicated. Neatly cut limbs and branches to be trimmed close to the bole of the tree or main branches. Paint cuts more than 1-1/4 inches in diameter with an approved tree wound paint.

3.5 GRUBBING

Grubbing consists of the removal and disposal of stumps, roots larger than 3 inches in diameter, and matted roots from the designated grubbing areas. Remove material to be grubbed, together with logs and other organic or metallic debris not suitable for foundation purposes, to a depth of not less than 18 inches below the original surface level of the ground in areas indicated to be grubbed and in areas indicated as construction areas under this contract, such as areas for buildings, and areas to be paved. Fill depressions made by grubbing with suitable material and compact to make the surface conform with the original adjacent surface of the ground.

3.6 DISPOSAL OF MATERIALS

3.6.1 Nonsaleable Materials

Written permission to dispose of such products on private property shall be filed with the DNREC Representative. Logs, stumps, roots, brush, rotten wood, and other refuse from the clearing and grubbing operations, except for salable timber, shall be disposed of outside the limits of Government-controlled land at the Contractor's responsibility, except when otherwise directed in writing. Such directive will state the conditions covering the disposal of such products and will also state the areas in which they may be placed.

-- End of Section --

SECTION 31 32 11

SOIL SURFACE EROSION CONTROL

PART 1 GENERAL

1.1 SUMMARY

Refer to the approved Erosion and Sediment Control Permit Drawings (No. 2011-012, Ext. #1) for further clarification. The work consists of furnishing and installing temporary and permanent soil surface erosion control materials to prevent the pollution of air, water, and land, including fine grading, blanketing, stapling, mulching, vegetative measures, structural measures, and miscellaneous related work, within project limits and in areas outside the project limits where the soil surface is disturbed from work under this contract at the designated locations. This work includes all necessary materials, labor, supervision and equipment for installation of a complete system.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
(DNREC)

DNREC (2013) Delaware Erosion and Sediment
Control Handbook

DELAWARE DEPARTMENT OF TRANSPORTATION (DelDOT)

DelDOT Delaware Department of Transportation

1.3 SUBMITTALS

SD-01 Preconstruction Submittals

Work sequence schedule

SD-03 Product Data

Hydraulic Mulch

SD-06 Test Reports

Hydraulic Mulch

SD-07 Certificates

Mulch
Hydraulic Mulch
Installer's Qualification

SD-10 Operation and Maintenance Data

Maintenance Instructions

1.4 QUALITY ASSURANCE

1.4.1 Installer's Qualification

Submit the installer's company name and address, and/or certifications.

1.4.2 Substitutions

Substitutions will not be allowed without written request and approval from the DNREC Representative.

1.5 DELIVERY, STORAGE, AND HANDLING

Prior to delivery of materials, submit certificates of compliance attesting that materials meet the specified requirements. Store materials in designated areas and as recommended by the manufacturer protected from the elements, direct exposure, and damage. Do not drop containers from trucks. Material shall be free of defects that would void required performance or warranty. Deliver geosynthetic binders and synthetic soil binders in the manufacturer's original sealed containers and stored in a secure area.

- a. Furnish erosion control blankets and geotextile fabric in rolls with suitable wrapping to protect against moisture and extended ultraviolet exposure prior to placement. Label erosion control blanket and geotextile fabric rolls to provide identification sufficient for inventory and quality control purposes.
- b. All synthetic grids, synthetic sheets, and articulating cellular concrete block grids shall be sound and free of defects that would interfere with the proper placing of the block or impair the strength or permanence of the construction. Minor cracks in synthetic grids and concrete cellular block, incidental to the usual methods of manufacture, or resulting from standard methods of handling in shipment and delivery, will not be deemed grounds for rejection.
- c. Inspect seed upon arrival at the jobsite for conformity to species and quality. Seed that is wet, moldy, or bears a test date five months or older, shall be rejected.

1.6 SCHEDULING

Submit a construction work sequence schedule, with the approved erosion control plan a minimum of 30 days prior to start of construction. The work schedule shall coordinate the timing of land disturbing activities with the provision of erosion control measures to reduce on-site erosion and off-site sedimentation. Coordinate installation of temporary erosion control features with the construction of permanent erosion control features to assure effective and continuous control of erosion, pollution, and sediment deposition. Include a vegetative plan with planting and seeding dates and fertilizer, lime, and mulching rates. Distribute copies of the work schedule and erosion control plan to site subcontractors. Address the following in the erosion control plan:

- a. Statement of erosion control and stormwater control objectives.

- b. Description of temporary and permanent erosion control, stormwater control, and air pollution control measures to be implemented on site.
- c. Description of the type and frequency of maintenance activities required for the chosen erosion control methods.

1.7 WARRANTY

Erosion control material shall have a warranty for use and durable condition for project specific installations. Temporary erosion control materials shall carry a minimum eighteen month warranty. Permanent erosion control materials shall carry a minimum three year warranty.

PART 2 PRODUCTS

2.1 MULCH

Mulch shall be free from weeds, mold, and other deleterious materials. Mulch materials shall be native to the region.

2.1.1 Straw

Straw shall be stalks from oats, wheat, rye, barley, or rice, furnished in air-dry condition and with a consistency for placing with commercial mulch-blowing equipment.

2.1.2 Hay

Hay shall be native hay, sudan-grass hay, broomsedge hay, or other herbaceous mowings, furnished in an air-dry condition suitable for placing with commercial mulch-blowing equipment.

2.1.3 Coir Matting

Coir shall be manufactured from 100 percent coconut fiber cured in fresh water for a minimum of 6 months.

2.1.4 Hydraulic Mulch

Hydraulic mulch shall be made of 100 percent virgin aspen wood fibers. Wood shall be naturally air-dried to a moisture content of 10.0 percent, plus or minus 3.0 percent. A minimum of 50 percent of the fibers shall be equal to or greater than 0.15 inch in length and a minimum of 75 percent of the fibers shall be retained on a 28 mesh screen.

2.2 WATER

Unless otherwise directed, water is the responsibility of the Contractor. Water shall be supplied by an existing irrigation system.

2.3 STANDARD SILT FENCE

- a. Stakes: (either T or U) or 2 inch by 2 inch hardwood.
- b. Geosynthetic Fabric: Type GD-1.
- c. Reinforcing Strip: Wooden lath, plastic strip or other approved equivalent.

2.4 SUPER SILT FENCE

a. Fencing: Fencing shall be 42 inches in height and constructed in accordance with the latest DelDOT Specifications for Chain Link Fencing (Section 728). The DelDOT specification for a 6 foot fence shall be used, substituting 42 inch fabric and 6 foot length posts.

b. Fabric: Type GD-1.

2.5 SITE POLLUTION PREVENTION PLAN AND DUST CONTROL

Refer to DNREC Erosion and Sediment Control Handbook Detail No. DE-ESC-3.6.1.

2.6 EROSION CONTROL BLANKET

Type SSM-1: NAG S75 or approved equivalent.

2.7 INLET PROTECTION - TYPE 1

a. Wooden frame is to be constructed of 2 inch by 4 inch construction grade lumber.

b. Wire mesh must be of sufficient strength to support filter fabric with water fully impounded against it.

c. Fabric: Type GD-II.

2.8 ORANGE BARRIER FENCE

a. 48 inch high density orange polyethylene safety fence.

b. Stakes: 72 inch T-post driven 20 inch minimum below grade and set 12 foot maximum on center.

c. Wire or zip ties to secure safety fence to posts.

2.9 STABILIZED CONSTRUCTION ENTRANCE

a. Stone: Use DE #3 stone.

b. Geotextile: Type GS-1, placed over the entire area prior to placing stone.

2.10 NONWOVEN SEPARATION GEOTEXTILE FABRIC

a. DNREC Type GS-1.

(1) Mirafi 600x or approved equivalent.

2.11 NONWOVEN DRAINAGE GEOTEXTILE FABRIC

a. DNREC Type GD-2.

(1) Mirafi 140N or approved equivalent.

2.12 COIR FIBER MATTING

Control Mat OCF 30 (Granite Environmental) or approved equivalent.

2.13 LIVE WATTLE BUNDLES

a. Live branches tied together to a total of 4-5 inch diameter and 8 foot length bundles.

b. Branches to be native to the area, if possible. To be approved by the Architect.

(1) (*Cephalanthus occidentalis*) Buttonbush 4 to 5 inch diameter Wattle (8 foot length) or approved equivalent.

PART 3 EXECUTION

3.1 WEATHER CONDITIONS

Perform erosion control operations under favorable weather conditions; when excessive moisture, frozen ground or other unsatisfactory conditions prevail, the work shall be stopped as directed. When special conditions warrant a variance to earthwork operations, submit a revised construction schedule for approval. Do not apply erosion control materials in adverse weather conditions which could affect their performance.

3.1.1 Finished Grade

Provide condition of finish grade status prior to installation, location of underground utilities and facilities. Verify that finished grades are as indicated on the drawings; complete finish grading and compaction in accordance with Section 31 00 00 EARTHWORK, prior to the commencement of the work. Verify and mark the location of underground utilities and facilities in the area of the work. Repair damage to underground utilities and facilities at the Contractor's expense.

3.1.2 Placement of Coir Matting

Before placing the coir matting, ensure the subgrade has been graded smooth; has no depressed, void areas; is free from obstructions, such as tree roots, projecting stones or other foreign matter. Verify that mesh does not include invasive species. Vehicles will not be permitted directly on the blankets.

3.2 SITE PREPARATION

3.2.1 Protecting Existing Vegetation

When there are established lawns in the work area, the turf shall be covered and/or protected or replaced after construction operations. Identify existing trees, shrubs, plant beds, and landscape features that are to be preserved on site by appropriate tags and barricade with reusable, high-visibility fencing along the dripline. Mitigate damage to existing trees at no additional cost to the Government. Damage shall be assessed by a state certified arborist or other approved professional using the National Arborist Association's tree valuation guideline.

3.3 INSTALLATION

Immediately stabilize exposed soil using mulch and seed. Stabilize areas for construction access immediately as specified in the paragraph Construction Entrance. Provide additional sediment fences as grading progresses. Provide inlet and outlet protection at the ends of new drainage systems.

3.3.1 Construction Entrance

Provide as indicated on drawings, a minimum of 6 inches thick, at points of vehicular ingress and egress on the construction site. Construction entrances shall be cleared and grubbed, and then excavated a minimum of 3 inches prior to placement of the filter fabric and aggregate. The aggregate shall be placed in a manner that will prevent damage and movement of the fabric. Place fabric in one piece, where possible. Overlap fabric joints a minimum of 12 inches.

3.3.2 Seeding

When seeding is required prior to installing mulch on matting verify that seeding will be completed in accordance with Sections 31 00 00 EARTHWORK and 32 92 19 SEEDING.

3.3.3 Mulch Installation

Install mulch in the areas indicated.

3.3.4 Hydraulic Mulch Application

3.3.4.1 Unseeded Area

Install hydraulic mulch as indicated and in accordance with manufacturer's recommendations. Mix hydraulic mulch with water at the rate recommended by the manufacturer for the area to be covered. Mixing shall be done in equipment manufactured specifically for hydraulic mulching work, including an agitator in the mixing tank to keep the mulch evenly disbursed.

3.3.4.2 Seeded Area

For drill or broadcast seeded areas, apply hydraulic mulch evenly at the rate approved by the erosion and sediment control details. See Sheets C-152, C-153, and C-155.

3.3.5 Coir Matting

- a. Install coir matting as indicated and in accordance with manufacturer's recommendations. The extent shall be as indicated.
- b. Orient coir matting in vertical strips and anchored with staples, as indicated. Abut adjacent strips to allow for installation of a common row of staples. Overlap horizontal joints between erosion control blankets sufficiently to accommodate a common row of staples with the uphill end on top.
- c. Where exposed to overland sheet flow, locate a trench at the uphill termination. Staple the erosion control blanket to the bottom of the trench. Backfill and compact the trench as required.

- d. Where terminating in a channel containing an installed blanket, the erosion control blanket shall overlap installed blanket sufficiently to accommodate a common row of staples.

3.3.6 Sediment Fencing

Install posts at the spacing indicated on drawings and at an angle between 2 degrees and 20 degrees towards the potential silt load area. Sediment fence height shall be approximately 24 inches. Do not attach filter fabric to existing trees. Secure filter fabric to the post and wire fabric using staples, tie wire, or hog rings. Imbed the filter fabric into the ground as indicated on drawings. Splice filter fabric at support pole using a 6 inches overlap and securely seal.

3.4 CLEAN-UP

Dispose of excess material, debris, and waste materials offsite at an approved landfill or recycling center. Clear adjacent paved areas. Immediately upon completion of the installation in an area, protect the area against traffic or other use by erecting barricades and providing signage as required, or as directed.

3.5 WATERING SEED

Apply water to supplement rainfall at a sufficient rate to ensure moist soil conditions to a minimum 1 inch depth. Prevent run-off and puddling. Do no drive watering trucks over turf areas, unless otherwise directed. Prevent watering of other adjacent areas or plant material.

3.6 MAINTENANCE

Maintenance shall include eradicating weeds; protecting embankments and ditches from surface erosion; maintaining the performance of the erosion control materials and mulch; protecting installed areas from traffic.

3.6.1 Maintenance Instructions

Furnish written instructions containing drawings and other necessary information, describing the care of the installed material; including, when and where maintenance should occur, and the procedures for material replacement. Submit instruction for year-round care of installed material. Include manufacturer supplied spare parts.

3.6.2 Patching and Replacement

Unless otherwise directed, material shall be placed, seamed or patched as recommended by the manufacturer. Remove material not meeting the required performance as a result of placement, seaming or patching from the site. Replace the unacceptable material at no additional cost to the Government.

3.7 SATISFACTORY STAND OF GRASS PLANTS

Evaluate the grass plants for species and health when the grass plants are a minimum 1 inch high. A satisfactory stand of grass plants from the revegetation mat area shall be a minimum 10 grass plants per square foot. The total bare spots shall not exceed 2 percent of the total revegetation mat area.

-- End of Section --

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SECTION 32 05 33

LANDSCAPE ESTABLISHMENT

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM D5851 (1995; R 2011) Planning and Implementing a Water Monitoring Program

TREE CARE INDUSTRY ASSOCIATION (TCIA)

TCIA Z133.1 (2006) American National Standard for Arboricultural Operations - Pruning, Repairing, Maintaining, and Removing Trees, and Cutting Brush - Safety Requirements

1.2 DEFINITIONS

1.2.1 Stand of Turf

95 percent ground cover of the established species.

1.3 RELATED REQUIREMENTS

Section 32 92 19 SEEDING applies to this section for installation of seed requirements, with additions and modifications herein.

Section 32 93 00 PLANTS applies to this section for installation of trees, shrubs, ground cover, and wildflower, with additions and modifications herein.

1.4 SUBMITTALS

SD-03 Product Data

Fertilizer

Mulches Topdressing

Submit documentation indicating percentage of post-industrial and post-consumer recycled content per unit of product. Indicate relative dollar value of recycled content products to total dollar value of products included in project.

SD-07 Certificates

Maintenance inspection report

Plant quantities

SD-10 Operation and Maintenance Data

Maintenance

SD-11 Closeout Submittals

Tree, staking and guying removal

1.5 DELIVERY, STORAGE AND HANDLING

1.5.1 Delivery

Deliver fertilizer to the site in original containers bearing manufacturer's chemical analysis, name, trade name, or trademark, and indication of conformance to state and federal laws. Instead of containers, fertilizer may be furnished in bulk with a certificate indicating the above information.

1.5.2 Storage

1.5.2.1 Fertilizer Storage

Material shall be stored in designated areas. Fertilizer shall be stored in cool, dry locations away from contaminants.

1.5.2.2 Antidessicants Storage

Do not store with fertilizers or other landscape maintenance materials.

1.5.3 Handling

Do not drop or dump materials from vehicles.

1.6 MAINTENANCE

Submit Operation and Maintenance (O&M) Manuals for planting materials. Include instructions indicating procedures during one typical year including variations of maintenance for climatic conditions throughout the year. Provide instructions and procedures for watering; promotion of growth, including fertilizing, pruning, and mowing; and integrated pest management. O&M Manuals shall include pictures of planting materials cross referenced to botanical and common names, with a description of the normal appearance in each season.

Develop a water monitoring program for surface and ground water on the project site in accordance with ASTM D5851 and consistent with the water management program utilized during construction operations.

PART 2 PRODUCTS

2.1 POST-PLANT FERTILIZER

Fertilizer for groundcover, wildflowers, and grasses is not permitted. Fertilizer for trees, plants, and shrubs shall be as recommended by plant supplier, except synthetic chemical fertilizers are not permitted. Fertilizers containing petrochemical additives or that have been treated with pesticides or herbicides are not permitted.

2.2 WATER

Source of water shall be approved by the DNREC Representative, and be of suitable quality for irrigation. Use collected storm water or graywater when available.

2.3 MULCHES TOPDRESSING

Free from noxious weeds, mold, pesticides, or other deleterious materials.

2.4 PESTICIDES

Pesticides and herbicides are not permitted.

2.5 Limestone Riprap in Wetland

Size R-5.

PART 3 EXECUTION

3.1 EXTENT OF WORK

Provide landscape construction maintenance to include fertilizing, watering, weeding, pruning, stake and guy adjusting, and for all newly installed landscape areas, unless indicated otherwise, and at all areas inside or outside the limits of the construction that are disturbed by the Contractor's operations.

3.1.1 Policing

The Contractor shall police all landscaped areas. Policing includes removal of leaves, branches and limbs regardless of length or diameter, dead vegetation, paper, trash, cigarette butts, garbage, rocks or other debris. Collected debris shall be promptly removed and disposed of at an approved disposal site.

3.2 IRRIGATION ESTABLISHMENT PERIOD

3.2.1 Water Restrictions

The Contractor shall abide by state, local or other water conservation regulations in force during the establishment period. Automatic controller shall be adjusted to comply with the water conservation regulations schedule.

3.2.2 Final Acceptance

Upon completion of the irrigation establishment period and final acceptance of groundcover and exterior plants, irrigation equipment shall be removed.

3.3 GROUNDCOVER ESTABLISHMENT PERIOD

Groundcover establishment period will commence on the date that inspection by the DNREC Representative shows that the new turf furnished under this contract has been satisfactorily installed to a 95 percent stand of coverage.

3.3.1 Frequency of Maintenance

Begin maintenance immediately after turf has been installed. Inspect area once a week during the installation and establishment period and perform needed maintenance promptly.

3.3.2 Promotion of Growth

Groundcover shall be maintained in a manner that promotes proper health, growth, natural color. Turf shall have a neat uniform manicured appearance, free of bare areas, ruts, holes, weeds, pests, dead vegetation, debris, and unwanted vegetation that present an unsightly appearance. Mow, remove excess clippings, eradicate weeds, water, fertilize, overseed, and perform other operations necessary to promote growth, as approved by DNREC Representative and consistent with approved Integrated Pest Management Plan. Remove noxious weeds common to the area from planting areas by mechanical means.

3.3.3 Mowing

3.3.3.1 Turf

Turf shall be mowed at a uniform finished height. Mowing of turf shall be performed in a manner that prevents scalping, rutting, bruising, uneven and rough cutting. Prior to mowing, all rubbish, debris, trash, leaves, rocks, paper, and limbs or branches on a turf area shall be picked up and disposed. Adjacent paved areas shall be swept/vacuumed clean.

3.3.4 Turf Watering

The Contractor shall perform irrigation in a manner that promotes the health, growth, color and appearance of cultivated vegetation and that complies with all Federal, State, and local water agencies and authorities directives. The Contractor shall be responsible to prevent over watering, water run-off, erosion, and ponding due to excessive quantities or rate of application. The Contractor shall abide by state, local or other water conservation regulations or restrictions in force during the establishment period.

3.3.5 Replanting

Replant in accordance with Section 32 92 19 SEEDING and within specified planting dates areas which do not have a satisfactory stand of turf. Replant areas which do not have a satisfactory stand of other groundcover and grasses.

3.3.6 Final Inspection and Acceptance

Final inspection will be made upon written request from the Contractor at least 10 days prior to the last day of the turf establishment period. Final turf acceptance will be based upon a satisfactory stand of turf. Final acceptance of wildflower and grass areas will be based upon a stand of 95 percent groundcover of established species.

3.3.7 Unsatisfactory Work

When work is found to not meet design intent and specifications, maintenance period will be extended at no additional cost to the Government until work has been completed, inspected and accepted by DNREC

Representative.

3.4 PLANT ESTABLISHMENT PERIOD

The exterior plant establishment period will commence on the date that inspection by the DNREC Representative shows that the transplanted plants furnished under this contract have been satisfactorily installed and shall continue for a period of 365 days.

3.4.1 Frequency of Maintenance

Begin maintenance immediately after plants have been installed. Inspect exterior plants at least once a week during the installation and establishment period and perform needed maintenance promptly.

3.4.2 Promotion of Plant Growth and Vigor

Water, prune, fertilize, mulch, adjust stakes, guys and turnbuckles, eradicate weeds and perform other operations necessary to promote plant growth, and vigor.

3.4.3 Planter Bed Maintenance

3.4.3.1 Shrub Selective Maintenance

In addition to the above requirements, shrubs shall be selectively pruned, and shaped for health and safety when the following conditions exist: Remove growth in front of windows, over entrance ways or walks, and any growth which will obstruct vision at street intersections or of security personnel; Remove dead, damaged or diseased branches or limbs; where shrub growth obstructs pedestrian walkways; where shrub growth is found growing against or over structures; where shrub growth permits concealment of unauthorized persons. All pruning debris shall be disposed of in a proper manner.

3.4.3.2 Tree Maintenance

Tree maintenance shall include adjustment of stakes, ties, guy supports, watering, fertilizing, pest control, mulching, pruning for health and safety. Fertilize exterior trees to promote healthy plant growth without encouraging excessive top foliar growth. Stakes, ties, guy supports shall be inspected and adjusted to avoid girdling and promote natural development. All trees within the project boundaries, regardless of caliper, shall be selectively pruned for safety and health reasons. These include but are not limited to removal of dead and broken branches and correction of structural defects. Prune trees according to their natural growth characteristics leaving trees well shaped and balanced. Pruning of all trees including palm trees shall be accomplished by or in the presence of a certified member of the International Society of Arboriculture and in accordance with TCIA Z133.1. All pruning debris generated shall be disposed of in a proper manner.

3.4.4 Slope Erosion Control Maintenance

The Contractor shall provide slope erosion control maintenance to prevent undermining of all slopes in newly landscaped and natural growth areas. Maintenance tasks include immediate repairs to weak spots in sloped areas to intercept and direct water flow to prevent development of large gullies and slope erosion. Eroded areas shall be filled with amended topsoil and

replanted with the same plant species. Coir matting damaged due to slope erosion shall be reinstalled.

3.4.5 Removal of Dying or Dead Plants

Remove dead and dying plants and provide new plants immediately upon commencement of the specified planting season, and replace stakes, guys, mulch, and eroded earth mound water basins. No additional plant establishment period will be required for replacement plants beyond the original warranty period. A tree shall be considered dying or dead when the main leader has died back, or a minimum of 20 percent of the crown has died. A shrub or ground cover shall be considered dying or dead when a minimum of 20 percent of the plant has died. This condition shall be determined by scraping on a branch an area 1/16 inch square, maximum, to determine the cause for dying plant material and shall provide recommendations for replacement. The Contractor shall determine the cause for dying plant material and provide recommendations for replacement.

3.4.6 Tracking of Unhealthy Plants

Note plants not in healthy growing condition, as determined by the DNREC Representative, and as soon as seasonal conditions permit, remove and replace with plants of the same species and sizes as originally specified. Install replacement plantings in accordance with Section 32 93 00 EXTERIOR PLANTS.

3.4.7 Final Inspection

Final inspection will be made upon written request from the Contractor at least 10 days prior to the last day of the establishment period. Final inspection will be based upon satisfactory health and growth of plants and on the following:

3.4.7.1 Total Plants on Site

Plants have been accepted and required number of replacements have been installed.

3.4.7.2 Mulching and Weeding

Planter beds and earth mound water basins are properly mulched and free of weeds.

3.4.7.3 Tree Supports

Stakes, guys, and turnbuckles are in good condition.

3.4.7.4 Remedial Work

Remedial measures directed by the DNREC Representative to ensure plant material survival and promote healthy growth have been completed.

3.4.8 Unsatisfactory Work

When work is found to not meet design intent and specifications, maintenance period will be extended at no additional cost to the Government until work has been completed, inspected and accepted by DNREC Representative.

3.5 FIELD QUALITY CONTROL

3.5.1 Maintenance Inspection Report

Provide maintenance inspection report to assure that landscape maintenance is being performed in accordance with the specifications and in the best interest of plant growth and survivability. Site observations shall be documented at the start of the establishment period, then quarterly following the start, and at the end of establishment period. Results of site observation visits shall be submitted to the DNREC Representative within 7 calendar days of each site observation visit.

3.5.2 Plant Quantities

The Contractor shall provide DNREC Representative with the number of plant quantities. In addition, provide total exterior area of hardscape and landscaping such as turf and total number of shrubs.

3.5.3 Tree Staking and Guying Removal

The Contractor shall provide a certified letter that all stakes and guys are removed from all project trees at the end of the establishment period.

-- End of Section --

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SECTION 32 92 19

SEEDING

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASSOCIATION OF OFFICIAL SEED ANALYSTS (AOSA)

AOSA Rules for Testing Seeds (2014) Rules for Testing Seeds

DELAWARE DEPARTMENT OF AGRICULTURE (DDA)

DDA Plant Industries - Seed Certification and Testing

DELAWARE DEPARTMENT OF TRANSPORTATION (DelDOT)

DelDOT Delaware Department of Transportation

1.2 DEFINITIONS

1.2.1 Stand of Turf

95 percent ground cover of the established species.

1.3 RELATED REQUIREMENTS

Section 31 00 00 EARTHWORK and Section 32 05 33 LANDSCAPE ESTABLISHMENT applies to this section for pesticide use and plant establishment requirements, with additions and modifications herein.

1.4 SUBMITTALS

SD-03 Product Data

Fertilizer

Include physical characteristics, and recommendations.

SD-07 Certificates

DDA certification and approval for seed

1.5 DELIVERY, STORAGE, AND HANDLING

1.5.1 Delivery

1.5.1.1 Seed Protection

Protect from drying out and from contamination during delivery, on-site storage, and handling.

1.5.1.2 Fertilizer Delivery

Deliver to the site in original, unopened containers bearing manufacturer's chemical analysis, name, trade name, trademark, and indication of conformance to state and federal laws. Instead of containers, fertilizer may be furnished in bulk with certificate indicating the above information.

1.5.2 Storage

1.5.2.1 Seed, Fertilizer Storage

Store in cool, dry locations away from contaminants.

1.5.2.2 Topsoil

Prior to stockpiling topsoil, treat growing vegetation with application of appropriate specified non-selective herbicide. Clear and grub existing vegetation three to four weeks prior to stockpiling topsoil.

1.5.2.3 Handling

Do not drop or dump materials from vehicles.

1.6 TIME RESTRICTIONS AND PLANTING CONDITIONS

1.6.1 Restrictions

Follow approved DNREC seeding detail standards.

If a new seed mix is approved, no seeding shall take place before April 1, between June 16 and August 31, or after November 15. Do not plant when the ground is frozen, snow covered, muddy, or when air temperature exceeds 90 degrees F.

1.7 TIME LIMITATIONS

1.7.1 Seed

Apply seed within 24 hours after seed bed preparation.

PART 2 PRODUCTS

2.1 SEED

a. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA Rules for Testing Seeds for purity and germination tolerances.

b. Seed Species: References the approved DNREC specifications and Erosion and Sediment Control Plan.

(1) Temporary Stabilization Seed: Rye.

(2) Permanent Stabilization Seed: Tall Fescue (Turf-type) or Strong Creeping Red Fescue or Perennial Ryegrass.

(a) Plus Flatpea.

c. Grass-Seed Mix: Proprietary seed mix as follows:

- (1) Temporary Stabilization Seed Mix, Rye:
 - (a) Seeding Rate: 125 lb/acre; 4 lb/1,000 square feet.
 - (b) Seeding Dates.
 - 2/1 to 4/30 and 8/15 to 10/31; optimum.
 - 5/1 to 8/14; acceptable.
 - (c) Planting depth: 1-2 inches (2-3 inch in sandy soil).

- (2) Permanent Stabilization Seed Mix, Tall Fescue (Turf-type) or Strong Creeping Red Fescue or Perennial Ryegrass, plus Flatpea.
 - (a) Seeding Rate: (the same rate for each type) 50 lb/acre; 1.15 lb/1,000 square feet.
 - Plus Flatpea seeding rate: 15 lb/acre; 0.34 lb/1,000 square feet.
 - (b) Seeding Dates.
 - 2/1 to 4/30 and 8/15 to 10/31; optimum.
 - 5/1 to 8/14; acceptable.

- (3) Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - (a) Approved equivalent.

2.2 FACW WETLAND MEADOW SEED MIX ERNMX-122 SPEC

FACW Wetland Meadow Mix					
Scientific Name	Common Name	% Weight	LBS.	Rate	Planting Dates: Sept. 1 - Oct. 15 or March 15 - June 1
<i>Elymus virginicus</i>	Virginia Wild Rye	20	3.000	15 lbs. per acre	X
<i>Carex vulpinoidea</i>	Fox Sedge	19	2.850	15 lbs. per acre	X
<i>Scirpus atrovirens</i>	Green Bulrush	7	1.050	15 lbs. per acre	X
<i>Verbena hastata</i>	Blue Vervain	5.50	0.825	15 lbs. per acre	X
<i>Heliopsis helianthoides</i>	Ox-Eye Sunflower	5	0.750	15 lbs. per acre	X

FACW Wetland Meadow Mix					
Scientific Name	Common Name	% Weight	LBS.	Rate	Planting Dates: Sept. 1 - Oct. 15 or March 15 - June 1
<i>Eupatorium perfoliatum</i>	Boneset	4	0.600	15 lbs. per acre	X
<i>Glyceria grandis</i>	American Mannagrass	4	0.600	15 lbs. per acre	X
<i>Carex lurida</i>	Lurid/Shallow Sedge	3	0.450	15 lbs. per acre	X
<i>Eupatorium maculatum</i>	Spotted Joe Pye Weed	3	0.450	15 lbs. per acre	X
<i>Juncus effusus</i>	Soft Rush	3	0.450	15 lbs. per acre	X
<i>Scirpus polyphyllus</i>	Many Leaved Bulrush	3	0.450	15 lbs. per acre	X
<i>Carex scoparia</i>	Blunt Broom Grass	2.50	0.375	15 lbs. per acre	X
<i>Asclepias incarnata</i>	Swamp Milkweed	2	0.300	15 lbs. per acre	X
<i>Carex lupulina</i>	Hop Sedge	2	0.300	15 lbs. per acre	X
<i>Helenium autumnale PA</i>	Common Sneezeweed PA	2	0.300	15 lbs. per acre	X
<i>Iris versicolor</i>	Blue Flag	2	0.300	15 lbs. per acre	X
<i>Vernonia gigantea</i>	Giant Ironweed	2	0.300	15 lbs. per acre	X
<i>Aster novae-angliae</i>	New England Aster	1	0.150	15 lbs. per acre	X
<i>Bromus altissima</i>	Wild Bromme Grass	1	0.150	15 lbs. per acre	X
<i>Carex stipata</i>	Awl Sedge	1	0.150	15 lbs. per acre	X
<i>Glyceria canadensis</i>	Rattlesnake Grass	1	0.150	15 lbs. per acre	X
<i>Glyceria striata</i>	Fowl Mannagrass	1	0.150	15 lbs. per acre	X
<i>Juncus tenuis, PA Ecotype</i>	Path Rush, PA Ecotype	1	0.150	15 lbs. per acre	X
<i>Zizia aurea</i>	Golden Alexanders	1	0.150	15 lbs. per acre	X
<i>Aster umbellatus</i>	Flat Topped White Aster	0.50	0.075	15 lbs. per acre	X
<i>Lilium superbum</i>	Turk's Cap Lilly	0.50	0.075	15 lbs. per acre	X
<i>Mimulus ringens</i>	Square Stemmed Monkey Flower	0.50	0.075	15 lbs. per acre	X

FACW Wetland Meadow Mix					
Scientific Name	Common Name	% Weight	LBS.	Rate	Planting Dates: Sept. 1 - Oct. 15 or March 15 - June 1
<i>Penthorum sedoides</i>	Ditch Stonecrop	0.50	0.075	15 lbs. per acre	X

2.3 RIPARIAN BUFFER SEED MIX ERNMX-178 SPEC

Riparian Buffer Mix					
Scientific Name	Common Name	% Weight	LBS.	Rate	Planting Dates: Sept. 1 - Oct. 15 or March 15 - June 1
<i>Panicum Virgatum</i>	Switch Grass	7	1.050	15 lbs. per acre	X
<i>Elymus riparius</i>	Riverbank Wild Rye	6	0.900	15 lbs. per acre	X
<i>Elymus virginicus</i>	Virginia Wild Rye	6	0.900	15 lbs. per acre	X
<i>Setaria italica</i>	German Foxtail Millet	6	0.900	15 lbs. per acre	X
<i>Andropogon gerardii, Niagara</i>	Niagara Big Bluestem	5	0.750	15 lbs. per acre	X
<i>Andropogon scoparius</i>	Little Bluestem	5	0.750	15 lbs. per acre	X
<i>Lolium multiflorum</i>	Annual Ryegrass	5	0.750	15 lbs. per acre	X
<i>Cornus amomum</i>	Silky Dogwood	4	0.600	15 lbs. per acre	X
<i>Rudbeckia hirta</i>	Black Eyed Susan	4	0.600	15 lbs. per acre	X
<i>Sorghastrum nutans</i>	Indian Grass	4	0.600	15 lbs. per acre	X
<i>Verbena hastata</i>	Blue Vervain	4	0.600	15 lbs. per acre	X
<i>Heliopsis helianthoides</i>	Ox Eyed Sunflower/False	3.50	0.525	15 lbs. per acre	X
<i>Chamaecrista fasciculata</i>	Partridge Pea	3	0.450	15 lbs. per acre	X
<i>Glyceria striata</i>	Fowl Mannagrass	3	0.450	15 lbs. per acre	X

Riparian Buffer Mix					
Scientific Name	Common Name	% Weight	LBS.	Rate	Planting Dates: Sept. 1 - Oct. 15 or March 15 - June 1
<i>Hamamelis virginiana</i>	Witch Hazel	3	0.450	15 lbs. per acre	X
<i>Rhus typhina</i>	Staghorn Sumac	3	0.450	15 lbs. per acre	X
<i>Vernonia gigantea</i>	Giant Ironweed	3	0.450	15 lbs. per acre	X
<i>Viburnum dentatum</i>	Arrow Wood	3	0.450	15 lbs. per acre	X
<i>Helenium autumnale</i>	Common Sneezeweed	2.50	0.375	15 lbs. per acre	X
<i>Asclepias syriaca</i>	Common Milkweed	2	0.300	15 lbs. per acre	X
<i>Carex vulpinoidea</i>	Fox Sedge	2	0.300	15 lbs. per acre	X
<i>Desmodium canadense</i>	Showy Tick Trefoil	2	0.300	15 lbs. per acre	X
<i>Eupatorium fistulosum</i>	Joe Pye Weed	2	0.300	15 lbs. per acre	X
<i>Juncus effusus</i>	Soft Rush	2	0.300	15 lbs. per acre	X
<i>Penstemon digitalis</i>	Tall White Beard Tongue	2	0.300	15 lbs. per acre	X
<i>Sambucus canadensis</i>	Elderberry	2	0.300	15 lbs. per acre	X
<i>Eupatorium perfoliatum</i>	Boneset	1.50	0.225	15 lbs. per acre	X
<i>Asclepias incarnata</i>	Swamp Milkweed	1	0.150	15 lbs. per acre	X
<i>Aster Prenanthoides</i>	Zigzag Aster	1	0.150	15 lbs. per acre	X
<i>Baptisia australis</i>	Blue False Indigo	1	0.150	15 lbs. per acre	X
<i>Monarda fistulosa</i>	Wild Bergamot	1	0.150	15 lbs. per acre	X
<i>Euthamia graminifolia</i>	Grass Leaved Goldenrod	0.50	0.075	15 lbs. per acre	X

2.4 PENNSYLVANIA FORMULA 1 - LOW MIX

Pennsylvania Formula 1 - Low Mix					
Scientific Name	Common Name	% Weight	LBS.	Rate	Planting Dates: As Needed
<i>Festuca longifolia and Festuca trachyphylla</i>	Hard Fescue Mixture	55	27.500	50 lbs. per acre	X
<i>Festuca rubra</i>	Creeping Red Fescue	35	17.500	50 lbs. per acre	X
<i>Lolium multiflorum</i>	Annual Rye Grass	10	5.000	50 lbs. per acre	X
<i>Typha latifolia</i> seeding					
<i>Typha latifolia</i>	Broadleaf cattail	0.5 Lbs. per Acre/Fall			

2.5 TOPSOIL

2.5.1 Topsoil

Topsoil shall be friable and loamy meeting the requirements of DelDOT Section 732 and meeting the requirements for loam, sandy loam, silt loam, sandy clay loam, or clay loam as defined by the USDA soil classification system. Topsoil shall be free of debris, trash, stumps, rocks, roots, and noxious weeds, and shall be able to support healthy vegetation. It shall contain no substance that is potentially toxic to plant growth.

2.5.2 Off-Site Topsoil

Conform to requirements specified in paragraph entitled "Composition." Additional topsoil shall be furnished by the Contractor.

2.6 FERTILIZER

2.6.1 Granular Fertilizer

Fertilizer shall be 10--20-20, dry formulation, meeting the requirements of DelDOT Standard Specifications Section 734 added at a rate of 15.6 pounds per 1000 square feet.

2.7 MULCH

Hay or straw mulch, meeting the requirements of DelDOT Section 735, added at a rate of 133 lbs per 1000 square feet. Mulch shall be free of weed seeds, foreign material, coarse stems, and any substances toxic to plant growth.

2.7.1 Straw

Stalks from oats, wheat, rye, barley, or rice. Furnish in air-dry condition and of proper consistency for placing with commercial mulch blowing equipment. Straw shall contain no fertile seed.

2.7.2 Hay

Air-dry condition and of proper consistency for placing with commercial mulch blowing equipment. Hay shall be sterile, containing no fertile seed.

2.8 WATER

Source of water shall be approved by DNREC Representative and of suitable quality for irrigation, containing no elements toxic to plant life.

PART 3 EXECUTION

3.1 PREPARATION

3.1.1 EXTENT OF WORK

Provide soil preparation (including soil conditioners as required), fertilizing, seeding, and surface topdressing of all newly graded finished earth surfaces, unless indicated otherwise, and at all areas inside or outside the limits of construction that are disturbed by the Contractor's operations.

3.1.1.1 Topsoil

Provide 6 inches of off-site topsoil to meet indicated finish grade. After areas have been brought to indicated finish grade, incorporate fertilizer into soil a minimum depth of 4 inches by disking, harrowing, tilling or other method approved by the DNREC Representative. Remove debris and stones larger than 3/4 inch in any dimension remaining on the surface after finish grading. Correct irregularities in finish surfaces to eliminate depressions. Protect finished topsoil areas from damage by vehicular or pedestrian traffic.

3.2 SEEDING

3.2.1 Seed Application Seasons and Conditions

Immediately before seeding, restore soil to proper grade. Do not seed when ground is muddy frozen, snow covered, or in an unsatisfactory condition for seeding. If special conditions exist that may warrant a variance in the above seeding dates or conditions, submit a written request to the DNREC Representative stating the special conditions and proposed variance. Apply seed within twenty four hours after seedbed preparation. Sow seed by approved sowing equipment. Sow one-half the seed in one direction, and sow remainder at right angles to the first sowing.

3.2.2 Mulching

3.2.2.1 Hay or Straw Mulch

Hay or straw mulch shall be spread uniformly at the rate of 2 tons per acre. Mulch shall be spread by hand, blower-type mulch spreader, or other approved method. Mulching shall be started on the windward side of

relatively flat areas or on the upper part of steep slopes, and continued uniformly until the area is covered. The mulch shall not be bunched or clumped. Sunlight shall not be completely excluded from penetrating to the ground surface. All areas installed with seed shall be mulched on the same day as the seeding. Mulch shall be anchored immediately following spreading.

3.2.3 Erosion Control Material

Install in accordance with manufacturer's instructions, where indicated or as directed by the DNREC Representative.

3.2.4 Watering

Start watering areas seeded as required by temperature and wind conditions. Apply water at a rate sufficient to insure thorough wetting of soil to a depth of 2 inches without run off. During the germination process, seed is to be kept actively growing and not allowed to dry out.

3.3 PROTECTION OF TURF AREAS

Immediately after turfing, protect area against traffic and other use.

3.4 RESTORATION

Restore to original condition existing turf areas which have been damaged during turf installation operations at the Contractor's expense. Keep clean at all times at least one paved pedestrian access route and one paved vehicular access route to each building. Clean other paving when work in adjacent areas is complete.

-- End of Section --

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SECTION 32 93 00

PLANTS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM A580/A580M (2015) Standard Specification for
Stainless Steel Wire

ASTM D4972 (2013) pH of Soils

AmericanHort (AH)

ANSI/ANLA Z60.1 (2004) American Standard for Nursery Stock

L.H. BAILEY HORTORIUM (LHBH)

LHBH (1976) Hortus Third

TREE CARE INDUSTRY ASSOCIATION (TCIA)

TCIA A300P1 (2008) ANSI A300 Part1: Tree Care
Operations - Trees, Shrubs and Other Woody
Plant Maintenance Standard Practices -
Pruning

TCIA Z133.1 (2006) American National Standard for
Arboricultural Operations - Pruning,
Repairing, Maintaining, and Removing
Trees, and Cutting Brush - Safety
Requirements

1.2 RELATED REQUIREMENTS

Section 31 00 00 EARTHWORK and Section 32 05 33 LANDSCAPE ESTABLISHMENT apply to this section for pesticide use and plant establishment requirements, with additions and modifications herein.

1.3 SUBMITTALS

SD-01 Preconstruction Submittals

State Landscape Contractor's License

Time Restrictions and Planting Conditions

Indicate anticipated dates and locations for each type of planting.

SD-03 Product Data

Submit documentation indicating type of biobased material in product and biobased content. Indicate relative dollar value of biobased content products to total dollar value of products included in project.

Mulch

Ground Stakes

Submit documentation indicating percentage of post-industrial and post-consumer recycled content per unit of product. Indicate relative dollar value of recycled content products to total dollar value of products included in project.

Fertilizer

Staking Material

Ground Stakes

Submit documentation certifying products are from salvaged/recovered lumber sources and indicating percentage of salvaged/recovered content per unit of product.

SD-06 Test Reports

Topsoil composition tests

SD-07 Certificates

Nursery certifications

Indicate names of plants in accordance with the LHBH, including type, quality, and size.

1.4 QUALITY ASSURANCE

1.4.1 Topsoil Composition Tests

Commercial test from an independent testing laboratory including basic soil groups (moisture and saturation percentages, Nitrogen-Phosphorus-Potassium (N-P-K) ratio, pH (ASTM D4972), soil salinity), secondary nutrient groups (calcium, magnesium, sodium, Sodium Absorption Ratio (SAR)), micronutrients (zinc, manganese, iron, copper), toxic soil elements (boron, chloride, sulfate), cation exchange and base saturation percentages, and soil amendment and fertilizer recommendations with quantities for plant material being transplanted. Soil required for each test shall include a maximum depth of 18 inches of approximately 1 quart volume for each test. Areas sampled should not be larger than 1 acre and should contain at least 6-8 cores for each sample area and be thoroughly mixed. Problem areas should be sampled separately and compared with samples taken from adjacent non-problem areas. The location of the sample areas should be noted and marked on a parcel or planting map for future reference.

1.4.2 Nursery Certifications

- a. Indicate on nursery letterhead the name of plants in accordance with the LHBH, including botanical common names, quality, and size.
- b. Inspection certificate.

1.4.3 State Landscape Contractor's License

Construction company shall hold a landscape contractors license in the state where the work is performed and have a minimum of five years landscape construction experience. Submit copy of license and three references for similar work completed in the last five years.

1.4.4 Pre-Installation Meeting

Convene a pre-installation meeting a minimum of one week prior to commencing work of this section. Require attendance of parties directly affecting work of this section. Review conditions of operations, procedures and coordination with related work. Agenda shall include the following:

- a. Tour, inspect, and discuss conditions of planting materials.
- b. Review planting schedule and maintenance.
- c. Review required inspections.
- d. Review environmental procedures.

1.5 DELIVERY, STORAGE, AND HANDLING

1.5.1 Delivery

1.5.1.1 Branched Plant Delivery

Deliver with branches tied and exposed branches covered with material which allows air circulation. Prevent damage to branches, trunks, root systems, and root balls and desiccation of leaves.

1.5.1.2 Soil Amendment Delivery

Deliver to the site in original, unopened containers bearing manufacturer's chemical analysis, name, trade name, or trademark, and indication of conformance to state and federal laws. Instead of containers, fertilizer, gypsum, sulfur, iron, and lime may be furnished in bulk with a certificate indicating the above information. Store in dry locations away from contaminates.

1.5.1.3 Plant Labels

Deliver plants with durable waterproof labels in weather-resistant ink. Provide labels stating the correct botanical and common plant name and variety as applicable and size as specified in the list of required plants. Attach to plants, bundles, and containers of plants. Groups of plants may be labeled by tagging one plant. Labels shall be legible for a minimum of 60 days after delivery to the planting site.

1.5.2 Storage

1.5.2.1 Plant Storage and Protection

Store and protect plants not planted on the day of arrival at the site as follows:

- a. Shade and protect plants in outside storage areas from the wind and direct sunlight until planted.
- b. Heel-in bare root plants.
- c. Protect balled and burlapped plants from freezing or drying out by covering the balls or roots with moist burlap, sawdust, wood chips, shredded bark, peat moss, or other approved material. Provide covering which allows air circulation.
- d. Keep plants in a moist condition until planted by watering with a fine mist spray.
- e. Do not store plant material directly on concrete or bituminous surfaces.

1.5.2.2 Topsoil

Prior to stockpiling topsoil, eradicate on site undesirable growing vegetation. Clear and grub existing vegetation three to four weeks prior to stockpiling existing topsoil.

1.5.3 Handling

Do not drop or dump plants from vehicles. Avoid damaging plants being moved from nursery or storage area to planting site. Handle plants carefully to avoid damaging or breaking the earth ball or root structure. Do not handle plants by the trunk or stem. Remove damaged plants from the site.

1.5.4 TIME LIMITATION

Except for container-grown plant material, the time limitation from digging to installing plant material shall be a maximum of 90 days. The time limitation between installing the plant material and placing the mulch shall be a maximum of 24 hours.

1.6 TIME RESTRICTIONS AND PLANTING CONDITIONS

Coordinate installation of planting materials during optimal planting seasons for each type of plant material required.

1.6.1 Planting Dates

Plant when soil and climatic conditions are favorable, according to the following schedule:

- a. Deciduous trees and shrubs: April 20 to May 31 OR September 15 to October 15.

1.6.2 Restrictions

Do not plant when ground is frozen, snow covered, muddy, or when air temperature exceeds 90 degrees Fahrenheit.

1.7 GUARANTEE

All plants shall be guaranteed for one year beginning on the date of inspection by the Contracting Officer to commence the plant establishment period, against defects including death and unsatisfactory growth, except for defects resulting from lack of adequate maintenance, neglect, or abuse by the Government or by weather conditions unusual for the warranty period.

PART 2 PRODUCTS

2.1 PLANTS

2.1.1 Regulations and Varieties

Existing trees and shrubs to remain shall be protected and a planting plan be arranged around them. Furnish nursery stock in accordance with ANSI/ANLA Z60.1, except as otherwise specified or indicated. Each plant or group of planting shall have a "key" number indicated on the nursery certifications of the plant schedule. Furnish plants, including turf grass, grown under climatic conditions similar to those in the locality of the project. Plants specified shall be low maintenance varieties, tolerant of site's existing soils and climate. Plants of the same specified size shall be of uniform size and character of growth. Plants shall be chosen with their mature size and growth habit in mind to avoid over-planting and conflict with other plants, structures or underground utility lines. All plants shall comply with all Federal and State Laws requiring inspection for plant diseases and infestation.

2.1.2 Shape and Condition

Well-branched, well-formed, sound, vigorous, healthy planting stock free from disease, sunscald, windburn, abrasion, and harmful insects or insect eggs and having a healthy, normal, and undamaged root system.

2.1.2.1 Deciduous Trees and Shrubs

Symmetrically developed and of uniform habit of growth, with straight boles or stems, and free from objectionable disfigurements.

2.1.2.2 Evergreen Trees and Shrubs

Well developed symmetrical tops with typical spread of branches for each particular species or variety.

2.1.2.3 Ground Covers and Vines

Number and length of runners and clump sizes indicated, and of the proper age for the grade of plants indicated, furnished in removable containers, integral containers, or formed homogeneous soil section.

2.1.3 Plant Size

Minimum sizes measured after pruning and with branches in normal position, shall conform to measurements indicated, based on the average width or

height of the plant for the species as specified in ANSI/ANLA Z60.1. Plants larger in size than specified may be provided with approval of the DNREC representative. When larger plants are provided, increase the ball of earth or spread of roots in accordance with ANSI/ANLA Z60.1.

2.1.4 Root Ball Size

All box-grown, field potted, field boxed, collected, plantation grown, bare root, balled and burlapped, container grown, processed-balled, and in-ground fabric bag-grown root balls shall conform to ANSI/ANLA Z60.1. All wrappings and ties shall be biodegradable. Root growth in container grown plants shall be sufficient to hold earth intact when removed from containers. Root bound plants will not be accepted.

2.1.5 Growth of Trunk and Crown

2.1.5.1 Deciduous Trees

A height to caliper relationship shall be provided in accordance with ANSI/ANLA Z60.1. Height of branching shall bear a relationship to the size and species of tree specified and with the crown in good balance with the trunk. The trees shall not be "poled" or the leader removed.

- a. Single stem: The trunk shall be reasonably straight and symmetrical with crown and have a persistent main leader.
- b. Multi-stem: All countable stems, in aggregate, shall average the size specified. To be considered a stem, there shall be no division of the trunk which branches more than 6 inches from ground level.

2.1.5.2 Deciduous Shrubs

Deciduous shrubs shall have the height and number of primary stems recommended by ANSI/ANLA Z60.1. Acceptable plant material shall be well shaped, with sufficient well-spaced side branches, and recognized by the trade as typical for the species grown in the region of the project.

2.1.5.3 Coniferous Evergreen Plant Material

Coniferous Evergreen plant material shall have the height-to-spread ratio recommended by ANSI/ANLA Z60.1. The coniferous evergreen trees shall not be "poled" or the leader removed. Acceptable plant material shall be exceptionally heavy, well shaped and trimmed to form a symmetrical and tightly knit plant. The form of growth desired shall be as indicated.

2.1.5.4 Broadleaf Evergreen Plant Material

Broadleaf evergreen plant material shall have the height-to-spread ratio recommended by ANSI/ANLA Z60.1. Acceptable plant material shall be well shaped and recognized by the trade as typical for the variety grown in the region of the project.

2.1.5.5 Ground Cover and Vine Plant Material

Ground cover and vine plant material shall have the minimum number of runners and length of runner recommended by ANSI/ANLA Z60.1. Plant material shall have heavy, well developed and balanced crown with vigorous, well developed root system and shall be furnished in containers.

2.2 PLANTING SOIL MIXTURES

100 percent topsoil as specified herein.

2.3 FERTILIZER

Fertilizer for groundcover, wildflowers and grasses is not permitted. Fertilizer for trees, plants, and shrubs shall be as recommended by plant supplier, except synthetic chemical fertilizers are not permitted. Fertilizers containing petrochemical additives or that have been treated with pesticides or herbicides are not permitted.

2.4 MULCH

Free from noxious weeds, mold, pesticides, or other deleterious materials.

2.5 TREES AND SHRUBS TABLE

Scientific Name	Common Name	Plant Size and Root	Key	Quantity	Density
<i>Quercus Palustris</i>	Pin Oak	1' CAL., B&B	QP	21	20-25' O.C.
<i>Betula nigra</i>	River Birch	1' CAL., B&B	BN	16	20-25' O.C.
<i>Liquidambar styraciflua</i>	Sweetgum	1' CAL., B&B	LS	9	20-25' O.C.
<i>Populus deloides</i>	Eastern Cottonwood	1' CAL., B&B	PO	14	20-25' O.C.
<i>Viburnum dentatum</i>	Southern Arrowwood	3' HT., B&B	VD	35	3-5' O.C.
<i>Amelanchier arborea</i>	Downy Serviceberry	3' HT., B.R.	AA	44	3-5' O.C.
<i>Baccharis halimifolia</i>	Groundsel Bush	3' HT., B.R.	BH	43	3-5' O.C.
<i>Salix discolor</i>	Pussy Willow	3' HT., B.R.	SD	18	3-5' O.C.
<i>Cephalanthus occidentalis</i>	Buttonbush	4"-5" Dia. Wattle (8' length)		86	

2.6 STAKING AND GUYING MATERIAL

2.6.1 Staking Material

2.6.1.1 Tree Support Stakes

Rough sawn FSC-certified or salvaged hard wood free of knots, rot, cross grain, bark, long slivers, or other defects that impair strength. Stakes shall be minimum 2 inches square or 2 1/2 inch diameter by 8 feet long, pointed at one end.

2.6.1.2 Ground Stakes

FSC-certified or salvaged wood, 2 inches square are by 3 feet long, pointed at one end.

2.6.2 Guying Material

2.6.2.1 Guying Wire

12 gauge annealed galvanized steel, ASTM A580/A580M.

2.6.2.2 Guying Cable

Minimum five-strand, 3/16 inch diameter galvanized steel cable.

2.6.3 Hose Chafing Guards

New or used 2 ply 3/4 inch diameter reinforced rubber or plastic hose, black or dark green, all of same color.

2.6.4 Flags

White surveyor's plastic tape, fastened to guying wires or cables.

2.6.5 Turnbuckles

Galvanized or cadmium-plated steel with minimum 3 inch long openings fitted with screw eyes. Eye bolts shall be galvanized or cadmium-plated steel with one inch diameter eyes and screw length 1 1/2 inches, minimum.

2.6.6 Deadmen

4 by 8 inch rectangular or 8 inch diameter by 36 inch long, wood material.

2.7 WATER

Source of water to be approved by Contracting Officer and suitable quality for irrigation and shall not contain elements toxic to plant life, including acids, alkalis, salts, chemical pollutants, and organic matter. Use collected storm water or graywater when available.

2.8 SOURCE QUALITY CONTROL

The DNREC representative will inspect plant materials at the site and approve them. Tag plant materials for size and quality.

PART 3 EXECUTION

3.1 EXTENT OF WORK

Provide soil preparation, tree, shrub, groundcover, and planting, a mulch topdressing of all newly graded finished earth surfaces, unless indicated otherwise, and at all areas inside or outside the limits of construction that are disturbed by the Contractor's operations.

3.2 PREPARATION

3.2.1 Protection

Protect existing and proposed landscape features, elements, and sites from damage or contamination. Protect trees, vegetation, and other designated features by erecting high-visibility, reusable construction fencing. Locate fence no closer to trees than the drip line. Plan equipment and vehicle access to minimize and confine soil disturbance and compaction to

areas indicated on Drawings.

3.2.2 Layout

Stake out approved plant material locations and planter bed outlines on the project site before digging plant pits or beds. The Contracting Officer reserves the right to adjust plant material locations to meet field conditions. Provide on-site locations for excavated rock, soil, and vegetation.

3.2.3 Erosion Control

Provide erosion control and seeding with native plant species to protect slopes.

3.3 PLANT INSTALLATION

3.3.1 Individual Plant Pit Excavation

Excavate pits at least twice as large in diameter as the size of ball or container to depth shown.

3.3.2 Plant Beds with Multiple Plants

Excavate plant beds continuously throughout entire bed as outlined to depth shown.

3.3.3 Handling and Setting

Set plants on hand compacted layer of prepared backfill soil mixture 6 inches thick and hold plumb in the center of the pit until soil has been tamped firmly around root ball. Set plant materials, in relation to surrounding finish grade. Replace plant material whose root balls are cracked or damaged either before or during the planting process.

Plant material shall be set in plant beds according to the drawings. Backfill soil mixture shall be placed on previously scarified subsoil to completely surround the root balls, and shall be brought to a smooth and even surface, blending to existing areas.

3.3.3.1 Balled and Burlapped Stock

Backfill with topsoil to approximately half the depth of ball and then tamp and water. Carefully remove or fold back excess burlap and tying materials from the top a minimum 1/3 depth from the top of the rootball. Tamp and complete backfill, place mulch topdressing, and water. Remove wires and non-biodegradable materials from plant pit prior to backfill operations.

3.3.3.2 Bare-Root Stock

Plant so roots are arranged in a natural position. Place roots in water a minimum of 30 minutes prior to planting. Carefully work topsoil among roots. Tamp remainder of backfill, place mulch topdressing and water.

3.3.3.3 Container Grown Stock

Remove from container and prevent damage to plant or root system.

3.3.3.4 Ground Covers and Vines

Plant after placing mulch topdressing. Do not remove plant materials from flats or containers until immediately before planting. Space at intervals indicated. Plant at a depth to sufficiently cover all roots. Start watering areas planted as required by temperature and wind conditions. Apply water at a rate sufficient to ensure thorough wetting of soil to a depth of 6 inches without run off or puddling. Smooth planting areas after planting to provide even, smooth finish. Mulch as indicated.

3.3.4 Placement of Mulch Topdressing

Place specified mulch topdressing on top of weed control fabric covering total area enclosed by edging. Place mulch topdressing to a depth of 3 inches.

3.3.5 Mulch Topdressing

Provide mulch topdressing over entire planter bed surfaces and individual plant surfaces including earth mound watering basin around plants to a depth of 3 inches after completion of plant installation and before watering. Keep mulch out of the crowns of shrubs. Place mulch a minimum 2 to 3 inches away from trunk of shrub or tree. Place on top of any weed control fabric.

3.3.6 Watering

Start watering areas planted as required by temperature and wind conditions. Slow deep watering shall be used. Apply water at a rate sufficient to ensure thorough wetting of soil to a depth of 12 inches without run off or puddling. Watering of other plant material or adjacent areas shall be prevented.

3.3.7 Staking and Guying

3.3.7.1 Staking

Stake plants with the number of stakes indicated complete with double strand of 12 gage guy wire as detailed. Attach guy wire half the tree height but not more than 5 feet high. Drive stakes to a depth of 2 1/2 to 3 feet into the ground outside the plant pit. Do not injure the root ball.

3.3.7.2 Guying

Guy plants as indicated. Attach two strands of guying wire around the tree trunk at an angle of 45 degrees at approximately 1/2 of the trunk height. Protect tree trunks with chafing guards where guying wire contacts the tree trunk. Anchor guys to wood ground stakes. Fasten flags to each guying wire approximately 2/3 of the distance up from ground level.

3.3.7.3 Chafing Guards

Use hose chafing guards, as specified where guy wire will contact the plant.

3.3.7.4 Wood Ground Stakes

Drive wood ground stakes into firm ground outside of plant pit with top of stake flush with ground. Place equal distance from tree trunk and around

the plant pit.

3.3.7.5 Flags

Securely fasten flags on each guy wire approximately two-thirds of the distance up from ground level.

3.3.8 Pruning

Prune in accordance with safety requirement of TCIA Z133.1.

3.3.8.1 Trees and Shrubs

Remove dead and broken branches. Prune to correct structural defects only. Retain typical growth shape of individual plants with as much height and spread as practical. Do not cut central leader on trees. Make cuts with sharp instruments. Do not flush cut with trunk or adjacent branches. Collars shall remain in place. Pruning shall be accomplished by trained and experienced personnel and shall be accordance with TCIA A300P1.

3.3.8.2 Wound Dressing

Do not apply tree wound dressing to cuts.

3.4 RESTORATION AND CLEAN UP

3.4.1 Restoration

Turf areas, pavements and facilities that have been damaged from the planting operation shall be restored to original condition at the Contractor's expense.

3.4.2 Clean Up

Excess and waste material shall be removed from the installed area and shall be disposed offsite at an approved landfill, recycling center, or composting center. Adjacent paved areas shall be cleared.

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SECTION 33 40 00

STORM DRAINAGE UTILITIES

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM A929/A929M	(2001; R 2013) Standard Specification for Steel Sheet, Metallic-Coated by the Hot-Dip Process for Corrugated Steel Pipe
ASTM C425	(2004; R 2013) Standard Specification for Compression Joints for Vitrified Clay Pipe and Fittings
ASTM C443	(2011) Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets
ASTM C76	(2015) Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
ASTM C990	(2009; R 2014) Standard Specification for Joints for Concrete Pipe, Manholes and Precast Box Sections Using Preformed Flexible Joint Sealants
ASTM D1557	(2012) Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft ³) (2700 kN-m/m ³)
ASTM D2167	(2008) Density and Unit Weight of Soil in Place by the Rubber Balloon Method
ASTM D3212	(2007; R 2013) Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
ASTM D6938	(2010) Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

1.2 SUBMITTALS

SD-03 Product Data

Placing Pipe

Submit printed copies of the manufacturer's recommendations for installation procedures of the material being placed, prior to installation.

SD-04 Samples

Pipe for Culverts and Storm Drains

SD-07 Certificates

Pipeline Testing
Hydrostatic Test on Watertight Joints
Determination of Density

1.3 DELIVERY, STORAGE, AND HANDLING

1.3.1 Delivery and Storage

Materials delivered to site shall be inspected for damage, unloaded, and stored with a minimum of handling. Materials shall not be stored directly on the ground. The inside of pipes and fittings shall be kept free of dirt and debris. Before, during, and after installation, plastic pipe and fittings shall be protected from any environment that would result in damage or deterioration to the material. Keep a copy of the manufacturer's instructions available at the construction site at all times and follow these instructions unless directed otherwise by the DNREC Representative. Solvents, solvent compounds, lubricants, elastomeric gaskets, and any similar materials required to install plastic pipe shall be stored in accordance with the manufacturer's recommendations and shall be discarded if the storage period exceeds the recommended shelf life. Solvents in use shall be discarded when the recommended pot life is exceeded.

1.3.2 Handling

Materials shall be handled in a manner that ensures delivery to the trench in sound, undamaged condition. Pipe shall be carried to the trench, not dragged.

PART 2 PRODUCTS

2.1 PIPE FOR CULVERTS AND STORM DRAINS

Pipe for culverts and storm drains shall be of the sizes indicated and shall conform to the requirements specified.

2.1.1 Reinforced Elliptical Culvert and Storm Drainpipe

Reinforced-Concrete Sewer Pipe and Fittings: ASTM C76.

a. Bell-and-spigot or tongue-and-groove ends and gasketed joints with ASTM C443, rubber gaskets.

b. Class III.

2.2 DRAINAGE STRUCTURES

2.2.1 Flared End Sections

Sections shall be of a standard design fabricated from zinc coated steel sheets meeting requirements of ASTM A929/A929M.

2.3 MISCELLANEOUS MATERIALS

2.3.1 Joints

2.3.1.1 Flexible Watertight Joints

- a. Materials: Flexible watertight joints shall be made with plastic or rubber-type gaskets for concrete pipe and with factory-fabricated resilient materials for clay pipe. The design of joints and the physical requirements for preformed flexible joint sealants shall conform to ASTM C990, and rubber-type gaskets shall conform to ASTM C443. Factory-fabricated resilient joint materials shall conform to ASTM C425. Gaskets shall have not more than one factory-fabricated splice, except that two factory-fabricated splices of the rubber-type gasket are permitted if the nominal diameter of the pipe being gasketed exceeds 54 inches.
- b. Test Requirements: Watertight joints shall be tested and shall meet test requirements of paragraph HYDROSTATIC TEST ON WATERTIGHT JOINTS. Rubber gaskets shall comply with the oil resistant gasket requirements of ASTM C443. Certified copies of test results shall be delivered to the DNREC Representative before gaskets or jointing materials are installed. Alternate types of watertight joint may be furnished, if specifically approved.

2.4 HYDROSTATIC TEST ON WATERTIGHT JOINTS

2.4.1 Concrete Pipe

A hydrostatic test shall be made on the watertight joint types as proposed. Only one sample joint of each type needs testing; however, if the sample joint fails because of faulty design or workmanship, an additional sample joint may be tested. During the test period, gaskets or other jointing material shall be protected from extreme temperatures which might adversely affect the performance of such materials. Performance requirements for joints in reinforced and nonreinforced concrete pipe shall conform to ASTM C990 or ASTM C443. Test requirements for joints in clay pipe shall conform to ASTM C425. Test requirements for joints in PVC, PE, and PP plastic pipe shall conform to ASTM D3212.

2.5 EROSION CONTROL RIPRAP

Average Size: NSA R-5, d50 = 9 inches.

PART 3 EXECUTION

3.1 EXCAVATION FOR PIPE CULVERTS, STORM DRAINS, AND DRAINAGE STRUCTURES

Excavation of trenches, and for appurtenances and backfilling for culverts and storm drains, shall be in accordance with the applicable portions of Section 31 00 00 EARTHWORK.

3.2 BEDDING

The bedding surface for the pipe shall provide a firm foundation of uniform density throughout the entire length of the pipe.

3.2.1 Concrete Pipe Requirements

When no bedding class is specified or detailed on the drawings, concrete pipe shall be bedded in granular material minimum 4 inch in depth in trenches with soil foundation. Depth of granular bedding in trenches with rock foundation shall be 1/2 inch in depth per foot of depth of fill, minimum depth of bedding shall be 8 inch up to maximum depth of 24 inches. The middle third of the granular bedding shall be loosely placed. Bell holes and depressions for joints shall be removed and formed so entire barrel of pipe is uniformly supported. The bell hole and depressions for the joints shall be not more than the length, depth, and width required for properly making the particular type of joint.

3.3 PLACING PIPE

Each pipe shall be thoroughly examined before being laid; defective or damaged pipe shall not be used. Pipelines shall be laid to the grades and alignment indicated. Proper facilities shall be provided for lowering sections of pipe into trenches. Lifting lugs in vertically elongated metal pipe shall be placed in the same vertical plane as the major axis of the pipe. Pipe shall not be laid in water, and pipe shall not be laid when trench conditions or weather are unsuitable for such work. Diversion of drainage or dewatering of trenches during construction shall be provided as necessary.

3.3.1 Elliptical and Elliptical Reinforced Concrete Pipe

The manufacturer's reference lines, designating the top of the pipe, shall be within 5 degrees of a vertical plane through the longitudinal axis of the pipe, during placement. Damage to or misalignment of the pipe shall be prevented in all backfilling operations.

3.4 JOINTING

3.4.1 Concrete Pipe

3.4.1.1 Flexible Watertight Joints

Gaskets and jointing materials shall be as recommended by the particular manufacturer in regard to use of lubricants, cements, adhesives, and other special installation requirements. Surfaces to receive lubricants, cements, or adhesives shall be clean and dry. Gaskets and jointing materials shall be affixed to the pipe not more than 24 hours prior to the installation of the pipe, and shall be protected from the sun, blowing dust, and other deleterious agents at all times. Gaskets and jointing materials shall be inspected before installing the pipe; any loose or improperly affixed gaskets and jointing materials shall be removed and replaced. The pipe shall be aligned with the previously installed pipe, and the joint pushed home. If, while the joint is being made the gasket becomes visibly dislocated the pipe shall be removed and the joint remade.

3.5 BACKFILLING

3.5.1 Backfilling Pipe in Trenches

After the pipe has been properly bedded, selected material from excavation or borrow, at a moisture content that will facilitate compaction, shall be placed along both sides of pipe in layers not exceeding 6 inches in compacted depth. The backfill shall be brought up evenly on both sides of pipe for the full length of pipe. The fill shall be thoroughly compacted under the haunches of the pipe. Each layer shall be thoroughly compacted with mechanical tampers or rammers. This method of filling and compacting shall continue until the fill has reached an elevation equal to the midpoint (spring line) of RCP or has reached an elevation of at least 12 inches above the top of the pipe for flexible pipe. The remainder of the trench shall be backfilled and compacted by spreading and rolling or compacted by mechanical rammers or tampers in layers not exceeding 8 inches. Tests for density shall be made as necessary to ensure conformance to the compaction requirements specified below. Where it is necessary, in the opinion of the DNREC Representative, that sheeting or portions of bracing used be left in place, the contract will be adjusted accordingly. Untreated sheeting shall not be left in place beneath structures or pavements.

3.5.2 Backfilling Pipe in Fill Sections

For pipe placed in fill sections, backfill material and the placement and compaction procedures shall be as specified below. The fill material shall be uniformly spread in layers longitudinally on both sides of the pipe, not exceeding 6 inches in compacted depth, and shall be compacted by rolling parallel with pipe or by mechanical tamping or ramming. Prior to commencing normal filling operations, the crown width of the fill at a height of 12 inches above the top of the pipe shall extend a distance of not less than twice the outside pipe diameter on each side of the pipe or 12 feet, whichever is less. After the backfill has reached at least 12 inches above the top of the pipe, the remainder of the fill shall be placed and thoroughly compacted in layers not exceeding 8 inches. Use select granular material for this entire region of backfill for flexible pipe installations.

3.5.3 Movement of Construction Machinery

When compacting by rolling or operating heavy equipment parallel with the pipe, displacement of or injury to the pipe shall be avoided. Movement of construction machinery over a culvert or storm drain at any stage of construction shall be at the Contractor's risk. Any damaged pipe shall be repaired or replaced.

3.5.4 Compaction

3.5.4.1 General Requirements

Cohesionless materials include gravels, gravel-sand mixtures, sands, and gravelly sands. Cohesive materials include clayey and silty gravels, gravel-silt mixtures, clayey and silty sands, sand-clay mixtures, clays, silts, and very fine sands. When results of compaction tests for moisture-density relations are recorded on graphs, cohesionless soils will show straight lines or reverse-shaped moisture-density curves, and cohesive soils will show normal moisture-density curves.

3.5.4.2 Minimum Density

Backfill over and around the pipe and backfill around and adjacent to drainage structures shall be compacted at the approved moisture content to the following applicable minimum density, which will be determined as specified below.

- a. Under airfield and heliport pavements, paved roads, streets, parking areas, and similar-use pavements including adjacent shoulder areas, the density shall be not less than 90 percent of maximum density for cohesive material and 95 percent of maximum density for cohesionless material, up to the elevation where requirements for pavement subgrade materials and compaction shall control.
- b. Under unpaved or turfed traffic areas, density shall not be less than 90 percent of maximum density for cohesive material and 95 percent of maximum density for cohesionless material.
- c. Under nontraffic areas, density shall be not less than that of the surrounding material.

3.5.5 Determination of Density

Testing is the responsibility of the Contractor and performed at no additional cost to the Government. Testing shall be performed by an approved commercial testing laboratory or by the Contractor subject to approval. Tests shall be performed in sufficient number to ensure that specified density is being obtained. Laboratory tests for moisture-density relations shall be made in accordance with ASTM D1557 except that mechanical tampers may be used provided the results are correlated with those obtained with the specified hand tamper. Field density tests shall be determined in accordance with ASTM D2167 or ASTM D6938. When ASTM D6938 is used, the calibration curves shall be checked and adjusted, if necessary, using the sand cone method as described in paragraph Calibration of the referenced publications. ASTM D6938 results in a wet unit weight of soil and ASTM D6938 shall be used to determine the moisture content of the soil. The calibration curves furnished with the moisture gauges shall be checked along with density calibration checks as described in ASTM D6938. Test results shall be furnished the DNREC Representative. The calibration checks of both the density and moisture gauges shall be made at the beginning of a job on each different type of material encountered and at intervals as directed.

3.6 PIPELINE TESTING

3.6.1 Post-Installation Inspection

Check each reinforced concrete pipe installation for joint separations, soil migration through the joint, cracks greater than 0.01 inches, settlement and alignment.

- a. Replace pipes having cracks greater than 0.1 inches in width or deflection greater than 5 percent deflection. An engineer shall evaluate all pipes with cracks greater than 0.01 inches but less than 0.10 inches to determine if any remediation or repair is required. RCP with crack width less than 0.10 inches and located in a non-corrosive environment (pH 5.5) are generally acceptable. Repair or replace any pipe with crack exhibiting displacement across the crack, exhibiting bulges, creases, tears, spalls, or delamination.

- b. Reports: The deflection results and final post installation inspection report shall include: a copy of all video taken, pipe location identification, equipment used for inspection, inspector name, deviation from design, grade, deviation from line, deflection and deformation of flexible pipe systems, inspector notes, condition of joints, condition of pipe wall (e.g. distress, cracking, wall damage dents, bulges, creases, tears, holes, etc.).

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