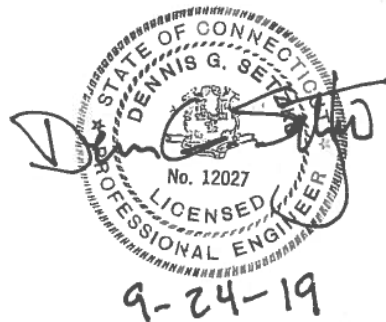


Bid Set No. \_\_\_\_\_

DOCUMENTS AND SPECIFICATIONS  
FOR  
**CONTRACT NO. 40**  
**HEMLOCK PUMPING STATION**  
**FORCE MAIN REPLACEMENT**  
**BRANFORD, CONNECTICUT**



SEPTEMBER 2019

J.N. 60581062

**AECOM**

Rocky Hill, Connecticut



**HEMLOCK PUMPING STATION FORCE MAIN REPLACEMENT  
BRANFORD, CONNECTICUT**

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SECTION 00020

INVITATION TO BID

**HEMLOCK PUMPING STATION FORCE MAIN REPLACEMENT  
IN THE  
TOWN OF BRANFORD, CONNECTICUT**

**CONTRACT 40**

**OWNER:** The Town of Branford, Connecticut, hereby gives notice that sealed unit price Bids will be received for the Hemlock Pumping Station Force Main Replacement project. The project includes, but is not limited to, the replacement of existing 2,900 ± LF of 8 inch cast iron force main with 8" ductile iron pipe from Hemlock Road Pumping Station to Cypress Drive to Millwood Drive to a discharge manhole on Brushy Plain Road.

The Work under the proposed Contract shall commence within 60 days after the date set forth in the Notice to Proceed and shall be completed within 195 days after start of Work.

**TIME AND PLACE OF BID OPENING:** Sealed Bids will be received until 11:00 a.m. Local Time on the 24th day of October, 2019, by the Purchasing Agent at the office of the Finance Department Office, Town Hall, 1019 Main Street, Branford, Connecticut 06405. After the official Bid closing time, the Bids will be publicly opened and read aloud.

**BIDDING DOCUMENTS:** Plans and specifications for this project will be available for download at the Town of Branford website and at the CT DAS website. Printed plans and specifications will not be offered for purchase for this project. A printed set of plans and specifications are available for review during business hours from 8:30 a.m. to noon and from 1:00 p.m. to 4:30 p.m. after October 1, 2019, at the following location:

Town Engineer's Office  
Town Hall  
1019 Main Street  
Branford, CT 06405

**WAGE RATES:** CONTRACTOR'S shall be required to pay not less than the prevailing wage rates on the Project if the Bid amount exceeds \$100,000, as established by the State of Connecticut. Copies of these wage rates are incorporated in the Contract Documents. Each CONTRACTOR or Subcontractor performing Work on this Project shall comply in all respects with all laws governing the employment of labor, Social Security, and Unemployment Insurance of both the state and federal government.

**BID SECURITY:** Bid Security in the amount of not less than 5 percent of the Bid shall accompany each Bid in accordance with the Instructions to Bidders.

Invitation to Bid  
Section No. 00020-1

Hemlock Pumping Station Force Main Replacement

**CONTRACT SECURITY:** The Bidder to whom a Contract is awarded shall furnish a Performance Bond and a Payment Bond each in an amount equal to 100 percent of the Contract Price.

**BID REJECTION/ACCEPTANCE:** OWNER reserves the right to reject any and all Bids, waive informalities or minor defects in bidding or to accept the Bid or Bids, which best serve the interests of OWNER.

**BID WITHDRAWAL:** No Bid shall be withdrawn for a period of 90 days after the opening of Bids without consent of OWNER.

Published by authority of the Town of Branford, Connecticut.

By:

**FIRST SELECTMAN  
TOWN OF BRANFORD, CONNECTICUT**

AECOM  
Rocky Hill, Connecticut  
Project No. **60581062**

END OF SECTION

Invitation to Bid  
Section No. 00020-2

Hemlock Pumping Station Force Main Replacement





## SECTION 00200

### INSTRUCTION TO BIDDERS FOR CONSTRUCTION CONTRACTS

#### ARTICLE 1 – DEFINED TERMS

- 1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:
- A. *Issuing Office* – The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.
  - B. *Bidder* - The individual or entity who submits a Bid directly to Owner.
  - C. *Successful Bidder* - The lowest, responsible Bidder submitting a responsive Bid to whom Owner (on the basis of Owner's evaluation as hereinafter provided) makes an award.

#### ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

- 2.01 Complete sets of the Bidding Documents will be available for download at the Online Plan Room at QuestCDN.com for a non-refundable fee of \$30 as stated in the advertisement or invitation to bid.
- 2.02 Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.03 Owner and Engineer, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license for any other use.
- 2.04 Fee for Drawings and Documents:
- A. The non-refundable fee designated in the Invitation to Bid will be required for each set of Drawings and other Contract Documents downloaded.

#### ARTICLE 3 – QUALIFICATIONS OF BIDDERS

- 3.01 To demonstrate Bidder's qualifications to perform the Work, within 14 days of Owner's request, Bidder shall submit written evidence such as financial data, previous experience, present commitments, and such other data as may be called for below.
- A. The address and description of the Bidder's place of business.

- B. The number of years engaged in the contracting business under the present firm name, and the name of the state where incorporated.
  - C. A list of the property and equipment available to the Bidder to evaluate if the Bidder can complete the Work in accordance with the Bidding Documents.
  - D. A financial statement of the Bidder showing that the Bidder has the financial resources to meet all obligations incidental to the Work.
  - E. The Bidder's performance record giving the description, location, and telephone numbers of similar projects constructed in a satisfactory manner by the Bidder.
  - F. A list of projects presently under contract, the approximate contract amount, and percent of completion of each.
  - G. A list of contracts which resulted in law suits.
  - H. A list of contracts defaulted.
  - I. A statement of the Bidder indicating whether or not the Bidder has ever filed bankruptcy while performing Work of like nature or magnitude.
  - J. A list of officers of the firm who, while in the employ of the firm or the employ of previous firms, were associated with contracts which resulted in lawsuits, contracts defaulted or filed for bankruptcy.
  - K. The technical experience of personnel guaranteed to be employed in the responsible charge of the Work stating whether the personnel have or have not performed satisfactorily on other contracts of like nature and magnitude or comparable difficulty at similar rate of progress.
  - L. Such additional information as will assist Owner in determining whether the Bidder is adequately prepared to fulfill the contract.
- 3.02 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.
- 3.03 Owner's decision as to qualification of the Bidders shall be final.
- 3.04 Ability and Experience of Bidder:
- A. No award will be made to any bidder who cannot satisfy the Owner that he has sufficient ability and experience in this class of work and sufficient capital and plant to enable him to prosecute and complete the Work successfully within the time named. The Owner's decision or judgment on these matters shall be final, conclusive, and binding.

- B. The Owner may make such investigations as it deems necessary, and the Bidder shall furnish to the Owner, under oath if so required, all such information and data for this purpose as the Owner may request.

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

##### *4.01 Subsurface and Physical Conditions:*

- A. All information given on the Drawings or in the other Contract Documents relating to subsurface and other conditions, natural phenomena, existing pipes, and other structures is from the best sources at present available to the Owner. All such information is furnished only for the information and convenience of bidders and is not guaranteed.
- B. It is agreed and understood that the Owner does not warrant or guarantee that the subsurface or other conditions, natural phenomena, existing pipes or other structures encountered during construction will be the same as those indicated on the Drawings or in the other Contract Documents.
- C. It is agreed further and understood that no bidder or contractor shall use or be entitled to use any of the information made available to him or obtained in any examination made by him in any manner as a basis of or ground for any claim or demand against the Owner or the Engineer, arising from or by reason of any variance which may exist between the information made available and the actual subsurface or other conditions, natural phenomena, existing pipes or other structures actually encountered during the construction work, except as may otherwise be expressly provided for in the Contract Documents.

##### *4.02 Underground Facilities*

- A. Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.

##### *4.03 Hazardous Environmental Condition*

- A. Hazardous Environmental Conditions are not anticipated on this project.

- 4.04 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 4.02, 4.03, and 4.04 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or

indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work, appear in Paragraph 4.06 of the General Conditions.

4.05 On request, Owner will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies. Bidder shall comply with all applicable Laws and Regulations relative to excavation and utility locates.

4.06

A. Reference is made to Article 7 of the Supplementary Conditions for the identification of the general nature of other work that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) that relates to the Work contemplated by these Bidding Documents. On request, Owner will provide to each Bidder for examination access to or copies of contract documents (other than portions thereof related to price) for such other work.

B. Paragraph 6.13.C of the General Conditions indicates that if an Owner safety program exists, it will be noted in the Supplementary Conditions.

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

A. examine and carefully study the Bidding Documents, and the other related data identified in the Bidding Documents;

B. visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;

C. become familiar with and satisfy Bidder as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work;

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

E. agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price(s) bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;

- F. become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
  - G. correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;
  - H. promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder; and
  - I. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.
- 4.08 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by Engineer are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

#### **ARTICLE 5 – SITE AND OTHER AREAS**

- 5.01 The Site is identified in the Bidding Documents. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by Owner unless otherwise provided in the Bidding Documents.
- 5.02 All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by Contractor.
- 5.03 The Contractor shall not work on property requiring obtaining of an easement until the Owner has obtained the necessary easement.
- 5.04 The Contractor shall have no claim for additional compensation or damage on account of any delay in obtaining the necessary easements.

#### **ARTICLE 6 – INTERPRETATIONS AND ADDENDA**

- 6.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to Engineer in writing. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda mailed or delivered to all parties

recorded by Engineer as having received the Bidding Documents. Questions received less than ten days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

- 6.02 To receive consideration, such questions shall be submitted in writing to the Engineer, at least seven days before the established date for receipt of Bids. If the question involves the equality or use of products or methods, it must be accompanied by drawings, specifications or other data in sufficient detail to enable the Engineer to determine the equality or suitability of the product or method. In general, the Engineer will neither approve nor disapprove particular products prior to the opening of Bids; such products will be considered when offered by the Contractor for incorporation into the Work.
- 6.03 The Engineer will set forth as Addenda, which shall become a part of the Contract Documents, such questions received as above provided as in his sole judgment are appropriate or necessary and his decision regarding each. At least five days prior to the receipt of Bids, he will send a copy of these Addenda to those prospective bidders known to have taken out sets of the Drawings and other Contract Documents.
- 6.04 The Contractor agrees to use the products and methods designated or described in the Specifications as amended by the Addenda.

#### **ARTICLE 7 – BID SECURITY**

- 7.01 A Bid must be accompanied by Bid security made payable to Owner (“Treasurer, Town of Branford”) in amount of not less than 5 percent of the Bidder’s maximum Bid price and in the form of a certified check, bank draft, or a Bid Bond (on the form attached) issued by a surety meeting the requirements of Paragraphs 5.01 and 5.02 of the General Conditions.
- 7.02 Bid security of the unsuccessful Bidders who furnished certified checks or bank drafts will have them returned within 10 days after the bid award. Bond forms will be returned upon request.

#### **ARTICLE 8 – CONTRACT TIMES**

- 8.01 The times for Substantial Completion and readiness for final payment are to be set forth by Bidder in the Bid and will be entered into the Agreement (or incorporated therein by reference to the specific language of the Bid). Substantial Completion is desired within 45 days. The times will be taken into consideration by Owner during the evaluation of Bids, and it will be necessary for the apparent Successful Bidder to satisfy Owner that it will be able to achieve Substantial Completion and be ready for final payment within the times designated in the Bid.

#### **ARTICLE 9 – LIQUIDATED DAMAGES**

- 9.01 Provisions for liquidated damages, if any, are set forth in the Agreement.

## **ARTICLE 10 – SUBSTITUTE AND “OR-EQUAL” ITEMS**

10.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration of possible substitute or “or-equal” items.

## **ARTICLE 11 – BASIS OF DESIGN AND MAJOR EQUIPMENT ITEMS**

### *11.01 Basis of Design*

A. Unless otherwise indicated, design of this Project is based upon the material or Supplier’s equipment named first in the list of manufacturers in the Specifications. Engineer has performed an evaluation of other listed manufacturers for compliance with the requirements of the Contract Documents. When other manufacturers are listed, Contractor may be required to make modifications or adjustments, at Contractor’s expense, to coordinate the installation of the furnished equipment with associated elements of Work, such as piping and electrical connections, or support and mounting provisions.

### *11.02 Major Equipment Items*

- A. Bidders shall include in their Lump Sum Contract Price the installed cost of material or equipment listed as Item A in the Specification Sections.
- B. Design of selected items of material or equipment of this Project is based upon Supplier’s material or equipment named as Item A in the Specification Section. Supplier(s) whose equipment or material is also named in the Specification Section is considered by Engineer to be equal in quality, function and performance.
- C. No substitutions will be allowed in the bid.
- D. The installed cost of each item includes:
1. Cost of a complete operating installation. Include additional costs such as overhead and profit for changing or modifying the Work such as piping, mechanical, electrical, structural support, accessories, and controls.
  2. Cost of preparation of drawings and details.
  3. Cost for the total number of units called for by the Contract Documents.
- E. Award of the Contract will be made on the basis of the Lump Sum Contract Price.

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

12.01 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to Owner in advance of a specified date prior to the

Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner a list of all such Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual, or entity if requested by Owner. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute, without an increase in the Bid.

- 12.02 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to revocation of such acceptance after the Effective Date of the Agreement as provided in Paragraph 6.06 of the General Conditions.
- 12.03 Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.

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

- 13.01 The Bid Form is included with the Bidding Documents.
- A. All blanks on the Bid Form shall be completed in ink and Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form.
  - B. A Bid price shall be indicated for each Bid item listed therein. In the case of optional alternatives, the words “No Bid,” “No Change,” or “Not Applicable” may be entered.
  - C. The Bid shall contain an acknowledgement of the receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
  - D. Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.
  - E. All names shall be printed in ink below the signatures.
  - F. It is the responsibility of the Bidder to submit a neat, accurate, and complete Bid.
- 13.02 The Bidder, when signing the Bid(s) shall meet the following requirements:
- A. Each Bidder shall provide two copies of the complete Bid package.



- B. A Bid by an individual shall show Bidder's name and Bidder's official address.
  - C. A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature) accompanied by evidence of authority to sign. The official address of the partnership shall be shown.
  - D. A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown.
  - E. A Bid by a joint venture shall be executed by each joint venture in the manner indicated on the Bid form. The official address of joint venture shall be shown.
  - F. A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown.
- 13.03 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located, or Bidder shall covenant in writing to obtain such authority and qualification prior to award of the Contract and attach such covenant to the Bid. Bidder's state Contractor license number, if any, shall also be shown on the Bid form.

#### **ARTICLE 14 – BASIS OF BID; COMPARISON OF BIDS**

##### *14.01 Lump Sum*

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

##### *14.02 Allowances*

- A. For cash allowances the Bid price shall include such amounts as the Bidder deems proper for Contractor's overhead, costs, profit, and other expenses on account of cash allowances, if any, named in the Contract Documents, in accordance with Paragraph 11.02.B of the General Conditions.

##### *14.03 Supplementary Unit Prices*

- A. Bidder shall submit a unit price for each item of Work listed in the Schedule of Supplementary Prices included in the Bid.
- B. Owner shall have the right to reject any supplemental unit prices for additions to or deductions from the Work if the prices are considered excessive or unreasonable, or to accept any supplementary unit prices which may be considered fair and reasonable.

## **ARTICLE 15 – SUBMITTAL OF BID**

- 15.01 An unbound copy of the Bid Form is to be completed and submitted with the Bid security and the documents listed in Bid Form Article 7.
- A. A Bid shall be submitted no later than the date and the time prescribed and at the place indicated in the Invitation to Bid and shall be enclosed in a plainly marked package with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of the Bidder, and shall be accompanied by the Bid security and other required documents. If the Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation “BID ENCLOSED.” No oral, facsimile, or telephonic bids will be accepted. A mailed Bid shall be addressed to the address indicated on the Bid Form.
  - B. OWNER may consider informal any Bid not prepared and submitted in accordance with the provisions hereof.
  - C. Bidders are cautioned that it is the responsibility of each individual bidder to assure that his bid is in the possession of the responsible official or his designated alternate prior to the stated time and at the place of the Bid Opening. Owner is not responsible for bids delayed by mail and/or delivery services, of any nature.
- 15.02 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid and shall be enclosed in a plainly marked package with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation “BID ENCLOSED.” A mailed Bid shall be addressed to Purchasing Agent, Office of the Finance Department, Town Hall, 1019 Main Street, Branford, CT 06405.

15.03 Bids received after the official Bid closure time will be returned to the Bidder unopened.

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

- 16.01 A Bid may be modified or withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.
- A. Withdrawn Bids may be resubmitted up to the time designated for the receipt of Bids provided that they are then fully in conformance with these Instructions to Bidders.
- 16.02 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may

withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

#### **ARTICLE 17 – OPENING OF BIDS**

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

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

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

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

19.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to not be responsible. Owner may also reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make an award to that Bidder. Owner also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder.

19.02 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.

19.03 In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.

19.04 In evaluating Bidders, Owner will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.

19.05 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work in accordance with the Contract Documents.

19.06 In the event that there is a discrepancy in the Bid between the lump sum or unit prices written in words and figures, the prices written in words shall govern. If the Contract is to be awarded, Owner will award the Contract to the Bidder whose Bid is in the best interests of the Project.

19.07 The Owner reserves the right to omit certain items in their entirety and other items in part as set forth in the Bid.

## **ARTICLE 20 – CONTRACT SECURITY AND INSURANCE**

20.01 Article 5 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it shall be accompanied by such bonds.

## **ARTICLE 21 – SIGNING OF AGREEMENT**

21.01 When Owner issues a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement along with the other Contract Documents which are identified in the Agreement as attached thereto. Within 15 days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to Owner. Within ten days thereafter, Owner shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification.

21.02 The Notice of Award will be issued within 60 days after the Bids are received.

## **ARTICLE 22 – WAGE RATES**

22.01 If the Contract amount exceeds \$100,000, not less than the prevailing wage rates on public Work as established by the U.S. Department of Labor and the State in which Work is to be done shall be paid. Wages and rates are subject to the provisions of the Davis-Bacon Act. If the Contract amount is less than \$100,000, prevailing wages rates are not applicable.

## **ARTICLE 23 – SALES AND USE TAXES**

23.01 Provisions for the Bidder's responsibilities for sales and other taxes appear in Paragraph 6.10 of the General Conditions and as supplemented in the Supplementary Conditions. The Owner has tax exempt status; therefore, Contractor(s) shall forward this information to its Suppliers in order that the sale of such materials and equipment be properly recorded as a tax-exempt sale.

23.01 Materials purchased for permanent installation in the work will be exempt from the Connecticut Sales and Use Tax under the Connecticut Education, Welfare and Public Health Tax Act. Each bidder shall take this exemption into account in calculating his bid for the work.

**ARTICLE 24 – POST-BID SUBMITTALS**

24.01 *Minority/Women's/Small Business Enterprises Participation* -- Not Used

**ARTICLE 25 – RETAINAGE**

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

**ARTICLE 26 – CONTRACTS TO BE ASSIGNED**

26.01 Not Used.

**ARTICLE 27 – PARTNERING**

27.01 Not Used.

**ARTICLE 28 – OTHER CONTRACTS**

28.01 Not Used.

**ARTICLE 29 – FEDERALLY ASSISTED CONTRACT**

29.01 Not Used.

**ARTICLE 30 – FEDERAL WAGE RATES**

30.01 Not Used.

END OF SECTION



DOCUMENT 00300

**FORM FOR GENERAL BID**

**PROPOSAL OF:** \_\_\_\_\_,  
(hereinafter called "BIDDER"), organized and existing under the laws of the State of  
\_\_\_\_\_ doing business as \_\_\_\_\_  
(a corporation, or a partnership, or an individual).

**TO: THE FIRST SELECTMAN FOR THE TOWN OF BRANFORD, CONNECTICUT**  
(hereinafter the Town of Branford shall be called "OWNER").

In compliance with your Advertisement for Bids, BIDDER hereby proposes to perform all WORK for Contract No. 40, Hemlock Pumping Station Force Main Replacement, in strict accordance with the CONTRACT DOCUMENTS, within the time set forth therein and at the prices stated below.

BIDDER hereby agrees to commence WORK under this contract within 60 consecutive calendar days after a date to be specified in the NOTICE TO PROCEED and fully complete the project within 195 consecutive calendar days thereafter unless the time for completion is extended otherwise by the Contract Documents. Work performed beyond this CONTRACT TIME period (COMPLETION) will be subject to liquidated damages. BIDDER further agrees to pay as liquidated damages, the sum of \$1,000.00 for each consecutive calendar day thereafter as provided in Article 15 of the General Conditions.

The Bidder agrees not to withdraw his bid within 60 days after the actual date of bid opening.

BIDDER acknowledges receipt of ADDENDA NO. \_\_\_ through \_\_\_.

The BIDDER agrees that, if he is selected as general contractor, he will within ten (10) days after presentation thereof by the awarding authority, execute a contract in accordance with the terms of this general bid and furnish a performance bond and a payment bond, each of a surety company qualified to do business under the laws of the State of Connecticut and satisfactory to the awarding authority. Each bond shall be in the sum of one hundred percent of the contract price, the premiums for which are to be paid by the general contractor and are included in the contract price.

**BID ITEMS**

- A. BIDDER agrees to perform all the work, including all incidental labor, materials and equipment necessary for the satisfactory completion of the work and in full compliance with the contents and intent of the specifications and/or plans of the work, for the following prices listed below:
- B. All prices, except item totals, shall be stated in both words and figures. In the event of a discrepancy between the price in words and the price in figures, the words shall govern. In the event of a discrepancy between the total of the items and the total stated, the total of the items shall govern.
- C. Interlineation, alteration or erasure may void the bid. All prices shall be typewritten or written by hand in ink.

| <u>Item</u>  | <u>Quantity</u> | <u>Extended<br/>Total</u> |
|--|-----------------|---------------------------|
| 1. PIPELINE 8" DUCTILE IRON PIPE - For<br>furnishing and installing 8-inch diameter DI force<br>main as specified, at all depths, the sum of                                       |                 |                           |
| Dollars (\$) _____ ) per LF  | 2900            |                           |
| 2. PRECAST CONCRETE DOGHOUSE<br>MANHOLE - For doghouse manholes, four feet<br>in diameter all depths, furnished and installed as<br>specified, without frame and cover, the sum of |                 |                           |
| Dollars (\$) _____ ) Each  | 1               |                           |



| <u>Item</u>   | <u>Quantity</u>  | <u>Extended Total</u> |
|---|------------------|-----------------------|
| <p>3. MANHOLE FRAMES AND COVERS - For standard manholes frames and covers, furnished and installed as specified, the sum of</p> <p>_____ Dollars (\$) _____ ) Each</p>  | <p>1</p> <hr/>   | <hr/>                 |
| <p>4. EXCAVATION AND REPLACEMENT OF UNSUITABLE MATERIAL BELOW TRENCH GRADE AND/OR SUBGRADE - For excavation of unsuitable material <u>below</u> trench grade and/or subgrade including replacement with suitable fill material, the sum of</p> <p>_____ Dollars (\$) _____ ) per CY</p> | <p>35</p> <hr/>  | <hr/>                 |
| <p>5. EXPERIMENTAL EXCAVATION - For experimental excavation and backfill, the sum of</p> <p>_____ Dollars (\$) _____ ) per CY</p>   | <p>25</p> <hr/>  | <hr/>                 |
| <p>6. REPLACEMENT OF UNSUITABLE MATERIAL ABOVE TRENCH GRADE - For material to replace unsuitable material <u>above</u> trench grade furnished and placed as specified, the sum of</p> <p>_____ Dollars (\$) _____ ) per CY</p>  | <p>200</p> <hr/> | <hr/>                 |
| <p>7. MISCELLANEOUS CEMENT CONCRETE - For miscellaneous cement concrete, not part of another bid item, furnished and placed, the sum of</p> <p>_____ Dollars (\$) _____ ) per CY</p>  | <p>10</p> <hr/>  | <hr/>                 |

| <u>Item</u>   | <u>Quantity</u> | <u>Extended Total</u> |
|---|-----------------|-----------------------|
| 8. ROAD BASE COURSE MATERIAL - For furnishing and placing processed gravel base course or dense graded crushed stone for roadway subbase below pavement as specified, the sum of<br><br>Dollars (\$) _____ ) per LF | 2,900           | _____                 |
| 9. UNIFORM POLICE OFFICERS - For uniformed traffic police, the allowance of<br><br>Seventy-Five Thousand Dollars (\$75,000.00)  | ALLOW           | \$25,000.00           |
| 10A. TEMPORARY PAVEMENT RESTORATION - For temporary pavement restoration furnished and placed as specified, the sum of<br><br>Dollars (\$) _____ ) per LF   | 2,900           | _____                 |
| 10B. PERMANENT PAVEMENT RESTORATION – MILLING AND PAVING - For permanent pavement restoration furnished and placed as specified, the sum of<br><br>Dollars (\$) _____ ) per SY                                      | 5,600           | _____                 |
| 11. UTILITY COMPANY WORK - For utility company work, the allowance of<br><br>Ten Thousand Dollars (\$10,000.00)   | ALLOW           | \$10,000.00           |
| 12. CONTROLLED LOW STRENGTH MATERIAL – For furnishing and placing controlled low strength material as specified, the sum of<br><br>Dollars (\$) _____ ) per CY  | 10              | _____                 |

|     |  |       |            |
|-----|--|-------|------------|
| 13. | DUCTILE IRON PIPE INSULATION - For Ductile Iron Pipe Insulation, furnished and placed as specified, the sum of |       |            |
|     |  | 400   |            |
|     | Dollars (\$) ) per LF  |       |            |
| 14. | SEWAGE PUMPING, HAULING AND DISCHARGE - For pumping, hauling and discharge of sewage, the allowance of         |       |            |
|     | Five Thousand Dollars (\$5,000.00)   | ALLOW | \$5,000.00 |

TOTAL AMOUNT OF BID BASED ON ENGINEER'S ESTIMATE OF QUANTITIES: Items 1 through 14, inclusive) – BASIS OF AWARD

\_\_\_\_\_  
Dollars (\$) ).

The BIDDER further certifies under the penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used herein the word "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity.

BIDDER also certifies that he has visited the site, received and reviewed the plans and project manual (Bidding Documents, Conditions and Technical Specifications) September 2019, and identified with the Engineer's Project No. 60581062, titled, Contract No. 40, Hemlock Pumping Station Force Main Replacement, Branford, Connecticut.

The BIDDER hereby certifies that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work and that he will comply fully with all laws and regulations applicable to awards made in the State of Connecticut, including the weekly submission of payroll records to the Owner.

This bid must bear the written signature of the BIDDER or an authorized agent of the BIDDER. If the BIDDER is a corporation or a partnership, the bid must be signed by a duly authorized officer of such corporation or by a partner and the title of such officer must be stated.

Respectfully submitted:

Date \_\_\_\_\_

By \_\_\_\_\_  
(Signature and Title of Person Authorized to Sign Bid)

\_\_\_\_\_  
(Name of General Bidder)

\_\_\_\_\_  
(Business Street Address)

\_\_\_\_\_  
(City and State)

Business Phone: (\_\_\_\_)

(SEAL - If bid is by a corporation)

ATTEST \_\_\_\_\_

(ACKNOWLEDGEMENT OF PRINCIPAL, IF A PARTNERSHIP)

State of \_\_\_\_\_ )  
County of \_\_\_\_\_ ) SS-

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_,  
before me personally came and appeared \_\_\_\_\_,  
to me known, and known to me to be one of the members of the firms of \_\_\_\_\_  
\_\_\_\_\_, described in and who executed the foregoing  
instrument and he acknowledged to me that he executed the same as and for the act and deed of  
said firm.

(Seal)

\_\_\_\_\_  
(NOTARY PUBLIC)

(ACKNOWLEDGEMENT OF PRINCIPAL, IF AN INDIVIDUAL)

State of \_\_\_\_\_ )  
County of \_\_\_\_\_ ) SS-

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_,  
before me personally came and appeared \_\_\_\_\_,  
to me known, and known to me to be the person in and who executed the foregoing instrument and  
and acknowledged that he executed the same.

(Seal)

\_\_\_\_\_  
(NOTARY PUBLIC)

(ACKNOWLEDGEMENT OF PRINCIPAL, IF AN LLC)

State of \_\_\_\_\_ )  
County of \_\_\_\_\_ ) SS-

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_,  
before me personally came and appeared \_\_\_\_\_,  
to me known, and known to me to be one of the members of the LLC of \_\_\_\_\_  
\_\_\_\_\_, described in and who executed the foregoing  
instrument and he acknowledged to me that he executed the same as and for the act and deed of  
said LLC.

(Seal)

\_\_\_\_\_

(NOTARY PUBLIC)

DOCUMENT 00303

**CERTIFICATION OF BIDDER REGARDING  
EQUAL EMPLOYMENT OPPORTUNITY**

INSTRUCTIONS

This certification is required pursuant to Connecticut's Executive Order No. Three. The implementing rules and regulations provide that any bidder or prospective contractor, or any of their proposed subcontractors, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any pervious contract or subcontract subject to the equal opportunity clause; and if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the bidder has not filed a compliance report due under applicable instructions, such bidder shall be required to submit a compliance report within seven calendar days after bid opening. No contract shall be awarded unless such report is submitted.

---

CERTIFICATION BY BIDDER

Bidder's Name: \_\_\_\_\_

Address and Zip Code: \_\_\_\_\_

\_\_\_\_\_

1. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause.

Yes     No    (If answer is yes, identify the most recent contract.)

2. Compliance reports were required to be filed in connection with such contract or subcontract.

3. Bidder has filed all compliance reports due under applicable instructions, including SF-100.

Yes     No    (If answer is yes, identify the most recent contract.)

4. If answer to Item 3 is "No", please explain in detail on reverse side of this certification.

Certification - The information above is true and complete to the best of my knowledge and belief.

---

Name and Title of Signer (Please Type)

---

Signature

---

Date





DOCUMENT 00305

**NON-COLLUSION AFFIDAVIT OF PRIME BIDDER**

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

County of: \_\_\_\_\_, SS)

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

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

Signed: \_\_\_\_\_

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

Subscribed and sworn before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

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

My Commission expires \_\_\_\_\_, 20\_\_\_\_.



SECTION 00410

BID BOND

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

BIDDER (Name and Address):

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

OWNER (Name and Address):

Town of Branford, CT
1019 Main Street
Branford, CT 06405

BID

Bid Due Date:
Description: Hemlock Pumping Station Force Main Replacement

BOND

Bond Number:
Date (Not earlier than Bid due date):
Penal sum

(Words) \$ (Figures)

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

BIDDER

SURETY

(Seal) Bidder's Name and Corporate Seal (Seal) Surety's Name and Corporate Seal

By: Signature

By: Signature (Attach Power of Attorney)

Print Name

Print Name

Title

Title

Attest: Signature

Attest: Signature

Title

Title

Note: Above addresses are to be used for giving any required notice. Provide execution by any additional parties, such as joint venturers, if necessary.

## PENAL SUM FORM

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

DOCUMENT 00450

**BIDDER QUALIFICATIONS STATEMENT**

(Bidder shall complete this statement and submit it with his bid)

SUBMITTED BY:

Name of Organization: \_\_\_\_\_  
(Print or Type Name of Bidder)

Name of Individual: \_\_\_\_\_

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

Business Address: \_\_\_\_\_

Telephone No.: \_\_\_\_\_

Fax No.: \_\_\_\_\_

Ladies and Gentlemen:

The undersigned certifies under oath the truth and correctness of all statements and of all answers to questions made herein.

(Note: Attach additional sheets as required)

1.0 Bidder's General Business Information

1.1 Check if:

- Corporation  Partnership  Joint Venture  Sole Proprietorship  
 Limited Liability Company

If Corporation:

A. Date and State of Incorporation:

\_\_\_\_\_

B. List of Executive Officers:

| Name  | Title |
|-------|-------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

If Partnership:

A. Date and State of Organization: \_\_\_\_\_

B. Names of Current and General Partners: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

C. Type of Partnership

General                       Publicly Traded                       Limited

Other (describe): \_\_\_\_\_

If Joint Venture:

A. Date and State of Organization: \_\_\_\_\_

B. Name, Address, and Form of Organization of Joint Venture Partners:  
(Indicate managing partner by an asterisk\*):

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

If Sole Proprietorship:

A. Date and State of Organization: \_\_\_\_\_

B. Name and address of Owners: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

- 2.0 How many years has your organization been in business as a general contractor? \_\_\_\_\_
- 3.0 If your organizational structure has changed within the past five years, provide data as listed above in Item 1.0 for your previous organization(s).
- 4.0 We normally perform \_\_\_\_\_ percent of the work with our own forces. List work normally subcontracted. \_\_\_\_\_
- \_\_\_\_\_
- 5.0 Has any construction contract to which you have been a party been terminated by the owner; have you ever terminated work on a project prior to its completion for any reason; has any surety which issued a performance bond on your behalf ever completed the work in its own name or financed such completion on your behalf; has any surety expended any monies in connection with a contract for which they furnished a bond on your behalf? If the answer to any portion of this question is "yes", furnish details of all such occurrences including the name of the owner, architect or engineer; and surety, and the name and date of the project.
- No.  Yes, Details provided.
- 6.0 Has any officer or partner of your organization ever been and officer or partner of another organization that had any construction contract terminated by the owner; terminated work on a project prior to its completion for any reason; has any surety which issued a performance bond complete the work in its own name or financed such completion; or has any surety expended monies in connection with a contract for which they furnished a bond? If the answer to any portion of this question is "yes", furnish details of all such occurrences including the name of the owner, architect or engineer; and surety, and the name and date of the project.
- No.  Yes, Details provided.
- 7.0 In the last five years, has your organization or any predecessor organization failed to substantially complete a project in a timely manner? If the answer to this question is "yes", furnish details of all such occurrences including the name of the owner, architect or engineer; and surety, and the name and date of the project.
- No.  Yes, Details provided.
- 8.0 On Schedule A attached, list the name, location, and description of the project, owner, architect, or engineer, contract price, percent complete, and scheduled completion of the major construction projects your organization currently has in progress. Provide name, address, and telephone number of a reference for each project listed.

9.0 On Schedule B attached, list the name, location, and description of the project, owner, architect, or engineer, contract price, percent complete, and date of completion and percent of work with your own forces of major projects of the same general nature as this project which your organization has completed within the past five years. Provide name, address, and telephone number of a reference for each project listed.

10.0 On Schedule C attached, list the name and construction experience of the principal individuals of your organization directly involved in construction operations.

11.0 List the states and categories in which your organization is legally qualified to do business.

---

12.0 Provide the following for your surety:

12.1 Surety Company: \_\_\_\_\_

12.2 Agent: \_\_\_\_\_

A. Address: \_\_\_\_\_

B. Telephone Number: \_\_\_\_\_

13.0 Provide the following with respect to an accredited banking experience institution familiar with your organization.

13.1 Name of Bank: \_\_\_\_\_

13.2 Address: \_\_\_\_\_

13.3 Account Manager: \_\_\_\_\_

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

14.0 Provide the name, address, and telephone number of an individual who represents a major equipment / material supplier whom the owner may contact for a financial reference:

---

---



15.0 Dated at \_\_\_\_\_, this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

Bidder: \_\_\_\_\_  
(Print or Type Name of Bidder)

By: \_\_\_\_\_ (Seal, if corporation)

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

Attachments A, B, and C

------(Affidavit for Individual)-----

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

- a) all of the foregoing qualification is true, complete, and accurate.

------(Affidavit for Partnership)-----

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

- a) he/she is a member of the partnership of \_\_\_\_\_;
- b) he/she is familiar with the books of said partnership showing its financial condition;
- c) all of the foregoing qualification is true, complete, and accurate.

------(Affidavit for Corporation)-----

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

- a) he/she is a \_\_\_\_\_ of \_\_\_\_\_;  
(Title) (Full name of Corporation)
- b) he/she is familiar with the books of said Corporation showing its financial condition;
- c) all of the foregoing qualification is true, complete, and accurate.

------(Affidavit for LLC)-----

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

- a) he/she is a member of the LLC of \_\_\_\_\_;
- b) he/she is familiar with the books of said LLC showing its financial condition;
- c) all of the foregoing qualification is true, complete, and accurate.

------(Acknowledgment)-----

\_\_\_\_\_ being duly sworn, deposes and says that he/she is  
\_\_\_\_\_ of \_\_\_\_\_;

(Title)

(Name of Bidder)

that he/she is duly authorized to make the foregoing affidavit and that he/she makes it on behalf of  
 himself / herself;  said partnership;  said corporation;  said LLC.

Sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_, in the County  
of \_\_\_\_\_, State of \_\_\_\_\_.

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

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

(Seal)

**SCHEDULE A  
PROJECTS IN PROGRESS**

| <u>Name, Location and<br/>Description of Project</u> | <u>Owner</u> | <u>Architect or<br/>Engineer</u> | <u>Contract Price</u> | <u>Percent<br/>Complete</u> | <u>Scheduled<br/>Completion</u> | <u>Reference / Contact<br/>Include Address and Phone</u> |
|--|--------------|----------------------------------|-----------------------|-----------------------------|---------------------------------|--|
|--|--------------|----------------------------------|-----------------------|-----------------------------|---------------------------------|--|

**SCHEDULE B  
PROJECTS COMPLETED**

| <u>Name, Location and<br/>Description of Project</u> | <u>Owner</u> | <u>Architect or<br/>Engineer</u> | <u>Contract Price</u> | <u>Percent<br/>with Own Forces</u> | <u>Reference / Contact<br/>Include Address and Phone</u> |
|--|--------------|----------------------------------|-----------------------|------------------------------------|--|
|--|--------------|----------------------------------|-----------------------|------------------------------------|--|

**SCHEDULE C  
PERSONNEL**

| <u>Name</u> | <u>Position</u> | <u>Date Started with<br/>This Organization</u> | <u>Date Started in<br/>Construction</u> | <u>Prior Positions and<br/>Experience in Construction</u> |
|-------------|-----------------|--|---|---|
|-------------|-----------------|--|---|---|

END OF SECTION



SECTION 00510

NOTICE OF AWARD (EJCDC C-510)

**Notice of Award**

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

Project: Hemlock Pumping Station Force Main Replacement

Owner: Town of Branford

Owner's Contract No.: 40

Contract:

Engineer's Project No.: 60581062

Bidder:

Bidder's Address: *[send Notice of Award Certified Mail, Return Receipt Requested]*

You are notified that your Bid dated [\_\_\_\_\_] for the above Contract has been considered. You are the Successful Bidder and are awarded a Contract for the Harbor Street Force Main Replacement.

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

[\_\_\_\_\_] copies of the proposed Contract Documents (except Drawings) accompany this Notice of Award.

[\_\_\_\_\_] sets of the Drawings will be delivered separately or otherwise made available to you immediately.

You must comply with the following conditions precedent within 15 days of the date you receive this Notice of Award.

1. Deliver to the Owner [\_\_\_\_\_] fully executed counterparts of the Contract Documents.
2. Deliver with the executed Contract Documents the Contract security bonds as specified in the Instructions to Bidders (Article 20), General Conditions (Paragraph 5.01), and Supplementary Conditions (Paragraph SC-5.01).
3. Other conditions precedent:  
[\_\_\_\_\_]

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

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

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

Copy to Engineer

SECTION 00520

AGREEMENT

THIS AGREEMENT is by and between the Town of Branford, Connecticut (“Owner”) and  
\_\_\_\_\_ (“Contractor”).

Owner and Contractor hereby agree as follows:

**ARTICLE 1 – WORK**

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

Furnish and install approximately 2,900 linear feet of 8 inch diameter ductile iron pipe including valves, bends, and appurtenances to replace existing 8 inch diameter cast iron pipe force main. Work to include pipe excavation, pipe removal / abandonment, backfill, testing, temporary / permanent paving and discharge manhole.

**ARTICLE 2 – THE PROJECT**

2.01 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

Contract No. 40: Hemlock Pumping Station Force Main Replacement, Branford, Connecticut



### **ARTICLE 3 – ENGINEER**

- 3.01 The Project has been designed by AECOM (Engineer), which is to act as Owner’s representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.
- 3.01 The Project has been designed by AECOM (Engineer) who will issue clarifications and interpretations in accordance with Paragraph 9.08 of the General Conditions.
- 3.02 Owner will provide a site representative who is to act as Owner’s representative, assume duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents except as described in Paragraph 3.01.

### **ARTICLE 4 – CONTRACT TIMES**

#### *4.01 Days to Achieve Substantial Completion and Final Payment*

The Work will be substantially completed within 150 days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions within 195 days after the date when the Contract Times commence to run.

#### *4.02 Liquidated Damages*

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial loss if the Work is not completed within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty), Contractor shall pay Owner \$1,000 for each day that expires after the time specified in Paragraph 4.02 above for Substantial Completion until the Work is substantially complete. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by Owner, Contractor shall pay Owner \$1,000 for each day that expires after the time specified in Paragraph 4.02 above for completion and readiness for final payment until the Work is completed and ready for final payment.

- 4.03 Permitting Contractor or Surety to continue and finish the Work or any part of the Work after the times specified for completion, or after the date to which the times for completion

may have been extended, shall in no way operate as a waiver on the part of Owner of its rights under the Contract.

## **ARTICLE 5 – CONTRACT PRICE**

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to Paragraph 5.01.A below:

A. For all Work a Contract Price of: \$\_\_\_\_\_

All specific cash allowances are included in the above price in accordance with Paragraph 11.02 of the General Conditions.

## **ARTICLE 6 – PAYMENT PROCEDURES**

6.01 *Submittal and Processing of Payments*

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

6.02 *Progress Payments; Retainage*

A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the 1st day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below. All such payments will be measured by the schedule of values established as provided in Paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Engineer may determine or Owner may withhold, including but not limited to liquidated damages, in accordance with Paragraph 14.02 of the General Conditions.

- a. 95 percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and
- b. 95 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

- B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 100 percent of the Work completed, less such amounts as Engineer shall determine in accordance with Paragraph 14.02.B.5 of the General Conditions and less 200 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the tentative list of items to be completed or corrected attached to the certificate of Substantial Completion.

### 6.03 *Final Payment*

- A. Upon final completion and acceptance of the Work in accordance with Paragraph 14.07 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 14.07.
- B. Retainage. The Owner may retain out of the moneys otherwise payable to the Contractor hereunder a percentage of 2 percent and may expend the same, in the manner hereinafter provided, in making such repairs, corrections or replacements in the Work as the Owner, in its sole judgment, may deem necessary.

If at any time within the said period of guarantee any part of the Work requires repairing, correction or replacement, the Owner may notify the Contractor in writing to make the required repairs, correction or replacements. If the Contractor neglects to commence making such repairs, correction, or replacements to the satisfaction of the Owner within three (3) days from the date of receipt of such notice, or having commenced fails to prosecute such work with diligence, the Owner may employ other persons to make the same. The Owner shall pay the cost and expense of the same out of the amounts retained for that purpose. Upon the expiration of the said period of guarantee, provided that the Work at that time is in good order, the Contractor will be entitled to receive the whole or such part of the sum last aforesaid, if any, as may remain after the cost and expense of making said repairs, correction or replacements, in the manner aforesaid, have been paid therefrom.

## **ARTICLE 7 – INTEREST**

- 7.01 All moneys not paid when due as provided in Article 14 of the General Conditions shall bear interest at the maximum rate allowed by law at the place of the Project.

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

- 8.01 In order to induce Owner to enter into this Agreement, Contractor makes the following representations:
  - A. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
  - B. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

- C. Contractor is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Contractor has considered the information known to Contractor; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Contract Documents; and (3) Contractor's safety precautions and programs.
- E. Based on the information and observations referred to in Paragraph 8.01.E above, Contractor does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
- F. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
- G. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
- H. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- I. In connection with the performance of Work under this Contract, Contractor agrees not to discriminate against any employee or applicant for employment because of age, race, religion, color, handicap, sex, physical condition or developmental disability. This provision 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. Contractor further agrees to take affirmative action to ensure equal employment opportunities for persons with disabilities. Contractor agrees to post in conspicuous places, available for employees and applicants for employment, notices setting forth the provisions of the nondiscrimination clause. Form of notice is included in the Project Forms.

## **ARTICLE 9 – CONTRACT DOCUMENTS**

### **9.01 Contents**

- A. The Contract Documents consist of the following:
  - 1. This Agreement (pages 00520-1 to 00520-8, inclusive).

2. Performance bond (pages 00610-1 to 00610-3, inclusive).
  3. Payment bond (pages 00615-1 to 00615-3, inclusive).
  4. General Conditions (pages 00700-1 to 00700-68, inclusive).
  5. Supplementary Conditions (pages 00800-1 to 00800-17, inclusive).
  6. Special Conditions (page 01864-1).
  7. Technical Specifications as listed in the table of contents of the Project Manual.
  8. Drawings consisting of 9 sheets with each sheet bearing the following general title "Hemlock Pumping Station Force Main Replacement".
  9. Addenda (numbers \_\_\_\_\_ to \_\_\_\_\_, inclusive).
  10. Exhibits to this Agreement (enumerated as follows):
    - a. Contractor's Bid (pages \_\_\_\_\_ to \_\_\_\_\_, inclusive).
    - b. Documentation submitted by Contractor prior to Notice of Award (pages \_\_\_\_\_ to \_\_\_\_\_, inclusive).
  11. Wage Rates, if applicable.
  12. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
    - a. Notice to Proceed (pages \_\_\_\_\_ to \_\_\_\_\_, inclusive).
    - b. Work Change Directives.
    - c. Change Orders.
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in Paragraph 3.04 of the General Conditions.

## **ARTICLE 10 – MISCELLANEOUS**

### **10.01 *Terms***

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

### **10.02 *Assignment of Contract***

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

### **10.03 *Successors and Assigns***

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

### **10.04 *Severability***

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

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

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

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

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

OWNER:

CONTRACTOR

\_\_\_\_\_

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

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

\_\_\_\_\_

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

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

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

**[CORPORATE SEAL]**

Attest  
\_\_\_\_\_

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

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

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

Address for giving notices:

Address for giving notices:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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

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

(Where applicable)



END OF SECTION



SECTION 00550

NOTICE TO PROCEED (EJCDC C-550)

**Notice to Proceed**

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

Project: Hemlock Pumping Station Force Main Replacement

Owner: Town of Branford

Owner's Contract No.: 40

Contract:

Engineer's Project No.: 60581062

Contractor:

Contractor's Address: *[send Certified Mail, Return Receipt Requested]*

You are notified that the Contract Times under the above Contract will commence to run on [\_\_\_\_]. On or before that date, you are to start performing your obligations under the Contract Documents. In accordance with Article 4 of the Agreement, the number of days to achieve Substantial Completion is 150, and the number of days to achieve readiness for final payment is 195.

Before you may start any Work at the Site, Paragraph 2.01.B of the General Conditions provides that you and Owner must each deliver to the other (with copies to Engineer and other identified additional insureds and loss payees) certificates of insurance which each is required to purchase and maintain in accordance with the Contract Documents.

Also, before you may start any Work at the Site, you must:

Submit shop drawings and traffic management plan

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

Owner

Given by:

Authorized Signature

Title

Date

Copy to Engineer



**PERFORMANCE BOND (EJCDC C-610)**

CONTRACTOR *(name and address)*

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

OWNER *(name and address):*

Town of Branford, 1019 Main Street, Branford, CT 06405

**CONSTRUCTION CONTRACT**

Effective Date of the Agreement:

Amount: \$

Description *(name and location)*: Contract : Hemlock Pumping Station Force Main Replacement, Branford, CT

**BOND**

Bond Number:

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

Amount:

Modifications to this Bond Form:  None  See Paragraph 16

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

**CONTRACTOR AS PRINCIPAL**

**SURETY**

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

Contractor's Name and Corporate Seal

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

Surety's Name and Corporate Seal

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

Signature

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

Signature *(attach power of attorney)*

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

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

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

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

Signature

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

Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

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

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

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

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

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

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

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

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

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

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

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

5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of

the Contract Price incurred by the Owner as a result of the Contractor Default; or

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

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

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

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

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

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

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

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

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

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

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

11. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within

**PAYMENT BOND (EJCDC C-615)**

CONTRACTOR *(name and address):*

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

OWNER *(name and address):* Town of Branford, 1019 Main Street, Branford, CT 06405

**CONSTRUCTION CONTRACT**

Effective Date of the Agreement:

Amount:

Description *(name and location):*

**BOND**

Bond Number:

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

Amount:

Modifications to this Bond Form:  None  See Paragraph 18

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

**CONTRACTOR AS PRINCIPAL**

**SURETY**

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

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

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

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

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

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

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

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

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

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

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

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

(2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

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

#### 16. Definitions

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

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

16.2 **Claimant:** An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond

shall be to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

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

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

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

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

18. Modifications to this Bond are as follows:





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

|   |                         |                                  |
|---|-------------------------|----------------------------------|
| Project: Hemlock Pumping Station Force Main Replacement | Owner: Town of Branford | Owner's Contract No.: 40         |
| Contract:   |                         | Date of Contract:                |
| Contractor:   |                         | Engineer's Project No.: 60581062 |

**The Contract Documents are modified as follows upon execution of this Change Order:**

Description:

\_\_\_\_\_

**Attachments (list documents supporting change):**

\_\_\_\_\_

**CHANGE IN CONTRACT PRICE:**

**CHANGE IN CONTRACT TIMES:**

Original Contract Price:  
\$ \_\_\_\_\_

Original Contract Times:  Working  Calendar days  
Substantial completion (days or date): \_\_\_\_\_  
Ready for final payment (days or date): \_\_\_\_\_

[Increase] [Decrease] from previously approved Change Orders No. \_\_\_\_\_ to No. \_\_\_\_\_  
\$ \_\_\_\_\_

**[Increase] [Decrease]** from previously approved Change Orders  
Substantial completion (days): \_\_\_\_\_  
Ready for final payment (days): \_\_\_\_\_

Contract Price prior to this Change Order:  
\$ \_\_\_\_\_

Contract Times prior to this Change Order:  
Substantial completion (days or date): \_\_\_\_\_  
Ready for final payment (days or date): \_\_\_\_\_

[Increase] [Decrease] of this Change Order:  
\$ \_\_\_\_\_

[Increase] [Decrease] of this Change Order:  
Substantial completion (days or date): \_\_\_\_\_  
Ready for final payment (days or date): \_\_\_\_\_

Contract Price incorporating this Change  
\$ \_\_\_\_\_

Contract Times with all approved Change Orders:  
Substantial completion (days or date): \_\_\_\_\_  
Ready for final payment (days or date): \_\_\_\_\_

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

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

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

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

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

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

Approved by Funding Agency (if applicable):

\_\_\_\_\_

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

# Change Order

## Instructions

### A. GENERAL INFORMATION

This document was developed to provide a uniform format for handling contract changes that affect Contract Price or Contract Times. Changes that have been initiated by a Work Change Directive must be incorporated into a subsequent Change Order if they affect Price or Times.

Changes that affect Contract Price or Contract Times should be promptly covered by a Change Order. The practice of accumulating Change Orders to reduce the administrative burden may lead to unnecessary disputes.

If Milestones have been listed in the Agreement, any effect of a Change Order thereon should be addressed.

For supplemental instructions and minor changes not involving a change in the Contract Price or Contract Times, a Field Order should be used.

### B. COMPLETING THE CHANGE ORDER FORM

Engineer normally initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by Contractor, or requests from Owner, or both.

Once Engineer has completed and signed the form, all copies should be sent to Owner or Contractor for approval, depending on whether the Change Order is a true order to the Contractor or the formalization of a negotiated agreement for a previously performed change. After approval by one contracting party, all copies should be sent to the other party for approval. Engineer should make distribution of executed copies after approval by both parties.

If a change only applies to price or to times, cross out the part of the tabulation that does not apply.

SECTION 00650

CERTIFICATE OF SUBSTANTIAL COMPLETION (EJCDC C-625)

**Certificate of Substantial Completion**

|   |                                  |
|---|----------------------------------|
| Project: Hemlock Pumping Station Force Main Replacement |                                  |
| Owner: Town of Branford, Connecticut                    | Owner's Contract No.: 40         |
| Contract: Contract 40                                   | Engineer's Project No.: 60581062 |

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

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

---



---



---

\_\_\_\_\_

Date of Substantial Completion

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Project or portion thereof designated above is hereby declared and is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below.

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

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

- Amended Responsibilities                       Not Amended

Owner's Amended Responsibilities:

---



---



---

Contractor's Amended Responsibilities:

---



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---

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

---

---

---

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

---

Executed by Engineer

---

Date

---

Accepted by Contractor

---

Date

---

Accepted by Owner

---

Date

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

# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

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and

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Endorsed by



CONSTRUCTION SPECIFICATIONS INSTITUTE

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

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## ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

### 1.01 *Defined Terms*

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

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

25. *Liens*—Charges, security interests, or encumbrances upon Project funds, real property, or personal property.
26. *Milestone*—A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.
27. *Notice of Award*—The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.
28. *Notice to Proceed*—A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.
29. *Owner*—The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.
30. *PCBs*—Polychlorinated biphenyls.
31. *Petroleum*—Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.
32. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.
33. *Project*—The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.
34. *Project Manual*—The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.
35. *Radioactive Material*—Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.
36. *Resident Project Representative*—The authorized representative of Engineer who may be assigned to the Site or any part thereof.
37. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
38. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.

39. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
40. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
41. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.
42. *Specifications*—That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.
43. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.
44. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
45. *Successful Bidder*—The Bidder submitting a responsive Bid to whom Owner makes an award.
46. *Supplementary Conditions*—That part of the Contract Documents which amends or supplements these General Conditions.
47. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or Subcontractor.
48. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
49. *Unit Price Work*—Work to be paid for on the basis of unit prices.
50. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such

construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

51. *Work Change Directive*—A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

## 1.02 *Terminology*

- A. The words and terms discussed in Paragraph 1.02.B through F are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. *Intent of Certain Terms or Adjectives:*

1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

C. *Day:*

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

D. *Defective:*

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
  - a. does not conform to the Contract Documents; or
  - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or

- c. has been damaged prior to Engineer's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

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

1. The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
  2. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
  3. The words "perform" or "provide," when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
  4. When "furnish," "install," "perform," or "provide" is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, "provide" is implied.
- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

## **ARTICLE 2 – PRELIMINARY MATTERS**

### *2.01 Delivery of Bonds and Evidence of Insurance*

- A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

### *2.02 Copies of Documents*

- A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

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

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the



Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

#### 2.04 *Starting the Work*

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

#### 2.05 *Before Starting Construction*

- A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:
  - 1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;
  - 2. a preliminary Schedule of Submittals; and
  - 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

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

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit instructions, receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

#### 2.07 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to

complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

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

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

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

#### **3.02 *Reference Standards***

- A. Standards, Specifications, Codes, Laws, and Regulations
  1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
  2. No provision of any such standard, specification, manual, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners,

employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

### 3.03 *Reporting and Resolving Discrepancies*

#### A. *Reporting Discrepancies:*

1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor discovers, or has actual knowledge of, and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.
2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) any standard, specification, manual, or code, or (c) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

#### B. *Resolving Discrepancies:*

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

### 3.04 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.

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

### 3.05 *Reuse of Documents*

- A. Contractor and any Subcontractor or Supplier shall not:
1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions; or
  2. reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

### 3.06 *Electronic Data*

- A. Unless otherwise stated in the Supplementary Conditions, the data furnished by Owner or Engineer to Contractor, or by Contractor to Owner or Engineer, that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
- B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.
- C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

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

### **4.01 *Availability of Lands***

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

### **4.02 *Subsurface and Physical Conditions***

- A. *Reports and Drawings:* The Supplementary Conditions identify:
  - 1. those reports known to Owner of explorations and tests of subsurface conditions at or contiguous to the Site; and
  - 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).
- B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
  - 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
  - 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
  - 3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

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

A. *Notice:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed either:

1. is of such a nature as to establish that any “technical data” on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or
2. is of such a nature as to require a change in the Contract Documents; or
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

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

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

C. *Possible Price and Times Adjustments:*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor’s cost of, or time required for, performance of the Work; subject, however, to the following:
  - a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and
  - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:
  - a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or
  - b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and

contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or

- c. Contractor failed to give the written notice as required by Paragraph 4.03.A.
3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, neither Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

#### 4.04 *Underground Facilities*

A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data provided by others; and
2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
  - a. reviewing and checking all such information and data;
  - b. locating all Underground Facilities shown or indicated in the Contract Documents;
  - c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction; and
  - d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated:*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the

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

2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

#### 4.05 *Reference Points*

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

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

- A. *Reports and Drawings:* The Supplementary Conditions identify those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at the Site.
- B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
  1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
  2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
  3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.



- C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.
- D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 4.06.E.
- E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered written notice to Contractor: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.
- F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.
- G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is

responsible. Nothing in this Paragraph 4.06.G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

- H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

## **ARTICLE 5 – BONDS AND INSURANCE**

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

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

### *5.02 Licensed Sureties and Insurers*

- A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly

licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

### 5.03 *Certificates of Insurance*

- A. Contractor shall deliver to Owner, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.
- B. Owner shall deliver to Contractor, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.
- C. Failure of Owner to demand such certificates or other evidence of Contractor's full compliance with these insurance requirements or failure of Owner to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.
- D. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor.
- E. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner in the Contract Documents.

### 5.04 *Contractor's Insurance*

- A. Contractor shall purchase and maintain such insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:
  - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
  - 2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;
  - 3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;
  - 4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:

- a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or
  - b. by any other person for any other reason;
5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and
  6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.
- B. The policies of insurance required by this Paragraph 5.04 shall:
1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, be written on an occurrence basis, include as additional insureds (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;
  2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;
  3. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;
  4. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);
  5. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and
  6. include completed operations coverage:
    - a. Such insurance shall remain in effect for two years after final payment.
    - b. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

## 5.05 *Owner's Liability Insurance*

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

## 5.06 *Property Insurance*

- A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee;
  2. be written on a Builder's Risk "all-risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than that caused by flood), and such other perils or causes of loss as may be specifically required by the Supplementary Conditions.
  3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);
  4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;
  5. allow for partial utilization of the Work by Owner;
  6. include testing and startup; and
  7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other loss payee to whom a certificate of insurance has been issued.
- B. Owner shall purchase and maintain such equipment breakdown insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors,

members, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee.

- C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other loss payee to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.
- D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.
- E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under this Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

#### 5.07 *Waiver of Rights*

- A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or loss payees thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.

- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for:
1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
  2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

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

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

- A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds

and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

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

**ARTICLE 6 – CONTRACTOR'S RESPONSIBILITIES**

6.01 *Supervision and Superintendence*

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

6.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner's written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.



### 6.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.
- B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

### 6.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.
  - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.
  - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

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

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.
  - 1. *"Or-Equal" Items:* If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements

for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

- a. in the exercise of reasonable judgment Engineer determines that:
  - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
  - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole; and
  - 3) it has a proven record of performance and availability of responsive service.
- b. Contractor certifies that, if approved and incorporated into the Work:
  - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
  - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. *Substitute Items:*

- a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.
- b. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.
- c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented by the General Requirements, and as Engineer may decide is appropriate under the circumstances.
- d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
  - 1) shall certify that the proposed substitute item will:
    - a) perform adequately the functions and achieve the results called for by the general design,
    - b) be similar in substance to that specified, and
    - c) be suited to the same use as that specified;

- 2) will state:
  - a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time,
  - b) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
  - c) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;
- 3) will identify:
  - a) all variations of the proposed substitute item from that specified, and
  - b) available engineering, sales, maintenance, repair, and replacement services; and
- 4) shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.

- B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.
- C. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by a Change Order in the case of a substitute and an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.
- D. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- E. *Engineer's Cost Reimbursement:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of

Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

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

6.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.
- B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.
- C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:
1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity; nor
  2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.
- D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.
- E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.

- F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as a loss payee on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

#### 6.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the

Work of any invention, design, process, product, or device not specified in the Contract Documents.

#### 6.08 *Permits*

- A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

#### 6.09 *Laws and Regulations*

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

#### 6.10 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

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

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

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full

responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.
  3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.
- B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

#### 6.12 *Record Documents*

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

#### 6.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall

take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;
  2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
  3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.
- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
- D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- F. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

#### 6.14 *Safety Representative*

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



6.15 *Hazard Communication Programs*

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

6.16 *Emergencies*

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

6.17 *Shop Drawings and Samples*

- A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

1. *Shop Drawings:*

- a. Submit number of copies specified in the General Requirements.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples:*

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

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

C. *Submittal Procedures:*

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

D. *Engineer's Review:*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of

each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. *Resubmittal Procedures:*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

6.18 *Continuing the Work*

- A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 *Contractor's General Warranty and Guarantee*

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

6. any inspection, test, or approval by others; or
7. any correction of defective Work by Owner.

#### 6.20 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable .
- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
  1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
  2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

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

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.

- B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, 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 Engineer.
- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

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

### *7.01 Related Work at Site*

- A. Owner may perform other work related to the Project at the Site with Owner's employees, or through other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:
  - 1. written notice thereof will be given to Contractor prior to starting any such other work; and
  - 2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.
- B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be

affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.

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

#### 7.02 *Coordination*

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

#### 7.03 *Legal Relationships*

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

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

#### 8.01 *Communications to Contractor*

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

8.02 *Replacement of Engineer*

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

8.03 *Furnish Data*

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

8.04 *Pay When Due*

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

8.05 *Lands and Easements; Reports and Tests*

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

8.06 *Insurance*

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

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

8.08 *Inspections, Tests, and Approvals*

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

8.09 *Limitations on Owner's Responsibilities*

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

8.10 *Undisclosed Hazardous Environmental Condition*

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

8.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents.

8.12 *Compliance with Safety Program*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed pursuant to Paragraph 6.13.D.

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

9.01 *Owner's Representative*

- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents.

9.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.



9.03 *Project Representative*

- A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Authorized Variations in Work*

- A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 *Rejecting Defective Work*

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

9.06 *Shop Drawings, Change Orders and Payments*

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

9.07 *Determinations for Unit Price Work*

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

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

- A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question.
- B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believes that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.
- C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.
- D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to the Resident Project Representative, if any, and assistants, if any.

#### 9.10 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Engineer has been informed pursuant to Paragraph 6.13.D.

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

#### 10.01 *Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).
- B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

#### 10.02 *Unauthorized Changes in the Work*

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

#### 10.03 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:

1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;
2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and
3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

#### 10.04 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

#### 10.05 *Claims*

- A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.
- B. *Notice:* Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Times shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).

- C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:
1. deny the Claim in whole or in part;
  2. approve the Claim; or
  3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.
- D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.
- E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.
- F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

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

### *11.01 Cost of the Work*

- A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 11.01.B, and shall include only the following items:
1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
  - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
  - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
  - c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
  - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
  - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
  - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of

property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

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

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

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

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

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

#### 11.02 *Allowances*

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. *Cash Allowances:*

1. Contractor agrees that:

- a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
- b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. *Contingency Allowance:*

1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

#### 11.03 *Unit Price Work*

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.



- D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:
1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
  2. there is no corresponding adjustment with respect to any other item of Work; and
  3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

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

### *12.01 Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:
1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or
  2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or
  3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).
- C. *Contractor's Fee:* The Contractor's fee for overhead and profit shall be determined as follows:
1. a mutually acceptable fixed fee; or
  2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
    - a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;
    - b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;

- c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 12.01.C.2.a and 12.01.C.2.b is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;
- d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;
- e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
- f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

#### 12.02 *Change of Contract Times*

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

#### 12.03 *Delays*

- A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.
- B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

- C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.
- D. Owner, Engineer, and their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.
- E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

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

### *13.01 Notice of Defects*

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

### *13.02 Access to Work*

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

### *13.03 Tests and Inspections*

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

2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in Paragraph 13.04.C; and
  3. as otherwise specifically provided in the Contract Documents.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
  - D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.
  - E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation.
  - F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

#### 13.04 *Uncovering Work*

- A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.
- B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.
- C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.
- D. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the

parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

#### 13.05 *Owner May Stop the Work*

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

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

- A. Promptly after receipt of written notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).
- B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

#### 13.07 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
  - 1. repair such defective land or areas; or
  - 2. correct such defective Work; or
  - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
  - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.

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

#### 13.08 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and for the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

#### 13.09 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct, or remedy any such deficiency.

- B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.
- C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

## **ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION**

### *14.01 Schedule of Values*

- A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

### *14.02 Progress Payments*

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

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other

arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

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

B. *Review of Applications:*

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
  - a. the Work has progressed to the point indicated;
  - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and any other qualifications stated in the recommendation); and
  - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
  - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or
  - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.



4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
  - a. to supervise, direct, or control the Work, or
  - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
  - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
  - d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or
  - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:
  - a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
  - b. the Contract Price has been reduced by Change Orders;
  - c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
  - d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

*C. Payment Becomes Due:*

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

*D. Reduction in Payment:*

1. Owner may refuse to make payment of the full amount recommended by Engineer because:
  - a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;

- b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
  - c. there are other items entitling Owner to a set-off against the amount recommended; or
  - d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.
2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor remedies the reasons for such action.
  3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1 and subject to interest as provided in the Agreement.

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

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

#### 14.04 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the tentative certificate to Owner, notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will, within said 14 days, execute and deliver to Owner and Contractor a definitive

certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.

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

#### 14.05 *Partial Utilization*

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

#### 14.06 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

#### 14.07 *Final Payment*

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

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

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

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for

Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Payment Becomes Due:*

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

14.08 *Final Completion Delayed*

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

14.09 *Waiver of Claims*

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

## ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

### 15.01 *Owner May Suspend Work*

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

### 15.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will justify termination for cause:
1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);
  2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;
  3. Contractor's repeated disregard of the authority of Engineer; or
  4. Contractor's violation in any substantial way of any provisions of the Contract Documents.
- B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:
1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion);
  2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere; and
  3. complete the Work as Owner may deem expedient.
- C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or

remedies under this Paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.
- E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.
- F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B and 15.02.C.

#### 15.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
  - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
  - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
  - 3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and
  - 4. reasonable expenses directly attributable to termination.
- B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

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

- A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may,

upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

## **ARTICLE 16 – DISPUTE RESOLUTION**

### *16.01 Methods and Procedures*

- A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.
- B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.
- C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:
  - 1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions; or
  - 2. agrees with the other party to submit the Claim to another dispute resolution process; or
  - 3. gives written notice to the other party of the intent to submit the Claim to a court of competent jurisdiction.

## **ARTICLE 17 – MISCELLANEOUS**

### *17.01 Giving Notice*

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:



1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended; or
2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

#### 17.02 *Computation of Times*

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

#### 17.03 *Cumulative Remedies*

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

#### 17.04 *Survival of Obligations*

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

#### 17.05 *Controlling Law*

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

#### 17.06 *Headings*

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



SECTION 00800  
SUPPLEMENTARY CONDITIONS

**ARTICLE 1. DEFINITIONS**

**SC-1.01**

*Defined Terms:*

Insert the following language before the word "Agreement" in the first sentence of the definition 1.01A.12 entitled "Contract Documents" in the General Conditions:

Invitation to Bid, Instructions to Bidders, and

**SC-1.01**

*Defined Terms:*

Add the following new paragraph immediately after paragraph 1.01.A.31:

- 33A. Products: Means materials and equipment that Contractor furnishes and provides, other than labor and services.

**ARTICLE 2. PRELIMINARY MATTERS**

**SC-2.01**

*Copies of Documents:*

Delete paragraph 2.01B of the General Conditions in its entirety and insert the following in its place:

- B. Before any work at the site is started, Contractor shall deliver to Owner, with a copy to Engineer, certificates of insurance (and other evidence of insurance requested by Owner) which Contractor is required to purchase and maintain in accordance with the requirements of Article 5.
1. Contractor shall include and identify on the certificate of insurance, indemnification as required by Article 6.20.

2. Engineer shall furnish to the Contractor, the form for Certificate of Insurance to be completed.

### **SC-2.02**

#### *Copies of Documents:*

Delete Paragraph 2.02.A. in its entirety and insert the following in its place:

- A. Owner shall furnish Contractor up to **3** printed or hard copies of the Drawings and Project Manual and one set in electronic format. Additional printed copies will be furnished upon request at the cost of reproduction.

### **SC-2.03**

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

Delete the last sentence of Paragraph 2.03.A. in its entirety and insert the following in its place:

In no event will the Contract Times commence to run later than the 61st day after the day of Bid opening or the 30th day after the Effective Date of the Agreement, whichever date is earlier.

### **SC-2.05**

#### *Before Starting Construction:*

Amend the first sentence of Paragraph 2.05.A.3. by inserting the words “except for Unit Price Work” at the beginning of the sentence.

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

### **SC-3.01**

#### *Intent:*

Add a new paragraph immediately after paragraph 3.01A of the General Conditions which is to read as follows:

1. Each and every provision of law and clause required by law to be inserted in the Contract shall be deemed to be inserted herein, and the Contract shall be read and enforced as though they were included herein. If through mistake or otherwise any such provision is

not inserted, or is not correctly inserted, then upon the application of either party, the Contract shall forthwith be physically amended to make such insertion.

2. Sections of Division 1 - General Requirements govern the execution of the work of all sections of the specifications.

### **SC-3.03**

#### *Reporting and Resolving Discrepancies:*

Add the following language as Paragraph 3.03.A.4.:

4. A request for written interpretation or clarification of the Contract Documents shall be submitted on the Contract Clarification/Interpretation Request form provided in the Project Forms section.

## **ARTICLE 4. AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS**

### **SC-4.02**

#### *Subsurface and Physical Conditions:*

Delete paragraph 4.02A of the General Conditions in its entirety and insert the following in its place:

Engineer has relied upon data obtained from subsurface investigations made at the site in the form of test borings. Such data is in the form of boring logs which are included in Appendix A to the Specifications. The locations of the test borings are indicated on the Drawings.

### **SC-4.04**

#### *Underground Facilities:*

Delete the following words from line 5 of paragraph 4.04B.2 of the General Conditions:

“or not shown or indicated with reasonable accuracy”

### **SC-4.05**

#### *Reference Points:*

Add a new paragraph at the end of paragraph 4.05A of the General Conditions which is to read as follows:

- B. Engineer may check the lines, elevations, reference marks, batter boards, etc., set by Contractor, and Contractor shall correct any errors disclosed by such check. Such a check shall not be considered as approval of Contractor's work and shall not relieve Contractor of the responsibility for accurate and satisfactory construction and completion of the entire Work. Contractor shall furnish personnel to assist Engineer in checking lines and grades.

#### **SC-4.06**

##### *Hazardous Environmental Conditions at Site:*

Delete Paragraphs 4.06.A. and 4.06.B. in their entirety and insert the following in their place:

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

### **ARTICLE 5. BONDS AND INSURANCE**

#### **SC-5.01**

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

Add the following language at the end of Paragraph 5.01.C:

In addition, no further progress payments under the Agreement will be made by Owner until Contractor complies with the provisions of this paragraph.

#### **SC-5.02**

##### *Licensed Sureties and Insurers:*

Add the following language at the end of Paragraph 5.02.A.:

Insurance companies shall be carriers approved in the State of Connecticut and have an A- or better rating by Best's Insurance Guide Rating. In addition, all carriers are subject to approval by the Town of Branford.

#### **SC-5.03**

##### *Certificates of Insurance:*

Delete paragraph 5.03B of the General Conditions.

**SC-5.04**

*Contractor's Insurance:*

Add the following new paragraph immediately after Paragraph 5.04.B.:

C. The limits of liability for the insurance required by Paragraph 5.04 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

1. Worker's Compensation, and related coverage under Paragraphs 5.04.A.1 and 5.04.A.2 of the General Conditions:

a. State: Statutory

b. Applicable Federal  
(e.g., Longshoreman's): Statutory

c. Employer's Liability: \$ 500,000

2. Contractor's General Liability under Paragraphs 5.04.A.3 through 5.04.A.6 of the General Conditions which shall include completed operations and product liability coverage's and eliminate the exclusion with respect to property under the care, custody, and control of Contractor or provide equivalent coverage under Builders Risk:

a. General Aggregate: **\$ 2,000,000**

c. Personal Injury and Accidental  
Death: **\$ 2,000,000**

d. Each Occurrence  
(Bodily Injury and Property Damage): **\$ 1,000,000**

f. Excess or Umbrella Liability  
(1) General Aggregate: **\$ 1,000,000**

3. Automobile Liability under Paragraph 5.04.A.6 of the General Conditions:

a. Bodily Injury:  
Each Person **\$ 2,000,000**  
Each Accident **\$ 1,000,000**

- b. Property Damage:  
Each Accident **\$ 2,000,000**
  
- 4. The Contractual Liability coverage required by Paragraph 5.04.B.3 of the General Conditions shall provide coverage for not less than the following amounts:
  - a. Bodily Injury:  
Each Accident **\$ 1,000,000**  
Annual Aggregate **\$ 2,000,000**
  
  - b. Property Damage:  
Each Accident **\$ 1,000,000**  
Annual Aggregate **\$ 2,000,000**
  
- 5. The Town of Branford and AECOM Technical Services shall be named as additional insureds on the policies of insurance.

## **ARTICLE 6. CONTRACTOR'S RESPONSIBILITIES**

### **SC-6.03**

#### *Services, Materials, and Equipment:*

Add the following new paragraph(s) immediately after Paragraph 6.03.C.:

#### D. Basis of Design

- 1. Unless otherwise indicated, design of this Project is based upon the material or Supplier's equipment named first in the list of manufacturers in a Specification section. Engineer has performed an evaluation of other listed manufacturers for compliance with the requirements of the Contract Documents.
  
- 2. When other manufacturers are listed, Contractor may be required to make modifications or adjustments, at Contractor's expense, to coordinate the installation of the furnished equipment with associated elements of Work, such as piping and electrical connections, or support and mounting provisions.

#### E. For material or equipment listed in the Specifications, Contractor shall provide Supplier A.

- 1. Contractor shall provide material or equipment of Supplier A unless one of the following conditions is satisfied.



- a. Required equipment or material cannot be provided within the Contract Time, but not as a result of Contractor's failure to pursue Work timely or coordinate various activities properly.
  - b. Packaging of several items of equipment from single source will provide maintenance and coordination advantages to Owner.
  - c. Contractor proposes to provide one of the other items of material or equipment listed with cost savings to Owner.
2. If Contractor feels that one of above conditions can be met, Contractor shall submit documentation to substantiate condition before requesting approval of submittals. Engineer will be sole judge of acceptance.
  3. If substitute material or equipment is accepted by Owner, the substitute material or equipment shall be provided and the Contract Price will be adjusted by a Change Order.
  4. If substitute material or equipment is not acceptable, the material or equipment of Supplier A shall be furnished for the amount included in the Lump Sum Contract Price.

#### **SC-6.06**

*Concerning Subcontractor's, Suppliers, and Others:*

Renumber subparagraph 6.06F to 6.06G and subparagraph 6.06G to 6.06H and add new subparagraph as follows:

- F. Owner or Engineer may furnish to any such Subcontractor, Supplier, or other person or organization, to the extent practicable, information about amounts paid to Contractor in accordance with Contractor's Applications for Payment on account of the particular Subcontractor's, Suppliers, other person's, or other organization's Work.

#### **SC-6.09**

*Concerning Laws and Regulations:*

Add the following new paragraph(s) immediately after Paragraph 6.09.C.:

**D. MINIMUM WAGE RATES (CONNECTICUT):**

1. A schedule of minimum wage rates issued by the Commissioner of Labor for the State of Connecticut, in accordance with Chapter 558 of the General Statutes of Connecticut, are included in these specifications. Building Heavy and Highway Construction Rates apply to this project. It is the responsibility of the Contractor before bid opening to request, if necessary, any additional information on State Wage Rates for those tradespeople who are not covered by the applicable Stage Wage Determination but who may be employed for the proposed work under this contract.
2. Particular attention is directed to the following excerpt from Section 31-53a of the General Statutes of Connecticut.
  - a. “The wages paid on an hourly basis of any mechanic, laborer or workman employed upon the work herein contracted to be done and the amount of payment or contribution paid or payable on behalf of each such employee to any employee welfare, fund, as defined in Section 31-78 of the general statutes, shall be at a rate equal to the rate customary or prevailing for the same work in the same trade or occupation in the town in which such public works project is being constructed. Any contractor who is not obligated by agreement to make payment or contribution on behalf of such employees to any such employee welfare fund shall pay to each employee as part of his wages the amount of payment or contribution for his classification, on each pay day.
3. Upon award of the contract, the Contractor shall complete the “Contractor’s Wage Certification Form” and forward it to the Wage and Workplace Standards Division of the Connecticut Labor Department. During the progress of the work, the Contractor shall, on a weekly basis, submit to the Owner certified payroll and a statement of compliance on Form WWS-CPI, a copy of which is attached to the wage rates schedule.

**SC-6.10**

*Taxes:*

Add a new paragraph immediately after Paragraph 6.10.A.:

- B. Owner is exempt from payment of sales and compensating use taxes of the State of Connecticut and of cities and counties thereof on all materials to be incorporated into the Work.
  1. Owner will furnish the required certificates of tax exemption to Contractor for use in the purchase of supplies and materials to be incorporated into the Work.

2. Owner's exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by Contractor, or to supplies or materials not incorporated into the Work.

#### **SC-6.12**

##### *Record Documents:*

Delete the last sentence of Paragraph 6.12.A. in its entirety and insert the following in its place:

Upon Substantial Completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner.

#### **SC-6.16**

##### *Emergencies:*

Add the following new paragraph immediately after Paragraph 6.16.A.:

- B. In emergencies affecting the safety or protection of persons or property or maintenance of temporary construction at the Site or adjacent thereto, and Contractor cannot be reached, Owner may act to attempt to prevent threatened damage, injury, or loss. Owner will give Contractor and Engineer prompt written notice of such action and the cost of the correction or remedy shall be charged against Contractor. A Change Order will be issued to document the change in Contract Price.

#### **SC-6.17**

##### *Shop Drawings and Samples:*

Add the following new paragraphs immediately after Paragraph 6.17.E.:

- F. Contractor shall furnish required submittals with sufficient information and accuracy in order to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing subsequent submittals of Shop Drawings, samples, or other items requiring approval and Contractor shall reimburse Owner for Engineer's charges for such time.
- G. After Engineer has reviewed and approved a Shop Drawing or Sample, Contractor shall provide the material or equipment approved. Engineer will not review subsequent submittals of a different manufacturer or Supplier unless Contractor provides sufficient information to Engineer that the approved material or equipment is unavailable, time of delivery will delay the construction progress but not as a result of Contractor's failure to timely pursue the Work or to coordinate various activities properly, or Owner requests a different manufacturer or Supplier.

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

### **SC-7.04**

#### *Damages to the Work or Property:*

Add the following new paragraph at the end of Article 7 of the General Conditions:

- A. Should Contractor cause damage to the work or property of any separate contractor at the site, or should any claim arising out of Contractor's performance of the Work at the site be made by any separate contractor against Contractor, Owner, Engineer, Engineer's Consultants, or any other person, Contractor shall promptly attempt to settle with such other contractor by agreement, or to otherwise resolve the dispute by arbitration or at law. Contractor shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold Owner, Engineer, and Engineer's Consultants, harmless from and against all claims, damages, losses, and expenses (including, but not limited to, fees of engineers, architects, attorneys, and other professionals, and court and arbitration costs) arising directly, indirectly, or consequentially out of any action, legal or equitable, brought by any separate contractor against Owner, Engineer, or Engineer's Consultants, to the extent based on a claim arising out of the Contractor's performance of the Work. Should a separate contractor cause damage to the Work or property of Contractor or should the performance of Work by any separate contractor at the site give rise to any other claim, Contractor shall not institute any action, legal or equitable, against Owner, Engineer or Engineer's Consultants, or permit any action against any of them to be maintained and continued in its name or for its benefit in any court or before any arbiter which seeks to impose liability on or to recover damages from Owner, Engineer, or Engineer's Consultants, on such damage or claim. If Contractor is delayed at any time in performing or furnishing Work by any act or neglect of a separate contractor and Owner and Contractor are unable to agree to the extent of any adjustment in Contract Times attributable thereto, Contractor may make a claim for an extension of times in accordance with Article 12. An extension of the Contract Times shall be Contractor's exclusive remedy with respect to Owner, Engineer, and Engineer's Consultants, for any delay, disruption, interference or hindrance caused by any separate contractor. This paragraph does not prevent recovery from Owner, Engineer, or Engineer's Consultant, for activities that are their respective responsibilities.

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

### **SC-8.06**

#### *Insurance:*

Delete paragraph 8.06 of the General Conditions in its entirety.

### **SC-8.13**

*Owner's Project Representative:*

Add the following new paragraph immediately after Paragraph 8.12.:

- A. Owner will furnish a site representative, assistants, and other field staff to observe performance and progress of the Work.
- B. The duties and responsibilities of Owner's site representative are described as follows:
  - 1. Become familiar with the Contract Documents to observe the progress and quality of the executed Work, and to determine, in general, if the Work is proceeding in accordance with the Contract Documents.
  - 2. Promptly forward to Engineer, reports from Contractor indicating conflict, error, ambiguity, or discrepancy in the Contract Documents to enable Engineer to issue a written clarification or interpretation as provided for in Paragraph 9.04 of the General Conditions.
  - 3. Provide Engineer with copy of Site Representatives' daily log.

## **ARTICLE 9. ENGINEER'S STATUS DURING CONSTRUCTION**

### **SC-9.03**

*Project Representative:*

Add the following new paragraph immediately after Paragraph 9.03.A.:

- B. Owner will provide a site representative whose responsibilities and duties are described in Paragraph SC 8.13.

### **SC-9.07**

*Determinations for Unit Price Work:*

Delete the last sentence of Paragraph 9.07.A. in its entirety and insert the following in its place:

“Engineer’s written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor and not subject to appeal.”

## **SC-9.10**

### *Compliance with Safety Program:*

Add the following new paragraph immediately after Paragraph 9.10.A.:

- B. In the event Engineer determines that Contractor's safety plans, programs, and procedures do not provide adequate protection for Engineer, Engineer may direct its employees to leave the Project Site or implement additional safeguards for Engineer's protection. If taken, these actions will be in furtherance of Engineer's responsibility to its own employees only, and Engineer will not assume any responsibility for protection of any other persons affected by the Work. In the event Engineer observes situations which appear to have potential for immediate and serious injury to persons, Engineer may warn the persons who appear to be affected by such situations. Such warnings, if issued, shall be given based on general humanitarian concerns, and Engineer will not, by the issuance of any such warning, assume any responsibility to issue future warnings or any general responsibility for protection of persons affected by the Work.

## **ARTICLE 10 - CHANGES IN THE WORK; CLAIMS**

### **SC-10.01**

#### *Authorized Changes in the Work:*

Add the following new subparagraph immediately after Paragraph 10.01.B.:

1. By submission of a Claim Contractor certifies that the claim is made in good faith, that the supporting data are accurate and complete to the best of Contractor's knowledge and belief, and that the amount or time requested accurately reflects the Contract adjustment for which Contractor believes Owner is liable.

### **SC-10.03**

#### *Execution of Change Orders:*

Add the following new paragraph immediately after Paragraph 10.03.A.3.:

4. Change Orders will be prepared on the form included in the Project Forms of the Project Manual.

## **SC-10.05**

### *Claims:*

Amend Paragraph 10.05.B. by deleting the words “30 days” in the first sentence and inserting the words “10 days” in their place, and deleting the words “60 days” in the third sentence and inserting the words “30 days” in their place.

Amend the sixth sentence of Paragraph 10.05.B. by deleting the words “believes it.”

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

### **SC-11.01**

#### *Cost of the Work:*

In the second sentence of paragraph 11.01A.1 delete the word "superintendents".

### **SC-11.02**

#### *Allowances:*

Add the following new paragraph immediately after Paragraph 11.02.B.:

- C. *Quantities Allowances:* The allowances include the quantity of material or equipment to be installed or removed from the Site; and
1. Contractor agrees that:
    - a. Contractor’s cost for unloading and handling on the Site, labor, installation costs, overhead, profit, and other expenses contemplated for the allowance shall have been included in the Contract Price and not in the allowances.
    - b. Contractor’s cost for removing and loading material or equipment on the Site, transporting and fees for disposal on or off Site, overhead, profit, and other expenses contemplated for the Allowance shall have been included in the Contract Price.
    - c. Contractor’s cost for furnishing and installing material or equipment to replace the removed material or equipment shall include cost for furnishing and installing the material or equipment, labor, installation costs, overhead, profit and other expenses contemplated for the allowance shall have been included in the Contract Price.

2. No demand for additional payment on account of any of the foregoing will be valid.

Renumber Paragraphs 11.02.C. and D. to 11.02.D. and E. respectively.

### **SC-11.03**

#### *Unit Price Work:*

Delete Paragraph 11.03.D. in its entirety and insert the following in its place:

- D. The unit price of an item of Unit Price Work shall be subject to reevaluation and adjustment under the following conditions:
  1. If the Bid price of a particular item of Unit Price Work amounts to 5 percent or more of the Contract Price and the variation in the quantity of that particular item of Unit Price Work performed by Contractor differs by more than 25 percent from the estimated quantity of such item indicated in the Agreement.
  2. If there is no corresponding adjustment with respect to any other item of Work.
  3. If Contractor believes that Contractor has incurred additional expense as a result thereof or if Owner believes that the quantity variation entitles Owner to an adjustment in the unit price, either Owner or Contractor may make a claim for an adjustment in the Contract Price in accordance with Article 10 if the parties are unable to agree as to the effect of any such variations in the quantity of Unit Price Work performed.

## **ARTICLE 12. CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES**

### **SC-12.01**

#### *Change in Contract Price*

Delete Paragraph 12.01.B.2. in its entirety and insert the following in its place:

2. When the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which includes an allowance for overhead and profit in accordance with Paragraph 12.01.C.2); or

### **SC-12.01**

#### *Change of Contract Price:*

Delete the semicolon at the end of Paragraph 12.01.C.2.c., and add the following language:



“, provided, however, that on any subcontracted work the total maximum fee to be paid by Owner under this subparagraph shall be no greater than 27 percent of the cost incurred by the Subcontractor who actually performed the work”;

### **SC-12.02**

#### *Change of Contract Times:*

Add the following new paragraph immediately after Paragraph 12.02.B.:

- C. Time extensions provided under Paragraph 12.03 of the General Conditions will only be allowed for controlling items of Work (critical path).

### **SC-12.03**

#### *Delays:*

Delete Paragraph 12.03.B. in its entirety and insert the following in its place:

- B. If Owner, Engineer, or other contractors or utility owners performing other work for the Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times. Contractor’s entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor’s ability to complete the Work with the Contract Times. Such an adjustment shall be Contractor’s sole and exclusive remedy for the delays described in this Paragraph 12.02.B.

## **ARTICLE 14. PAYMENTS TO CONTRACTOR AND COMPLETION**

### **SC-14.02**

#### *Progress Payments:*

Amend the first sentence of Paragraph 14.02.A.1. by striking out the words “20 days” and inserting the words “30 days” in their place.

Add the following language at the end of Paragraph 14.02.A.2.:

Owner may at any time require Contractor to furnish lien waivers for labor and materials covered by specified Applications for Payment.

## **SC-14.02**

### *Progress Payments:*

Amend Paragraph 14.02.C.1. by striking out the words “Ten days” and inserting the words “Twenty days” in their place.

## **SC-14.07**

### *Final Payment:*

Amend the first sentence of Paragraph 14.07.A.1. by striking out the words “and has delivered in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance certificates of inspection, marked up record documents (as provided in Paragraph 6.12), and other documents,”

Amend Paragraph 14.07.A.2.a. by striking out the words “, including but not limited to evidence of insurance required by Paragraph 5.04.B.6.”

## **SC-14.07**

### *Final Payment:*

Add the following new paragraph after paragraph 14.07A.3 of the General Conditions.

4. The amount of retainage with respect to final payment will be as stipulated in the Agreement.

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

### **SC-15.04**

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

Amend Paragraph 15.04.A. by striking out the words “30 days” in two places and inserting the words “60 days” in their places, and by striking out the words “seven days” and inserting the words “10 days” in their place.

Amend Paragraph 15.04.B. by striking out the words “30 days” in two places and inserting the words “60 days” in their places, and by striking out the words “seven days and inserting the words “10 days” in their place.

## **ARTICLE 16. DISPUTE RESOLUTION**

### **SC-16.01**

#### *Methods and Procedures:*

Add a new sentence at the end of paragraph 16.01A of the General Conditions which is to read as follows:

Contractor shall carry on the Work and maintain the progress schedule during the dispute resolution proceedings unless otherwise agreed in writing by Owner and Contractor.

## **ARTICLE 17. MISCELLANEOUS**

### **SC-17.06**

Delete paragraph 17.06 in its entirety and replace with the following:

#### 17.06 Headings:

- A. The headings or titles of any article, paragraph, subparagraph, section, subsection, or part of the Contract Documents shall not be deemed to limit or restrict the article, paragraph, section, or part.

### **SC-17.07**

#### *Legal Address of Contractor:*

Add new paragraph immediately after paragraph 17.06 of the General Conditions as follows:

- A. Contractor's business address and his office at or near the site of the Work are both hereby designated as places to which communications shall be delivered. The depositing of any letter, notice, or other communication in a postpaid wrapper directed to the Contractor's business address in a post office box regularly maintained by the Post Office Department or the delivery at either designated address of any letter, notice, or other communication by mail or otherwise shall be deemed sufficient service thereof upon Contractor, and the date of such service shall be the date of receipt. The first-named address may be changed at any time by an instrument in writing, executed and acknowledged by Contractor and delivered to Engineer. Service of any notice, letter, or other communication upon the Contractor personally shall likewise be deemed sufficient service.

**SC-17.08**

*Engineering and Inspection Costs and Expenses:*

Add a new paragraph immediately after paragraph 17.07 of the General Conditions which is to read as follows:

- A. The Contractor shall be responsible and liable for all engineering and inspection costs and expenses incurred by the Owner caused by, or related in any way to, the failure of the Contractor to perform its services in the time and manner set forth in the Agreement, the General Conditions and the Supplemental Conditions. The Owner may charge to the Contractor, and may deduct from the periodical payments and the final payment for the Contractor's work, the full amount of such engineering and inspection costs and expenses including Owner's and Engineer's costs.
  - 1. The Engineer's charges will be based on the Engineer's actual labor and expenses at the same rate the Owner is charged.
- B. For any engineering costs and expenses beyond the regular eight-hour day and for any time work on Saturday, Sunday, or holidays, the charges for such personnel will be one and one-half times the rate established above.

END OF SECTION

## DIVISION 1 - GENERAL REQUIREMENTS



SECTION 01010

SUMMARY OF WORK

PART 1 GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of this Contract generally consists of the furnishing and installation of sanitary force main, valves and manhole as shown on the Contract Drawings and outlined in these specifications.
- B. Furnishing, assembling, and removing temporary facilities, if required to complete the project as shown on the Contract Drawings.
- C. The Contractor shall be responsible for furnishing all materials and appurtenances required to complete the project as shown on the Contract Drawings.
- D. All work within the Town jurisdiction shall not commence until approval is received by the Contractor from the Town in which the work under this contract is being performed.

1.02 CONTRACT

- A. Construct the Work under a unit item contract as presented in Section 00300 Bid Form.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION





## SECTION 01025

### MEASUREMENT AND PAYMENT

#### PART 1.0. GENERAL

##### 1.01 SCOPE

- A. The purpose of this section is to define the method of measurement and payment for each of the unit prices or lump sums listed in the Proposal. If no quantity or bid item appears in the Proposal for any of the following described items, no work of that description is anticipated on the project.
- B. The Contractor shall acquaint himself with all work associated with each payment item and shall have no claim for additional compensation due to his unfamiliarity with the requirements of various items.
- C. The Contractor's attention is directed to the fact that no payment will be made for any item until the Contractor has submitted all required documentation as required by the Contract Documents and such documentation has been reviewed and approved by the Engineer.
- D. The Contractor's attention is directed to the fact that no payment will be made for additional materials that are not installed on the project.

##### 1.02 PAYMENT ITEMS

###### A. BASE BID

| <u>Item</u> | <u>Description</u>   |
|-------------|--|
| 1.          | Pipeline 8" Ductile Iron Force Main  |
| 2.          | Precast Concrete Doghouse Manhole  |
| 3.          | Manhole Frames and Covers  |
| 4.          | Excavation And Replacement Of Unsuitable Material Below Trench Grade And/Or Subgrade |
| 5.          | Experimental Excavation  |
| 6.          | Replacement of Unsuitable Material Above Trench Grade                                |
| 7.          | Miscellaneous Cement Concrete  |
| 8.          | Road Base Course Material  |
| 9.          | Uniformed Police Officers  |
| 10A.        | Temporary Pavement Restoration   |
| 10B.        | Permanent Pavement Restoration- Milling And Paving                                   |
| 11.         | Utility Company Work   |
| 12.         | Controlled Density Fill  |
| 13.         | Ductile Iron Pipe Insulation   |
| 14.         | Sewage Pumping, Hauling And Discharge  |

## BASIS OF MEASUREMENT AND PAYMENT

### ITEM 1. PIPELINE 8" DUCTILE IRON FORCE MAIN

#### A. General.

1. The price bid for Item 1 shall be considered as fair compensation for all labor, equipment, tools and materials necessary to complete the work as specified, which shall include furnishing and installing pipe, fittings, valves, corporation stop, plugs, hardware, special coatings and other materials required to install the pipe from Hemlock Road (Hemlock Road Pump Station) to Brushy Plain Road, handling and disposal of materials, clearing and grubbing, traffic flaggers except ITEM 9. UNIFORM POLICE OFFICERS, excavation (excluding that which is specified to be paid for separately), backfill above trench grade including all bedding materials (excluding material used to replace unsuitable material and road base course material), testing (including soil compaction tests), compacting trenches, temporary earth support systems including sheeting and shoring not ordered left in place, removing existing sheeting (if required), dewatering, all connections to existing force main and proposed manholes, repair and/or rebuilding of inverts in existing manholes, loaming and seeding, landscaping and planting restoration, replacing concrete and bituminous concrete curbing, removing and resetting property markers, removing and resetting signs, bypass pumping, sewer connections, dust control (including mechanical sweeping), cleanup, restoration of all areas disturbed by the Contractor's operations and not included under another item, all work as specified in SECTION 01140, ENVIRONMENTAL PROTECTION; SECTION 01310, SCHEDULES AND REPORTS; SECTION 01570, TRAFFIC MANAGEMENT AND MAINTENANCE; AND SECTION 02060, DEMOLITION and all other incidental work relative thereto.

#### B. Measurement. The method of measurement for pipelines shall be as follows:

1. Measurement of force main shall be the horizontally measured length of pipe in place between connections to the existing force main to the centerline of connecting manhole. Measurement shall be by the linear foot with no deductions made for fittings and/or valves.

#### C. Payment. Payment for furnishing and installing pipeline listed in DOCUMENT 00300, FORM FOR GENERAL BID, shall be made at the unit price bid per linear foot under Item 2.

1. Only 75 percent of the price bid per linear foot of pipe shall be paid for upon its installation, the balance shall be withheld until such time as the site has been fully restored and the pipe has been successfully tested and ready to be incorporated into the existing system. The above percentages are prior to the specified retainage to be withheld.

### ITEM 2. PRECAST CONCRETE DOG HOUSE MANHOLE

- #### A. General. The price bid under for Item 2 shall be considered as fair compensation for all labor, equipment, tools and materials necessary to complete the work as specified, which shall include excavation, installation, steel reinforced copolymer polypropylene plastic steps, lifting rings, sealing materials in horizontal joints, bricks, grout, building invert, pipe penetrations, assembly, drop piping and connections, fittings, dampproofing, backfill, testing, and all other incidental work relative thereto.

- B. Measurement. The method of measurement for manholes shall be as follows:
1. Measurement for furnishing and installing precast concrete manholes shall be per each approved installation.
- C. Payment. Payment for furnishing and installing precast concrete manholes listed in DOCUMENT 00300, FORM FOR GENERAL BID shall be made at the unit price bid per each under Item 2.
1. Only 75 percent of the price bid for each manhole shall be paid for upon its installation, the balance shall be withheld until such time as the site has been fully restored and the manhole has been successfully tested and is ready to be incorporated into the existing system. The above percentages are prior to the specified retainage to be withheld.
  2. An additional 10 percent shall be withheld until such time as the invert and manhole steps have been installed and are ready to be incorporated into the existing system. The above percentage is prior to the specified retainage to be withheld.

### ITEM 3. MANHOLE FRAMES AND COVERS

- A. General. The price bid under Item 3 shall be considered as fair compensation for all labor, equipment, tools and materials necessary to complete the work as specified, which shall be setting frame and cover to existing grade initially and resetting frame and cover to final grade, removing existing frame and cover where applicable, and all other incidental work relative thereto.
- B. Measurement. Measurement for furnishing and installing manhole frames and covers shall be per each approved installation.
- C. Payment. Payment for furnishing and installing the manhole frames and cover listed in DOCUMENT 00300, FORM FOR GENERAL BID shall be made at the unit price bid per each under Item 3.

### ITEM 4. EXCAVATION AND REPLACEMENT OF UNSUITABLE MATERIAL BELOW TRENCH GRADE AND/OR SUBGRADE

- A. General. The price bid under Item 4 shall be considered as fair compensation for all labor, equipment, tools and materials necessary to complete the work as specified which shall include excavation, sheeting or shoring, dewatering, removal and legal disposal of waste materials, filter cloth, replacement material, backfill, hauling and compaction and any other incidental work relative thereto.
- B. Measurement. Measurement for replacement of unsuitable material below trench grade and/or subgrade shall be made based on the approved volume removed and replaced.
1. Unsuitable material in pipe trenches shall be measured from a point six (6) inches below the invert of pipe to the bottom of the excavation and to a width one (1) foot plus the inside diameter of the pipe for pipes greater than twelve (12) inches in diameter or a total width of three (3) feet for pipes twelve (12) inches or less in diameter.
  2. Unsuitable material encountered below precast concrete manholes shall be measured from a point six (6) inches below the base of structure to the bottom of the excavation and to a width of five (5) feet plus the inside diameter of the structure.

- C. Payment. Payment for replacement of unsuitable material below trench grade and/or subgrade listed in DOCUMENT 00300, FORM FOR GENERAL BID shall be made at the unit price bid per cubic yard under Item 4.
1. No payment will be made for unsuitable material replaced beyond the limits specified unless specifically approved by the Engineer.
  2. No additional payment will be made for unsuitable material replaced below grade where existing utilities are removed and relaid to facilitate the work, within the trench limits defined herein.

#### ITEM 5. EXPERIMENTAL EXCAVATION

- A. General. The price bid under Item 5 shall be considered as fair compensation for all labor, equipment, tools and materials necessary to complete the work as specified, which shall include notification of utility companies, excavation and backfill by machine and by hand, compaction, marking locations, legal disposal of waste materials, furnishing suitable backfill materials, furnishing assistance to the Engineer and all other incidental work relative thereto.
- B. Measurement. Measurement of experimental excavation shall be made based on the actual volume excavated and backfilled as approved by the engineer.
- C. Payment. Payment for experimental excavation listed in DOCUMENT 00300, FORM FOR GENERAL BID shall be made at the unit price bid per cubic yard under Item 5. No separate payments will be made for damages to existing utilities made during the performance of experimental excavation operations.

#### ITEM 6. REPLACEMENT OF UNSUITABLE MATERIAL ABOVE TRENCH GRADE

- A. General. The price bid under Item 6 shall be considered as fair compensation for all labor, equipment, tools and materials necessary to complete the work as specified which shall include loading, hauling, and legal disposal of unsuitable material above trench grade, furnishing suitable backfill materials, and any other incidental work relative thereto.
- B. Measurement. Measurement for replacement of unsuitable material above trench grade shall be made based on the approved volume removed and replaced.
1. Replacement material for backfill of trenches in paved areas, shall be measured and paid for in place, from a point one (1) foot below the existing pavement surface to a point not to extend below the mid diameter of the pipe and a width of three (3) feet plus the inside diameter of the pipe for pipes greater twelve (12) inches in diameter or a total width of four (4) feet for pipes twelve (12) inches and less in diameter.
- C. Payment. Payment for replacement of unsuitable material above trench grade listed in DOCUMENT 00300, FORM FOR GENERAL BID shall be made at the unit price bid per cubic yard under Item 6.
1. No payment will be made for replacement of suitable material above trench grade when suitable excess excavated material is available from other excavations made under this project.
  2. Bedding material placed from a point six inches below the invert of the pipe, to a point one foot above the top of the pipe shall be included for payment under the applicable divisions of Item 6.

#### ITEM 7. MISCELLANEOUS CEMENT CONCRETE

- A. General. The price bid under Item 7 shall be considered as fair compensation for all labor, equipment, tools and materials necessary to complete the work as specified, and any other incidental work relative thereto.
- B. Measurement. Measurement of miscellaneous cement concrete shall be actual cubic yardage placed.
- C. Payment. Payment for miscellaneous cement concrete listed in DOCUMENT 00300, FORM FOR GENERAL BID shall be made at the unit price bid per cubic yard under Item 7.
  - 1. Payment for concrete used for concrete curbs shall be paid under Item 1.
  - 2. Payment for concrete used for manhole bases, joints and inverts shall be paid under Item 2.
  - 3. Payment for concrete used for setting frames and covers shall be paid for under Item 3.
  - 4. Payment for concrete used for providing thrust block shall be paid for under Item 7.

#### ITEM 8. ROAD BASE COURSE MATERIAL

- A. General. The price bid under Item 8 shall be considered as fair compensation for all labor, equipment, tools and materials necessary to complete the work as specified, which shall include transporting, sieve analysis, preparation of sub-grade, placement, grading, compaction and any other incidental work relative thereto.
- B. Measurement. Measurement of gravel, dense graded crushed stone or hardening shall be on the length of trench of which road base course material was placed and as follows:
  - 1. No payment will be made for road base course material when suitable excess excavated material is available from other excavations made under this project.
  - 2. The length of trench shall be defined as being from centerline of manhole to centerline of manhole for sewer lines and from three feet from the face of wye to edge of pavement for service connections and along the centerline of the pipe for the force main.
  - 3. When more than one sewer pipe is installed in the same trench, payment will be based on common trenches.
- C. Payment. Payment for furnishing and placing road base course materials which may include gravel, dense graded crushed stone or hardening listed in DOCUMENT 00300, FORM FOR GENERAL BID shall be made at the unit price bid per linear foot of trench under Item 8 .

#### ITEM 9. UNIFORMED POLICE OFFICERS

- A. General. Payment for the services of police officers shall be made at the prevailing rates of pay for special duty details in effect at the time of services, for each permanent, special or reserve officer and for graduated rank. Uniformed Police officers shall be paid directly by the Contractor.

- B. Measurement. The Contractor shall include in the total bid price the “Allowance” amount specified in the Bid Proposal for providing “Uniformed Police Officers”.
- C. Payment. Payment for furnishing the service of uniformed police officers listed in DOCUMENT 00300, FORM FOR GENERAL BID shall be made under Item 9 as follows:
  - 1. The Contractor is advised that uniformed traffic police are paid for a five (5) hour minimum. If arrangements have been made for uniformed traffic police and inclement weather or other factors prohibit work, the Contractor must contact the Police Department not later than 5:30 a.m. of the day of scheduled work to cancel the police detail.
  - 2. Should the Contractor fail to notify the Police Department as required, he shall assume all costs for the five (5) hour minimum police details not canceled in time.
  - 3. No payment will be made for personnel other than uniformed traffic police.
  - 4. No payment shall be made for overtime for uniformed police officers unless an emergency condition exists. The Contractor shall properly plan and execute his work so that all work in progress can be completed in an eight (8) hour day. If the Contractor elects to work more than eight (8) hours in any one (1) day, or more than forty (40) hours in any one (1) week, he shall assume all premium costs for overtime and will not be reimbursed. If the Owner approves emergency or planned overtime, payment will be made as previously described hereinbefore.

#### ITEM 10. PAVEMENT RESTORATION

- A. General. The prices bid under Item 10 shall be considered as fair compensation for all labor, equipment, tools, and materials necessary to complete the work as specified, which shall include, preparation of subgrade, milling of existing pavement, furnishing and placing bituminous concrete surfacing, maintenance and protection, cutting and recutting of pavement, repainting of temporary and permanent traffic control lines with epoxy paint, reclamation of existing pavement and foundation material, and all other work incidental thereto. Unit price bid under Item 10 shall be based on a minimum material cost of Twenty-Five (\$25.00) Dollars per ton.
- B. Measurement. The methods of measurement for temporary pavement restoration and permanent pavement restoration – milling and paving shall be as follows:
  - 1. Measurement for temporary pavement restoration will be made based on the length along the centerline of the pipe for force main.
  - 2. Measurement for permanent pavement restoration – milling and paving in Town Roads will be made based on the field measured square yards of milling and paving approved by the Engineer.
- C. Payment. Payment for milling existing pavement, furnishing and placing temporary bituminous concrete trench pavement, permanent bituminous concrete, miscellaneous bituminous concrete and adjusting existing manhole frames and covers listed in DOCUMENT 00300, FORM FOR GENERAL BID shall be made under the applicable divisions of Item 10. Payment of temporary pavement restoration for trenches over more than one pipe laid in the same trench shall be treated as separate trenches.
  - 1. Payment for temporary pavement restoration will be made at the unit price per linear foot of trench under the applicable division of Item 10.

2. Payment for permanent pavement restoration – milling and paving in Town Roads will be made at the unit price per square yard under the applicable division of Item 10. The cost of reshaping of the roadway and/or road shoulders, cutbacks, roadway reclamation, regrading the roadway base, compaction of the roadway base, striping with epoxy paint, utility protection and restoration shall be included in the price bid. Payment for the costs associated with the adjustment of gate boxes and similar items owned by gas, water and other such utilities shall be included in the price bid.

#### ITEM 11. UTILITY COMPANY WORK

- A. General. Payment for required or necessary work by utility companies, including but not limited to relocation of existing utilities or utility services, shall be made from the allowance in the bid form for providing such work. All utility company charges will be paid for directly by the Contractor. The allowance will be adjusted accordingly and payment to the Contractor made to cover the actual utility company invoices.
- B. Measurement. The Contractor shall include in the total bid price the “Allowance” amount specified in the Bid Proposal for providing “Utility Company Work”.
- C. Payment. Payment for furnishing the “Utility Company Work” listed in DOCUMENT 00300, FORM FOR GENERAL BID shall be made under Item 11 as follows:
  1. Payment for the actual costs of the utility company invoices associated with this project.
  2. No payment shall be made for work the Contractor performs on existing utilities.

#### ITEM 12. CONTROLLED LOW STRENGTH MATERIAL

- A. General Payment for required or necessary work for furnishing and placing Controlled Low Strength Material including containing damming, protection during settling including bridging, clean up and all other work required as defined in contract documents.
- B. Measurement The method for measurement of Controlled Low Strength Material is Cubic yard.
- C. Payment. Payment for Controlled Low Strength Material listed in DOCUMENT 00300, Form FOR GENERAL BID shall be made at the unit price bid per cubic yard under Item 12.

#### ITEM 13. DUCTILE IRON PIPE INSULATION

- A. General Payment for required or necessary work for furnishing and placing 2” rigid polystyrene insulation board around the 8” Ductile Iron Pipe where required by the Contract Documents and in accordance with Contract Drawing Details. The price shall include the cost of insulation material, placement and any and all bedding placement and compaction in vicinity of insulation board.
- B. Measurement – The method for measurement of Ductile Iron Pipe Insulation is per linear feet of insulation.
- C. Payment. Payment for Ductile Iron Pipe Insulation listed in DOCUMENT 00300, FORM FOR GENERAL BID shall be made at the unit price bid per linear feet under Item 13.

ITEM 14. SEWAGE PUMPING, HAULING AND DISCHARGE

- A. General. Payment for the services of a sewage hauler to pump sewage from the existing wet well of the Hemlock Pumping Station to sewage tankers, transportation to the discharge site, and discharge to the wet well of the Cedar Street Pumping Station during periods of shutdown of the Hemlock Pump Station in order to make final piping connections. Contractor shall make all efforts to provide all final piping connections during a single shutdown period. Sewage pumping, hauling and discharge services shall be paid directly by the Contractor.
- B. Measurement. The Contractor shall include in the total bid price the "Allowance" amount specified in the Bid Proposal for providing "Sewage Pumping, Hauling And Discharge".
- C. Payment. Payment for furnishing the services for sewage pumping, hauling and disposal listed in DOCUMENT 00300, FORM FOR GENERAL BID shall be made under Item 14 as follows:
  - 1. The Contractor is advised that shutdown of the Hemlock Pumping Station for final piping connections shall be made during periods of low sewage flows to minimize total sewage pumping, hauling and disposal requirements..
  - 3. No payment will be made for personnel other than direct costs for a Subcontractor to provide sewage pumping, hauling and discharge services, without markup.
  - 4. No payment shall be made for coordination or supervision of the sewage pumping, hauling and discharge services, the costs thereof being included in other items of work.

END OF SECTION



SECTION 01030  
SPECIAL REQUIREMENTS

PART 1 GENERAL

1.01 SCOPE

- A. The work of this section includes the furnishing of all labor, materials, tools and equipment required by the Contractor to perform special requirements as specified herein.

1.02 MEASUREMENT AND PAYMENT

- A. Measurement and payment for work described in this section will be made in accordance with the provisions of SECTION 01025, MEASUREMENT AND PAYMENT and as follows:
1. All costs associated with locating, maintaining location marks, excavation, refilling, compaction, repairing utilities broken due to the Contractors operations, time delays relative to existing utilities and all other work associated with utilities shall be included for payment under the applicable division of Item 2 in the DOCUMENT 00300, FORM FOR GENERAL BID.
  2. All costs associated with the legal disposal of excess materials shall be borne by the Contractor.
  3. No additional payment will be made to the Contractor for corrective work associated with furnishing and installing bedding materials for refill of excavations carried to grades lower than specified. If inadequate dewatering methods employed by the Contractor cause softening of subgrade areas then the Contractor shall remove the unsuitable material and replace with common fill at no additional cost to the Owner.
  4. No payment will be made for temporary shoring of trench walls utilizing trench boxes and/or steel plates. Where timber or steel sheeting is used and not to be paid for, the Contractor has the option of leaving sheeting in, not ordered left in place, or removing it after it has been cut off one foot above the top of the pipe.
  5. No additional payment will be made for the relocation or support of any obstruction encountered along the line of work.
  6. Water used for puddling and/or jetting shall be provided by the Contractor at his own expense.
  7. All costs associated with repairing settlement of trenches shall be borne by the Contractor.

### 1.03 SPECIFICATIONS AND DRAWINGS

- A. All work shall conform to these specifications and the accompanying drawings entitled:

CONTRACT NO. 40  
CONSTRUCTION PLANS FOR  
HEMLOCK PUMPING STATION FORCE MAIN REPLACEMENT  
FOR THE  
TOWN OF BRANFORD, CONNECTICUT

dated September 2019 consisting of 9 sheets, all made by the Engineer, on file with the Owner, and any changes, drawings, plans, and directions that may be furnished from time to time by the Engineer.

### 1.04 PROGRESS OF WORK

- A. The Contractor shall promptly start and continue actual construction work under this contract with the necessary equipment to properly execute and complete this contract in the specified time. No cessation of Contractor's operations will be allowed without the written approval of the Owner.
- B. The Contractor shall furnish to the Engineer a progress schedule for the work prior to the start of construction.

### 1.05 DETOURS AND ROAD ACCESSIBILITY

- A. The Contractor shall contact the responsible heads of the Fire, Police, and other appropriate governing bodies of the municipality having jurisdiction over all or part of the proposed project, in order to obtain all necessary permits and determine the requirements of these governing bodies, with regards to traffic control.
- B. Wherever detours are permitted, the size, construction and location of signs shall conform with local and state requirements and/or standards. Detour routes shall be adequately posted to assist the motorist to return to his route of travel. Where the roadway under construction is the only means of vehicular access to a particular area, the Contractor shall provide continual access to the area for residents and emergency vehicles.
- C. Detours and Road Accessibility shall be in accordance with SECTION 01570, TRAFFIC MANAGEMENT AND MAINTENANCE.

### 1.06 CHANGE IN AMOUNT OF WORK

- A. The Owner reserves the right to increase or decrease the amount of any item of the work listed as may be found desirable or necessary during the carrying out of this contract and the unit prices quoted in the DOCUMENT 00300, FORM FOR GENERAL BID shall apply without change to such variation in the quantity of each of the bid items to the extent provided by law.

## 1.07 SCOPE OF WORK AND SEQUENCE OF CONSTRUCTION

- A. The scope of this project includes the installation of a sanitary manhole, force main and valves including all associated site work.
- B. The Contractor shall furnish, install, and operate any piping, equipment, and appurtenances necessary to provide temporary services and bypasses needed to maintain uninterrupted service at all times throughout the duration of the project. All existing sanitary sewer service connections and that are interrupted during construction shall be reconnected at the end of each work day. Refer to SECTION 01500-TEMPORARY FACILITIES for bypass pumping requirements.
- C. The Contractor shall install the force main first.
- D. The Contractor's attention is directed to the fact that the work of this contract shall require existing utilities to be bypassed and/or demolished in their entirety. All costs associated with this work shall be paid for by the Contractor at no additional cost to the Owner except as specified in SECTION 01025, MEASUREMENT AND PAYMENT.
- E. For the protection of life and property all backfill operations shall follow closely behind pipe laying. The Contractor shall insure that no excavation be left open, unguarded, or water filled during any period of time when work is not actually in progress. It is the purpose and intent that all excavations and backfill, including consolidation operations, and temporary surfacing within an area be accomplished expeditiously and on a daily basis before proceeding to other work areas.
- F. The Owner reserves the right to schedule the Contractor to construct at any locations within the project area. At the same time the Owner may schedule the suspension of construction at any location.
- G. The Contractor shall meet all of the requirements of SECTION 01140, ENVIRONMENTAL PROTECTION.
- H. Any permits obtained by the Owner are included in DOCUMENT 01864. The Contractor shall meet all requirements/conditions of all permits during the construction of this project. All costs associated with this work shall be borne by the Contractor and included in the prices bid for this project.
- I. The Contractor's attention is directed to the fact that temporary earth support shall be required for force main due to the depth and proximity of existing utilities. Refer to Section 02220, EARTHWORK.
- J. The Contractor's attention is directed to the fact that cleanup/restoration of all disturbed areas shall be completed each and every week or a maximum of 250 LF of pipeline installation, throughout the duration of the project. Cleanup/restoration consists of but not limited to restoration of the area to preconstruction conditions, removal of all excess materials, removal of all pipe, fittings, manholes, etc., removal of all construction equipment and materials, and removal of all construction debris.
- K. The Contractor's attention is directed to the fact that temporary paving, where applicable, is required to be placed at the end of each day throughout the duration of the Project in all areas disturbed by construction. The Contractor shall include all costs associated with this work in the unit cost bid under the applicable division of Item 11. No payment will be made for temporary paving for areas not prepared in accordance with the Contract Documents.

- L. The Contractor's attention is directed to the fact that the project involves roadways which are heavily traveled.
  - 1. The Contractor's attention is directed to the additional requirements of SECTION 01570, TRAFFIC MANAGEMENT AND MAINTENANCE during work within these areas.
  - 2. The Contractor's attention is directed to the fact that no work shall be started on the Project until the Contractor has submitted a detailed Project Schedule, Traffic Management Plan and has met with the Town to discuss the work. In addition, during construction within these areas, the Contractor will be required to update the Project Schedule weekly and inform the Town Engineer's office, Police Department, Fire Department, and Highway Department, in writing of such weekly updates.

#### 1.08 EXISTING UTILITIES

- A. The Contractor shall, in accordance with Chapter 353 of the Acts of 1983, give written notice by certified mail to all utilities at least 72 hours, exclusive of Saturday, Sunday, and legal holidays, before excavation and/or blasting operations. All excavations shall be performed in such manner, and such reasonable precautions taken to avoid damage to pipes, mains, wires or conduits in use. Immediate notification shall be given to the utility when damage occurs.
- B. The location and size of the existing sewers, drains, culverts, water mains, gas mains, cables, service pipes, and other utilities shown on the drawings, were obtained from the results of surveys and existing records and are shown as approximate only, to guide the Contractor in the preparation of his bid. The location and depth of existing utilities will be determined by the various utility companies by marking them out upon the ground and by experimental excavations by the Contractor prior to and as the work progresses. The drawings do not show the exact location and depth of all utilities, nor do they show all utilities or the number of lines for each utility that may be encountered.
- C. The Contractor shall assume that there are existing water, sewer, gas, electric, and other utility connections to each and every building or structure along the line of work, whether they appear on the drawings or not. The Contractor shall notify the proper utility companies and obtain and preserve the location as marked for all existing water, sewer, gas and other utilities that may be encountered along the line of work, until such time as such markings are no longer required.
- D. Experimental trench excavations are to be made prior to commencing pipe laying operations. The Contractor shall dig by hand in advance of the trenching machinery to determine the exact location and depth of each utility to be encountered. Excavating machinery shall be stopped prior to each side of the utility to be crossed and the Contractor shall tunnel by hand under these utilities after he has ascertained their exact location and depth.
- E. All utilities interfered with or damaged shall be properly restored immediately, by the Contractor. The Contractor shall be required to have repair materials on-site for the adjacent existing utilities. The Contractor shall carefully bed, tamp and fully consolidate refill material around and under all existing utilities encountered or crossed unless otherwise shown on the drawings.
- F. The Contractor is advised that protection of all existing utilities in the vicinity of the project, and the assurance of uninterrupted service during the construction period is imperative.

- G. In the event that blasting or other operations undertaken by the Contractor under this contract result in damages to existing utilities, all necessary repairs to damaged utilities shall be executed by the Contractor. The Contractor shall provide all necessary materials, equipment and labor necessary to satisfactorily repair damaged utilities.

#### 1.09 VISIT TO THE SITE

- A. Before submitting a bid, the Contractor shall visit the site, examine existing conditions and thoroughly acquaint himself with the work effort required to perform the work.
- B. The Contractor shall study the drawings and compare the same with the information gathered during his examination of the sites, as no extra compensation will be authorized for extra work caused by his unfamiliarity with the site(s) and/or drawings or the conditions peculiar to this job.

#### 1.10 DISPOSAL OF EXCESS MATERIAL

- A. All surplus and unsuitable soil materials removed from the excavations shall become the property of the Contractor and shall be removed from the site and disposed of off site by the Contractor in accordance with all applicable laws and regulations.

#### 1.11 TECHNICAL SPECIFICATIONS

- A. Where reference is made to ASTM, AWWA, AASHTO specification or other association, it is understood that the latest revisions as of the date of this specification shall apply.

#### 1.12 PERMITS, FEES AND BONDS

- A. The Contractor shall obtain and comply with all required permits, pay all fees and provide all bonds necessary to complete the work as specified. The Contractor shall be solely responsible for performing any necessary acts and providing any materials required in order to comply with any and all terms and conditions set forth in any permits and licenses.
- B. Refer to DOCUMENT 01864, SPECIAL CONDITIONS - PERMITS AND DOCUMENTS for all permits which have been obtained for the project. The Contractor's attention is directed to the fact that all permits and licenses required for this project have not been obtained by the Owner.

#### 1.13 SUBMITTALS

- A. The Contractor shall submit to the Engineer for approval, shop drawings, certificates of compliance and/or catalog cuts for all items to be furnished under this contract. All submittals shall be in compliance with the DOCUMENT 00700, GENERAL CONDITIONS.
- B. The Contractor shall utilize Transmittal Forms supplied by the Engineer for all required submittals.

#### 1.14 BOUNDS AND PROPERTY MARKERS

- A. Prior to construction, the Contractor shall engage an independent Registered Land Surveyor (in the State where the project is located) to provide permanent reference points for all bounds and property markers along the line of the work which may be disturbed during construction. The Contractor shall submit copies of all ties to the bounds and property markers to the Engineer prior to excavation at the site.

- B. Any bounds or markers disturbed by the Contractor shall be replaced utilizing the services of a Registered Land Surveyor in the State where the project is located. The cost of replacing markers disturbed by the Contractor's operations shall be at the Contractor's expense.

#### 1.15 TWENTY-FOUR HOUR EMERGENCY SERVICE

- A. The Contractor shall maintain a 24-hour, 7-day a week telephone service. The Contractor's emergency personnel and equipment shall be within 30 minutes travel time to the project site(s) in order to handle emergency requirements such as, but not limited to, settled trenches, clogged drains, and rain damage and/or any other emergency situation. A list of the personnel and their telephone numbers, beeper numbers, and cell phone numbers, shall be submitted to the Engineer, the Owner and to the local Police and Fire Departments.
- B. This requirement shall apply during the entire length of the project. This list shall be submitted on the Contractor's letterhead and shall state that should an emergency arise during the implementation of this project, these people are to be contacted. The Contractor shall submit this letter to the Engineer prior to initiating construction.

#### 1.16 UNIFORMED POLICE OFFICERS

- A. Payment of uniformed police officers used for pedestrian and vehicle control on this project are to be paid for directly by the Contractor. The Contractor's involvement shall include input as to traffic control requirements and canceling of planned details.
- B. The Contractor is advised that uniformed traffic police are paid a four hour minimum. If arrangements have been made for uniformed traffic police and inclement weather or other factors prohibit work, the Contractor must contact the Police Department no later than 5:30 a.m. of the day of scheduled work to cancel the police detail.
- C. Should the Contractor fail to notify the Police Department as required, the Contractor shall assume all costs for the four hour minimum police details not canceled in time.
- D. Separate billings will be issued by the Police Department for non-canceled police details and the Contractor shall pay such bills on a monthly basis.
- E. No uniformed private security forces shall be employed in this capacity without the express written approval of the Owner.

#### 1.17 HOURS OF OPERATION

- A. The Contractor including all subcontractors, materialmen, and all others relating to this project shall conform to the following work schedule:
  - 1. No outdoor activity on or adjacent to the site will be permitted before 7:00 a.m. or after 4:30 p.m.
  - 2. All outdoor activity shall be confined to Monday through Friday except for emergency conditions which shall be reviewed and approved by the Owner in advance.

#### 1.18 DISPOSAL OF DEBRIS

- A. During the prosecution of the work, the Contractor shall maintain the work site and adjoining areas in a neat and orderly manner and shall not allow the accumulation of

construction debris. A rubbish container shall be kept at the site at all times and be emptied as required to prevent odors and vermin.

- B. The Contractor shall remove all debris from the site and legally dispose of the debris in accordance with Federal/State/Local Regulations. Should the Contractor neglect or refuse to maintain the site free of accumulated debris, the Owner reserves the right to have the service performed by others and cost thereof deducted from monthly progress payment requests.
- C. At the conclusion of the work, the Contractor shall remove and haul away any surplus excavation, broken pavement, lumber, equipment, temporary structures, and any other refuse remaining from the construction operations, and shall leave the entire site of the work in a neat and orderly condition.

#### 1.19 RECORD DRAWINGS

- A. During the course of the work the Contractor and applicable subcontractors shall continually maintain a set of legible marked up prints, drawings and sketches showing any changes made during the construction process. This set of prints shall be incorporated into one complete set of prints by the Contractor following completion of work. The Contractor shall make any revisions required by the Engineer in order to make the drawings complete. After acceptance by the Engineer, the reproducible mylars shall be given to the Engineer.
- B. These record drawings shall be complete in every way and shall show the full extent of the executed work. Special attention shall be given to concealed work which would be difficult to measure at a later date. Change orders, addenda items and field changes should be noted where applicable. Additional specific requirements relative to record drawings may be called for in the individual sections of these specifications.

#### 1.20 CONTINUOUS OPERATING CRITERIA

- A. The Contractor shall conduct his operations in such a manner and sequence which shall neither result in a disruption of the amenities, nor interfere with the functional organization and workings of existing facilities.
- B. The Contractor shall furnish, install and operate any piping, equipment and appurtenances necessary to provide the temporary services, facilities, and bypasses required during construction including, but not limited to, bypass pumping, tanker trucks, flow barriers and diversions. All interrupted existing sanitary sewer service connections and sewer mains shall be reconnected at the end of each work day. All storm drainage piping that is interrupted during construction shall also be reconnected at the end of each work day.
- C. The Owner will operate and maintain all existing systems and equipment. The Contractor shall notify and coordinate with the Owner to effect all temporary modifications in operation required for construction within, or interfacing with, the existing facilities. The Contractor shall be responsible for the operation and maintenance of all proposed facilities until such time as they are accepted by the Owner.

## PART 2 PRODUCTS

Not Applicable.

PART 3 EXECUTION

Not Applicable.

END OF SECTION



SECTION 01090  
REFERENCE STANDARDS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Quality assurance.
- B. Schedule of references.

1.02 QUALITY ASSURANCE

- A. For products or workmanship specified by association, trade, or Federal Standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on date for receiving bids unless otherwise specified in Product Sections.
- C. Should specified reference standards conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.

1.03 SCHEDULE OF REFERENCES

|        |   |
|--------|---|
| AASHTO | American Association of State Highway<br>and Transportation Officials<br>444 North Capitol Street, N.W.<br>Washington, DC 20001 |
| ACI    | American Concrete Institute<br>Box 19150<br>Reford Station<br>Detroit, MI 48219   |
| AI     | Asphalt Institute<br>Asphalt Institute Building<br>College Park, MD 20740   |
| AISC   | American Institute of Steel Construction<br>400 North Michigan Avenue<br>Eighth Floor<br>Chicago, IL 60611                      |
| AISI   | American Iron and Steel Institute<br>1000 16th Street, N.W.<br>Washington, DC 20036   |
| ANSI   | American National Standards Institute<br>1430 Broadway<br>New York, NY 10018  |

|       |  |
|-------|--|
| ASME  | American Society of Mechanical Engineers<br>345 East 47th Street<br>New York, NY 10017   |
| ASTM  | American Society for Testing and Materials<br>1916 Race Street<br>Philadelphia, PA 19103   |
| AWS   | American Welding Society<br>550 LeJeune Road, N.W.<br>Miami, FL 33135  |
| AWWA  | American Water Works Association<br>6666 West Quincy Avenue<br>Denver, CO 80235  |
| CDA   | Copper Development Association<br>57th Floor, Chrysler Building<br>405 Lexington Avenue<br>New York, NY 10174                            |
| CRSI  | Concrete Reinforcing Steel Institute<br>933 Plum Grove Road<br>Schaumburg, IL 60195  |
| EJCDC | Engineers' Joint Contract Documents Committee<br>American Consulting Engineers Council<br>1015 15th Street, N.W.<br>Washington, DC 20005 |
| EJMA  | Expansion Joint Manufacturers Association<br>25 North Broadway<br>Tarrytown, NY 10591  |
| IMIAC | International Masonry Industry All-Weather Council<br>International Masonry Institute<br>815 15th Street, N.W.<br>Washington, DC 20005   |
| NCMA  | National Concrete Masonry Association<br>P.O. Box 781<br>Herndon, VA 22070   |
| PCA   | Portland Cement Association  |

5420 Old Orchard Road  
Skokie, IL 60077

PS                   Product Standard  
                          U. S. Department of Commerce  
                          Washington, DC 20203

PART 2   PRODUCTS - Not Used

PART 3   EXECUTION - Not Used

END OF SECTION



## SECTION 01140

### ENVIRONMENTAL PROTECTION

#### PART 1 GENERAL

##### 1.01 SCOPE

- A. The work covered by this section includes the furnishing of all labor, tools, equipment and materials necessary to perform all work necessary or as may be required to prevent environmental damage and/or pollution to wetland resource areas during and as a result of construction operations under this Contract.
- B. All work shall conform to the requirements stated herein and to the requirements of the regulatory agencies having jurisdiction over the areas of work.

##### 1.02 MEASUREMENT AND PAYMENT

- A. Measurement and payment for work described in this section will be made in accordance with the provisions of SECTION 01025, MEASUREMENT AND PAYMENT.
- B. The Contractor shall comply with all requirements of the Department of Energy and Environmental Protection or their designee at no additional cost to the Owner.

##### 1.03 SUBMITTALS

- A. Shop Drawings and brochures shall be submitted for all items to be furnished in accordance with the provisions of the DOCUMENT 00700, GENERAL CONDITIONS.
- B. Submittals required under this section include, but are not limited to the following:
  - 1. Grass seed.
  - 2. Siltation fence.
  - 3. Woven netting.
  - 4. Geotextile material.
  - 5. Silt Sack
  - 6. Erosion control blanket.

##### 1.04 IMPLEMENTATION AND COMPLIANCE

- A. The Contractor shall meet with the appropriate regulatory agencies, if required, regarding requirements of this project. The Contractor shall familiarize himself with the nature of work to be performed and the extent and peculiarities of the wetland resource areas in the project area as shown or described in the specifications.
- B. The requirements specified hereinbefore shall be considered as minimum, and may be supplemented, altered or deleted in whole or in part by the appropriate regulatory agencies based on actual site conditions. The Contractor is advised that control devices may be required outside of the limits of designated buffer zones to protect wetlands and/or water resource areas, if the proposed construction will tend to alter or be detrimental to these areas.

#### 1.05 AREAS OF WORK

- A. The Contractor shall confine his construction operations to those areas designated or defined by the drawings. The Contractor shall not occupy adjacent public or private property without the express written approval of the Owner, abutters, or the appropriate regulatory agencies having jurisdiction.

#### 1.06 CLEARING, GRUBBING AND STRIPPING

- A. The Contractor shall limit his clearing, grubbing and stripping operations to the minimum necessary to facilitate work. Specific limits of work in wetland resource areas may be individually defined by the Department of Energy and Environmental Protection or their designee.
- B. It is the intent under this Contract to minimize the land area, which is to be exposed and free from vegetation during construction, and the Contractor shall schedule his operations accordingly. In areas where topographical and/or drainage conditions require their use, temporary vegetation, hay bale barriers, or other protective devices shall be used to prevent erosion.
- C. Prior to the start of any work in defined wetland resources or their buffer zones, the Contractor shall install siltation barriers. Unless otherwise recommended by the Department of Energy and Environmental Protection or their designee, siltation fencing in combination with a hay bale barrier shall be used wherever the drawings require a siltation barrier. In cases where field conditions necessitate, a siltation fence may be used without hay bales, if approved in writing by the Department of Environmental Protection or their designee.

#### 1.07 LOCATION AND STORAGE OF MATERIALS

- A. No earthen materials shall be dispersed or stockpiled in any wetland resource area unless permission is obtained from the appropriate regulatory agency. No excavated materials, except that which is to be reused for backfilling, shall be deposited within 100 feet of any watercourse, wetlands area or drainage facility without the express written approval of the appropriate regulatory agency.
- B. Materials rejected by the Engineer for use in the backfilling operation shall be removed and legally disposed of.
- C. Adequate protective measures shall be taken to prevent the erosion of stockpiled material and resultant sedimentation of adjacent watercourses, wetland areas or drainage facilities, during the course of constructing the work.

#### 1.08 PROTECTION OF WATER RESOURCES

- A. The Contractor shall not discharge fuel oil, sewage, septic waste or other deleterious substances into streams, groundwater supplies or wetlands areas. The storage of fuel oil, refueling of equipment and lubrication of equipment shall be restricted to designated areas outside of all wetland resource areas and their buffer zones or areas approved by the Department of Energy and Environmental Protection. The Contractor shall report any spillage of deleterious substance (fuel oil, lubricants, septic waste, etc.) to the Owner and appropriate regulatory agency and appropriate measures taken, as determined by the regulatory agency, to contain and to clean up the affected areas.
- B. Any water that is pumped or bailed from the excavations shall be conveyed by conduit or hose to points of discharge. Water shall be filtered through sedimentation barriers,

constructed in such a manner so as to minimize velocities of discharge and to contain silt. Sedimentation barriers shall be cleaned and/or replaced periodically to ensure effective control and protection of wetlands and water resource areas.

## PART 2 PRODUCTS

### 2.01 MATERIALS

- A. Grass seed for temporary erosion control shall be Annual Ryegrass, unless otherwise specified by the Town, the Department of Energy and Environmental Protection or their designee.
- B. Hay bales for mulching, slope protection, and for use as sedimentation traps in borrow areas and as barriers in drainage swales shall conform to the details shown on the drawings.
- C. Siltation fence shall be made of 15 mil reinforced polypropylene (3.5 ounce per square yard). It shall have a water flow rate of 20 gallons per minute per square foot. The apparent opening size shall be 36-50 (U.S. Standard Sieve). Fabric shall be stable against ultraviolet radiation. Fabric width shall be 3 feet with netting and tension cord on 1-1/2 inch by 1-1/2 inch by 48-inch posts. Siltation fence shall be "Envirofence" Style No. 10550 as manufactured by Mirafi Inc. Charlotte N.C. or equal.
- D. Woven netting or "jute mesh" shall be "Ludlow Soil Saver", as manufactured by the Ludlow Corp., or similar product as manufactured by Advanced Netting Co., or "Jute-Net" as manufactured by Bemis, Inc.
- E. Geotextile material for filter bag shall consist of a non-woven fabric made from polypropylene. The fabric shall be non-rotting, acid- and alkali-resistant and inert to organic chemicals commonly encountered in soils.
- F. Erosion control blanket shall be SC150 as manufactured by North American Green or equal.

## PART 3 EXECUTION

### 3.01 FLOOD FLOWS

- A. The Contractor is advised that stream flows and water levels of wetland and water resource areas may vary substantially due to climatic and seasonal conditions. The Contractor shall be responsible for controlling and handling ground and/or surface water regardless of the volume of water and regardless of whether this flow is due to floodwaters from storms.

### 3.02 WATER CONTROL FACILITIES

- A. The Contractor shall be responsible for constructing and maintaining all necessary channels or other protective works; shall furnish all materials required therefore; and shall furnish, install, maintain, and operate all necessary pumping facilities for dewatering the various parts of the work and for bypassing stream flows and for maintaining other parts of the work free from water as required for construction. After having served their purpose, all control facilities and other temporary protective works shall be removed and or leveled so as not to present an unsightly appearance and interfere in any way with the watercourse or resource areas.
- B. No direct discharge into any wetland and/or water resource will be allowed. Where required, discharge water shall be piped to a filter bag. Such installations shall ensure the inviolability of all natural waterways or other wetland resource areas and shall not cause excessive siltation or negative impacts on wetlands or water resource areas.

- C. Upon completion of work, trapped sediment in the filter bag shall be legally disposed of. Filter bags shall then be legally removed from the construction site. The area previously covered by the filter bag shall be regraded and revegetated.

### 3.03 EROSION AND TURBIDITY CONTROL

- A. The Contractor shall take every precaution to minimize and control erosion and turbidity within the project area. These precautions shall be subject to approval by the Department of Energy and Environmental Protection or their designee and shall include, but not necessarily be limited to, the following:
  - 1. Stockpiles of excavated materials in buffer zones as well as exposed cut and fill slopes shall be kept to minimum gradients whenever possible. During the contract period, these areas shall be protected with hay, mulch, netting, grass seed or combination of the above to slow down the rate of surface run-off and to reduce the volume of suspended solids in the run off water.
  - 2. Siltation barriers shall be staked in place down gradient from all exposed borrow areas or material storage areas in order to reduce the amount of suspended solids in runoff water. The exact location of the siltation barriers may vary from that shown on the drawings and may require adjustment in the field as work progresses. The Contractor shall promptly remove any sedimentation buildup over six inches in depth that accumulates behind the siltation barriers. Barriers shall be checked after every storm and at regular weekly intervals.
  - 3. Siltation barrier shall be installed with wooden stakes in accordance with manufacturer directions. Bottom 6 inches of fabric shall be toed in or backfilled so that top of fabric shall be 2 feet 6 inches above finish grade.

### 3.04 BUFFER ZONES

- A. Protective measures shall be used around catch basins (e.g., filter fabric surrounded by haybales). After project completion, accrued silt shall be removed from the roadway and legally disposed of and catch basin sumps shall be cleaned.
- B. Erosion control barriers adjacent to wetland resources as delineated on the drawings shall be used as previously specified herein.
- C. Any water that is pumped or bailed from excavations shall be discharged to the ground without the direct unfiltered reentry to a wetland resource area. If this is not possible, dewatering fluids shall be filtered through sedimentation basins constructed in such a manner so as to minimize velocities and to minimize the silt content of discharge to streams or other wetland resource areas. Discharges from filter bags to a wetland resource area shall have sheet flow.

END OF SECTION



## SECTION 01200

### PROJECT MEETINGS

#### PART 1 - GENERAL

##### 1.01 DESCRIPTION

- A. This Section specifies requirements for project meetings including but not limited to Pre-Construction Conference and Progress Meetings.
- B. It shall be the responsibility of the Contractor to coordinate work between all subcontractors, sections, and trades required for the proper completion of the Work.

##### 1.02 PRE-CONSTRUCTION CONFERENCE

- A. After the bids have been opened but prior to the start of the construction there will be a pre-construction conference to discuss the phasing and scheduling of the Project. The specific time and place of the conference shall be arranged by the Engineer after the Contract has been awarded.
- B. This pre-construction conference is intended to establish lines of communication between the parties involved, review responsibilities and personnel assignments, establish project schedules, discuss proposed performance methods, and coordinate Work to be performed by subcontractors.
- C. Authorized representatives of the Owner, Engineer and their consultants, the Contractor, its Superintendent and Site Foreman, and all others invited by the Contractor, shall attend the pre-construction conference. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.
- D. Discuss items of significance at the pre-construction conference that could affect progress including at least the following:
  - 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. Review of Davis Bacon and other federal requirements
  - 7. Distribution of Contract Documents

8. Submittal of Shop Drawings, Product Data and Samples
9. Preparation of record documents
10. Use of the premises
11. Office, work and storage, and laydown areas
12. Equipment deliveries
13. Construction safety procedures
14. Environmental health and safety procedures
15. First aid
16. Security
17. Housekeeping
18. Working hours
19. Traffic Control
20. Emergency Vehicle Access to and around work site
21. Environmental protection measures for construction site

### 1.03 PROGRESS MEETINGS

- A. During the course of the Project, the Contractor shall attend weekly progress meetings as scheduled by the Owner. The Owner, based on work progress and activities, may adjust the progress meetings to twice per month or other. The attendance of subcontractors may be required during the progress of the Work. The Contractor's delegate to the meeting shall be prepared and authorized to discuss the following items:
1. Progress of Work/Critical Work Sequencing in relation to Contract Schedule.
  2. Proposed Work activities for forthcoming period.
  3. Resources committed to Contract.
  4. Coordination of Work with others.
  5. Status of procurement of equipment and materials.
  6. Status of Submittals.
  7. Outstanding actions, decisions, or approvals that affect Work activities.
  8. Site access and/or security issues
  9. Hazards and risks
  10. Housekeeping
  11. Quality issues
  12. Potential Claims
  13. Change Orders
  14. Costs, budget, and payment requests
- B. The Contractor shall revise the construction schedule after each progress meeting where revisions to the schedule have been made or recognized and the revised schedule shall be submitted to the Engineer and Owner.

PART 2 - PRODUCTS

Not used.

PART 3 – EXECUTION

Not used.

END OF SECTION



## SECTION 01300

### SUBMITTALS

#### PART 1 - GENERAL

##### 1.01 WORK INCLUDED

- A. The Contractor shall provide the Engineer with submittals as required by the contract documents.

##### 1.02 RELATED WORK

- A. Divisions 1 – 16 of these specifications that require submittals.

#### PART 2 - PRODUCTS

#### NOT USED

#### PART 3 - EXECUTION

##### 3.01 GENERAL

- A. As required by the General Conditions, Contractor shall submit a schedule of shop and working drawing submittals.
- B. The Contractor shall submit the shop and working drawing submittals either electronically or hard copy.

##### 3.02 ELECTRONIC SUBMITTALS

- A. In accordance with the accepted schedule, the Contractor shall submit promptly to the Engineer by email, one electronic copy in Portable Document Format (PDF) of shop or working drawings required as noted in the specifications, of equipment, structural details and materials fabricated especially for this Contract.
- B. Each electronic copy of the shop or working drawing shall be accompanied by the Engineer's standard shop drawing transmittal form, included as Exhibit 1 of this section (use only for electronic submittals), on which is a list of the drawings, descriptions and numbers and the names of the Owner, Project, Contractor and building, equipment or structure. A fillable PDF version of this form will be provided by the Owner for completion. Submittals and submittal cover sheets shall be legibly written, with preference to type written work. Any cover sheets or submittals determined to illegible will be rejected without review.

- C. The Contractor shall receive a shop drawing memorandum with the Engineer's approval or comments via email.

### 3.03 HARD COPY SUBMITTALS

- A. In general, the Engineer will accept and prefer electronic copies of the submittals. However if requested by the Engineer, the Contractor shall submit promptly to the Engineer, by mail the Engineer's Office, six (6) copies each of shop or working drawings required as noted in the specifications, of equipment, structural details and materials fabricated especially for this Contract.
- B. Each shipment of drawings shall be accompanied by the Engineer's (if applicable) standard shop drawing transmittal form on which is a list of the drawings, descriptions and numbers and the names of the Owner, Project, Contractor and building, equipment or structure.

### 3.04 SHOP AND WORKING DRAWINGS

- A. Shop and working drawings shall show the principal dimensions, weight, structural and operating features, space required, clearances, type and/or brand of finish of shop coat, grease fittings, etc., depending on the subject of the drawings. When it is customary to do so, when the dimensions are of particular importance, or when so specified, the drawings shall be certified by the manufacturer or fabricator as correct for this Contract.
- B. All shop and working drawings shall be submitted to the Engineer by and/or through the Contractor, who shall be responsible for obtaining shop and working drawings from his subcontractors and returning reviewed drawings to them. All shop and working drawings shall be prepared on standard size, 24-inch by 36-inch sheets, except those, which are made by changing existing standard shop or working drawings. All drawings shall be clearly marked with the names of the Owner, Project, Contractor and building, equipment or structure to which the drawing applies, and shall be suitably numbered. Each shipment of drawings shall be accompanied by the Engineer's (if applicable) standard shop drawing transmittal form on which is a list of the drawings, descriptions and numbers and the names mentioned above.
- C. Only drawings that have been prepared, checked and corrected by the fabricator should be submitted to the Contractor by his subcontractors and vendors. Prior to submitting drawings to the Engineer, the Contractor shall check thoroughly all such drawings to satisfy himself that the subject matter thereof conforms to the Contract Documents in all respects. Shop drawings shall be reviewed and marked with the date, checker's name and indication of the Contractor's approval, and only then shall be submitted to the Engineer. Shop drawings unsatisfactory to the Contractor shall be returned directly to their source for correction, without submittal to the Engineer. Shop drawings submitted to the Engineer without the Contractor's approval stamp and signature will be rejected. Any deviation from the Contract Documents indicated on

- the shop drawings must be identified on the drawings and in a separate submittal to the Engineer, as required under subsection 6.17 Shop Drawings and Samples; C. Submittal Procedures, Paragraph 3 of the General Conditions.
- D. The Contractor shall be responsible for the prompt submittal and resubmittal, as necessary, of all shop and working drawings so that there will be no delay in the work due to the absence of such drawings.
  - E. The Engineer will review the shop and working drawings as to their general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Corrections of comments made on the drawings during the review do not relieve the Contractor from compliance with requirements of the Contract Documents. The Contractor is responsible for: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner. The review of the shop drawings is general and shall not relieve the Contractor of the responsibility for details of design, dimensions, code compliance, etc., necessary for interfacing with other components, proper fitting and construction of the work required by the Contract and for achieving the specified performance. The Engineer will review submittals two times: once upon original submission and a second time if the Engineer requires a revision or corrections. The Contractor shall reimburse the Owner amounts charged to the Owner by the Engineer for performing any review of a submittal for the third time or greater.
  - F. With few exceptions, shop drawings will be reviewed and returned to the Contractor within 30 days of submittal.
  - G. No material or equipment shall be purchased or fabricated especially for this Contract nor shall the Contractor proceed with any portion of the work, the design and details of which are dependent upon the design and details of equipment or other features for which review is required, until the required shop and working drawings have been submitted and reviewed by the Engineer as to their general conformance and compliance with the project and its Contract Documents. All materials and work involved in the construction shall then be as represented by said drawings.
  - H. Two copies of the shop and working drawings and/or catalog cuts will be returned to the Contractor. The Contractor shall furnish additional copies of such drawings or catalog cuts when he needs more than two copies or when so requested.

### 3.05 SAMPLES

- A. Samples specified in individual Sections include, but are not necessarily limited to, physical examples of the work such as sections of manufactured or fabricated work, small cuts or containers of materials, complete units of repetitively-used products, color/texture/pattern swatches and range sets, specimens for coordination of visual

- effect, graphic symbols, and units of work to be used by the Engineer or Owner for independent inspection and testing, as applicable to the work.
- B. The number of samples submitted shall be as specified. Submittal and processing of samples shall follow the procedures outlined for shop and working drawings unless the specifications call for a field submittal or mock-up.
  - C. Acceptance of samples will be acknowledged via a copy of the transmittal noting status. When samples are not acceptable, prompt resubmittal will be required.

END OF SECTION



SECTION 01310  
SCHEDULES AND REPORTS

PART 1 GENERAL

1.01 SCOPE

- A. The work covered by this section of the specifications includes all labor, equipment, tools, and materials, necessary to complete schedules and reports, as specified herein, and/or as shown on the drawings.

1.02 MEASUREMENT AND PAYMENT

- A. Measurement and payment for the work described in this section will be made in accordance with the provisions of SECTION 01025, MEASUREMENT AND PAYMENT.

1.03 LABORATORY AND FIELD TESTS

- A. Any laboratory or field test of water samples, concrete or other project materials and finished articles shall be made by bureaus, laboratories or agencies approved by the Owner. Copies of all test reports shall be submitted in duplicate by the bureau, laboratory or agency, directly to the Owner and the Engineer. The cost of all testing shall be paid for by the Contractor.
- B. The Contractor shall furnish all sample materials required for these tests and shall deliver them without charge to the testing laboratory or other designated agency when directed by the Engineer.
- C. Any additional test required beyond those required under this specification may be ordered by the Engineer to settle disagreements with the Contractor regarding the quality of work done. If the work is defective, the Contractor shall pay all costs of the extra tests and shall correct the work. If work is satisfactory, the Owner will pay for the additional tests.
- D. Where the technical section of the specifications required that a piece of equipment be tested at the manufacturer's plant or at the site, the cost of such tests shall be included in the price of the equipment.

1.04 RECORD DRAWINGS

- A. The Contractor shall submit one complete set of as-built drawings following the completion of the work. The Contractor shall make any revisions required by the Engineer in order to make the Drawings complete. After acceptance by the Engineer, the drawings shall be given to the Engineer. These record drawings shall be complete in every way and shall show the extent of the executed work. Change orders, addenda items and field changes should be noted where applicable. Additional specific requirements relative to record drawings may be called for in the individual sections of these specifications.

1.05 SUBSURFACE SOIL DATA

- A. Subsurface soil data is presented in Appendix A and is for the general information of the Contractor. The information presented in the specifications and on the drawings pertaining to the subsoil conditions in the vicinity of the work, topography, or other matters is given to assist the Contractor in evaluating the amount and character of the work required hereunder. Such data is represented as being the best information available. The Owner

assumes no responsibility for the accuracy thereof or for any conclusions that the Contractor might draw therefrom.

- B. It is understood and agreed that the Contractor, by careful examination, has satisfied himself as to the nature and location of the work, has examined such logs of test borings and/or records made of underground exploration as may be available, understands the character of equipment and facilities needed preliminary to and during the prosecution of the work, and the general and local conditions, and all other matters which could in any way affect the work under this contract.
- C. No allowance will be made, and no responsibility will be assumed by the Owner for any failure of the Contractor to estimate correctly any difficulty attending the execution of the work.
- D. Jar samples, if available, may be examined by contacting the Engineer.

#### 1.06 DRAWINGS OF EXISTING SEWER SYSTEM

- A. Drawings of the existing sanitary sewer system may be available for examination at the office of the Town Engineer. If drawings are available, the drawings are provided for reference only and the Owner assumes no responsibility for the accuracy of the drawings or for any conclusions that the Contractor might draw from review of the drawings.

PART 2 NOT APPLICABLE

PART 3 NOT APPLICABLE












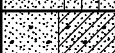












END OF TEXT

## SCHEDULES AND REPORTS

### APPENDIX A

### LOGS OF TEST BORINGS

## UNIFIED SOIL CLASSIFICATION SYSTEM - ASTM D2488

| MAJOR DIVISION  |   | GROUP SYMBOL  | LETTER SYMBOL   | GROUP NAME   |  |
|---|---|---|---|--|--|
| <b>COARSE GRAINED SOILS</b><br>CONTAINS MORE THAN 50% FINES | <b>GRAVEL AND GRAVELLY SOILS</b><br>MORE THAN 50% OF COARSE FRACTION <u>RETAINED</u> ON NO. 4 SIEVE | GRAVEL WITH * <u>5% FINES</u>   |  GW      | Well-graded GRAVEL   |  |
|   |   | GRAVEL WITH * <u>5% FINES</u>   |  GP      | Poorly graded GRAVEL   |  |
|   |   | GRAVEL WITH BETWEEN 5% AND 15% FINES  |  GW-GM   | Well-graded GRAVEL with silt   |  |
|   |   |   |  GW-GC   | Well-graded GRAVEL with clay   |  |
|   |   |   |  GP-GM   | Poorly graded GRAVEL with silt   |  |
|   |   |   |  GP-GC   | Poorly graded GRAVEL with clay   |  |
|   |   |   |  GM      | Silty GRAVEL   |  |
|   |   |   |  GC      | Clayey GRAVEL  |  |
|   |   | <b>SAND AND SANDY SOILS</b><br>MORE THAN 50% OF COARSE FRACTION <u>PASSING</u> ON NO. 4 SIEVE | SAND WITH * <u>5% FINES</u>   |  SW   | Well-graded SAND   |
|   | SAND WITH * <u>5% FINES</u>   |   |  SP      | Poorly graded SAND   |  |
|   | SAND WITH BETWEEN 5% AND 15% FINES  |   |  SW-SM   | Well-graded SAND with silt   |  |
|   |   |   |  SW-SC   | Well-graded SAND with clay   |  |
|   |   |   |  SP-SM  | Poorly graded SAND with silt   |  |
|   |   |   |  SP-SC | Poorly graded SAND with clay   |  |
|   |   |   |  SM    | Silty SAND   |  |
|   |   |   |  SC    | Clayey SAND  |  |
|   | <b>FINE GRAINED SOILS</b><br>CONTAINS MORE THAN 50% FINES   |   | SILT AND CLAY   | LIQUID LIMIT <u>LESS</u> THAN 50   |  ML |
|   |   | LIQUID LIMIT <u>LESS</u> THAN 50  |   |  CL | Lean inorganic CLAY with low plasticity  |
| LIQUID LIMIT <u>LESS</u> THAN 50                            |   |  OL        |   | Organic SILT with low plasticity   |  |
| LIQUID LIMIT <u>GREATER</u> THAN 50                         |   | LIQUID LIMIT <u>GREATER</u> THAN 50   |  MH    | Elastic inorganic SILT with moderate to high plasticity                                |  |
|   |   | LIQUID LIMIT <u>GREATER</u> THAN 50   |  CH    | Fat inorganic CLAY with moderate to high plasticity                                    |  |
|   |   | LIQUID LIMIT <u>GREATER</u> THAN 50   |  OH    | Organic SILT or CLAY with moderate to high plasticity                                  |  |
|   |   | LIQUID LIMIT <u>GREATER</u> THAN 50   |  PT    | PEAT soils with high organic contents  |  |
| HIGHLY ORGANIC SOILS  |   |            | PT  | PEAT soils with high organic contents  |  |

**NOTES:**

- 1) Sample descriptions on the boring logs are based on visual field observations using classification methods of ASTM D2488. Laboratory classifications are in accordance with ASTM D2487, therefore slight differences may exist between the soil descriptions shown on the laboratory sheets and the soil descriptions on the boring logs.
- 2) Solid lines between soil descriptions indicate change in interpreted geologic unit. Dashed lines indicate stratigraphic change within the unit.
- 3) Fines are material passing the U.S. Std. #200 Sieve.

Report: GEO\_CR\_KEY: File S:\PROJECTS\60560960 RIDOT 6-10 INTERCHANGE RECON DB\400-TECHNICAL\440 FIELD\_INVESTIGATIONS\GINT LOGS\6-10 GINT LOGS-DESIGN.GPJ; 8/7/2018 11:47:26 AM

**Project: RIDOT Route 6/10 Interchange Reconstruction**  
**Project Location: Providence, Rhode Island**  
**Project Number: 60560960**

## Key to Log

| Elevation,<br>feet | Depth,<br>feet | SAMPLES |        |                                      |             |                               |             | Graphic Log | MATERIAL DESCRIPTION | REMARKS AND<br>OTHER DETAILS |
|--------------------|----------------|---------|--------|--------------------------------------|-------------|-------------------------------|-------------|-------------|----------------------|------------------------------|
|                    |                | Type    | Number | Sampling<br>Resistance Blow<br>6 in. | Recovery, % | Pocket Pene-<br>trometer, tsf | Graphic Log |             |                      |                              |
| 1                  | 2              | 3       | 4      | 5                                    | 6           | 7                             | 8           | 9           | 10                   |                              |

**COLUMN DESCRIPTIONS**

- 1** **Elevation:** Elevation in feet referenced to mean sea level (MSL) or site datum.
- 2** **Depth:** Depth in feet below the ground surface.
- 3** **Sample Type:** Type of soil sample collected at depth interval shown; sampler symbols are explained below.
- 4** **Sample Number:** Sample identification number.
- 5** **Sampling Resistance:** Number of blows required to advance driven sampler each 6-inch interval, or distance noted, using a 140-lb hammer with a 30-inch drop.
- 6** **Recovery:** Percentage of driven sample length actually recovered.
- 7** **Pocket Penetrometer:** Pocket penetrometer field consistency measurement (estimate of unconfined compressive strength) in tons per square foot (tsf).

- 8** **Graphic Log:** Graphic depiction of subsurface material encountered; typical symbols are explained below.
- 9** **Material Description:** Description of material encountered; may include color, moisture, grain size, and density/consistency.
- 10** **Remarks and Other Details:** Comments and observations regarding drilling or sampling made by driller or field personnel.

- PL** =Plastic Limit, in percent
- LL** =Liquid Limit, in percent
- PI** =Plasticity Index, in percent
- WC** =Moisture Content, in percent
- %G** =Percent Gravel
- %S** =Percent Sand
- %F** =Percent Fines
- %M** =Percent Silt
- %C** =Percent Clay
- %Ash** =Ash content as determined by ASTM D2974
- %Organic** =Organic content as determined by ASTM D2974

**MINOR SOIL TYPE(s)**

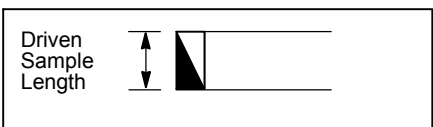
- "trace"** When the soil type's percentage is estimated, using visual/manual procedures, to be between 1 and 5 percent of the total sample.
- "few"** When the soil type's percentage is estimated, using visual/manual procedures, to be greater than 5 percent and less than 15 percent of the total sample.
- "little"** When the soil type's percentage is estimated, using visual/manual procedures, to be greater than 15 percent and less than 30 percent of the total sample.
- "some"** When the soil type's percentage is estimated, using visual/manual procedures, to be greater than 30 percent and less than 50 percent of the total sample.
- "y"** When the soil type's percentage is estimated, using visual/manual procedures, to be greater than 30 percent of the total sample.

**OTHER GRAPHIC SYMBOLS**

- Water level in boring ATD
- Water level in boring at time indicated after drilling
- Inferred or gradational lithologic contact
- ATD At Time of Drilling
- NR Not Recorded
- NA Not Applicable
- bgs Below Ground Surface
- WOH Weight of Hammer
- WOR Weight of Rod
- P Pushed Shelby Tube

**TYPICAL SAMPLER GRAPHIC SYMBOLS**

- SS-1
- Grab Sample
- Shelby Tube



**Project: Hemlock Road Force Main**

**Project Location: Branford, CT**

**Project Number: 60581062**

**Log of Boring SB-1**

Sheet 1 of 1

|                   |                                  |                      |                                     |                         |                      |
|-------------------|----------------------------------|----------------------|-------------------------------------|-------------------------|----------------------|
| Date(s) Drilled   | 9/24/2018 to 9/24/2018           | Logged By            | Connor Halloran                     | Checked By              | P. Jarast            |
| Drilling Method   | Hollow Stem Auger (HSA)          | Drill Bit Size/Type  | 2.25" I.D.                          | Total Depth of Borehole | 20.0' bgs            |
| Drill Rig Type    | Truck Mounted                    | Drilling Contractor  | Associated Drilling Co. (J. Lloret) | Surface Elevation       |                      |
| Borehole Backfill | Cuttings and cold patch asphalt  | Sampling Method(s)   | Split barrel                        | Hammer Data             | 140 lb./30 in. Donut |
| Boring Location   | Hemlock Force main, Branford, CT | Groundwater Level(s) | 7.5 ft                              |                         |                      |

| Depth, feet | SAMPLES |        |                                |                           |             |                          | Graphic Log  | MATERIAL DESCRIPTION           | REMARKS AND OTHER DETAILS |
|-------------|---------|--------|--------------------------------|---------------------------|-------------|--------------------------|--|--------------------------------|---------------------------|
|             | Type    | Number | Sampling Resistance Blow/6 in. | SPT N-Value (Uncorrected) | Recovery, % | Pocket Penetrometer, tsf |  |                                |                           |
| 0           |         |        |                                |                           |             |                          | 0.0<br>Top 6": Pavement<br>0.5<br>6" Stone<br>1.0<br>1.5   |                                |                           |
| 1.5         | SS-1    | 7      | 17                             | 35                        | 33          |                          | Dark brown, Poorly graded SAND with Gravel (SP), fine to medium grained sand, little fine to coarse grained gravel [FILL]                            |                                |                           |
| 2.5         |         | 18     |                                |                           |             |                          | Dark brown, Silty SAND (SM), fine to coarse grained sand, few fine grained gravel, little fines, moist [FILL]  |                                |                           |
| 3.5         |         | 13     |                                |                           |             |                          |  |                                |                           |
| 5           | SS-2    | 4      | 5                              | 8                         | 8           |                          | Dark brown to reddish brown, Silty SAND (SM), fine to coarse grained sand, little fines, few fine grained gravel, moist [FILL]                       |                                |                           |
| 6           |         | 3      |                                |                           |             |                          |  |                                |                           |
| 7           |         | 4      |                                |                           |             |                          |  |                                |                           |
| 10          | SS-3    | 6      | 6                              | 16                        | 50          |                          | Dark brown to reddish brown, Silty SAND with Gravel(SM), fine to coarse grained sand, little fine to coarse grained gravel, little fines, wet [FILL] |                                |                           |
| 11          |         | 10     |                                |                           |             |                          |  |                                |                           |
| 12          |         | 14     |                                |                           |             |                          |  |                                |                           |
| 15          | SS-4    | 12     | 22                             | 60                        | 63          |                          | Dark brown to reddish brown, Sandy CLAY (CL), little fine to coarse grained sand, wet [Natural soil]   |                                |                           |
| 16          |         | 38     |                                |                           |             |                          |  |                                |                           |
| 17          |         | 65     |                                |                           |             |                          |  |                                |                           |
| 18          | SS-5    | 29     | 80/6"                          | R                         | 83          |                          | Similar to SS-4, trace fine to coarse grained gravel, wet [Natural Soil]   |                                |                           |
| 19          |         |        |                                |                           |             |                          | Augered down to 20 ft through hard material, possible sand stone   |                                |                           |
| 20          |         |        |                                |                           |             |                          |  | Boring Terminated at 20 ft bgs |                           |

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**Project: Hemlock Road Force Main**

**Project Location: Branford, CT**

**Project Number: 60581062**

**Log of Boring SB-2**

Sheet 1 of 1

|                   |                                  |                      |                                     |                         |                      |
|-------------------|----------------------------------|----------------------|-------------------------------------|-------------------------|----------------------|
| Date(s) Drilled   | 9/24/2018 to 9/24/2018           | Logged By            | Connor Halloran                     | Checked By              | P. Jarast            |
| Drilling Method   | Hollow Stem Auger (HSA)          | Drill Bit Size/Type  | 2.25" I.D.                          | Total Depth of Borehole | 20.0' bgs            |
| Drill Rig Type    | Truck Mounted                    | Drilling Contractor  | Associated Drilling Co. (J. Lloret) | Surface Elevation       |                      |
| Borehole Backfill | Cuttings and cold patch asphalt  | Sampling Method(s)   | Split barrel                        | Hammer Data             | 140 lb./30 in. Donut |
| Boring Location   | Hemlock Force main, Branford, CT | Groundwater Level(s) | Not Encountered                     |                         |                      |

| Depth, feet | SAMPLES |        |                                |                           |             |                          | Graphic Log       | MATERIAL DESCRIPTION   | REMARKS AND OTHER DETAILS |
|-------------|---------|--------|--------------------------------|---------------------------|-------------|--------------------------|-------------------|--|---------------------------|
|             | Type    | Number | Sampling Resistance Blow/6 ft. | SPT N-Value (Uncorrected) | Recovery, % | Pocket Penetrometer, tsf |                   |  |                           |
| 0           |         |        |                                |                           |             |                          | 0.0<br>0.5<br>1.0 | Top 6": Pavement<br>6" Processed Gravel  |                           |
| 5           | SS-1    |        | 7<br>9<br>16<br>40             | 25                        | 33          |                          |                   | Dark brown, Poorly graded SAND with Silt and Gravel (SP-SM), fine to medium grained sand, little fine to coarse grained gravel, few fines [FILL]   |                           |
| 5           | SS-2    |        | 3<br>11<br>12<br>14            | 23                        | 33          |                          |                   | Dark brown to reddish brown, Silty Sand (SM), fine to medium grained sand, little fines, few plastic fines, moist [FILL]   |                           |
| 10          | SS-3    |        | 8<br>18<br>20<br>35            | 38                        | 50          |                          |                   | Brown to reddish brown, Silty SAND with Gravel (SM), fine to coarse grained sand, little fines, few plastic fines, some layers of light gray, fine to coarse grained sand [Natural soil] |                           |
| 15          | SS-4    |        | 36<br>60/4"                    | R                         | 100         |                          |                   | Top: Brown to reddish brown, Sandy CLAY (CL), fine grained sand [Natural soil]   |                           |
| 18          | SS-5    |        | 30<br>70/5"                    | R                         | 91          |                          |                   | Half gray, half reddish brown, Sandy CLAY (CL), some fine to coarse grained sand, little silt layers [til]   |                           |
| 20          |         |        |                                |                           |             |                          |                   | Augered down to 20 ft.<br>Boring Terminated at 20 ft bgs   |                           |

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**Project: Hemlock Road Force Main**

**Project Location: Branford, CT**

**Project Number: 60581062**

**Log of Boring SB-3**

Sheet 1 of 1

|                   |                                  |                      |                                     |                         |                      |
|-------------------|----------------------------------|----------------------|-------------------------------------|-------------------------|----------------------|
| Date(s) Drilled   | 9/24/2018 to 9/24/2018           | Logged By            | Connor Halloran                     | Checked By              | P. Jarast            |
| Drilling Method   | Hollow Stem Auger (HSA)          | Drill Bit Size/Type  | 2.25" I.D.                          | Total Depth of Borehole | 20.0' bgs            |
| Drill Rig Type    | Truck Mounted                    | Drilling Contractor  | Associated Drilling Co. (J. Lloret) | Surface Elevation       |                      |
| Borehole Backfill | Cuttings and cold patch asphalt  | Sampling Method(s)   | Split barrel                        | Hammer Data             | 140 lb./30 in. Donut |
| Boring Location   | Hemlock Force main, Branford, CT | Groundwater Level(s) | Not Encountered                     |                         |                      |

| Depth, feet | SAMPLES |        |                                |                           |             | Graphic Log | MATERIAL DESCRIPTION  | REMARKS AND OTHER DETAILS |
|-------------|---------|--------|--------------------------------|---------------------------|-------------|-------------|---|---------------------------|
|             | Type    | Number | Sampling Resistance Blow/6 ft. | SPT N-Value (Uncorrected) | Recovery, % |             |   |                           |
| 0           |         |        |                                |                           |             |             | 0.0<br>Top 6": Asphalt Pavement<br>0.5<br>6" Processed Gravel<br>1.0  |                           |
|             | SS-1    |        | 26<br>25<br>17<br>28           | 42                        | 50          |             | Top: Black, processed Gravel [FILL]<br>Bottom: Dark to light brown, Silty SAND with Gravel (SM), fine to coarse grained sand, little fine to coarse grained gravel [FILL]                           |                           |
| 5           | SS-2    |        | 5<br>3<br>3<br>3               | 6                         | 38          |             | Medium brown, Silty SAND with Gravel (SM), fine to medium grained sand, few fine to coarse grained gravel, little fines [FILL]  |                           |
| 10          | SS-3    |        | 11<br>10<br>9<br>8             | 19                        | 42          |             | Brown to reddish brown, Silty SAND with Gravel (SM), fine to medium grained sand, few fine to coarse grained gravel [Natural soil]  |                           |
| 15          | SS-4    |        | 14<br>36<br>34<br>44           | 70                        | 42          |             | Brown to reddish brown, flashy, Sandy CLAY (CL), breaks apart easily, little fine to medium grained sand, moist [till]  |                           |
| 20          | SS-5    |        | 31<br>43<br>81/6"              | R                         | 50          |             | Brown to reddish brown, flashy, Sandy CLAY (CL), breaks apart easily, little fine to medium grained sand, few silt layers [till]<br>Augered down to 20 ft<br>20.0<br>Boring Terminated at 20 ft bgs |                           |

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**Project: Hemlock Road Force Main**

**Project Location: Branford, CT**

**Project Number: 60581062**

**Log of Boring SB-4**

Sheet 1 of 1

|                   |                                  |                      |                                     |                         |                      |
|-------------------|----------------------------------|----------------------|-------------------------------------|-------------------------|----------------------|
| Date(s) Drilled   | 9/24/2018 to 9/24/2018           | Logged By            | Connor Halloran                     | Checked By              | P. Jarast            |
| Drilling Method   | Hollow Stem Auger (HSA)          | Drill Bit Size/Type  | 2.25" I.D.                          | Total Depth of Borehole | 20.0' bgs            |
| Drill Rig Type    | Truck Mounted                    | Drilling Contractor  | Associated Drilling Co. (J. Lloret) | Surface Elevation       |                      |
| Borehole Backfill | Cuttings and cold patch asphalt  | Sampling Method(s)   | Split barrel                        | Hammer Data             | 140 lb./30 in. Donut |
| Boring Location   | Hemlock Force main, Branford, CT | Groundwater Level(s) | Not Encountered                     |                         |                      |

| Depth, feet | SAMPLES |        |                                |                           |             |                          | Graphic Log   | MATERIAL DESCRIPTION | REMARKS AND OTHER DETAILS |
|-------------|---------|--------|--------------------------------|---------------------------|-------------|--------------------------|---|----------------------|---------------------------|
|             | Type    | Number | Sampling Resistance Blow/6 ft. | SPT N-Value (Uncorrected) | Recovery, % | Pocket Penetrometer, tsf |   |                      |                           |
| 0           |         |        |                                |                           |             |                          | 0.0<br>Top 6": Asphalt Pavement<br>0.5<br>6" Processed Gravel<br>1.0  |                      |                           |
|             | SS-1    |        | 22<br>35<br>48<br>46           | 83                        | 54          |                          | Medium dark gray to brown, Poorly graded SAND (SP), fine to medium grained sand, few light gray flashy fine to coarse grained gravel [Natural soil] |                      |                           |
| 5           | SS-2    |        | 11<br>14<br>22<br>25           | 36                        | 58          |                          | 5.0<br>Dark brown, Silty SAND with Gravel (SM), fine to medium grained sand [Natural Soil]  |                      |                           |
| 10          | SS-3    |        | 12<br>30<br>50<br>60           | 80                        | 75          |                          | Brown to reddish brown, Silty SAND (SM), fine grained sand, few fine to coarse grained gravel, moist [Natural soil]                                 |                      |                           |
| 15          | SS-4    |        | 7<br>35<br>80/5"               | R                         | 82          |                          | Brown, reddish brown, Silty SAND (SM), fine to medium grained sand, black and white coarse grained sand, some glacial till [Natural soil]           |                      |                           |
|             | SS-5    |        | 70/4"                          | R                         | 100         |                          | 18.0<br>Brown to reddish brown, flashy Sandy CLAY (CL), some fine to medium grained sand [Natural soil]<br>20.0<br>Augered down to 20 ft            |                      |                           |
| 20          |         |        |                                |                           |             |                          | Boring Terminated at 20 ft bgs  |                      |                           |

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**Project: Hemlock Road Force Main**

**Project Location: Branford, CT**

**Project Number: 60581062**

**Log of Boring SB-5**

Sheet 1 of 1

|                   |                                  |                      |                                     |                         |                      |
|-------------------|----------------------------------|----------------------|-------------------------------------|-------------------------|----------------------|
| Date(s) Drilled   | 9/24/2018 to 9/24/2018           | Logged By            | Connor Halloran                     | Checked By              | P. Jarast            |
| Drilling Method   | Hollow Stem Auger (HSA)          | Drill Bit Size/Type  | 2.25" I.D.                          | Total Depth of Borehole | 18.5' bgs            |
| Drill Rig Type    | Truck Mounted                    | Drilling Contractor  | Associated Drilling Co. (J. Lloret) | Surface Elevation       |                      |
| Borehole Backfill | Cuttings and cold patch asphalt  | Sampling Method(s)   | Split barrel                        | Hammer Data             | 140 lb./30 in. Donut |
| Boring Location   | Hemlock Force main, Branford, CT | Groundwater Level(s) | Not Encountered                     |                         |                      |

Report: GEO\_CR\_WITH\_N\_VALUE; File J:\AE\_DEPTS\GEO\PROJECT FILES (GEOTECH)\HEMLOCK ROAD FORCE MAIN BRANFORD CT\HEMLOCK FORCE MAIN.GPJ; 10/10/2018 2:51:56 PM

| Depth, feet | SAMPLES |        |                                |                           |             | Graphic Log | MATERIAL DESCRIPTION  | REMARKS AND OTHER DETAILS |
|-------------|---------|--------|--------------------------------|---------------------------|-------------|-------------|---|---------------------------|
|             | Type    | Number | Sampling Resistance Blow/6 ft. | SPT N-Value (Uncorrected) | Recovery, % |             |   |                           |
| 0           |         |        |                                |                           |             |             | 0.0<br>Top 6": Asphalt Pavement   |                           |
|             |         |        |                                |                           |             |             | 0.5<br>6" Processed Gravel  |                           |
|             | SS-1    |        | 10<br>20<br>80/5"              | R                         | 59          |             | 1.0<br>Brown to reddish brown, Silty SAND with Gravel (SM), fine to medium grained sand, some gray coarse grained gravel [FILL]               |                           |
| 5           | SS-2    |        | 21<br>60<br>50/3"              | R                         | 93          |             | 5.0<br>Brown to reddish brown, Silty SAND (SM), fine to medium grained sand, some fine to coarse grained gravel, moist [Natural Soil]         |                           |
| 10          | SS-3    |        | 34<br>60/6"                    | R                         | 100         |             | 10.0<br>Brown to reddish brown, Silty SAND with Gravel (SM), fine to coarse grained sand, little fine to coarse grained gravel [Natural soil] |                           |
| 15          | SS-4    |        | 70/6"                          | R                         | 100         |             | 15.0<br>Brown to reddish brown, Clayey SAND (SC), fine to medium grained sand, little fines, moist to wet [Natural soil]                      |                           |
|             | SS-5    |        | 80/5"                          | R                         | 99          |             | 18.0<br>Brown to reddish brown, Sandy CLAY (CL), some fine to medium grained sand, moist to wet   |                           |
|             |         |        |                                |                           |             |             | 18.5<br>Boring Terminated at 18.5 ft bgs  |                           |

**Project: Hemlock Road Force Main**

**Project Location: Branford, CT**

**Project Number: 60581062**

**Log of Boring SB-6**

Sheet 1 of 1

|                   |                                  |                      |                                     |                         |                      |
|-------------------|----------------------------------|----------------------|-------------------------------------|-------------------------|----------------------|
| Date(s) Drilled   | 9/24/2018 to 9/24/2018           | Logged By            | Connor Halloran                     | Checked By              | P. Jarast            |
| Drilling Method   | Hollow Stem Auger (HSA)          | Drill Bit Size/Type  | 2.25" I.D.                          | Total Depth of Borehole | 19.5' bgs            |
| Drill Rig Type    | Truck Mounted                    | Drilling Contractor  | Associated Drilling Co. (J. Lloret) | Surface Elevation       |                      |
| Borehole Backfill | Cuttings and cold patch asphalt  | Sampling Method(s)   | Split barrel                        | Hammer Data             | 140 lb./30 in. Donut |
| Boring Location   | Hemlock Force main, Branford, CT | Groundwater Level(s) | Not Encountered                     |                         |                      |

| Depth, feet | SAMPLES |                        |                                |                           |             |                          | Graphic Log       | MATERIAL DESCRIPTION  | REMARKS AND OTHER DETAILS |
|-------------|---------|------------------------|--------------------------------|---------------------------|-------------|--------------------------|-------------------|---|---------------------------|
|             | Type    | Number                 | Sampling Resistance Blow/6 ft. | SPT N-Value (Uncorrected) | Recovery, % | Pocket Penetrometer, tsf |                   |   |                           |
| 0           |         |                        |                                |                           |             |                          | 0.0<br>0.5<br>1.0 | Top 6": Asphalt Pavement<br>6" Gravel base  |                           |
|             | SS-1    | 7<br>6<br>9<br>8       | 15                             | 33                        |             |                          |                   | Black to dark brown, Poorly graded SAND with Gravel (SP), fine to coarse grained sand, few fine to coarse grained gravel [FILL]         |                           |
| 5           | SS-2    | 50<br>28<br>27<br>32   | 55                             | 42                        |             |                          |                   | Similar to SS-1 [FILL]  |                           |
| 10          | SS-3    | 9<br>24<br>23<br>70/2" | 47                             | 59                        |             |                          | 10.0              | Brown to reddish brown, Silty SAND (SM), fine to medium grained sand, fine to coarse grained gravel, little fines, moist [Natural soil] |                           |
| 15          | SS-4    | 47<br>50/2"            | R                              | 124                       |             |                          |                   | Similar to SS-3 [Natural soil]  |                           |
|             | SS-5    | 30<br>50<br>65/6"      | R                              | 44                        |             |                          | 18.0<br>19.5      | Light brown, flashy Clayey SAND (SC), fine to medium grained sand, little fines [fill]  |                           |
|             |         |                        |                                |                           |             |                          |                   | Boring Terminated at 19.5 ft bgs  |                           |

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**Project: Hemlock Road Force Main**

**Project Location: Branford, CT**

**Project Number: 60581062**

**Log of Boring SB-7**

Sheet 1 of 1

|                   |                                  |                      |                                     |                         |                      |
|-------------------|----------------------------------|----------------------|-------------------------------------|-------------------------|----------------------|
| Date(s) Drilled   | 9/24/2018 to 9/24/2018           | Logged By            | Connor Halloran                     | Checked By              | P. Jarast            |
| Drilling Method   | Hollow Stem Auger (HSA)          | Drill Bit Size/Type  | 2.25" I.D.                          | Total Depth of Borehole | 18.7' bgs            |
| Drill Rig Type    | Truck Mounted                    | Drilling Contractor  | Associated Drilling Co. (J. Lloret) | Surface Elevation       |                      |
| Borehole Backfill | Cuttings and cold patch asphalt  | Sampling Method(s)   | Split barrel                        | Hammer Data             | 140 lb./30 in. Donut |
| Boring Location   | Hemlock Force main, Branford, CT | Groundwater Level(s) | Not Encountered                     |                         |                      |

| Depth, feet | SAMPLES |                     |                                |                           |             |                          | Graphic Log       | MATERIAL DESCRIPTION   | REMARKS AND OTHER DETAILS |
|-------------|---------|---------------------|--------------------------------|---------------------------|-------------|--------------------------|-------------------|--|---------------------------|
|             | Type    | Number              | Sampling Resistance Blow/6 ft. | SPT N-Value (Uncorrected) | Recovery, % | Pocket Penetrometer, tsf |                   |  |                           |
| 0           |         |                     |                                |                           |             |                          | 0.0<br>0.5<br>1.0 | Top 6": Pavement<br>6" Processed Gravel  |                           |
|             | SS-1    | 19<br>8<br>19<br>19 | 27                             | 42                        |             |                          |                   | Brown to reddish brown, Silty SAND with Gravel (SM), fine to medium grained sand, few fine to coarse grained gravel, little fines [FILL]   |                           |
| 5           | SS-2    | 20<br>28<br>50/6"   | R                              | 56                        |             |                          | 5.0               | Brown to reddish brown, Silty SAND (SM), fine to medium grained sand, fine to coarse grained gravel [Natural soil]                         |                           |
| 10          | SS-3    | 37<br>50/4"         | R                              | 100                       |             |                          | 10.0              | Brown to reddish brown, Silty SAND (SM), fine to medium grained sand, little fines [Natural soil]  |                           |
| 15          | SS-4    | 50/5"               | R                              | 99                        |             |                          | 15.0              | Dark brown to reddish brown, Clayey SAND (SC), fine to medium grained sand, few fine to coarse grained gravel, little fines [Natural soil] |                           |
|             | SS-5    | 35<br>50/2"         | R                              | 100                       |             |                          | 18.7              | Similar to SS-4  |                           |
|             |         |                     |                                |                           |             |                          |                   | Boring Terminated at 18.67 ft bgs  |                           |

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SECTION 01500

TEMPORARY FACILITIES

PART 1 GENERAL

1.01 DESCRIPTION

- A. The work of this Section shall consist of providing the following temporary facilities:
  - 1. Water
  - 2. Sanitary Facilities
  - 3. Drainage

PART 2 PRODUCTS

2.01 TEMPORARY WATER

- A. Drinking water shall be provided by the Contractor for his personnel and the personnel of his sub-contractors.
  - 1. Drinking water shall be tested and approved by the State Agency as "safe drinking water suitable for human consumption".
  - 2. Contractor shall furnish water for construction.

2.02 TEMPORARY SANITARY FACILITIES

- A. Sanitary conveniences, properly screened from public observation, for the use of all persons employed on the work and beginning with the first man engaged in preliminary operations, shall be provided and maintained by the Contractor in sufficient numbers through the completion of the work.
  - 1. Contractor shall be diligent in maintaining sanitary facilities; pumping weekly, or more often as required to protect soil and water quality.

2.03 TEMPORARY DRAINAGE

- A. Temporary drainage, as necessary shall be provided by the Contractor to keep the working area dry.

PART 3 EXECUTION (Not Applicable)

END OF SECTION



## SECTION 01570

### TRAFFIC MANAGEMENT AND MAINTENANCE

#### PART 1 GENERAL

##### 1.01 SCOPE

- A. The work under this section includes furnishing all engineering, materials, labor, and equipment required for traffic management and maintenance on state highways and municipal roadways within the limits of construction under this contract.
- B. All practices and traffic control devices shall conform to the relevant provisions of the Connecticut Department of Transportation (hereinafter called State) Standard Specifications for Highways & Bridges (latest edition) and the Manual on Uniform Traffic Control Devices (MUTCD), including latest amendments and addenda.
- C. The Contractor's responsibilities shall include, but not be limited to, the following:
  - 1. Maintain at a minimum, two way alternating traffic at all times through the project area.
  - 2. Develop a traffic management plan to be reviewed and approved by the Owner, state, local, and/or jurisdictional agencies as appropriate. The traffic management plan shall meet with standard practices of the above references, requirements of this specification and Contract Drawings, and special requirements required by the project.
  - 3. Furnish adequate notice to police and fire departments, public transportation authorities, and school departments/districts of the proposed traffic maintenance plan including, but not limited to, detours, lane closures, and alternate routes.
  - 4. Furnish, erect and maintain traffic control devices, as required by the traffic maintenance plan. The Contractor shall provide traffic control devices including lights, markings, barricades, warning signs, and all other safety precautions necessary to protect streets, sidewalks, access to adjoining property, and the traveling public within the area of the construction.
  - 5. Remove, replace and/or reposition all traffic control devices, as necessary.

##### 1.02 MEASUREMENT AND PAYMENT

- A. Measurement and payment for the work described in this section shall be made in accordance with the provisions of SECTION 01025, MEASUREMENT AND PAYMENT, and as follows:
  - 1. Any traffic control devices provided under this section which are lost, stolen, destroyed or deemed unacceptable while in use on the project, shall be immediately replaced by the Contractor at no additional cost to the Owner.
  - 2. Uniformed Police Officers shall be paid for in accordance with SECTION 01025, MEASUREMENT AND PAYMENT.

##### 1.03 SUBMITTALS

- A. Shop Drawings and brochures shall be submitted for all items to be furnished in accordance with the provisions of the DOCUMENT 00700, GENERAL CONDITIONS.
- B. Submittals required under this section include, but are not limited to the following:
  - 1. Traffic Management Plan.

#### 1.04 JOB CONDITIONS

- A. The Contractor shall notify the Owner, state, local, and/or jurisdictional agencies well in advance of commencing construction. The Contractor shall arrange all detours, partial road closures, and alternate traffic patterns. The Contractor shall inform emergency departments on the daily status of project roadways.
- B. The Contractor shall arrange for the services of uniformed police officers, as required to protect and facilitate the flow of vehicular and pedestrian traffic through the construction work zone.
- C. As necessary, during winter months, the Contractor shall be responsible for snow removal and prevention of icing conditions within active construction work zones, and shall assist local or state agencies in clearing roads used as detour routes to facilitate uninterrupted movement of traffic.

### PART 2 PRODUCTS

#### 2.01 SAFETY CONTROLS AND SIGNING FOR CONSTRUCTION OPERATIONS

- A. All signs, barricades and drums shall have reflective sheeting, in accordance with the State Standard Specifications.
- B. The Contractor shall use sandbags or provide other suitable means to weigh down Portable Breakaway Barricades Type III, to minimize the disturbance of barricades by vandals.
- C. Warning and directional signs used on the project shall be furnished, erected and maintained throughout the construction period by the Contractor. A partial representative list of possible construction signs and their sizes are shown on the Contract Drawings.
- D. All traffic control devices not conforming in type, composition, and size to the standards specified herein shall not be used under this contract.
- E. All erected signs not consistent with the use of the roadway shall be removed or covered each day by the Contractor.

#### 2.02 FLAGS FOR ADVANCE WARNING SIGNS

- A. Standard orange or red-orange flags (16 inch by 16 inch minimum) shall be mounted on all advance work area signs. Flags shall be mounted as shown in MUTCD and shall not interfere with a clear view of the sign face.

#### 2.03 TEMPORARY PRECAST CONCRETE BARRIER

- A. Temporary Precast Concrete Barriers shall conform to the State Standard Specifications for Highways and Bridges.



- B. The Contractor shall furnish, set up, move, maintain, and remove Temporary Precast Concrete Barriers, when positive traffic barriers are needed for traffic control and safety in construction zones.
- C. Each run or bay of Temporary Precast Concrete Barrier units shall be installed and fastened together to form a continuous chain, in accordance with the requirements of the state or local agencies having jurisdiction.

#### 2.04 PORTABLE BREAKAWAY BARRICADE TYPE III

- A. Portable Breakaway Barricades, Type III shall be a 4 foot unit and conform to the latest edition of the State Construction Standards, as shown on the Contract Drawings at the end of this section and any additional requirements of this specification.
- B. Reflectorized sheeting shall conform to materials of the State Standard Specifications. Alternating 6 inch wide stripes shall be orange and white and shall slope downward at 45 degrees toward the end by which traffic is to pass. Pipe shall be Polyvinyl Chloride (PVC) pressure rated SDR 26 conforming to ASTM D2241. Fittings may be PVC conforming to ASTM D2665 or Acrylonitrile Butadiene Styrene (ABS) conforming to ASTM D2661 (Drainage Waste and Vent).
- C. The Contractor shall furnish, set up, move, maintain (in good and serviceable condition), and remove Portable Breakaway Barricades Type III, as required by the performance of this work or as may be required by jurisdictional authorities, at no additional cost to the Owner.

#### 2.05 PORTABLE BARRIER FENCE

- A. Construction of Portable Barrier Fences shall be as shown on the Contract Drawings. The Contractor shall include the necessary signs, reflectors, and all incidental equipment in order to provide the portable barrier fence, complete in place.

#### 2.06 REFLECTORIZED DRUMS WITH OR WITHOUT WARNING LIGHTS (TYPE A OR TYPE C)

- A. Reflectorized drums shall conform to materials of the State Standard Specification and shall be as shown on the Contract Drawings. Other drum-type products providing equivalent target value and stability, and accepted by the State, may be used.
- B. Drums shall be used in the protection of driveways, utility structures, and pedestrian control and safety throughout the construction period.
- C. Warning lights shall conform to the MUTCD Subsection 6E-5 for Type A or Type C. Drums shall be maintained in a satisfactory manner including the removal of dirt or road film that may cause a reduction in reflective efficiency. Type A, Low Intensity Flashing Warning Lights, mounted on drums, shall be used to continually warn drivers that they are approaching or proceeding in a hazardous area. Type C, Steady-Burn Lights, placed in a series on drums, shall be used to delineate the proper vehicle path through construction areas (which require changing patterns of traffic movement).
- D. The Contractor shall furnish, set up, move, maintain (in good and serviceable condition), and remove reflectorized drums with or without warning lights as required by the performance of his work or as directed by jurisdictional authorities, at no additional cost to the Owner.

## 2.07 SPECIAL LIGHTING UNITS (FLASHING ARROW)

- A. Special Lighting Units shall consist of a black background panel meeting the requirements of the MUTCD Subsection 6E-9, Table VI-3 for Type C and shall contain at least 15 No. 4412A (or equal) amber lights with approximately 8000 initial maximum candlepower each. Each Special Lighting Unit shall automatically provide for a minimum of 50 percent dimming from their rated lamp voltage at night. The flashing rate of the lamps shall not be less than 25 nor more than 40 flashes per minute. The arrow panels shall have the capability of the following mode selection: (1) left or right flashing or sequential arrows; and (2) double flashing arrows.
- B. Special Lighting Units shall be as specified in the State Standard Specifications.
- C. Minimum mounting height should be seven feet above the roadway to the bottom of the panel.

## 2.08 TEMPORARY PAVEMENT MARKINGS AND RAISED PAVEMENT MARKERS

- A. Paints, tapes, and glass beads used for temporary pavement markings shall conform to Subsections M.07.20, M.07.21, M.07.22, M.07.24, and M.07.25 of the State Standard Specifications. Other material, which will provide satisfactory durability and reflectivity, and accepted by the CTDOT, may be used. The reflectivity of temporary pavement markings shall be equal to or better than the CTDOT minimum requirements for a period of 90 days. The colors of the marking materials shall be white, yellow or black.
- B. Raised pavement markers shall conform to materials of the State Standard Specifications.

## PART 3 EXECUTION

### 3.01 PERFORMANCE

- A. The Contractor shall furnish, erect and maintain suitable barriers, barricades, signs, markings, drums and all other traffic control devices necessary to protect all roadways, which are partially obstructed or closed to vehicular or pedestrian traffic, as a result of this project.
- B. The Owner reserves the right to suspend work, if the Contractor fails to provide such adequate traffic control devices to control and protect both vehicular and pedestrian traffic.
- C. The Contractor shall completely backfill all trenches at the end of each work day on streets that are not closed and/or when work is suspended for indefinite periods. The Contractor shall install temporary trench patch at the end of each work day on roads that have not been closed.
- D. The Contractor shall be responsible, at his own expense, for all damage to the work, pedestrians or public/private property due to his failure to place or maintain adequate warning or directional signs or other traffic control devices.
- E. The Contractor shall furnish, supply, maintain and remove temporary white and/or yellow reflectorized and/or black non-reflectorized pavement markings, as required by the performance of his work or as directed by jurisdictional authorities, at no additional cost to the Owner. For the purpose of this specification, temporary markings shall mean an effective marking for a 90-day period.

- F. The Contractor shall remove existing pavement markings as required by the performance of his work or as directed by jurisdictional authorities, at no additional cost to the Owner. Pavement marking removal methods used by the Contractor shall not cause damage to the pavement or cause significant change in its texture. Any damage to the pavement or surfacing caused by pavement marking removal shall be satisfactorily repaired by the Contractor, at no additional cost to the Owner.
- G. Where required by the project, the Contractor shall provide all necessary temporary pavement markings, and/or temporary raised pavement markers following the completion of each day's operation or prior to opening the roadway to traffic. The Contractor will be responsible for making all necessary arrangements for this work, as required by the performance of his work.
- H. The Contractor shall be responsible for transporting and relocating any or all signs, barriers, barricades, or other safety devices as specified herein, as required or directed during the project. No additional payment will be provided for relocating and removing traffic control devices.

END OF SECTION



## SECTION 01610

### PRODUCT HANDLING

#### PART 1 GENERAL

##### 1.01 DESCRIPTION

- A. Work included: Protect products scheduled for use in the Work by means including, but not necessarily limited to, those described in this Section.

##### 1.02 QUALITY ASSURANCE

- A. Include within the Contractor's quality assurance program such procedures as are required to assure full protection of work and materials.

##### 1.03 MANUFACTURER'S RECOMMENDATIONS

- A. Comply with manufacturers' recommendations on product handling, storage and protection.

##### 1.04 PACKAGING

- A. Deliver products to the job site in their manufacturer's original container, with labels intact and legible.
  - 1. Maintain packaged materials with seals unbroken and labels intact until time of use.
  - 2. Promptly remove damaged material and unsuitable items from the job site, and promptly replace with material meeting the specified requirements, at no additional cost to the Owner.
- B. The Owner may reject as non-complying such material and products that do not bear identification satisfactory to the Owner as to manufacturer, grade, quality and other pertinent information.

##### 1.05 PROTECTION

- A. Mechanical equipment subject to damage by the atmosphere if stored outdoors, shall be stored in a building with a controlled environment. The building may be a temporary structure on the site or a building off the site.
- B. PVC and HDPE pipe shall be covered to protect it from UV degradation.
- C. The Contractor shall be responsible for securing the staging and project area to prevent stored materials from being stolen or damaged. The use of fences, locking storage containers, trailers or other means shall be employed by the Contractor at no additional cost to the Owner.

1.06 REPAIRS AND REPLACEMENTS

- A. In event of damage, promptly make replacements and repairs to the approval of the Owner at no additional cost to the Owner.
- B. The Contractor shall promptly replace any materials that are stolen or lost at no additional cost to the Owner.
- C. Additional time required to secure replacements and to make repairs will not be considered by the Owner to justify an extension in the Contract Time of Completion.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION

## SECTION 01700

### CONTRACT CLOSEOUT

#### PART 1 GENERAL

##### 1.01 DESCRIPTION

- A. The work of this Section consists of procedures and requirements for contract closeout, such as cleaning, restoration of project site to original condition, inspections and guarantees.

#### PART 2 PRODUCTS (Not Applicable)

#### PART 3 EXECUTION

##### 3.01 CLEANING UP

- A. During its progress, the work and the adjacent areas affected thereby shall be kept cleaned up and all rubbish, surplus materials, and unneeded construction equipment shall be removed and all damage repaired so that the public and property owners will be inconvenienced as little as possible.
- B. Where material or debris has washed or flowed into or been placed in water-courses, ditches, gutters, drains, catch basins, or elsewhere as a result of the Contractor's operations, such material or debris shall be entirely removed and legally disposed of during progress of the work, and the ditches, channels, drains, etc., kept in a neat, clean and functioning condition.
- C. On or before the completion of the work, the Contractor shall, unless otherwise especially directed or permitted in writing, remove all rubbish from any grounds which he has occupied; and shall leave the roads and all parts of the premises and adjacent property affected by his operation in a neat and satisfactory condition.
- D. Unless otherwise specifically directed or permitted in writing, the Contractor shall perform the following tasks:
  - 1. Remove all temporary works, tools, and machinery or other construction equipment furnished by him.
  - 2. Remove, acceptably disinfect, and cover all organic matter and material containing organic matter in, under, and around privies, houses, and other buildings used by him.
    - a. Subsequent to disinfection, remove or suitably neutralize

- disinfectant residuals from treated area(s).
3. Remove all rubbish from any grounds which he has occupied.
  4. Leave roads and all parts of premises and adjacent property affected by his operations in a neat and satisfactory condition.

### 3.02 RESTORATION

- A. The Contractor shall restore or replace, when and as directed by the Engineer, any public or private property damaged by his work, equipment, or employees, to a condition at least equal to that existing immediately prior to the beginning of operations.
  1. To this end, the Contractor shall do as required all necessary highway or driveway, walk, and landscaping work.
  2. Suitable materials, equipment and methods shall be used for such restoration, or as required in other divisions of this Specification.
  
- B. In restoring the disturbed areas the Contractor shall:
  1. Replace any loam that has been removed during the excavation to a depth of 2 inches or to match existing; whichever is greater.
  2. Remove from the property and legally dispose of in an approved fashion all trees, brush and other items that the Contractor has cut in order to prosecute his work.
  3. Remove from the property upon completion of the work thereon, all excess materials of construction such as stone, pipe, concrete block, gravel, etc., that the Contractor may have stockpiled for use during the course of the work.
  4. Leave the land in a smooth, even condition. All ruts, holes or other undesirable grading conditions which resulted from work under this Contract shall be filled and the area so graded to eliminate ponding.
  5. All drainage course(s) shall be restored to their pre-existing condition or better.
  6. Reset all public or private monuments, iron pipes or other types of property line and geodetic markers damaged or disturbed by operations under this Contract. This work shall be done by a licensed land surveyor at no additional cost.
  7. Repair, reset or replace as directed all pipes, walls, utilities, fences, railings, stone walls, etc., and ornamental or utilitarian domestic accessories, such as, but not limited to, arbors, fireplaces, sheds and incinerators, or other surfaces, structures, or property which may have been damaged, either directly or indirectly by his operations under this Contract.
  8. Restore to a condition at least equal to that in which they were found immediately prior to the beginning of construction all sidewalks, gutters, driveways and curbs which have been damaged by the Contractor's operations.



### 3.03 FINAL INSPECTION

- A. At completion of all work, the Owner and Engineer, along with the General Contractor and each of the subcontractors shall conduct a final inspection jointly for "punch list" purposes and to determine the exact status of the project before final acceptance.

### 3.04 GUARANTEES

- A. The Contractor shall take notice of special guarantees required in the technical Sections of these Specifications.
  - 1. If, in the opinion of the Owner, any item requires excessive maintenance during guarantee periods, the item shall be considered defective and the Contractor shall correct the defects.
  - 2. All defects so corrected shall be at the expense of the Contractor.

END OF SECTION



SECTION 01864

SPECIAL CONDITIONS - PERMITS AND DOCUMENTS

PART 1 GENERAL

1.01 PERMITS

- A. It is the responsibility of the General Contractor to comply with conditions of existing permits, obtain permits and provide information to the Owner in order for the Owner to obtain permits. These consist of, but are not limited to, the following:

1. **CTDEEP General Permit for the Discharge of Stormwater and Dewatering Wastewater from Construction Activities.** If 5 (five) acres or more of ground surface are disturbed during the construction of the project, the project must be registered with the Connecticut Department of Energy And Environmental Protection, and must comply with the conditions of the General Permit. It is the Contractor's responsibility to submit the registration, prepare the stormwater pollution control plan, comply with all the general permit conditions, and pay all fees associated with the application, including compliance fees, if any.
2. **Town of Branford Building Permit.** If required, the Contractor shall obtain a building permit which may require the preparation of additional submittals or permits to the Branford Building Department or any Town department, agency or commission as a prerequisite to obtaining the building permit for the planned construction activities.. The Contractor shall abide by all state and national building code requirements as enforced by the Town Building Inspector. The Town building inspector may require individual trade permits for which the Contractor or his agent will be responsible for. Town Building Permit fees will be waived, State fees will not. The Contractor will be responsible for all fines imposed by the Town building department or any other Town agency for non-compliance.

The permits described and listed herein are not intended to be complete or exhaustive. Other permits may be required that are the responsibility of the Contractor to obtain and pay fees for. Furthermore, unapproved deviations from the specific permit language and associated contract documents shall not be tolerated. All fines and associated costs or claims as a result of the Contractor's operations or negligence shall be assumed by and paid for by the Contractor.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION 01864



DIVISION 2 - SITE WORK



## SECTION 02060

### DEMOLITION

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Demolish existing structures or portions of existing structures as required and described herein.
  - 1. Remove and legally dispose of demolished materials off-site.
  - 2. Protect site work and adjacent structures requiring protection.
  - 3. Provide all temporary utilities including pumping, drainage, and electrical service as necessary.
  - 4. Maintain operation of sanitary sewer system until new piping is installed and accepted for use.

##### 1.02 MEASUREMENT AND PAYMENT

- A. Measurement and payment for work described in this section will be made in accordance with the provisions of SECTION 01025, MEASUREMENT AND PAYMENT.

##### 1.03 QUALITY ASSURANCE

- A. Standards: Comply with applicable requirements of American National Standards Institute (ANSI) Standard A10.6, Safety Requirements for demolition, current edition and OSHA Safety and Health Regulations (see 29 CFR Part 1926 and all subsequent amendments) as promulgated by the United States Department of Labor on June 24, 1974; The Prevention of Accidents and Illnesses in Construction Operations. Contractors are urged to become familiar with the requirements of these regulations.
- B. Comply with governing codes and regulations. Use experienced workmen.

##### 1.04 JOB CONDITIONS

- A. Provide and maintain all protective devices, including fences, barricades, bracing, shoring, planking, guards, warning lights and signs, as necessary or required for protection against injury to persons or damage to property. Conform to ANSI A10.6 current addition.

##### 1.05 SUBMITTALS

- A. Permits and notices authorizing construction.
- B. Certificates of severance of utility services.
- C. Permit for transport and disposal of debris.
- C. Demolition procedures and operational sequence for review and acceptance before start of work.

- D. Sewage dewatering plan which shall be approved by both the Town and the Engineer prior to the start of work.

#### 1.06 PROTECTION

- A. Do not interfere with use of adjacent buildings. Maintain free and safe passage to and from all structures.
- B. Cease operations and notify Engineer immediately if safety of adjacent structure(s) appears to be endangered. Take precautions to properly support structures(s) and existing utilities. Do not resume operations until safety is restored.

### PART 2 PRODUCTS

#### 2.01 MATERIALS

- A. Disposal. All items listed for demolition shall become the property of the Contractor and shall be promptly removed from the site and disposed of in accordance with all applicable laws and regulations.

### PART 3 EXECUTION

#### 3.01 DEMOLITION

- A. The existing sanitary sewer system must remain operational during construction. Do not close or obstruct streets, walks, drives or other occupied or used spaces or facilities without the written permission of the Owner and the authorities having jurisdiction. Do not interrupt utilities serving occupied or used facilities without the written permission of the owner and authorities having jurisdiction. If necessary, provide temporary utilities including fuel for emergency power systems.
- B. In order to complete connection to existing force main on Hemlock Road, the existing Hemlock Pumping Station will need to be shut down from pumping operations. Contractor shall perform this work during low flow conditions. During these periods of time, the Contractor shall provide dewatering the existing force main, as well as the incoming sewage from the tributary gravity sewers into the pump station wet well, and pump into sewage tanker trucks. This sewage shall be trucked and discharged to Pump Station on Cedar Street. Pump station shut downs, and sewage dewatering shall be coordinated with and approved by the Town of Branford. The Contractor shall ensure that sufficient dewatering capacity is made available for the Contractor's intended outage period.
- C. Cease operations if public safety or remaining structures are endangered. Perform temporary corrective measures until operations can be continued properly.
- D. Repair demolition performed in excess of that required, at no cost to the Owner.
- E. Keep work sprinkled to prevent dust. Provide hoses and water main or hydrant connections for this purpose.
- F. Burning of materials on site is not permitted.
- G. Remove from site any contaminated, vermin infested, or dangerous materials encountered and disposed of properly so as not to endanger the health of workers and public.



- H. Remove demolished materials, tools and equipment upon completion of work. Leave site in condition acceptable to Engineer.
- I. Cleanliness. The work shall be performed in such manner and with safeguards adequate to prevent soiling or contamination of existing work areas of the Owner. Any screens, barriers, temporary walls and similar temporary structures required for that purpose and the removal thereof are included in the contract work.

3.02 REPAIR

- A. Repair damage to adjacent structure(s) caused as the result of this work.

END OF SECTION



## SECTION 02100

### SITE PREPARATION

#### PART 1 GENERAL

##### 1.01 SCOPE

- A. The work of this section includes all labor, equipment, tools, and materials necessary for the performance of all operations in connection with clearing and all incidental and appurtenant work pertaining thereto, as specified herein, and as shown on the drawings.

##### 1.02 MEASUREMENT AND PAYMENT

- A. Measurement and payment for the work described in this section will be made in accordance with the provisions of SECTION 01025, MEASUREMENT AND PAYMENT.

##### 1.03 SUBMITTALS - Not Used

##### 1.04 PRODUCT HANDLING - Not Used

##### 1.05 SPECIAL REQUIREMENTS

- A. Prior to the performance of any work of this section or any related work required by other sections of the specifications, the Limit of Work Line shall be laid out and staked in the field by the Contractor, according to the drawings. The Contractor shall be responsible for maintaining the Limit of Work Line during the construction operation.
- B. At all times throughout the duration of this contract, the Contractor shall be responsible for the appearance and condition of the area within and surrounding the project site. The Contractor shall repair or replace, at no additional expense to the Owner, any structures, either natural or man-made such, as but not limited to, utilities, trees, plants, water bodies, and pavements that are damaged or destroyed by any actions or sequences of events related to the Contractor's operations.
- C. Any existing plant materials designated to be saved, protected and/or undisturbed, that are cut or damaged without prior approval of the Engineer, shall be replaced in kind and size by the Contractor, at no expense to the Owner.
- D. Disposal of waste/surplus materials may involve securing permits, licenses, or approvals, which may vary according to the type of material to be disposed of prior to the start of construction. The Contractor shall apply for these, as they may be required by the various governing agencies and pay all required fees. The Contractor shall have sole responsibility for the legal disposal of all waste surplus material of this project. The Contractor shall be responsible for any and all fines due to any illegal activity with regards to the disposal of waste/surplus materials.

#### PART 2 PRODUCTS - NOT USED

## PART 3 EXECUTION

### 3.01 GENERAL REQUIREMENTS

- A. All graded areas, and all areas within the Limit of Work Line on which proposed work is to be installed, shall be cleared as may be needed and as indicated on the drawings.
- B. The Contractor shall be careful to note any areas that may be designated on the drawings to receive only selective clearing.

### 3.02 CLEARING

- A. Clearing operations shall be performed in a manner which will prevent damage and which will provide for the safety of employees and other persons.

### 3.03 DISPOSAL OF WASTE MATERIALS

- A. Disposal of Cleared and Grubbed Materials
  - 1. Disposal of cleared materials by burning is not permitted, they shall be legally disposed of off-site by the Contractor.
- B. All waste materials shall be satisfactorily legally disposed of off-site by the Contractor at no additional cost to the Owner.

END OF SECTION

## SECTION 02220

### EARTHWORK

#### PART 1 GENERAL

##### 1.01 SCOPE

- A. The Work of this section includes the furnishing of all labor, materials, tools, equipment, accessories and appurtenances necessary to satisfactorily complete all stripping of topsoil, excavation of earth and rock, stockpiling, removal of unsatisfactory materials, backfilling, filling, compaction, and grading not specified elsewhere, and all incidental Work pertaining thereto within the limits of the Work indicated or required as specified herein.

##### 1.02 MEASUREMENT AND PAYMENT

- A. Measurement and payment for the Work described in this section will be made in accordance with the provisions of SECTION 01025, MEASUREMENT AND PAYMENT

##### 1.03 SUBMITTALS

- A. Shop drawings and brochures shall be submitted for all items to be furnished in accordance with the provisions of the DOCUMENT 00700, GENERAL CONDITIONS.
- B. Submittals required under this section include, but are not limited to, the following:
  - 1. Materials Testing Results
  - 2. Materials Brochures
  - 3. Temporary Earth Support Certification Letter
  - 4. Control of Water Certification Letter
  - 5. Soil Testing Reports

##### 1.04 PRODUCT HANDLING - NOT USED

##### 1.05 PROTECTION OF WORK

- A. Prosecute the Work so that no damage occurs to adjacent utilities, structures, property, or any other installation located in or adjacent to Work areas. Damaged utilities shall be repaired with similar or better materials of the same size and to the requirements of the utility owner. Have on site the necessary manpower, materials and equipment such as pumps, piping, and the like as required to protect and maintain uninterrupted flows in existing utilities during construction.
- B. Excavations shall be kept free from water, snow and ice during construction. Bedding and backfill material shall not be placed in water. Water shall not be allowed to rise upon or flow over bedding and backfill material.
- C. Maintain all benchmarks, monuments and other reference points and, if disturbed, shall replace them at no additional cost to the Owner.

- D. Excavating equipment shall be of such size and type, and used in a manner, that will not damage existing items such as but not limited to paved surfaces, utilities, structures and/or trees.
- E. The finished subgrade shall not be disturbed by traffic or other operations and shall be maintained in a satisfactory condition until the finished surfaces are placed. No pavement materials shall be installed thereon until the Engineer has observed the subgrade is in compliance with this requirement.
- F. Take whatever steps necessary to prevent catch basins and drain lines from receiving silt and sediment washed from Project Work areas. Clean out catch basins and drain lines that have not been properly protected.

## PART 2 PRODUCTS

### 2.01 MATERIALS

- A. Fill materials, meeting the following requirements, shall be used in the areas shown on the Contract Drawings and/or where specified herein. Fill materials may be obtained from either on-site excavations or from off-site sources as appropriate.

### 2.02 COMMON FILL

- A. Common fill shall be granular material, consisting of hard, sand and gravel with less than thirty-five (35) percent passing the No. 200 sieve, when tested in accordance with ASTM C136 and ASTM C117 and shall be free of organic matter, trash, roots or other deleterious material.
- B. Common fill material shall contain no stone measuring greater in any dimension than two-thirds of the loose lift thickness or twelve (12) inches whichever is smaller. Common fill material shall be capable of forming a firm, stable base when spread and compacted. In addition, the common fill shall be non-plastic (plasticity index zero, defined as liquid limit minus plastic limit). Any materials, excavated from the site, not conforming to this common fill specification, shall be legally disposed of and replaced with approved material, as required, at no additional cost to the Owner.

### 2.03 GRAVEL FILL

- A. Gravel fill shall consist of hard, durable gravel and sand, free from trash, organic matter and clay, surface coatings, and other deleterious materials.
- B. Gravel fill shall have a maximum stone size of five inches. Gravel fill used for pipe bedding shall have a maximum stone size of 1.5 inches. Gradation, plasticity, and resistance to abrasion requirements shall be as per Connecticut Department of Transportation Form 817, Section M.02.06, Gradation C.

### 2.04 SELECT FILL

- A. Select fill shall consist of hard durable sand or sand and gravel, free from trash, organic matter, clay, surface coatings and other deleterious materials.
- B. Select fill placed between the mid-height of a pipe and twelve (12) inches above a pipe shall have a maximum stone size of four (4) inches. Select fill used for other purposes shall have a maximum stone size of two thirds of the loose lift thickness and that portion passing the

four (4) inch sieve shall meet the following gradation requirements, as determined by ASTM C136 and ASTM C117:

| U.S. Sieve Size | Percent Passing |
|-----------------|-----------------|
| 4 inch          | 100             |
| No. 10          | 30-100          |
| No. 40          | 0-70            |
| No. 200         | 0-15            |

## 2.05 CRUSHED STONE

- A. Crushed stone shall consist of clean, crushed, non-porous rock, or crushed gravel, uniformly blended.
- B. Crushed stone shall meet the gradation requirements of Connecticut Department of Transportation Form 817, Section M.01.01, No.6.”

## PART 3 EXECUTION

### 3.01 PREPARATION

- A. Stripping
  - 1. Prior to any excavation, filling, or grading operations, all topsoil and subsoil or similar organic soils found within the Limit of Work line shall be stripped to their full depth in the area of all structures and in all areas required to be filled, excavated or graded.
  - 2. Stripped materials suitable for re-use as loam shall be stockpiled. Stockpiles shall be kept separate and not mixed with other materials. Excess stripped materials and unsuitable materials shall be legally disposed of off-site unless otherwise specified.
- B. Pavement Cutting
  - 1. Where excavations are to be made in paved or surface treated areas, the pavement shall be cut with a pavement saw or wheel cutter prior to excavation unless otherwise noted.
  - 2. In areas where the trench width is greater than the original cut, the pavement shall be re-cut prior to paving operations.
- C. Trench Excavation
  - 1. Trench excavation shall consist of the removal of all materials encountered. Excavations shall be made to accommodate the elevation, depth of cover, or detail shown on the Contract Drawings and/or as specified. Trench widths shall be kept to the minimum practicable but shall be at least three (3) feet wide or two (2) feet plus the diameter of the pipe, whichever is greater. The bottom of the trenches shall be firm and free of water and shall be accurately graded and shaped to allow placement of required bedding beneath the bottom of all barrels, bells or couplings of all pipes installed.

2. Design criteria require that pipe be laid in trench conditions, therefore trenches for utilities in fill areas shall be excavated after all fill materials have been placed, spread and compacted to an elevation at least twelve (12) inches above the top of the proposed utility. This requirement is necessary to fulfill design criteria and should not be construed as a dictation of means and methods of construction.
3. If, through error, the excavations are carried beyond the specified limits, or if inadequate dewatering causes softening of the subgrade that necessitates removal, backfill shall be with gravel fill, placed and compacted as specified hereinafter under Trench Backfilling. Backfill shall be performed at no additional cost to the Owner.

G. Experimental Excavation

1. Make excavations at locations authorized by the Engineer, for the purpose of confirming the location and depth of existing utilities or structures.
2. Additional experimental excavations may be requested to precisely locate utilities and underground structures that may be affected by the Work. Backfill the experimental excavations with materials meeting the specification for common fill, unless directed otherwise by the Engineer. Backfill of experimental excavation shall be compacted in accordance with the requirements for Trench Backfilling.
3. Provide the Engineer with utility name, location, top of pipe, bottom of pipe and pipe diameter of each utility provided with experimental excavation (test pit).

3.03 TEMPORARY EARTH SUPPORT

- A. Design, furnish, install and maintain temporary earth support systems, as required, to prevent injury to persons, collapse of the sides of the excavation, and damage, disturbance and settlement of adjacent property. Sheeting and bracing shall be of adequate type; size and strength for the conditions encountered and shall be driven to true alignment in a workmanlike manner.
- B. Timber sheeting shall be straight and sound and shall be tongue and grooved where groundwater is encountered. Minimum thickness of timber sheeting shall be a nominal three inches.
- C. Steel sheeting shall have a minimum thickness of 3/8 inch. Steel sheeting shall be designed for the conditions encountered and shall be driven tight.
- D. Sheeting may be either left in place or removed. Sheeting left in place shall be cut off at least one (1) foot above the crown of the pipe. In no case shall the top of sheeting be left in place within five (5) feet of the finished grade.
- E. Excavated slopes in rock shall be appropriately laid back or be stabilized by rock bolts or other appropriate means. Loose or semi-detached rock shall be scaled from the rock surface. When necessary, wire mesh or other appropriate means shall be installed to prevent injury to workers from falling rock.
- F. If sheeting is utilized, engage an independent Registered Professional Engineer (in the state where the project is located) with experience in the design of temporary earth support to evaluate his methods of excavation and provide guidance regarding proper slopes and to design or provide guidance of temporary earth support during construction. Submit a notarized letter to the Engineer certifying conformance to the above requirements, before the start of any construction (Refer to attached sample form).



### 3.04 CONTROL OF WATER

- A. Evaluate the impact of the anticipated subsurface soil and groundwater conditions on proposed method of excavation and dewatering and other operations. If subsurface conditions so dictate, provide wells, wellpoints, pumps, or any other facilities to control groundwater and surface water in order to permit Work to be performed under dry and stable conditions. Provide any facilities required to remove subsurface water from the construction area in advance of excavation. Dewatering shall continue until all Work below groundwater level has been completed or otherwise stabilized against uplift or other disturbance. Pumping shall be continuous where required to protect the Work and to maintain satisfactory progress. All dewatering wells shall be backfilled upon completion of the Work.
- B. Control all surface water within the Work area. Excavations shall be protected from flooding by surface water by use of berms, ditches or other appropriate means.
- C. Pay special attention to areas where difficult soil and groundwater conditions are anticipated and evaluate the subsurface conditions in these areas from the geotechnical data provided in the Contract Document or by other means.
- D. All pipeline(s) and structures not stable against uplift during construction or prior to completion of installation shall be thoroughly braced or otherwise protected.
- E. Dewater in a manner that does not cause loss of ground or disturbance to the bearing soil or soil supporting adjacent structures.

### 3.06 PIPE BEDDING AND TRENCH BACKFILLING

#### A. General

- 1. The requirements for pipe bedding and trench backfilling shall be as specified and/or as shown on the Contract Drawings.
- 2. Pipe and/or structures shall be placed on specified bedding materials, to provide uniform support and a stable foundation for the pipeline(s) or structure(s) and backfill material. No bedding shall be placed on unstable subgrade soils. An unstable subgrade is defined as a condition of running sand, running silt, quick bottom, or otherwise soft, soupy or spongy bottom. If an unstable condition exists, or develops during the excavation, excavate, dewater and stabilize the subgrade to the extent necessary to provide a firm stable foundation prior to placing bedding, pipe and/or structures.
- 3. The height of fill adjacent to structures and pipelines shall be increased at approximately the same rate on all sides to prevent displacement.

#### B. Trench Bedding

- 1. Pipeline(s) and appurtenant items of Work shall be laid in the bedding material, from the bottom of the excavation to the mid-diameter of the pipe, for the full width of trench. Bedding material shall be compacted to a minimum density of ninety-five (95) percent of the maximum density as determined by ASTM D1557 (Modified Proctor) and shall meet the requirements for gravel fill or crushed stone.
- 2. The type and thickness of bedding material shall be adjusted based on field conditions, as follows:

- a. Crushed stone bedding material shall be placed to a depth of 6 inches below the pipe as shown on the Contract Drawings and compacted to the mid-diameter of the pipe as specified hereinbefore.”
  - b. The excavation shall be made to a depth of six (6) inches below the bottom of pipe for placement of bedding material.
  - c. Where the bottom of the trench excavation is below the groundwater level and pumping of water is done from within the excavation, utilize a bedding system which provides a stable working surface which limits the disturbance of the subgrade and prevents migration or washing of fine soils from the subgrade due to the flow of water into the trench.
3. Excavation beyond the required limits shall be backfilled with compacted gravel fill at no additional cost to the Owner. Gravel Fill used to replace unsuitable material or unauthorized excavation shall be compacted to a minimum density of ninety-two (92) percent of the maximum density determined by ASTM D1557, (Modified Proctor).
  4. If crushed stone is used as bedding material, a twelve (12) inch wide impermeable clay cutoff barrier (“Control Dam”) shall be constructed, as specified and/or as shown on the Contract Drawings, across the trench from the bottom of the excavation to the mid-diameter of the pipe every three hundred (300) feet, or as otherwise directed by the Engineer, to prevent groundwater from flowing unimpeded along the pipe trench, through the crushed stone. No more than six (6) inches of crushed stone bedding shall be placed beneath the bottom of any pipe and/or structure.

#### C. Trench Backfilling

1. Backfill materials, meeting the requirements for Select Fill, shall be placed above the mid diameter of the pipe to twelve (12) inches above the pipe. The Select Fill backfill shall be compacted to a density of at least ninety-two (92) percent of the maximum density as determined by ASTM D1557 (Modified Proctor).
2. Backfill materials placed from twelve (12) inches above the pipe to the bottom of the roadway base course in paved areas or to the bottom of loam shall meet the requirements for Common backfill. Fill shall be placed and compacted so that a density of at least ninety (90) percent of the maximum density is achieved as determined by ASTM D1557 (Modified Proctor). Select equipment and establish procedures consistent with the backfill materials being used to achieve the required density. Backfill materials with more than fifteen (15) percent passing the No. 200 sieve shall be placed at a moisture content between two (2) percent dry and three (3) percent wet of the optimum moisture content as determined by ASTM D1557.
3. Puddling or jetting of the backfill materials may be utilized, however, any water used for puddling or jetting shall be secured in sufficient quantity and pressure to obtain the required result and shall be provided at no additional cost to the Owner.
4. All settlement of trench backfill shall be repaired at no additional cost to the Owner. All repairs shall be made with materials meeting the requirements of the specifications compacted as specified.
5. After trenches have been backfilled as specified, all surplus material shall be removed and legally disposed of at no additional cost to the Owner. The removal of surplus material and clean up of trench surfaces shall closely follow the pipe laying Work.

6. Where hardened surfaces or roadways, driveways, or walls are disturbed, special attention shall be given to backfilling and compaction prior to resurfacing.

### 3.07 SOIL TESTING

#### A. General

1. Three (3) types of soil tests shall be performed by a soil testing laboratory furnished by the Contractor. The type of test, timing and frequency are described below.
2. The performance of these tests does not relieve the responsibility to control operations and perform tests as necessary to assure that the Work performed meets the requirements of the specifications.
3. Sieve analysis tests for initial approval of fill materials from borrow sources shall be performed by an independent testing laboratory at no additional cost to the Owner. Such testing is considered incidental to the Work and will not be measured and paid for separately by the Owner.

#### B. Sieve Analysis Tests

1. Sieve analysis tests shall be performed on a minimum of one (1) random sample for each type of fill being placed on site. Additional tests shall be performed on samples obtained from the fill when it is suspected that the material does not meet specifications. Tests shall also be performed when it is noted that the gradation of material actually being placed differs significantly from the documented gradation from a particular source.
2. Sieve analysis will be performed in accordance with ASTM C136 and ASTM C117.

#### C. In-Place Density Tests

1. The Engineer will determine the location, number and timing of In Place Density tests. The Engineer will coordinate the testing with the Work schedule.
2. In general, at least one (1) test shall be performed for each three hundred (300) feet of pipeline installed. Structural and embankment fills shall be tested at least once for each five hundred (500) cubic yards of fill placed. For structures and embankments, a minimum of four (4) tests shall be performed during each of two (2) separate visits by the testing laboratory.
3. Tests shall be performed in accordance with ASTM D1556, ASTM D2167, or ASTM D2922.

#### D. Moisture Density Relationship Test

1. Moisture Density Relationship Tests (Proctor Tests) shall be performed in conjunction with In-Place Density Tests for each different fill material tested.
2. Tests shall be performed in accordance with ASTM D1557.

### 3.10 CLEAN-UP

- A. Where hardened surfaces or roadways, driveways, or walls are disturbed, special attention shall be given to backfilling and compaction prior to resurfacing. This shall be done and redone as many times as necessary to ensure that the Project is safe at all times and to give the required result.
- B. Provide street sweeping as necessary to reduce dust, siltation, nuisance problems, and to provide safe passage for vehicular and pedestrian traffic.

END OF SECTION

SEE ATTACHED FORMS

1. Temporary Earth Support Certification

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

To: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Subject: Owner Name: \_\_\_\_\_  
Project Name: \_\_\_\_\_  
Contract No.: \_\_\_\_\_  
Temporary Earth Support Certification

Dear \_\_\_\_\_:

I hereby certify that I have reviewed the methods for Temporary Earth Support proposed by the following Contractor for the above referenced project:

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I have experience in the design of temporary earth support and have evaluated the proposed methods of excavation and have provided guidance regarding proper slopes. The following is a description of the proposed methods to be used during construction:

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

If you have any questions or comments concerning the information provided, please contact our office.

Very truly yours,

\_\_\_\_\_  
SIGNATURE of REGISTERED PROFESSIONAL ENGINEER

\_\_\_\_\_  
NAME of REGISTERED PROFESSIONAL ENGINEER

\_\_\_\_\_  
ENGINEER's STAMP  
(Signed and Dated)



## SECTION 02502

### MILLING EXISTING PAVEMENT

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

The General Conditions and Supplementary General Conditions apply to this Section of the Specifications.

##### 1.2 SUMMARY

- A. This work shall consist of the removal and satisfactory disposal of existing bituminous and/or Portland cement concrete pavement(s) to the depth(s) as indicated by a "MILLING" or "COLD PLANING" technique. All work shall be completed in conformity with the lines, grades, and cross-sections as shown on the plans, or as ordered by the Engineer. The planed surface shall provide a smooth riding surface free from gouges, continuous grooves, ridges, oil film and other imperfections of workmanship and shall have a uniform surface appearance ready for traffic or resurfacing upon completion.
- B. Refer to Section 02503 "Bituminous Concrete Pavement" for additional requirements.

##### 1.3 STANDARDS

- A. References to "Form 817" mean the State of Connecticut Department of Transportation "Standard Specifications for Roads, Bridges, Facilities and Incidental Construction, 2016", including any interim and supplemental specifications.

##### 1.4 SUBMITTALS

- A. None.

#### PART 2 - PRODUCTS

##### 2.1 MATERIALS

- A. None.

## PART 3 - EXECUTION

### 3.1 CONSTRUCTION METHODS

- A. The equipment for planing and profiling of pavement surface shall be a commercially designed and manufactured power operated, track propelled, planing machine or a grinder capable of removing, in one pass, a layer of bituminous material six (6') feet in width, and a minimum depth of cut equal to four (4") inches. The equipment shall be self-propelled with sufficient power, traction and stability to maintain accurate depth of cut and slope. The equipment should also have the ability to provide variable depth of cut across the width of the planing equipment.
- B. The machine shall be capable of accurately and automatically establishing profile grades (within  $\pm 1/8"$ ) along each edge of the machine by referencing from the existing pavement by means of a ski or matching shoe, or from an independent grade line. The machine shall have an automatic system for controlling grade elevation and cross slope.
- C. The equipment shall have the means for self-loading the cuttings directly into a truck. All planing machinery shall be equipped with dust control devices to prevent any dust produced in the cutting operation from escaping into the air. The Contractor should have available an extra set of cutting teeth and the necessary tools and equipment to perform field adjustments and repairs. Contractor to supply water as required.
- D. The equipment used to remove pavement materials from around manholes, catch basins, and other areas not accessible to the large machine shall be a smaller, specially designed commercial machine capable of performing work in a similar manner and character as the larger machine.
- E. Sweeping equipment shall be a motorized self-loading power broom capable of adequately cleaning the recently milled pavement surface of all-foreign matter and debris.
- F. Prior to beginning work the contractor shall meet with the inspector and carefully review the project noting all utility structures, limits of construction, phasing, and points of interest or concern. Adequate support vehicles and equipment such as trucks, sweepers, and refueling equipment shall be on site and available for use as required.
- G. All traffic control devices such as signs, drums, barricades, etc. shall be in place as per the construction phasing plans, or in the absence of such plans as per the direction of the Engineer. Traffic police officers, if required by the engineer, shall



be ordered in advance by the contractor and shall be located as required by the Engineer.

- H. Milling operations shall then commence with the existing bituminous surface being planed and profiled to the required depth, width, grade, and cross-section as required on the plans, or as ordered by the Engineer. After each pass of the machine, all loose matter and debris shall be cleaned and swept from the site.
- I. After the work has progressed sufficiently, the contractor shall "MILL" or "COLD PLANE" the remaining portions of pavement around manholes, and catch basins, etc. so that these areas match the surrounding areas.
- J. If the road is to remain open to traffic during the progression of work transverse drop-offs at the beginning or end of the limits of milling shall not exceed 2 inches. All longitudinal drop-offs between milled and existing surfaces shall be delineated at all times until paving as directed by the Engineer. All manholes, catch basins, drives and intersecting streets and other utility structures shall be ramped with bituminous concrete in conformance with the traffic phasing details.
- K. Sweeping operations shall be performed concurrently as milling operations may permit. If construction operations dictate that paving operations be undertaken as a future construction activity, the Contractor shall be required to re-sweep the milled pavement surface just prior to paving operations.
- L. Unless otherwise noted on the plans, or ordered by the Engineer, all milled bituminous concrete material(s) shall remain the property of the Contractor, removed and disposed of legally off-site.
- M. In all cases, the resulting final surface from "MILLING" or "COLD PLANING" operations shall be characterized by uniform, discontinuous longitudinal striations, or other uniform patterns and shall not be gouged or torn.

END OF SECTION



## SECTION 02503

### BITUMINOUS CONCRETE PAVEMENT

#### PART 1 GENERAL

##### 1.01 SCOPE

- A. The work covered by this section of the specifications includes furnishing all labor, equipment, tools, and materials, and in performing all operations in connection with roadway pavement overlay, and the replacement of existing paved surfaces, tack coat, and all incidental work pertaining thereto as indicated on the drawings and as specified herein.

##### 1.02 MEASUREMENT AND PAYMENT

- A. Measurement and payment for work described in this section will be made in accordance with the provisions of SECTION 01025, MEASUREMENT AND PAYMENT.

##### 1.03 SUBMITTALS

- A. Shop drawings and material reports shall be submitted for all items to be furnished in accordance with the provisions of DOCUMENT 00700, GENERAL CONDITIONS.
- B. Submittals required under this section include, but are not limited to the following:
  - 1. Material reports for bituminous concrete pavement job mix formula and tack coat.

##### 1.04 PRODUCT HANDLING - NOT USED

##### 1.05 ENVIRONMENTAL CONDITIONS

- A. Permanent paving shall be placed only when the underlying surface is dry, when the atmospheric temperature in the shade is above 40 degrees F, and when the weather is not foggy or rainy, provided, however, that the Engineer may permit, in case of sudden rain, the placing of mixture then in transit from the plant, if laid at proper temperature and if the roadbed is free from pools of water. Such permission shall in no way relax the requirements for quality of the pavement and smoothness of surface.
- B. No material shall be laid upon a frozen base course or when wind conditions are such that rapid cooling will prevent satisfactory compaction. No load shall be sent out so late in the day that spreading and compaction cannot be completed during daylight.

#### PART 2 PRODUCTS

##### 2.01 GENERAL

- A. All materials shall conform to the requirements of "State of Connecticut Department of Transportation Standard Specification for Roads and Bridges", latest edition as last amended (hereinafter referred to as the "State Specifications") and as specified herein.

## 2.02 CALCIUM CHLORIDE

- A. Calcium Chloride shall conform to the requirements of Section 9.42 of the State Specifications.

## 2.03 BASE COURSE

- A. Gravel base course shall conform to the requirements of Section M.02.06, Grading "B" of the State Specifications. The maximum size of stone in the gravel shall be 3 inches.
- B. Processed aggregate base course shall conform to the requirements of Section M.05.01 with no reclaimed materials, Item No. 67 of the State Specifications.

## 2.04 BITUMINOUS CONCRETE PAVEMENT

- A. The binder and top courses for bituminous concrete pavement shall conform to the requirements of Section M.04 of the State Specifications.
- B. The general composition limits of materials, which makes up the Job Mix Formula, shall conform to columns entitled "SO.375 and S1" as listed in Section M.04.03 of the State Specifications. No bituminous concrete pavement shall be placed until the Engineer approves the job mix formula.

## 2.05 BITUMINOUS CONCRETE FOR TEMPORARY SURFACING

- A. Hot mixed bituminous concrete shall be as specified hereinbefore for binder course or top course unless otherwise authorized by the Engineer.
- B. Cold mixed bituminous concrete shall be a suitable type as approved by the Engineer. Cold mix may only be used when hot mixed bituminous concrete is not available and when authorized by the Engineer.

## 2.06 TACK COAT

- A. Tack Coat shall conform to the requirements of Section M.05.02 of the State Specifications.

## 2.07 BITUMINOUS CONCRETE CURBING

- A. Bituminous concrete lip curbing shall consist of machine laid bituminous concrete, constructed on the pavement to the dimensions and details shown on the Plans, or as ordered, and in conformity with the Specifications.
- B. Materials for this work, including tack coats, shall conform to the requirements of Section M.04, (Curb Mix) of "Form 817".
- C. Curb Inlets shall conform to the State Specifications.
- D. Construction methods shall conform to the requirements of Article 8.15.03 of "Form 817".

## 2.08 MORTAR

- A. Mortar for pointing joints in granite curbing shall be composed of equal parts of cement and sand with sufficient water to form a workable mixture. The materials shall conform to the requirements of Section M.11.04 of the State Specifications.

## 2.09 PAVEMENT MARKINGS

- A. Pavement marking paint shall conform to the requirements of Article M.07.20 of "Form 817".
- B. Glass beads shall conform to the requirements of Article M.07.30 of "Form 817".

## PART 3 EXECUTION

### 3.01 DUST CONTROL

- A. Calcium chloride shall be applied to control dust. No calcium chloride will be allowed where runoff will enter water bodies or wetlands.
- B. Calcium chloride shall be uniformly applied at the rate of 1-1/2 pounds per square yard.

### 3.02 PREPARATIONS FOR BITUMINOUS CONCRETE PAVING

#### A. Subgrade Preparation

1. All trenches shall be backfilled and compacted as required under the SECTION 02220, EARTHWORK. The edges of all pavements along the line of the trench shall be cut back from exposed edges thereof, a sufficient distance to form a clean, sharp straight edge essentially parallel to the centerline of the trench. The minimum lateral cut back to be allowed will be 12 inches. Cut back pavement shall be carefully removed to minimize any disturbance to foundation materials. The exposed surface of the foundation material shall then be rolled, wetting the surface as necessary to obtain a firm, even surface. Any depressions or uneven areas shall be regraded and re-rolled until the surface is smooth and satisfactorily compacted.
2. All surfaces to receive pavements shall be examined by the paving subcontractor to see that they are in proper condition to receive paving. Starting work in any area shall constitute acceptance of that surface. Sub-grade shall be maintained in satisfactory condition and properly drained until surface improvement is placed. All defects resulting from use of unaccepted surfaces shall be corrected by the Contractor at no additional expense to the Owner.

- B. The Contractor shall raise all Owner drain and sewer manhole frames and covers, catch basin frames and grates and gate boxes to the established grades before paving is applied.
- C. Prior to submitting his bid, the Contractor shall contact the other utilities so as to gain their requirements concerning any possible adjustment of gate boxes and other such structures. If the utility wishes the Contractor to raise these boxes it shall be in accordance with the utilities requirements. If the utility wishes to adjust their own gate boxes the Contractor shall give the utility adequate notice of his paving schedule.

### 3.03 GRAVEL BASE COURSE

- A. Construction requirements for gravel base course shall conform to the requirements for gravel fill in SECTION 02220, EARTHWORK.

- B. Material as previously specified shall be placed and compacted to the required thickness for the particular application. The moisture content of material may have to be adjusted to obtain the specified compaction. Refer to the SECTION 02220, EARTHWORK for specific compaction requirements. After compaction, all base course for pavements shall be as indicated on the drawings.

### 3.04 BITUMINOUS CONCRETE PAVEMENT

- A. Construction requirements for bituminous concrete pavement shall conform to Section 4.06 of the State Specifications.
- B. Material for proposed bituminous concrete roadway shall be spread on the prepared gravel base course in 2 courses in the compacted thickness indicated on the drawings. If there has been an appreciable lag in time between installing bituminous concrete courses, or if the binder course has been used extensively during construction, the Engineer shall determine whether tack coat and/or cleaning will be required.
- C. In areas indicated for proposed bituminous concrete resurfacing, the Contractor shall thoroughly clean and repair the existing pavement to the satisfaction of the Engineer. Upon securing approval, the Contractor shall apply a tack coat as specified and shall place a bituminous concrete mix to a minimum depth as shown on the Contract Drawings in an approved manner.

### 3.05 ROADWAY MARKINGS

- A. Roadway markings shall be painted on non-windy days using whatever methods are necessary to prevent overspray from discoloring pavement. Lines shall be yellow, 4 inches in width. Six pounds of glass beads shall be added to each gallon paint. Painting, in general, shall conform to Section 12.09 of the State Specifications.

END OF SECTION

SECTION 02630  
DUCTILE IRON FORCE MAIN

PART 1 GENERAL

1.01 SCOPE

- A. The work of this section includes furnishing all labor, tools, equipment and materials, and performing all operations in connection with the construction of ductile iron (DI) pipe, complete with fittings, and other related items, as specified herein and as shown on the drawings.
- B. The materials covered by this specification are intended to be standard materials of proven ability as manufactured by reputable concerns. Materials shall be designed and constructed in accordance with the best practice of the industry and shall be installed in accordance with the manufacturer's recommendations. The specifications call attention to certain features but do not purport to cover all details entering into the construction of the materials.

1.02 MEASUREMENT AND PAYMENT

- A. Measurement and payment for work described in this section will be made in accordance with the provisions of SECTION 01025, MEASUREMENT AND PAYMENT.

1.03 SUBMITTALS

- A. Shop Drawings and/or brochures shall be submitted for all items to be furnished in accordance with the provisions of the DOCUMENT 00700, GENERAL CONDITIONS.
- B. Submittals required under this section include, but are not limited to the following:
  - 1. Pipe and fittings.
  - 2. Gaskets.
  - 3. Joint Restraints
  - 4. Valves.

1.04 PRODUCT HANDLING

- A. Products shall be shipped, stored and handled in a manner consistent with the written recommendations of the manufacturer and as to not to degrade quality, serviceability or appearance. All products delivered to the project site shall be accompanied by test reports certifying that the pipe conforms to the ASTM specifications listed herein. Any unit found to be defective either before or after installation shall be removed from the project site and replaced with a sound unit.
- B. If stored for more than two weeks, the materials shall receive all maintenance considerations required by the manufacturer for proper storage of the materials.

## PART 2 PRODUCTS

### 2.01 MATERIALS

Ductile iron pipe shall be Thickness Class 54 and shall be the size shown on the Contract Drawings. All ductile iron pipe shall be lined with double-thickness, cement mortar in accordance with ANSI/AWWA, C104/A21.4-80 and Section 051-8.1 of ANSI/AWWA C151/A21.51-81. The standard interior and exterior bituminous coating will be applied to exterior piping. All ductile iron pipe shall be centrifugally cast and conform to ANSI A21.51 and ANSI A21.50. All pipes shall be made of grade 60-42-10 ductile iron. The pipe shall be in nominal laying lengths of 18 to 20 feet. Joints shall be boltless, restrained, push-on type capable of being deflected after assembly conforming to ANSI/AWWA C111/A21.11. Designs using set screws or requiring field welding are not acceptable. Acceptable products include:

1. Flex-Ring, as manufactured by American Cast Iron Pipe Company
  2. TR FLEX, as manufactured by McWane Cast Iron Pipe Company
  3. TR FLEX, as manufactured by United States Pipe and Foundry Company, LLC
- B. All fittings associated with exterior ductile iron pipe shall be boltless, restrained ductile iron fittings conforming to ANSI A21.10 or shall be mechanical joint fittings furnished with series 1100 Megalug mechanical joint restraints with Meg-Bond coating, as manufactured by EBAA Iron Sales, Inc. The restrained joint shall have a working pressure rating of 350 psi. All tie bolts shall be coated with a bitumastic coating after installation. The bolted restraint system shall be wrapped in its entirety with polyethylene once complete and prior to backfill. Joints shall conform to ANSI A21.11.
- C. Joint gaskets shall be Nitrile (NBR) (Acrylonitrile Butadiene) conforming to ANSI/AWWA C111/A21.11.
- D. Underground detectable warning tape shall be 6-inch wide detectable tape, which permanently identifies the underground sewer. The tape shall meet APWA requirements and use green colored stripes with black print indicating "CAUTION BURIED FORCE MAIN BELOW".

### 2.02 JOINTS:

- A. Provide push-on joint and mechanical joint pipe with necessary accessories, conforming to AWWA A21.11.
1. Provide gasket composition designed for exposure to liquid within pipe.
- B. Provide pipe flanges and accessories conforming to AWWA A21.15.
1. Provide flat faced flanges.
  2. Provide 1/8-inch thick, full faced gaskets designed for exposure to liquid within pipe.
- C. Manufacturers:
1. American Cast Iron Pipe Co. Flex-Ring.
  2. U.S. Pipe TR FLEX.
  3. Clow Super-Lock.
  4. Or equal.



## 2.03 POLYETHYLENE ENCASEMENT

- A. All ductile iron pipe, fittings and valves shall be polyethylene encased in accordance with ANSI/AWWA A21.5/C105. Encasement shall be V-Bio co-extruded 3-layer low density polyethylene film.
- B. Provide Affidavit of Compliance as described in Section 5.1.2 of ANSI/AWWA C105/A21.5.

## 2.04 PLUGS AND/OR CAPS

- A. Furnish and install permanent pipe plugs, caps or blank flanges as shown on the drawings and/or as directed by the Engineer. The wetted surfaces of all plugs, caps, and blank flanges shall be cement coated and asphalt seal coated as specified hereinbefore for ductile iron pipe.
- B. Furnish and maintain on the project site temporary watertight plugs in the various sizes required for the pipe to be installed.

## 2.05 GATE VALVES

- A. Resilient seated, ductile iron body, bronze mounted resilient wedge, double "O" ring seal with flanged joints. Conform to the requirements of ANSI/AWWA C509 as modified herein. Provide catalog data, assembly drawings, and manufacturer's affidavit as required by Section 6.3 of ANSI/AWWA C509.
- B. Acceptable manufacturers:
  - 1. American Flow Control
  - 2. Clow Valve Company
  - 3. Mueller Company
  - 4. Engineer approved equal
- C. Buried Valves: Mechanical joint or push-on joint ends, non-rising stem valves with operating nut in lieu of hand wheel. Provide gate boxes, steel extension stems or universal-joint operating rods with 2-in square operating nuts at upper end with coupling connected to valve stem to bring to operating nut to within 6 inches of ground surface.
- D. Exposed Valves: Flanged OS&Y valves. Face-to-face dimensions to comply with ANSI B16.10, flanges to comply with ANSI B16.1.
- E. Operator: Exterior valves shall have non rising bronze stem with wrench nut operator. Exposed valves shall use hand wheel operator. Valve opening direction to be counterclockwise (open left).
- F. All cast ferrous components shall be ductile-iron.

- G. Valve bolts, studs and nuts shall be Type 304L stainless steel conforming to ASTM F593 or ASTM F594 as applicable with anti-galling coating.
- H. Valve stem seal shall be O-ring type, replaceable under pressure.
- I. Valve Ends: Flanged joint conforming to ANSI/AWWA C207 with full face Nitrile (NBR) (Acrylonitrile Butadiene) ribbed Flange-Tyte gaskets.
- J. Bolting: Valve bolts, studs and nuts shall be Type 316L stainless steel conforming to ASTM F593 or ASTM F594 as applicable with an anti-galling coating.
- K. Interior and Exterior Coatings: Fusion bonded epoxy coating conforming to ANSI/AWWA C550. Holiday testing shall be performed.

### PART 3 EXECUTION

#### 3.01 GENERAL

- A. Force main shall be laid as shown on the drawings with a continuous slope between the high and low points defined on the drawings.
- B. Handling of Pipe
  - 1. The loading, hauling, unloading and handling of pipes and appurtenances shall be accomplished without damage. Dropping of pipe and appurtenances directly to the ground or floor will not be permitted. Suitable buffers or runners shall be provided. The Contractor shall be liable for any damage to the pipe or appurtenances until they are accepted in the completed work. Each pipe section shall be handled into its final position only in such a manner and by such means as the Engineer approves as satisfactory, and these operations will be restricted to those considered safe for the workmen and such as to cause no injury to the pipe or to any property.
  - 2. As far as practicable, the Contractor shall be required to furnish slings, straps, and/or approved devices to permit satisfactory support of the pipe when it is handled. Transportation from delivery areas to the trench shall be restricted to certain operations which can cause no injury to the pipe units.
- C. Tools for Pipe Installation
  - 1. The Contractor shall furnish all tools, torque wrenches, materials and labor necessary to make the joints in pipe in strict accordance with the manufacturer's specifications. Proper and suitable tools and appliances for the safe and convenient handling and installation of pipes shall be used.
  - 2. The Contractor shall exercise reasonable precaution during his operation in order to avoid damaging the material. All pipes, fittings or appurtenances which are so damaged shall be replaced by him at his sole expense.
- D. Installation
  - 1. All materials and equipment shall be installed in a neat workmanlike manner, and as recommended by the manufacturer. All piping shall be installed true to line

and grade and rigidly supported. Pipe shall be installed with a constant slope and with a straight alignment between structures and fittings. When pipes are laid in a trench suitable coupling holes shall be dug to provide ample space for making joints and to allow the pipe to have bedding along its entire barrel length. Before setting wall sleeves and pipes to be cast-in-place, the Contractor shall check all plans and figures which may have a direct bearing on his pipe location and he shall be responsible for the proper location of his pipes during the construction of the buildings.

2. All excavations are to be kept dry while pipe is being laid and until each joint and pipe has been viewed by the Engineer and approval given to commence backfilling operations. Pipe shall be installed in accordance with published recommendations of the pipe manufacturer.
3. All valves and appurtenances shall be installed in accordance with manufacturer's directions at locations shown on the drawings. All in-line devices provided under instrumentation shall be installed as part of the work of this section.
4. All piping not required to be painted shall be installed using stainless steel nuts, bolts and washers.

E. Cleaning and Plugging Pipe

1. The pipes and fittings shall be thoroughly cleaned before being laid and shall be kept clean until accepted in the finished work. The ends of all uncompleted lines shall be tightly closed with temporary plugs at all times when pipe laying is not in progress, and no trench water shall be permitted to enter the pipe.

F. Trenching and Backfill

1. Trenching and backfill shall conform to the applicable provisions of the Section 02220, Earthwork.
2. All pipes shall have a bedding of 3/4 inch stone from the face of the structure for a distance of ten feet or to undisturbed material.

G. Arrangement

1. Except as otherwise required, changes in direction shall be made using proper fittings, and unless shown otherwise piping shall run parallel and at right angles to walls and floors. Systems shall be arranged with low points and drains to permit complete drainage of the system. Control piping may be arranged with unions or union connections at low points to permit draining.

### 3.02 LAYING PIPE

- A. Excavations shall be made to accommodate the bedding material as specified in SECTION 02220, EARTHWORK. All excavations shall be kept dry while pipe is being laid and until each joint and pipe has been viewed by the Engineer and approval given to commence backfilling operations. Any pipe, which is not laid to grade and alignment, shall be relaid to the satisfaction of the Engineer. No blocking shall be used. Pipe shall be installed in accordance with published recommendations of the pipe manufacturer.

### 3.03 TESTING

- A. The pipe shall be subjected to hydrostatic pressure of 100 psi for a period of 2 hours. Test results shall be measured at the lower end of the system.
- B. Testing shall be in accordance with ANSI/AWWA C600-17 with an allowable leakage rate of 0.054 gallons per hour per 100 LF.
- C. Should the pipeline or sections thereof not come within the permissible leakage limits, the Contractor will be required to excavate and locate the source of leakage and make repairs. The test will be repeated until the pipeline or sections thereof are made satisfactory.
- D. The test shall be performed by an approved company experienced with the procedure.
- E. All equipment, labor, water, gauges, and the like for the testing of the force main shall be supplied at no additional cost to the Owner.

END OF SECTION

## SECTION 02725

### MANHOLES

#### PART 1 GENERAL

##### 1.01 SCOPE

- A. The work under this section includes the furnishing of all labor, materials, tools and equipment necessary to construct precast concrete manholes, including bases complete with inverts, tables, steps, frames, grates and covers, mancatchers, fittings, piping and concrete encasements for drop manholes as specified herein and as shown on the drawings.
- B. The materials covered by this specification are intended to be standard materials of proven ability as manufactured by reputable concerns. Materials shall be designed and constructed in accordance with the best practice of the industry and shall be installed in accordance with the manufacturer's recommendations. The specifications call attention to certain features but do not purport to cover all details entering into the construction of the materials.

##### 1.02 MEASUREMENT AND PAYMENT

- A. Measurement and payment for work described in this section will be in accordance with the provisions of SECTION 01025, MEASUREMENT AND PAYMENT.

##### 1.03 SUBMITTALS

- A. Shop Drawings and/or brochures shall be submitted for all items to be furnished in accordance with the provisions of the DOCUMENT 00700, GENERAL CONDITIONS.
- B. Submittals required under this section include, but are not limited to the following:
  - 1. Precast concrete manholes,
  - 2. Frames and covers.
  - 3. Horizontal joint sealing material.
  - 4. Pipe connections.
  - 5. Manhole steps.

##### 1.04 PRODUCT HANDLING

- A. Products shall be shipped, stored and handled in a manner consistent with the written recommendations of the manufacturer and as not to degrade quality, serviceability or appearance. All products delivered to the project site shall be accompanied by test reports certifying that the pipe conforms to the ASTM specifications listed herein. Any unit found to be defective either before or after installation shall be removed from the project site and replaced with a sound unit.
- B. If stored for more than two weeks, the materials shall receive all maintenance considerations required by the manufacturer for proper storage of the materials.

## PART 2 PRODUCTS

### 2.01 PRECAST CONCRETE SECTIONS FOR MANHOLES,

- A. Precast reinforced concrete sections for drain manholes, sewer manholes, valve manholes, chemical or process manholes, (hereinafter referred to as "manholes") shall conform to the applicable requirements of ASTM C478. Sections and bases shall have a minimum wall thickness of the dimensions shown on the drawings. Unless otherwise detailed on the drawings all sections shall be of precast concrete. Flat top sections to be substituted for conical sections of manholes and catch basins in areas of low cover shall be indicated in submittals, and shall conform to the requirements for precast concrete sections for handholes.
- B. Unless otherwise shown on the drawings manholes shall be four foot in diameter for pipe up to 24 inches in diameter unless the angle between two 24-inch pipes is less than 120 degrees. In such cases and when the size of the pipe is less than 36 inches a five foot inside diameter manhole shall be used. Where the pipe is 36 inches in diameter or greater, the diameter of the structure shall be as shown on the drawings.

### 2.02 HORIZONTAL JOINTS

- A. Horizontal joints between sections of manholes, unless otherwise specified herein, shall be sealed with a self-sealing butyl rubber based flexible joint sealant in rope form. Sealant material shall be Kent-Seal No. 2 as manufactured by Hamilton-Kent Mfg. Co., Kent, Ohio; C-S146 as manufactured by Concrete Products Supply Co. Div., Press Seal Gasket Corp., Fort Wayne, Indiana; Ram-Nek as manufactured by K.T. Snyder Co., Inc., Houston, Texas, or equal. Sealant shall be installed in accordance with the manufacturers written instructions.
- B. Horizontal joints between sections of precast concrete drain manholes and catch basins shall be mortared with mix specified herein.

### 2.03 MANHOLE STEPS

- A. Manhole steps shall be of steel reinforced copolymer polypropylene conforming to ASTM C478, cast-in-place or installed utilizing inserts approved by the Engineer.
- B. All steps shall be 12 inches on center with abrasive step surface and safety edge, drop front design, 1-inch diameter and 16 inches wide. Metal items embedded in concrete shall be painted with a zinc chromate primer.

## 2.06 PIPE CONNECTIONS

- A. Premolded elastomeric sealed joints shall be used at the joints between the pipe and sewer manhole sections. Premolded elastomeric sealed joints shall be A-Lok, Res-Seal, Press-Wedge II, Lock Joints Flexible Manhole Sleeve, Kor-N-Seal Joint Sleeve, or equal.
- B. Mortar shall be used between pipe and structure in the storm drainage systems. Mortar mix shall be as specified herein.
- C. Manholes shall be manufactured with knockout panels for future pipe connections/ extensions at the locations shown on the drawings.

## 2.07 MANHOLE FRAMES AND COVERS

- A. Manhole frames and covers shall be cast iron conforming to the requirements of ASTM A48, Class 30, and shall be of noiseless, non-rocking design with pick holes. The Town name and year shall be cast on each cover in three inch letters as applicable.
- B. Standard manhole covers and frames shall have a minimum clear opening of 24 7/16 inches, unless otherwise indicated on the drawings. Standard manhole frames and covers shall be Campbell Foundry Pattern Number 1007, or equal as approved by the Engineer.
- C. Locking (bolted and gasketed) type, watertight manhole frames and covers shall have a minimum clear opening of 21 inches, unless otherwise indicated on the drawings. Bolted and gasketed type frames and covers shall be Campbell Foundry Pattern Number 6540, or equal as approved by the Engineer. All cross-country manholes shall have bolted and gasketed manhole frames and covers, unless otherwise indicated on the drawings.

## 2.08 BEDDING MATERIAL

- A. Bedding material under structures herein shall be as detailed and as specified in SECTION 02220, EARTHWORK.

## 2.09 CONCRETE

- A. Concrete for tables, inverts, paved invert fillings, encasements, floor fillings and similar items shall be as specified in SECTION 03315, CAST-IN-PLACE CONCRETE.

## 2.10 SEWER BRICK

- A. Sewer brick shall conform to the provisions of ASTM-32, Grade MM. Mortar shall conform to the requirements of the Standard Specifications.

## PART 3 EXECUTION

### 3.01 PRECAST REINFORCED CONCRETE STRUCTURES

- A. Precast Reinforced Concrete Structures shall be installed as shown on the drawings. Precast sections shall be installed so that the entire structure is vertically plumb and the steps are in a true line. All erection holes and horizontal joists shall be filled solid with non-shrinking grout. The top uppermost precast section shall be set at a grade that will allow for the installation of a minimum of two courses and a maximum of five courses of manhole adjusting rings prior to setting the cast iron frame and cover. The Contractor shall furnish and use suitable slings, hooks and cables for the proper handling of the sections.

- B. Surfaces of sewer pipe to be bonded to cast-in-place concrete bases shall be cleaned of all dust, dirt, grease, laitance, and loose or spalling concrete and given, where applicable, a coat of bonding compound in conformance with the sealant or gasket manufacturers recommendations.
- C. Tables and inverts shall be constructed of brick and cement mortar for sewer manholes, and of concrete for drain manholes as shown on the drawings. The size and shape of the invert shall accurately conform to the adjoining sewer. Any change in size or direction shall be even and as gradual as possible.

### 3.02 MANHOLE COVERS AND FRAMES

- A. If overlay pavement is required by the Owner, the grates, covers and frames shall be set 1/4 inch below the finish grade of the roadway utilizing cement mortar to hold the frame in place, as detailed.
- B. The temporary roadway surface elevation shall be maintained and the grates, frames, and covers shall be set 3/4 inch above the grade of the temporary resurfacing utilizing either cement mortar or bituminous concrete to hold the frame in place. A slope, constructed of bituminous concrete pavement, shall be placed around the entire grate, frame and cover for a distance of 6 inches from the grate, frame and cover.
- C. Any voids created in the road gravel or pavement when raising the grate, frame and cover from its temporary elevation to its permanent elevation shall be filled with concrete.

### 3.04 LEAKAGE TESTS

- A. Leakage tests shall be made and observed by the Engineer on each sewer manhole. The test shall be an exfiltration, infiltration test or vacuum test made as described below:
  - 1. Preparation for Testing
    - a. After the manhole had been assembled in place, all lifting holes and horizontal joints shall be filled and pointed with an approved non-shrinking mortar. The test shall be made prior to placing the tables and invert and before filling and pointing the horizontal joints.
    - b. If the groundwater table has been allowed to rise above the bottom of the manhole, it shall be lowered for the duration of the test. All pipes and other openings into the manhole shall be suitably plugged and plugs braced to prevent blow out.
  - 2. Backfilling
    - a. The test may be conducted before backfilling around the manhole.
    - b. There will be adjustment in the leakage allowance for unknown causes including, but limited to, leaking plugs and absorption. It will be assumed that all loss of water during the test is a result of leaks through the joints or through the concrete.
  - 3. The Contractor has the option of test method depending upon the actual field conditions. The following are acceptable test methods:



- a. If the measured ground water table is above the highest joint in the manhole, and if there is not leakage into the manhole as determined by the Engineer, the Contractor may perform an infiltration or vacuum test as described herein.
- b. If the measured ground water table height is lower than the invert of the manhole, the Contractor may perform an exfiltration or a vacuum test.

### 3.05 TEST PROCEDURES

#### A. Infiltration Test

1. The manhole interior shall be visually inspected. The manhole shall be considered acceptable for use when no infiltration of ground water is observed on the interior surfaces of the manhole.

#### B. Exfiltration Test

1. The manhole shall be filled with water to the top of the cone section. If the excavation has not been backfilled and observation indicates no visible leakage, that is, no water visibly moving down the surface of the manhole, the manhole may be considered to the satisfactorily watertight.
2. If the test as described above is unsatisfactory as determined by the Engineer or if the manhole excavation has been backfilled the test shall be continued. A period of time may be permitted, if the Contractor so wishes, to allow for absorption.
3. At the end of this period, the manhole shall be refilled to the top of the cone, if necessary, and the measuring time of at least 8 hours shall begin. At the end of the test period, the manhole shall be refilled to the top of the cone, measuring the volume of water added. This amount shall be extrapolated to a 24-hour rate and the leakage determined on the basis of depth. The leakage for each manhole shall not exceed 1 gallon per vertical foot for a 24-hour period.
4. If the test fails, but the leakage does not exceed 3 gallons per vertical foot per day, repairs by approved methods may be made as to bring the leakage within the allowable rate of 1 gallon per vertical foot per day. It shall be the Contractor's responsibility to uncover the manhole as necessary and to disassemble, reconstruct or replace it as required, at no additional cost to the Owner. The manhole shall then be retested.

#### C. Vacuum Test

1. If the vacuum test is performed in lieu of the infiltration or exfiltration test the Contractor shall take any and all steps necessary to assure the Engineer that the water table is below the invert of the manhole throughout the test. Any and all measures necessary by the Contractor to lower the ground water table below the invert of the manhole will be at the Contractor's cost. The vacuum test shall be based on the following criteria:
  - a. Manhole test pressures and time shall be as follows:
    - (1) Initial test pressure, 10 inches Hg (i.e., 20 inch absolute).
    - (2) Test time, 1 inch Hg drop to 9 inch Hg in 2 minutes minimum allowable, for 0 to 10 foot deep manholes; 2-1/2 minutes minimum allowable for 10 foot to 15 foot deep manholes; 3 minutes minimum allowable for manholes greater than 15 foot in depth.

- b. If the pressure drop exceeds 1 inch Hg in 2 minutes the manhole shall be repaired and retested.
- c. If a manhole fails to meet a 1-inch Hg drop in 1 minute after repair, the manhole shall be water exfiltration tested and repaired as necessary.
- d. Testing using either air or water shall be done whenever possible prior to backfilling to assist in locating leaks. Joint repairs by parging are to be done on both outside and inside of the joint to ensure a permanent seal. Vacuum testing draws together the joint and applies high pressure to the elastomeric joint material. Properly placed and sized elastomeric joint material must be used to avoid leakage or to enable sections to be separated if necessary to effect a repair.

### 3.06 VISUAL INSPECTION

- A. At the conclusion of the work, all manholes shall be visually inspected by the Engineer to insure a straight and plumb alignment.
- B. All manholes, catch basins, handholes and pull boxes that are not straight and plumb shall be removed and replaced.

### 3.07 CLEANUP

- A. Upon completion, of all construction and testing, and prior to final acceptance all debris shall be removed from manholes and the tables cleaned.

END OF SECTION

SECTION 02922  
HYDROSEEDING

PART 1 - GENERAL

1.01 DESCRIPTION:

- A. This section describes hydroseeding, hydromulching, and seed mix establishment and maintenance for erosion control and revegetation.

1.02 REFERENCES:

- A. American National Standards Institute (ANSI):
  - 1. Z60.1-2004: American Standard for Nursery Stock.
- B. American Society for Testing and Materials International (ASTM):
  - 1. ASTM D5268, Standard Specification for Topsoil Used for Landscaping Purposes.
  - 2. ASTM D5435, Standard Test Method for Plant Growth and Food Chain Protection.
- C. State of Connecticut, Department of Transportation:
  - 1. Form 817, Standard Specifications for Roads, Bridges, and Incidental Construction, as amended.

1.03 SUBMITTALS:

- A. Submit the following shop drawings in accordance with Section 01300:
  - 1. After completion of grading and prior to soil preparation, obtain soil samples for a representative sampling of planting areas. Submit a location map showing proposed soil sample locations for review prior to collecting samples. Collect two soil samples at each sample location. Collect samples at depths of 0-6 inches (0-15.2 cm) and 6-12 inches (15.2 – 30.5 cm). Submit soil samples for agronomic soils test report. Tests shall be performed by an agronomic soils testing laboratory. Report shall include a fertility and plant suitability analysis with written recommendations for organic soil amendments, fertilizers, soil conditioners, and their respective application rates for soil treatment and plant maintenance. The soils report recommendations shall take precedence over the minimum amendment, fertilizer, and conditioner application rates specified herein only when they exceed specified minimums.

2. Submit materials list noting product (generic) name and manufacturer or supplier. List shall include fertilizers, organic amendments, soil conditioners, soil binder, herbicides, fiber mulch, etc.
3. Submit seed list naming seeds, application rate in pounds per acre, and supplier's name, address, and phone number.
4. Submit laboratory analysis of fertilizers, organic amendments, soil conditioners, soil binder, herbicides, etc.
5. Submit the above submittals to the Owner's Representative no later than 30 days prior to performing the work, giving evidence that Contractor has a source for specified hydrospray materials and seed mix and that they conform to these specifications.

1.04 QUALITY ASSURANCE:

A. Qualifications:

1. Subcontractor shall have specialized equipment and experience for hydroseeding.

B. Planting Plan:

1. Follow planting plan in accordance with Engineers drawings and planting plan narrative. Apply hydroseeding on areas shown on planting plan drawings.

C. Inspection:

1. Engineer may inspect hydroseeded area. Such inspection shall be in addition to inspection at Site.
2. Contractor shall be present during required inspections or as may be required by Engineer.

1.05 WARRANTY:

1. During 2 year correction period replace bare spots, or areas that have failed to flourish so its usefulness or appearance has been impaired.
2. Replacement and Damages:
  - a. Decisions of Engineer and Owner for required replacements is final and binding upon Contractor.
  - b. Contractor is responsible for repairing damage to property caused by defective workmanship and materials.

3. Exclusions:

- a. Contractor is not liable for replacement cost of grass damaged by deicing compounds, fertilizers, pesticides or other materials not specified in Contract Documents or not applied by Contractor, by relocating or removal by others, by acts of God, or by vandalism, and losses due to curtailment of water by local authorities.

1.06 OBSERVATIONS:

- A. Request observation by the Owner's Representative at least 48 hours in advance of required observation time.
- B. Observation will be required for the following parts of the work:
  1. Review landscape final grading and weed control prior to hydroseeding.
  2. When hydroseeding work is ready to begin, a review of slurry materials and seed mixes shall be performed prior to slurry preparation.
  3. During and upon completion of maintenance and seed mix establishment.

PART 2 - PRODUCTS

2.01 SEED MIX:

- A. Deliver seeds to the site in sealed bags with certification tags, including weight, seed type, seed purity, germination percent, and date seed tested. Give seed certification tags to Owner's Representative. Seed mix must comply with planting plan.
- B. Seed mix shall conform to the requirements of Form 817 M.13.04.

2.02 FIBER MULCH:

- A. Fiber mulch shall be derived from wood chips or recycled paper products. The mulch shall be free of chemicals and growth inhibitors. Mulch shall contain a green dye to assist in metering the application.
- B. Cellulose fiber mulch shall be Conwed 2000 (wood fiber), Conwed Corp. 612/631-5700; Cellin-K (cellulose fiber), Cellin Manuf. Inc. 703/690-1195; or equal.

2.03 HYDRO MULCH:

- A. Material for hydromulching shall consist of the fiber mulch material.

2.04 STRAW:

- A. Materials for straw tack shall consist of the straw from oats, barley, wheat, or rye and shall be seed free or fumigated to prevent introduction of weeds. At least 50 percent of the mulch by weight shall be 10 inches (25.4 cm) or more in length. Do not use old, dry straw that breaks and does not bend.

2.05 MAT:

- A. Landscape fabric consisting of wood fiber mulch conforming to Form 817 M.13.05, 3.

2.06 TOPSOIL:

- A. Fertile, friable, natural topsoil typical of locality, without admixture of subsoil, refuse or other foreign materials, and obtained from well-drained arable site. Mixture of sand, silt and clay particles in equal proportions. Free of stumps, roots, heavy or stiff clay, stones larger than 1 inch (2.54 cm) in diameter, lumps, coarse sand, noxious weeds, sticks, brush or other deleterious matter. Topsoil shall be in accordance with ASTM 5268 Standard Specification for Topsoil Used for Landscaping Purposes.

2.07 FERTILIZERS, SOIL CONDITIONERS, SOIL BINDER, AND HERBICIDES:

- A. Provide slow-release fertilizer with an analysis of 20-10-5.
- B. Provide superphosphate fertilizer with an analysis of 0-18-0.
- C. Agricultural gypsum shall be an agricultural calcium sulfate and shall contain 19 percent combined sulfur.
- D. Soil sulfur shall contain 99 percent combined sulfur.
- E. Soil Binder:
  - 1. Soil binder shall be a physllium based, organic compound derived from natural plant sources. Binder shall consist of an active hydrophilic colloid, which will hydrate with water and, upon drying after application, will tack hydrospray mix to soil surface.
  - 2. Binder shall be nontoxic and contain no growth or germination inhibitors.
  - 3. Binder shall be R-2400 by Reclamare Co. 206/824-2385, Sentinel from Albright Seed Co. 805/484-0551, Ecology M-Binder, or equal.
- F. Herbicide shall be Roundup<sup>®</sup> by Monsanto Company or equal.
- G. Fertilizer application rates shall be based on results of agronomic soil testing section 104.A.1.

### PART 3 - EXECUTION

#### 3.01 DELIVERY OF AMENDMENTS AND FERTILIZERS:

- A. Deliver amendments and fertilizers in sacks with manufacturer's label showing weight and analysis attached to each sack.

#### 3.02 LANDSCAPE GRADING:

- A. Bring planting areas to grade by filling or removing surplus dirt. Final grades shall be uniform and smooth in nonturf areas. Topsoil shall be a minimum of 2 inches (5.1 cm) below adjacent hardscape. Areas shall slope to drain.
- B. Remove rock debris over 1 inch in diameter.
- C. Topsoil shall be scarified to a depth of 2 inches (5.1 cm) inches prior to seeding.

#### 3.03 WEED AND INVASIVE SPECIES ABATEMENT:

- A. After establishment of grades and prior to hydroseeding, cut weeds and grasses to ground. Remove from site. Do not drag cut materials.
- B. Apply 150 pounds (56.0 kilograms) per acre of urea fertilizer and irrigate several times per day for a minimum of two weeks to germinate weed seeds.
- C. Following germination, a licensed pest control applicator shall spray a postemergent weed killer, Roundup<sup>®</sup> or equal, per manufacturer's directions in hydroseed areas.
- D. Wait a minimum of one week for dissipation. Remove residual foliage.

#### 3.04 HYDROSEEDING:

- A. Hydroseed the locations indicated in the drawings and where the native vegetation has been destroyed by construction or grading operations. Hydroseed excavation and fill areas.
- B. Prior to hydroseeding, all other work in areas to be hydroseeded shall be complete (i.e., grading, irrigation, other plant installations, etc.).
- C. Application:
  - 1. Measure the site and stake to identify the areas to be sprayed by each truckload of mix.
  - 2. Water the area to be hydroseeded for three consecutive days prior to or until the upper 2 inches (5.1 cm) of soil are wet. Let the top 1/4-inch (0.6 cm) of soil dry out, leaving some residual moisture in the soil below.

3. Apply the hydroseed in the form of a slurry consisting of fiber mulch, seed, soil binder, soil conditioners, fertilizer, and water. When hydraulically sprayed on the soil surface, the mix shall form a blotter-like ground cover impregnated uniformly with seed and fertilizer and shall allow moisture to percolate to the underlying soil.
4. Hydroseed in the time period between March 15 to June 15 and August 15 to October 15. Repeat in accordance with warranty, water permit, local and/or state regulations, state Department of Transportation criteria, and/or warranty as required.

D. Hydroseed Slurry Mixture:

|                               |                               |
|-------------------------------|-------------------------------|
| Seed Mix:                     |                               |
| Fiber mulch                   | 2,000 lbs (746.5 kg) per acre |
| Slow-release fertilizer:      |                               |
| 20-10-5                       | 200 lbs (74.6 kg) per acre    |
| 0-18-0 single super-phosphate | 150 lbs (56.0 kg) per acre    |
| Agricultural gypsum           | 500 lbs (186.6 kg) per acre   |
| Soil sulfur                   | 100 lbs (37.3 kg) per acre    |
| Soil binder                   | 100 lbs (37.3 kg) per acre    |

- E. Mix the soil binder at the rate of 60 pounds (22.4 kilograms) of concentrate mixed with 1,500 gallons (5,678 liters) of water.

F. Equipment:

1. Use an agitator mixer for the application of the slurry. This equipment shall have a built-in agitation system and operating capacity sufficient to agitate, suspend, and homogeneously mix a slurry containing not less than 82 pounds (30.6 kilograms) pounds of cellulose fiber mulch, plus a combined total of 15 pounds (5.6 kilograms) pounds of fertilizer solids for each 100 gallons (378.5 liters) of water.
2. The slurry distribution hose lines shall be large enough to prevent stoppage and shall be equipped with a set of hydraulic spray nozzles that will provide a continuous nonfluctuating discharge. Mount slurry tank on a traveling unit.

3.05 GEOTEXTILE AND STABILIZATION FABRIC

- A. Install biodegradable fabric such as jute mesh, burlap, coconut fiber, or other natural material as specified in accordance with design plans.



3.06 STRAW TACK:

- A. After the hydroseed application, spread straw uniformly over the hydroseed area at the rate of 3 tons (2.72 metric tons) per acre.
- B. Apply hydromulch over straw.

3.07 HYDROMULCHING:

- A. Hydromulching application shall be similar to hydroseeding as far as equipment and procedures.
- B. Apply hydromulch over hydroseed or straw.
- C. Hydromulch slurry mix shall be as follows:
  - 1. Fiber Mulch: 200 lbs (74.6 kg) per acre.
  - 2. Soil Binder: 50 lbs (18.7 kg) per acre.
- D. Mix soil binder at the rate of 30 pounds of concentrate mixed with 1,500 gallons (5,678 liters) of water.

3.08 MAINTENANCE:

- A. Maintenance work shall include the following plant establishment work:
  - 1. Maintain the entire project for a minimum period of 90 calendar days, commencing from the time all contract work items have been completed to the satisfaction of the Owner's Representative and evidence of such satisfaction has been received in writing.
  - 2. Rehydroseed planting areas that do not show a prompt establishment of plant material at 10-day intervals.
- B. Repair damage to hydroseeded areas immediately and throughout the maintenance period. Rehydroseed immediately after repairs are finished.
  - 1. Fill and level depressions caused by vehicles or foot traffic.
  - 2. Exterminate gophers and moles and repair damage as above.
  - 3. Fill rills and gullies caused by erosion.
- C. Remove obvious undesirable and/or invasive plants (such as noxious weeds, thistle, etc.) that have grown in with the hydroseed mix.

- D. Keep watering basins of container stock planted in hydroseed area free of hydroseeded plants that overgrow container stock.
- E. Maintain site in a neat and clean condition. Remove debris and trash from the site weekly.
- F. Provide a minimum of two (2) mowings of seeded areas.

END OF SECTION

## DIVISION 3 - CONCRETE

SECTION 03346

CAST-IN-PLACE CONCRETE FOR UTILITY WORK

PART 1 - GENERAL

1.01 DESCRIPTION:

- A. Provide, finish, cure and protect cast-in-place concrete for minor structures, pipe encasements and thrust blocks as indicated/specified in these Contract Documents or as required.

1.02 RELATED WORK (NOT USED):

1.03 REFERENCES:

A. American Concrete Institute (ACI):

1. ACI 211.1: Standard Practice for Selecting Proportions for Normal, Heavy Weight, and Mass Concrete
2. ACI 301: Standard Specifications for Structural Concrete.
3. ACI 304R: Guide for Measuring, Mixing, Transporting and Placing Concrete
4. ACI 305R: Hot Weather Concreting
5. ACI 306R: Cold Weather Concreting
6. ACI 308: Standard Practice for Curing Concrete
7. ACI 309R: Guide for Consolidation of Concrete
8. ACI 318: Building Code Requirements for Structural Concrete and Commentary
9. ACI 347R: Guide to Formwork for Concrete

B. American Society for Testing and Materials (ASTM) Publications:

1. A 615/A 615M: Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement

2. C 31: Practice for Making and Curing Concrete Test Specimens in the Field
3. C 33: Specification for Concrete Aggregates
4. C 39: Test Method for Compressive Strength of Cylindrical Concrete Specimens
5. C 40: Test Method for Organic Impurities in Fine Aggregates for Concrete
6. C 87: Test Method for Effect of Organic Impurities in Fine Aggregate on Strength of Mortar.
7. C 88: Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate.
8. C 94: Specification for Ready-Mixed Concrete
9. C 123: Test Method for Lightweight Pieces in Aggregate
10. C 138: Test Method for Unit Weight, Yield, and Air Content (Gravimetric) of Concrete
11. C 143: Test Method for Slump of Hydraulic Cement Concrete
12. C 150: Specification for Portland Cement
13. C 171: Specification for Sheet Materials for Curing Concrete
14. C 172: Practice for Sampling Freshly Mixed Concrete
15. C 192: Practice for Making and Curing Concrete Test Specimens in the Laboratory
16. C 309: Specification for Liquid Membrane-Forming Compounds for Curing Concrete
17. C 1064: Test Method for Temperature of Freshly Mixed Portland Cement Concrete
18. D 75: Practice for Sampling Aggregates
19. E 329: Specification for Agencies Engaged in the Testing and/or Inspection of Materials used in Construction.

1.04 SUBMITTALS:

A. Submit the following in accordance with Section 01300 - Submittals:

1. Name and address of proposed Contractor's testing laboratory firm and a brief description of prior work which is similar to that proposed for this project. Provide prior work with Owner's full name, address and telephone number. ASTM E 329 will also be used as one of the basis for evaluating the testing laboratory firm.
2. Concrete design mixes and results of strength tests from trial concrete mixes by the Contractor's testing laboratory firm.
3. Material test results by the Contractor's testing laboratory:
  - a. Fineness modulus of fine aggregate.
  - b. Fine aggregate organic impurities per ASTM C 40.
  - c. Fine aggregate mortar strength per ASTM C 87.
  - d. Fine aggregate soundness per ASTM C 33.
  - e. Coarse aggregate soundness per ASTM C 88.
  - f. Coarse aggregate chert per ASTM C 33 and C 123.
4. Mill test reports for each shipment of cement, regardless of quantity, prior to incorporation into the work.
5. Mill test reports for each shipment of reinforcement. Identify reports with specific lots in shipment and submit prior to use of reinforcement in work.

1.05 QUALITY ASSURANCE:

- A. Provide in accordance with Section 01400 and as specified herein.
- B. Perform concrete work in conformance with ACI-301 unless otherwise indicated or specified.
- C. Do not place concrete until design mix, material tests and trial concrete batch mix compression test results are approved by the Engineer.
- D. Employ an independent testing laboratory, acceptable to the Engineer, to test conformity of materials to specifications and to design concrete mixes.

- E. Furnish, pay for and deliver representative samples of sufficient quantity of cement, aggregates and admixtures required for trial concrete batch mixes to the testing laboratory. Obtain materials from the concrete batching plant which will be supplying production concrete in conformance with ASTM D 75.
- F. Testing laboratory shall furnish trial concrete design mixes having proportions, admixtures and slump proposed for use, based upon ACI 211.1. Furnish at least three different water-cement ratios which will produce a range of strengths encompassing those required for the work. Report design mixes for maximum permitted air, slump and temperature of concrete used in trial batches.
- G. Make at least two compression test cylinders for each test age of each water-cement ratio in conformance with ASTM C 192. Compression test at 7 and 28 days in conformance with ASTM C 39. Plot a curve of the test results showing the relationship between water-cement ratio and strength. Determine from these curves the maximum allowable water-cement ratio for each strength of concrete and aggregate size to produce an average compressive strength 15 percent greater than specified. Do not exceed the water-cement ratio shown in Table 03346-1.
- H. Produce new concrete design mixes at no additional cost to the Owner when job site concrete is not of required strength. Provide additional testing when original sample materials produce unsatisfactory results or new material sources are to be used. All additional testing shall be done by the same testing laboratory and paid for by the Contractor.
- I. Measure all materials for ready mixed concrete, including water, with equipment and facilities suitable for accurate measurement and capable of being adjusted in conformance with ASTM C 94. Use scales certified by local Sealer of Weights and Measures within one year of use and accurate when static load tested to plus or minus 0.4 percent of total capacity of scale. Batch all materials by weight except admixtures which may be batched by volume.
- J. Measure all materials for site mixed concrete, including water, with equipment and facilities suitable for accurate measurement. Batch all materials by weight.
- K. Provide seven and twenty-eight day concrete compression test results of all field control test specimens to the Engineer's representative in the field.
- L. Take control test specimens, slump tests, air content and temperature tests.
- M. Methods of Sampling and Testing:
  - 1. Fresh Concrete Sampling: ASTM C 172
  - 2. Specimen Preparation: ASTM C 31

3. Compressive Strength: ASTM C 39
  4. Air Content: ASTM C 231
  5. Slump: ASTM C 143
  6. Temperature: ASTM C 1064
  7. Unit Weight: ASTM C 138
- N. Acceptance: Acceptance of completed concrete work requires conformance with dimensional tolerances, appearance and strength as indicated or specified.
- O. Hot weather concrete: Conform to ACI 305R and as specified herein.
- P. Cold weather concrete: Conform to ACI 306R and as specified herein.
- Q. Reject concrete delivered to job site which exceeds the concrete temperature limitations specified.
- R. Do not place concrete in water or on frozen or disturbed ground.
- S. Remove all formwork from concrete.
- 1.06 DELIVERY, STORAGE AND HANDLING:
- A. Provide in conformance with Section 01610 and as specified herein.
  - B. Order concrete from batching plant so that trucks arrive at discharge locations when concrete is required. Avoid excessive mixing of concrete or delays in placing successive layers of concrete in forms.
  - C. Deliver concrete to discharge locations in watertight agitator or mixer trucks without altering the specified properties of water-cement ratio, slump, air entrainment, temperature and homogeneity.
  - D. Reject concrete not conforming to specification, unsuitable for placement, exceeding the time or temperature limitations or not having a complete delivery batch ticket.
- 1.07 JOBSITE CONDITIONS:
- A. Do not place concrete until conditions and facilities for making and curing control test specimens are in compliance with ASTM C 31 and as specified herein.



## PART 2 - PRODUCTS

### 2.01 MATERIALS:

- A. Furnish Portland cement conforming to ASTM C 150. Use one approved brand from one mill throughout the contract term unless otherwise approved by the Engineer. Use cement of uniform color.
  - 1. Use Type II for all work.
  - 2. Reject the entire shipment when cement is lumpy, wetted, partially or wholly set.
  
- B. Water:
  - 1. Use water for concrete which is potable and free from injurious amounts of oil, acid, alkali, organic matter or other deleterious substances, and conforms to the requirements for water in ASTM C 94, and as specified herein.
  - 2. Heat or cool water to obtain concrete temperatures indicated or specified, and in conformance with ACI 305R and ACI 306R.
  
- C. Aggregates:
  - 1. Use fine aggregates for normal weight concrete consisting of well graded natural sand conforming to ASTM C 33 and to the following requirements:
    - a. Fineness modulus: 2.50 to 3.10
    - b. Soundness: Maximum of 10 percent weighted average loss after 5 cycles of magnesium sulfate soundness test as determined by ASTM C 33.
  - 2. Use coarse aggregates for normal weight concrete consisting of well graded gravel or crushed stone conforming to ASTM C 33 and to the following requirements:
    - a. Soundness: Maximum of 14 percent weighted average loss after 5 cycles of magnesium sulfate soundness test as determined by ASTM C 88.
  - 3. Test aggregates for chert in conformance with ASTM C 33 as determined by ASTM C 123.

- D. Waterproof Curing Sheet: Waterproof paper or white opaque polyethylene film conforming to ASTM C 171.
- E. Cloth, Burlap, Jute or Kenaf: Curing materials conforming to CCC-C-467C.

2.02 MIXES:

- A. Ready Mixed Concrete: Use ready-mixed concrete secured from a batching or mixing plant conforming to ASTM C 94, capable of developing specified characteristics, and being placed without segregation.
- B. Site Mixed Concrete: Mix in a batch mixer of adequate capacity. Volume of mixed batch shall not exceed the rated capacity of the mixer.
- C. Use 3,000 psi concrete for all concrete, unless otherwise indicated or specified.
- D. Secure, for every part of work, concrete of homogeneous structure having required strength, watertightness, and durability. Give careful attention to selection of materials, mixtures, transporting to discharge locations, placing, spading, vibrating, and curing.
- E. Use the 3/4 inch coarse aggregate size for all concrete, unless otherwise indicated or specified.
- F. Provide concrete meeting the requirements in Table 03346-1.

| <b>TABLE 03346-1</b>                                 |  |                                    |
|--|--|------------------------------------|
| <b>Minimum compressive strength at 28 days (psi)</b> | <b>Minimum compressive strength at 28 days (MPa)</b> | <b>Maximum water cement ratio*</b> |
| 1,500  | 10   | 0.76                               |
| 3,000  | 20   | 0.53                               |
| 4,000  | 28   | 0.44                               |

\*Total water in mix at time of mixing, including free water in the aggregates.

- G. Consistency: Mix concrete to produce homogeneous consistency, capable of being worked into constricted areas of forms, corners and around embedded items, without segregation or bleeding of free water.

2.03 FORMS:

- A. Forms shall be constructed of sound lumber, plywood or metal and shall conform accurately to dimensions shapes and elevations indicated on the drawings.

- B. Forms shall be mortar tight, rigid and unyielding during placing and compacting of concrete.

2.04 STEEL REINFORCING BARS:

- A. Provide newly rolled deformed billet-steel reinforcement bars conforming to ASTM A 615, Grade 60.

2.05 TIE WIRE:

- A. Provide minimum 16 gage mild steel or annealed iron tie wire.

2.06 REINFORCING BAR SUPPORTS:

- B. Provide 3-in. by 3-in. plain precast concrete blocks and precast concrete doweled blocks for reinforcing bar supports. Provide block thickness to produce concrete cover of reinforcement as indicated.

2.07 CONTROLLED LOW STRENGTH MATERIAL (CLSM) (FLOWABLE FILL):

- A. 28-Day compressive strength of 100 psi.
- B. Shall be capable of being excavated without mechanical means after fully cured.
- C. The aggregate shall be sand.
- D. Water/ cement ratio of 2.0 and slump 10-12 inches.

2.08 NON-SHRINK, NON-METALLIC GROUT:

- A. Commercial fomulation requiring only addition of water with minimum 28-day compressive strength of 5,000 psi conforming to ASTM C 1107, Grade A, B, or C. Grout shall be:
  - 1. Five Star grout manufactured by U.S. Grout Corp.
  - 2. SikaGrout 212 manufactured by Sika Corporation.
  - 3. Masterflow 928 Grout manufactured by Master Builders.
  - 4. Or equal.

PART 3 - EXECUTION

3.01 GENERAL:

- A. Batch, mix and deliver portland cement concrete in conformance with ASTM C94. Batch all constituents at central batching or mixing plant. Produce concrete in conformance with ACI 301 and as specified herein.

B. Seasonal Conditions:

1. Conform to ACI 305R and as specified herein for hot weather concreting. Do not add retarder admixture to any concrete.
2. Conform to ACI 306R and as specified herein for cold weather concreting. Do not add accelerator admixture to any concrete.

3.02 FORMS:

- A. Set forms true to the indicated line and grade and to obtain specified tolerances for formed surfaces. Correct deviations in line before concrete placement.
- B. Apply oil to form surfaces in contact with concrete. Clean, repair and re-oil all reused form surfaces.
- C. Inspect forms, embedded items and foundation preparation before placing concrete. Remove snow, ice, water, dirt, debris and foreign matter from excavation and within formwork before placing concrete.
- D. Do not remove forms until concrete has cured 3 days minimum
- E. Set reinforcing bars and welded wire fabric to tolerances specified in ACI 318. Hold reinforcing in position using tie wire with ends pointed away from forms.
- F. Tack welding reinforcement is prohibited.

3.03 EMBEDDED ITEMS:

- A. Clean embedded items of oil and foreign matter.
- B. Install inserts, anchors, sleeves and other items indicated or specified under other sections of these specifications in formwork. Close ends of conduits, piping and sleeves embedded in concrete with caps or plugs.
- C. Complete required tests on embedded piping before starting concrete placement.
- D. Check location and support of piping, conduits and other embedded items before depositing concrete. Correct locations as required and secure supports.

3.04 TRANSPORTING AND MIXING:

- A. General: Conform to concreting procedures set forth in ACI 304R and as specified herein.

1. Transport concrete to discharge locations without altering the specified properties of water-cement ratio, slump, temperature and homogeneity.
  2. Discharge concrete into forms within 1-1/2 hours after cement has entered mixing drum or before the drum has revolved 300 revolutions after the addition of water, whichever occurs first. Do not add retempering water at jobsite, nor exceed the maximum water content in the approved concrete design mix.
  3. Site Mixed Concrete: Mix in a batch mixer of adequate capacity. Volume of mixed batch shall not exceed the rated capacity of the mixer.
    - a. Provide adequate facilities for accurate measurement and control of materials entering drum.
    - b. Revolve mixer at uniform peripheral speed of approximately 200 feet per minute.
    - c. Mixing Time: Mixing time is measured from the time when all solid materials and water are first introduced into the drum.
      - (1) Mixing time shall be a minimum of 1 1/2 minutes for each batch for mixers of 1 cubic yard capacity or less.
      - (2) Mixing time shall be increased 30 seconds for each additional half cubic yard capacity or fraction thereof.
    - d. The entire batch shall be discharged before the mixer is recharged.
  4. During hot weather, or under conditions contributing to rapid setting of concrete, a shorter mixing time is necessary, in conformance with the following:
    - a. Reduce mixing and placement time from 90 to 45 minutes maximum when concrete temperature at time of placement is between 85 and 90 degrees Fahrenheit.
    - b. Reject concrete with a temperature in excess of 90 degrees Fahrenheit.
- B. Conveying: Convey concrete from agitator or mixer truck to place of final deposit in forms by one of the following methods:
1. Buckets or hoppers with discharge gates having a clear opening equal to not less than one-third the maximum interior horizontal area or five times the maximum aggregate size being used, whichever is greater, and side

slopes of not less than 60 degrees to horizontal.

2. Buggies or wheelbarrows equipped with pneumatic tires.
3. Round bottom, metal or metal-lined chutes with inclined slope of between two to three feet horizontally to one foot vertically and sufficient capacity to avoid overflow.
4. Circular drop pipes with a top diameter of at least eight times the maximum aggregate size, but not less than 4 in., or tapered to not less than six times maximum aggregate size. Do not drop concrete more than 5 feet without drop pipes.

### 3.05 CONCRETE ACCEPTANCE:

- A. Accept or reject each batch of concrete delivered to the point of agitator or mixer truck discharge. Concrete acceptance shall be indicated by the signature of a Contractor's authorized representative on the delivery batch ticket.
- B. Reject concrete delivered without a complete concrete delivery batch ticket as specified herein. Copies of the signed batch ticket will be furnished by the concrete supplier to the Contractor and Engineer.
- C. Field tests shall be performed by the Contractor's testing laboratory firm at the point of agitator or mixer truck discharge. Accept or reject concrete on the basis of conformity with slump, air content and temperature specified.
- D. Inspect concrete transit truck's barrel revolution counter and gauge for measuring water added to the concrete. Reject concrete which exceeds the maximum barrel revolution of 300 or which has water content exceeding the specified water-cement ratio.
- E. Reject concrete exceeding time or temperature limitations specified.
- F. Concrete not conforming to specification shall be rejected by the Contractor or by the Engineer before discharging into the forms.

### 3.06 PLACING:

- A. Deposit concrete into its final position in conformance with ACI 304R and as specified herein. Place concrete in horizontal layers 1-1/2 to 2 feet thick maximum completely across forms. Avoid inclined layers and cold joints. Place concrete at lower portion of slope first on sloping surfaces.
  1. Do not deposit partially hardened concrete in forms. Retempering of partially hardened concrete is not permitted. Remove all partially

hardened concrete from site at no additional compensation.

2. Do not allow concrete to fall freely in forms to cause segregation (separation of coarse aggregate from mortar). Do not move concrete horizontally more than four feet from point of discharge.
3. Pump Concrete: Use equipment procedures with backup to maintain steady flow of concrete at discharge end of pipe. Maintain concrete properties of unit weight, slump, air content and temperature. Make adjustments in concrete proportions to provide concrete properties in accordance with the approved concrete design mix and as specified herein. Do not pump concrete through aluminum piping. Use pipe having at least three times the maximum coarse aggregate size. Take samples at the point of agitator or mixer truck discharge. Adjust slump and air content to maintain the specified requirements at the discharge end of the pipe. Furnish labor and assistance as required by the testing laboratory in obtaining and handling test specimens.

B. Consolidation:

1. Consolidate concrete using mechanical vibrators operated within the mass of concrete and/or on the forms conforming to procedures set forth in ACI 309R and as specified herein.
2. Conduct vibration in a systematic manner with regularly maintained vibrators. Furnish sufficient backup units at job site. Use vibrators having minimum frequency of 8,000 vibrations per minute and of amplitude to consolidate concrete. Use not less than one vibrator with crew for each 35 to 40 cubic yards of concrete placed per hour.
3. Insert and withdraw vibrator vertically at a uniform spacing over the entire area of placement. Space distance between insertions such that spheres of influence of each insertion overlap.

3.07 TESTING:

A. General:

1. The Contractor's testing laboratory firm shall use concrete samples provided by the Contractor at the point of agitator or mixer truck discharge to perform slump and temperature tests and for field control test specimens.

B. Notification of Delivery:

1. Notify the Engineer of concrete deliveries a minimum of 24 hours in advance of the scheduled placement. Include within this notification, the compressive strength and quantity of concrete, method and location of placement, frequency of trucks, ordered slump and time of initial delivery.
2. Place concrete during normal working hours whenever possible. Notify the Engineer of special conditions at least 48 hours in advance of placement when concrete placement schedules require concrete placement at times other than during normal working hours.
3. Furnish delivery batch ticket to the Engineer's representative in the field with each batch delivered to the discharge locations in conformance with ASTM C 94. Batch tickets shall be written in ink or computer printed and and to include:
  - a. Load number, truck number and driver's name
  - b. Strength of concrete (compression strength)
  - c. Amount of concrete (cu. yds.)
  - d. Time truck is charged with cement
  - e. Revolution counter reading at first addition of water
  - f. Type, brand and amount of cement
  - g. Information necessary to calculate total mixing water
  - h. Maximum size of aggregate
  - i. Weights of fine and coarse aggregates
  - j. Signature of ready-mix representative
  - k. Concrete temperature at batching plant
4. The Contractor shall notify the testing laboratory firm of scheduled concrete deliveries.

C. Test Measurements at Discharge:

1. The Contractor's testing laboratory firm shall take measurement of concrete slump and temperature for each 50 cu. yd. of each concrete



strength but not less than once a day. The laboratory firm shall conduct the slump and temperature test measurements in conformance with ASTM C 143 and ASTM C 1064, respectively.

2. The Contractor's testing laboratory firm shall immediately submit test reports of concrete field measurements specified above to the Contractor and to the Engineer.
3. The Engineer may also take measurements of concrete slump and temperature.

D. Control Test Specimens:

1. The Contractor's testing laboratory firm shall cast a minimum of one set of three field control test specimens in conformance with ASTM C 31 for each 150 cu. yd. of each concrete strength but not less than once a day.
2. Laboratory personnel shall record truck and load number from the delivery batch ticket, the concrete placement location of each specimen, the date, concrete strength, slump, temperature and truck driver's name.
3. Furnish tightly constructed 6 in. diameter by 12 in. long nonabsorbent test cylinder molds. Use molds of same type and manufacture for all test specimens. Leave molds on cylinders until received in testing laboratory.
4. The Contractor's testing laboratory firm shall compression test one of each set of three specimens at seven days. Immediately notify the Contractor and the Engineer if the seven-day strength is deficient. Test the two remaining cylinders at twenty-eight days for concrete strength acceptance. The acceptance test result is the average of the strengths of the two specimens tested at 28 days. Compression test results of the control test specimens shall be submitted by the laboratory firm to the Contractor and the Engineer. Evaluation and acceptance of concrete shall conform to ACI 301 and ACI 318.
5. The Contractor may take field control test specimens for small quantities of concrete only if approved by the Engineer.

3.08 CURING AND PROTECTION:

A. General:

1. Protect concrete from premature drying, hot or cold temperatures and mechanical injury, beginning immediately after placement and maintain concrete with minimal moisture loss at relatively constant temperature. Continuously cure concrete for a period of not less than seven days after

placement.

2. Comply with curing procedures set forth in ACI 301, applicable portions of ACI 308 and as specified herein.
3. Perform hot weather concreting in conformance with ACI 305R and as specified herein.
4. Perform cold weather concreting in conformance with ACI 306R and as specified herein.

B. Methods of Curing:

1. **Unformed Surfaces:** Cover and cure entire surface of newly placed concrete immediately after completing finishing operations and water film has evaporated from surface. Use warm water curing for unformed surfaces. Continuously water cure all exposed concrete by ponding, immersion, spraying, sprinkling or saturated materials such as burlap or cotton mats in contact with concrete surface at all times kept wet with a soil soaking hose and maintained.
2. **Formed Surfaces:** Minimize moisture loss for formed surfaces exposed to heating by the sun by keeping forms wet until safely removed. Keep surface continuously wet by warm water spray or warm water saturated fabric immediately following form removal. Liquid membrane curing compound may be substituted for water curing when curing materials and locations are approved by the Engineer.
3. **Membrane Curing:**
  - a. Use liquid membrane curing compounds where water curing is not feasible as a temporary method of curing when finishing operations necessitate delay in start of warm water curing.
  - b. Apply membrane curing compound uniformly over concrete surface by means of roller or mechanical spray machine at a rate recommended by the curing compound manufacturer, but not less than 1 gallon per 150 sq. ft. of surface area.
4. **Sealing Materials:**
  - a. Use common sealing materials such as plastic film or waterproofing (kraft) paper when approved by the Engineer.

- b. Lap adjacent sheets a minimum of 12 inches. Use sheets of sufficient length to cover sides of concrete member.
  - c. Place sheet materials only on moist concrete surfaces. Wet concrete surface with fine warm water spray if the surface appears dry.
  - d. The presence of moisture on concrete surfaces at all times during prescribed curing period is proof of acceptable curing using sheet material.
- C. Duration of Curing and Protection: Continuously cure concrete for period of not less than seven days after placing.
- 1. Protect concrete so that temperature at concrete surface will not fall below 50 deg. F. for at least seven days after placement. Use methods of protecting concrete as specified herein and in conformance with Section 01500.
  - 2. Do not use salt or heat producing chemicals for cold weather protection.
- D. Protection from physical injury: Protect concrete from physical disturbances such as heavy shock and vibration during curing period.
- E. Protection from Deicing Agents: Do not apply deicing chemicals to concrete.
- 3.09 REPAIR:
- A. General: Repair surface defects immediately after form removal. Surface defects include tie holes, air voids and bug holes with a nominal diameter or depth greater than 1/4 inch, honeycombed areas, visible construction joints, fins, burrs and other defects as determined by the Engineer. Make concrete repairs in concrete surfaces to produce a uniform color and texture and free of irregularities.
  - B. Repair of Defective Areas:
    - 1. Remove honeycombed and other defective concrete down to sound concrete. Chisel edges a minimum of 1 inch deep perpendicular to surface or slightly undercut. No feather-edges permitted.
    - 2. Dampen the area to be patched and area at least 6 inches wide surrounding it for at least 24 hours to prevent absorption of water from patching mortar.
    - 3. Make patching mixture of same materials and of approximately same proportions as used for the parent concrete, except omit coarse aggregate.

Use not more than 1 part cement to 2-1/2 parts sand by damp loose volume and substitute white portland cement for a portion of regular grey portland cement to produce patching mix to match the surrounding concrete in color when dry.

4. Use no more mixing water than necessary for handling and placing. Mix patching mortar and allow to stand with frequent manipulation with a trowel, without addition of water, until it has reached stiffest consistency that will permit placing.
  5. Brush bond coat of neat cement well into surface after surface water has evaporated from area to be patched. Consolidate mortar into place and strike off so as to leave patch slightly higher than surrounding surface to permit initial shrinkage. Leave patch undisturbed for at least 1 hour before final finish. Keep patched area damp for a minimum of 7 days.
- C. Tie Holes: Fill tie holes solid with patching mortar after cleaning and dampening. Fill tie holes in liquid containing structures with specified non-shrink, non-metallic grout.
- D. Final determination as to acceptability of concrete and repair of defects shall be made by Engineer.
- 3.10 FINISHES:
- A. Hard steel-trowel finish surfaces shaped with or without forms and over which liquids will flow.
  - B. Use forms for all concrete.
  - C. Finish other concrete surfaces as indicated or specified.
  - D. Descriptions:
    1. Steel-Trowel Finish: Remove excess laitance from surfaces by tamping, screeding and magnesium or bull-floating. Dusting with dry cement or other mixtures or sprinkling with water is not permitted in finishing. Leave surfaces with smooth hard finish free of blemishes.
    2. Form Finish: Remove fins, finish flush with parent concrete and make repairs.

3.11 METALWORK IN CONCRETE:

- A. Secure castings, inserts, conduits and other metalwork encased in concrete to prevent metalwork from being displaced or deformed during concrete work.
- B. Set anchor bolts by means of templates.

3.12 CONCRETE TOLERANCES:

- A. Comply with the requirements of ACI 117 for tolerances for formed surfaces.
- B. Maximum deviation in concrete work not to exceed 1/4 inch in 10 feet as determined by a 10 foot straight edge placed anywhere on the surface in any direction.

END OF SECTION



## APPENDIX B – WAGE RATES

Project: Hemlock Pumping Station

**Minimum Rates and Classifications  
for Heavy/Highway Construction**

**Connecticut Department of Labor  
Wage and Workplace Standards Division**

ID#: H 26524

By virtue of the authority vested in the Labor Commissioner under provisions of Section 31-53 of the General Statutes of Connecticut, as amended, the following are declared to be the prevailing rates and welfare payments and will apply only where the contract is advertised for bid within 20 days of the date on which the rates are established. Any contractor or subcontractor not obligated by agreement to pay to the welfare and pension fund shall pay this amount to each employee as part of his/her hourly wages.

Project Number:

Project Town: Branford

FAP Number:

State Number:

Project: Hemlock Pumping Station

| <b>CLASSIFICATION</b>   | <b>Hourly Rate</b> | <b>Benefits</b> |
|---|--------------------|-----------------|
| 1) Boilermaker  | 33.79              | 34% + 8.96      |
| 1a) Bricklayer, Cement Masons, Cement Finishers, Plasterers, Stone Masons | 34.72              | 32.15           |
| 2) Carpenters, Piledrivermen  | 33.53              | 25.66           |
| 2a) Diver Tenders   | 33.53              | 25.66           |

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|   |       |       |
|---|-------|-------|
| 3) Divers   | 41.99 | 25.66 |
| 03a) Millwrights  | 34.04 | 26.09 |
| 4) Painters: (Bridge Construction) Brush, Roller, Blasting (Sand, Water, etc.), Spray | 51.00 | 21.80 |
| 4a) Painters: Brush and Roller  | 34.62 | 21.80 |
| 4b) Painters: Spray Only  | 36.62 | 21.80 |
| 4c) Painters: Steel Only  | 35.62 | 21.80 |
| 4d) Painters: Blast and Spray   | 37.62 | 21.80 |

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|  |       |                        |
|--|-------|------------------------|
| 4e) Painters: Tanks, Tower and Swing   | 36.62 | 21.80                  |
| 5) Electrician (Trade License required: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9)   | 38.50 | 28.61+3% of gross wage |
| 6) Ironworkers: Ornamental, Reinforcing, Structural, and Precast Concrete Erection   | 36.67 | 35.77 + a              |
| 7) Plumbers (Trade License required: (P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2) and Pipefitters (Including HVAC Work) (Trade License required: S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4 G-1, G-2, G-8, G-9) | 43.62 | 32.06                  |
| ----LABORERS-----  |       |                        |
| 8) Group 1: Laborer (Unskilled), Common or General, acetylene burner, concrete specialist  | 30.75 | 20.84                  |
| 9) Group 2: Chain saw operators, fence and guard rail erectors, pneumatic tool operators, powdermen  | 31.00 | 20.84                  |

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|  |       |       |
|--|-------|-------|
| 10) Group 3: Pipelayers  | 31.25 | 20.84 |
| 11) Group 4: Jackhammer/Pavement breaker (handheld); mason tenders (cement/concrete), catch basin builders, asphalt rakers, air track operators, block paver, curb setter and forklift operators | 31.25 | 20.84 |
| 12) Group 5: Toxic waste removal (non-mechanical systems)  | 32.75 | 20.84 |
| 13) Group 6: Blasters  | 32.50 | 20.84 |
| Group 7: Asbestos/lead removal, non-mechanical systems (does not include leaded joint pipe)  | 31.75 | 20.84 |
| Group 8: Traffic control signalmen   | 18.00 | 20.84 |
| Group 9: Hydraulic Drills  | 29.30 | 18.90 |

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----LABORERS (TUNNEL CONSTRUCTION, FREE AIR). Shield Drive and Liner Plate Tunnels in Free Air.----

|   |       |           |
|---|-------|-----------|
| 13a) Miners, Motormen, Mucking Machine Operators, Nozzle Men, Grout Men, Shaft & Tunnel Steel & Rodmen, Shield & Erector, Arm Operator, Cable Tenders | 32.98 | 20.84 + a |
|---|-------|-----------|

|                         |       |           |
|-------------------------|-------|-----------|
| 13b) Brakemen, Trackmen | 32.01 | 20.84 + a |
|-------------------------|-------|-----------|

----CLEANING, CONCRETE AND CAULKING TUNNEL----

|  |       |           |
|--|-------|-----------|
| 14) Concrete Workers, Form Movers, and Strippers | 32.01 | 20.84 + a |
|--|-------|-----------|

|                   |       |           |
|-------------------|-------|-----------|
| 15) Form Erectors | 32.34 | 20.84 + a |
|-------------------|-------|-----------|

----ROCK SHAFT LINING, CONCRETE, LINING OF SAME AND TUNNEL IN FREE AIR:----

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|  |       |           |
|--|-------|-----------|
| 16) Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers                        | 32.01 | 20.84 + a |
| 17) Laborers Topside, Cage Tenders, Bellman                                    | 31.90 | 20.84 + a |
| 18) Miners   | 32.98 | 20.84 + a |
| ----TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED AIR:<br>----              |       |           |
| 18a) Blaster   | 39.47 | 20.84 + a |
| 19) Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders | 39.27 | 20.84 + a |
| 20) Change House Attendants, Powder Watchmen, Top on Iron Bolts                | 37.29 | 20.84 + a |

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|                              |       |           |
|------------------------------|-------|-----------|
| 21) Mucking Machine Operator | 40.06 | 20.84 + a |
|------------------------------|-------|-----------|

----TRUCK DRIVERS----(\*see note below)

|                 |       |           |
|-----------------|-------|-----------|
| Two axle trucks | 29.51 | 24.52 + a |
|-----------------|-------|-----------|

|                                       |       |           |
|---------------------------------------|-------|-----------|
| Three axle trucks; two axle ready mix | 29.62 | 24.52 + a |
|---------------------------------------|-------|-----------|

|                      |       |           |
|----------------------|-------|-----------|
| Three axle ready mix | 29.67 | 24.52 + a |
|----------------------|-------|-----------|

|  |       |           |
|--|-------|-----------|
| Four axle trucks, heavy duty trailer (up to 40 tons) | 29.72 | 24.52 + a |
|--|-------|-----------|

|                     |       |           |
|---------------------|-------|-----------|
| Four axle ready-mix | 29.77 | 24.52 + a |
|---------------------|-------|-----------|

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|   |       |           |
|---|-------|-----------|
| Heavy duty trailer (40 tons and over)   | 29.98 | 24.52 + a |
| Specialized earth moving equipment other than conventional type on-the road trucks and semi-trailer (including Euclids)   | 29.77 | 24.52 + a |
| ----POWER EQUIPMENT OPERATORS----   |       |           |
| Group 1: Crane handling or erecting structural steel or stone, hoisting engineer (2 drums or over), front end loader (7 cubic yards or over), Work Boat 26 ft. & Over, Tunnel Boring Machines. (Trade License Required)   | 40.97 | 24.80 + a |
| Group 2: Cranes (100 ton rate capacity and over); Excavator over 2 cubic yards; Piledriver (\$3.00 premium when operator controls hammer); Bauer Drill/Caisson. (Trade License Required)  | 40.64 | 24.80 + a |
| Group 3: Excavator/Backhoe under 2 cubic yards; Cranes (under 100 ton rated capacity), Gradall; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar); Grader Operator; Bulldozer Fine Grade (slopes, shaping, laser or GPS, etc.). (Trade License Required) | 39.88 | 24.80 + a |
| Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper)   | 39.48 | 24.80 + a |

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|  |       |           |
|--|-------|-----------|
| Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Spreader; Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24" Mandrell) | 38.87 | 24.80 + a |
| Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller.   | 38.87 | 24.80 + a |
| Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).  | 38.55 | 24.80 + a |
| Group 7: Asphalt Roller; Concrete Saws and Cutters (ride on types); Vermeer Concrete Cutter; Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24" and Under Mandrel).  | 38.20 | 24.80 + a |
| Group 8: Mechanic, Grease Truck Operator, Hydroblaster, Barrier Mover, Power Stone Spreader; Welder; Work Boat under 26 ft.; Transfer Machine.   | 37.79 | 24.80 + a |
| Group 9: Front End Loader (under 3 cubic yards), Skid Steer Loader regardless of attachments (Bobcat or Similar); Fork Lift, Power Chipper; Landscape Equipment (including hydroseeder).   | 37.34 | 24.80 + a |
| Group 10: Vibratory Hammer, Ice Machine, Diesel and Air Hammer, etc.   | 35.24 | 24.80 + a |



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|   |       |           |
|---|-------|-----------|
| Group 11: Conveyor, Earth Roller; Power Pavement Breaker (whiphammer), Robot Demolition Equipment.            | 35.24 | 24.80 + a |
| Group 12: Wellpoint Operator.   | 35.18 | 24.80 + a |
| Group 13: Compressor Battery Operator.  | 34.58 | 24.80 + a |
| Group 14: Elevator Operator; Tow Motor Operator (Solid Tire No Rough Terrain).                                | 33.41 | 24.80 + a |
| Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.  | 32.99 | 24.80 + a |
| Group 16: Maintenance Engineer/Oiler  | 32.32 | 24.80 + a |
| Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator. | 36.76 | 24.80 + a |

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|  |       |           |
|--|-------|-----------|
| Group 18: Power Safety Boat; Vacuum Truck; Zim Mixer; Sweeper;<br>(minimum for any job requiring CDL license). | 34.26 | 24.80 + a |
|--|-------|-----------|

\*\*NOTE: SEE BELOW

---LINE CONSTRUCTION---(Railroad Construction and Maintenance)---

|  |       |              |
|--|-------|--------------|
| 20) Lineman, Cable Splicer, Technician | 48.19 | 6.5% + 22.00 |
|--|-------|--------------|

|                              |       |              |
|------------------------------|-------|--------------|
| 21) Heavy Equipment Operator | 42.26 | 6.5% + 19.88 |
|------------------------------|-------|--------------|

|  |       |              |
|--|-------|--------------|
| 22) Equipment Operator, Tractor Trailer Driver, Material Men | 40.96 | 6.5% + 19.21 |
|--|-------|--------------|

|                      |       |             |
|----------------------|-------|-------------|
| 23) Driver Groundmen | 26.50 | 6.5% + 9.00 |
|----------------------|-------|-------------|

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|                   |       |              |
|-------------------|-------|--------------|
| 23a) Truck Driver | 40.96 | 6.5% + 17.76 |
|-------------------|-------|--------------|

---LINE CONSTRUCTION---

|                      |       |             |
|----------------------|-------|-------------|
| 24) Driver Groundmen | 30.92 | 6.5% + 9.70 |
|----------------------|-------|-------------|

|               |       |             |
|---------------|-------|-------------|
| 25) Groundmen | 22.67 | 6.5% + 6.20 |
|---------------|-------|-------------|

|                               |       |              |
|-------------------------------|-------|--------------|
| 26) Heavy Equipment Operators | 37.10 | 6.5% + 10.70 |
|-------------------------------|-------|--------------|

|   |       |              |
|---|-------|--------------|
| 27) Linemen, Cable Splicers, Dynamite Men | 41.22 | 6.5% + 12.20 |
|---|-------|--------------|

|  |       |              |
|--|-------|--------------|
| 28) Material Men, Tractor Trailer Drivers, Equipment Operators | 35.04 | 6.5% + 10.45 |
|--|-------|--------------|

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01) Asbestos/Toxic Waste Removal Laborers: Asbestos removal and encapsulation (except its removal from mechanical systems which are not to be scrapped), toxic waste removers, blasters. **\*\*See Laborers Group 5 and 7\*\***

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*Welders: Rate for craft to which welding is incidental.*

*\*Note: Hazardous waste removal work receives additional \$1.25 per hour for truck drivers.*

*\*\*Note: Hazardous waste premium \$3.00 per hour over classified rate*

***ALL Cranes: When crane operator is operating equipment that requires a fully licensed crane operator to operate he receives an extra \$4.00 premium in addition to the hourly wage rate and benefit contributions:***

- 1) Crane handling or erecting structural steel or stone; hoisting engineer (2 drums or over)***
- 2) Cranes (100 ton rate capacity and over) Bauer Drill/Caisson***
- 3) Cranes (under 100 ton rated capacity)***

Crane with 150 ft. boom (including jib) - \$1.50 extra  
Crane with 200 ft. boom (including jib) - \$2.50 extra  
Crane with 250 ft. boom (including jib) - \$5.00 extra  
Crane with 300 ft. boom (including jib) - \$7.00 extra  
Crane with 400 ft. boom (including jib) - \$10.00 extra

All classifications that indicate a percentage of the fringe benefits must be calculated at the percentage rate times the "base hourly rate".

Apprentices duly registered under the Commissioner of Labor's regulations on "Work Training Standards for Apprenticeship and Training Programs" Section 31-51-d-1 to 12, are allowed to be paid the appropriate percentage of the prevailing journeymen hourly base and the full fringe benefit rate, providing the work site ratio shall not be less than one full-time journeyman instructing and supervising the work of each apprentice in a specific trade.

*~~Connecticut General Statute Section 31-55a: Annual Adjustments to wage rates by contractors doing state work ~~*

*The Prevailing wage rates applicable to this project are subject to annual adjustments each July 1st for the duration of the project.*

*Each contractor shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.*

*It is the contractor's responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's website.*

*The annual adjustments will be posted on the Department of Labor's Web page: [www.ct.gov/dol](http://www.ct.gov/dol).*

*The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project.*

*All subsequent annual adjustments will be posted on our Web Site for contractor access.*

*Contracting Agencies are under no obligation pursuant to State labor law to pay any increase due to the annual adjustment provision.*

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*Effective October 1, 2005 - Public Act 05-50: any person performing the work of any mechanic, laborer, or worker shall be paid prevailing wage*

All Person who perform work ON SITE must be paid prevailing wage for the appropriate mechanic, laborer, or worker classification.

All certified payrolls must list the hours worked and wages paid to All Persons who perform work ON SITE regardless of their ownership i.e.: (Owners, Corporate Officers, LLC Members, Independent Contractors, et. al)

Reporting and payment of wages is required regardless of any contractual relationship alleged to exist between the contractor and such person.

**~~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 clause (29 CFR 5.5 (a) (1) (ii)).**

Please direct any questions which you may have pertaining to classification of work and payment of prevailing wages to the Wage and Workplace Standards Division, telephone (860)263-6790.

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