As Bid Set No. _____

NORWICH PUBLIC UTILITIES
NORWICH, CONNECTICUT

DOCUMENTS AND SPECIFICATIONS

FOR THE

DEEP RIVER WATER TREATMENT PLANT TRANSMISSION MAIN REHABILITATION DWSRF 2010-1040011C

BID NO. 7435

TATA & HOWARD, INC.

CONSULTING ENGINEERS

321 RESEARCH PARKWAY, SUITE 204

MERIDEN, CONNECTICUT

MARCH 2014

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SECTION 00030

ADVERTISEMENT FOR BIDS

Norwich Public Utilities shall receive Bids for the Deep River Water Treatment Plant Transmission Main Rehabilitation Project in Lebanon, Connecticut, Bid No. 7435. Bids shall be received at the Office of the Purchasing Agent at City Hall, 100 Broadway, Norwich, Connecticut 06360, until **2:00 p.m.**, prevailing time, on **Friday, April 16, 2014**, at which time bids will be opened in Room 319, Norwich City Hall. Bids submitted after this time will not be accepted.

The Work of this Contract generally consists of the slip lining with Fusible PVC pipe of approximately 3,500 linear feet of a 30-inch diameter cast iron (CI) transmission main with associated piping and appurtenances, site work and construction of a gravel access road.

On or after **March 17, 2014**, Contract Documents may be examined at the following locations:

1. Norwich Public Utilities Purchasing Department, 16 South Golden Street, Norwich, CT 06360
2. Norwich City Hall, Office of the Purchasing Agent, 100 Broadway, Room 104, Norwich, CT 06360
3. Online on the City of Norwich, Connecticut website.

Each bid shall be accompanied by a bid security in the amount of 5% of the total bid amount and in the form described in the Instructions to Bidders. A Performance Bond and Labor and Materials Payment Bond each in the amount of 100 percent of the contract price will be required for the accepted bid in the form described in the Instructions to Bidders.

No Bidder may withdraw his bid within 30 days (Saturdays, Sundays and legal holidays excluded) after the actual date of the opening of the Bids.

The Owner reserves the right to reject any or all bids, to accept any bid, to waive any informality on bids received, to omit any item or items deemed advisable for the best interests of the Owner or to limit the extent of the Work to keep within the limits of available funds.

The federal Davis-Bacon prevailing wage laws, including reporting requirements will apply to any project whose total cost is greater than $2,000.

The prevailing wage laws set forth in Part III of Chapter 557 of the Connecticut general statutes apply to all contracts and subcontracts for work performed on this project. The higher of the two wage rates will be used. Failure to pay the prevailing rate of wages to any mechanic, laborer or worker employed upon this project or to make appropriate payments or contributions on behalf of such employees to any employee welfare fund is punishable under the provisions of subsection (b) of section 31-53 of the general statutes.

The foregoing is a general description only and shall not be construed as a complete description of the Work to be performed for this Project.

The requirement for MBE/WBE participation, expressed as a percentage of the total contract amount, shall be a minimum of 8.0 percent with the following makeup:

MBE 3.0 percent WBE 5.0 percent

The requirement for MBE/WBE participation shall be applied independently to each phase of the project (planning, design and construction). If amendment(s) to the original engineering contract are necessary, the minimum 8% participation will be evaluated based upon the combined value of the original contract along with the amendment(s).

Any contract or contracts awarded under this advertisement/invitation for bids are expected to be funded in part by a loan from the State of Connecticut Drinking Water State Revolving Fund. Neither the State of Connecticut nor any of its Departments, agencies, or employees is or will be a party to this invitation for bids or any resulting contract. This procurement will be subject to the requirements contained in subsections (h), (j) and (o) of Section 22a-482-4 of the RCSA.

To demonstrate qualifications to perform the Work, each Bidder must be prepared to submit within five days after Bid opening, upon Owner's request, detailed written evidence such as financial data, previous experience, present commitments and other such data as may be called for below. Each Bid must contain evidence of Bidder's qualifications to do business in the state where the project is located or covenant to obtain such qualification prior to award of contract. Each bidder for the project shall hold a current Prequalification Certificate for a designated classification from the Department of Administration Services (DAS), and a copy of the contractor's DAS Prequalification Certificate and Update (Bid) Statement must be submitted with their bid.

Owner and/or Engineer may make such investigation as deemed necessary to determine the ability of Bidder to perform the work and Bidder shall furnish to Owner all such information for this purpose as Owner may request.

No award will be made to any Bidder who cannot meet all of the following requirements.
Bidder:

a. Shall not have defaulted on any contract within three years prior to the bid date.
b. Shall maintain a permanent place of business.
c. Shall have adequate personnel and equipment to perform the work expeditiously.
d. Shall have suitable financial status to meet obligations incident to the work.
e. Shall have appropriate technical experience satisfactory to Owner in the class of work involved.
f. Shall be registered with the Secretary of State of the Connecticut to do business in Connecticut.
g. Shall not have failed to perform satisfactorily on contracts of a similar nature.
h. Shall not have failed to complete previous contracts on time.

Owner reserves the right to reject any bid if the foregoing requirements are not satisfied or if any other evidence fails to satisfy Owner that such Bidder is properly qualified to carry out the obligations of the Contract and to complete the work contemplated.

A Pre-Bid meeting of bidders will be held in regards to this project. This meeting will take place on **Monday, March 24, 2014 at 1:00 p.m**. local time at the Deep River Water Treatment Plant, 54 Reservoir Road, Lebanon, Connecticut, 06249. In order to attend this meeting, the Bidder shall submit a written request stating his/her intention to attend, including the names of those who will be present, no later than **March 21, 2014 by noon**. The request should be sent to the following:

Mark Decker, P.E.
Water and Wastewater Integrity Manager
E-mail: markdecker@npumail.com

William Block
City Purchasing Agent

NORWICH PUBLIC UTILITIES

DWSRF 2010-1040011C

END OF ADVERTISEMENT FOR BIDS

SECTION 00100

INSTRUCTIONS TO BIDDERS

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SECTION 00100
INSTRUCTIONS TO BIDDERS

ARTICLE 1 - DEFINED TERMS

1.01 Terms used in these Instructions to Bidders which are defined in the Standard General Conditions of the Construction Contract (EJCDC C-800 2007 Edition) have the meanings assigned to them in the General Conditions.

Certain additional terms used in these Instructions to Bidders have the meaning indicated below which are applicable to both the singular and plural thereof, and are gender inclusive.

A. BIDDER - One who submits a Bid directly to Owner for all the work described in the Contract Documents.

B. APPARENT LOW BIDDER - That Bidder whose Bid as offered in the Bid Form for General Bid represents the lowest total as determined by the Proposed Contract Price.

C. PROPOSED CONTRACT PRICE - The sum of all Bid Items on the Bid Form for General Bid.

D. SUCCESSFUL BIDDER - The lowest responsible and responsive Bidder to whom Owner (on the basis of Owner's evaluation as herein provided) makes an award.

ARTICLE 2 - BIDDING DOCUMENTS

2.01 Complete sets of the Bidding Documents in the number and for the deposit sum stated in the Advertisement For Bids may be obtained from the location(s) stated in the Advertisement For Bids.

2.02 Complete sets of Bidding Documents must be used in preparing Bids; neither Owner nor Engineer assume 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 confer a license or grant for any other use.

ARTICLE 3 - QUALIFICATIONS OF BIDDERS

3.01 To demonstrate qualifications to perform the Work, each Bidder must be prepared to submit within five days after Bid opening, upon Owner's request, detailed written evidence such as financial data, previous experience, present commitments and other such data as may be called for below. Each Bid must contain evidence of Bidder's qualifications to do business in the state where the project is located or covenant to obtain such qualification prior to award of contract. Each bidder for the project shall hold a current Prequlification Certificate for a designated classification from the Department of Administration Services (DAS), and a copy of the contractor's DAS Prequalification Certificate and Update (Bid) Statement must be submitted with their bid.

3.02 Owner and/or Engineer may make such investigation as deemed necessary to determine the ability of Bidder to perform the work and Bidder shall furnish to Owner all such information for this purpose as Owner may request.

A. No award will be made to any Bidder who cannot meet all of the following requirements. Bidder:
   a. Shall not have defaulted on any contract within three years prior to the bid date.
   b. Shall maintain a permanent place of business.
   c. Shall have adequate personnel and equipment to perform the work expeditiously.
   d. Shall have suitable financial status to meet obligations incident to the work.
   e. Shall have appropriate technical experience satisfactory to Owner in the class of work involved.
   f. Shall be registered with the Secretary of State of the Connecticut to do business in Connecticut.
   g. Shall not have failed to perform satisfactorily on contracts of a similar nature.
   h. Shall not have failed to complete previous contracts on time.

3.03 Owner reserves the right to reject any bid if the foregoing requirements are not satisfied or if any other evidence fails to satisfy Owner that such Bidder is properly qualified to carry out the obligations of the Contract and to complete the work contemplated.

3.04 Nothing indicated herein will prejudice Owner's right to seek additional pertinent information as is provided in Article 18 – BASIS OF AWARD AND AWARD OF CONTRACT.

ARTICLE 4 - EXAMINATION OF CONTRACT DOCUMENTS AND SITE

4.01 It is the responsibility of each Bidder before submitting a Bid;

A. To examine thoroughly the Contract Documents and other related data identified in the Bidding Documents.

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

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

D. To study and carefully correlate Bidder's knowledge and observations with the Contract Documents and such other related documents.

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

4.02 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders on subsurface conditions, other physical conditions and Underground Facilities, and possible changes in the Contract Documents due to differing or unanticipated conditions appear in paragraphs 4.02. and 4.03. of the General Conditions.

4.03 Information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the site is based upon information and data furnished

to Owner and Engineer by owners of such Underground Facilities or others, and Owner and Engineer do not assume responsibility for the accuracy or completeness thereof.

4.04 On request, Owner will provide each Bidder access to the site to conduct such examinations, investigations, explorations, tests and studies as each Bidder deems necessary for submission of a Bid. Bidder must fill all holes and clean up and restore the site to its former conditions upon completion of such explorations, investigations, tests and studies.

4.05 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Contract Documents and applying the specific means, methods, techniques, sequences or procedures of construction (if any) that may be shown or indicated or expressly required by the Contract Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities and discrepancies that Bidder has discovered in the Contract Documents and the written resolutions thereof by Engineer is acceptable to Bidder and that the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

ARTICLE 5 - PRE-BID CONFERENCE

5.01 The Bidder's attention is directed to the "Advertisement for Bids" Section 00030 of the contract specifications concerning the pre-bid meeting.

ARTICLE 6 - AVAILABILITY OF LANDS FOR WORK, ETC.

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

6.02 The Contractor shall take particular care to avoid damages to all private property outside the limits of the Contract. He shall make good any damages to the satisfaction of the Engineer.

6.03 The site upon which the Work is occurring will remain accessible for the State of Connecticut Department of Public Health, The State of Connecticut Department of Environmental and Energy Protection, and/or authorized State representatives.

ARTICLE 7 - INTERPRETATIONS AND ADDENDA

7.01 All questions about the meaning or intent of the Bidding Documents are to be directed to Engineer. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda, in writing to all bidders who obtained bid documents, up to five (5) business days prior to the date of opening of Bids. Questions received less than five (5) business days prior to the date for opening of Bids may not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

7.02 Addenda may also be issued to modify the Bidding Documents as deemed advisable by Owner or Engineer.

ARTICLE 8 - BID SECURITY

8.01 Each Bid must be accompanied by Bid security made payable to Owner in an amount of five percent of Bidder's maximum Proposed Contract Price and in the form of cash, a certified or cashier check, or a Bid Bond, issued by a surety authorized to do business in the State of Connecticut.

8.02 The Bid Security shall be in the amount stated in the Advertisement For Bids. Bid Security shall be sealed in a separate envelope from the Bid and then attached to the envelope containing the Bid. All Bid Securities of Bidder except those of the three eligible Low Bidders will be returned within five days, (Saturdays, Sundays and legal holidays excluded) after the opening of General Bids. All Bid Securities will be returned on the execution of the Agreement or if no award is made, within sixty days, (Saturdays, Sundays and legal holidays excluded), after the actual date of opening of the Bids, unless forfeited under the conditions herein stipulated.

8.03 In the case a party to whom a contract is awarded shall fail or neglect to execute the Agreement and furnish the satisfactory bonds within the time specified, Owner may determine that the Bidder has abandoned the Contract, and thereupon the Bid Forms and acceptance shall be null and void and the Bid Security accompanying the Bid Form shall be forfeited to Owner as liquidated damages for such failure or neglect and to indemnify said Owner for any loss which may be sustained by failure of the bidder to execute the Agreement and furnish the bonds as aforesaid, provided that the amount forfeited to Owner shall not exceed the difference between the Proposed Contract Price of said Bidder and that of the next eligible bidder and provided further that, in case of death, disability, or other unforeseen circumstances affecting the Bidder, such Bid Security may be returned to them. After execution of the Agreement and acceptance of the bonds by Owner, the Bid Security accompanying the Bid Form of the successful bidder will be returned.

ARTICLE 9 - CONTRACT TIMES

9.01 The number of days within which, or the dates by which the Work is to be Substantially Completed, and Completed and ready for final payment are set forth in the Bid Form and the Agreement.

ARTICLE 10 - LIQUIDATED DAMAGES.

10.01 Provisions for liquidated damages are set forth in the Contract Documents.

ARTICLE 11 - SUBSTITUTE AND "OR-EQUAL" ITEMS.

11.01 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. Whenever it is specified or described in the Bidding Documents that a substitute or "or-equal" item of material or equipment may be furnished or used by Contractor, if acceptable to Engineer, application for such acceptance will not be considered by Engineer until after the Effective Date of the Agreement. The procedure for submission of any such application by Contractor and consideration by Engineer is set forth in paragraph 6.05, of the General Conditions.

ARTICLE 12 - MANUFACTURER'S EXPERIENCE

12.01 Whenever it is written that an equipment manufacturer must have a specified period of experience with their product, equipment which does not meet the specified experience period may be considered if the equipment supplier or manufacturer is willing to provide an "Efficiency Guarantee Bond" or cash deposit for the duration of the specified time period which will guarantee replacement of that equipment in the event of failure.

ARTICLE 13 - PREPARATION OF BID

13.01 The Bid Form and other attachments are included with the Bidding Documents. No substitution of forms will be allowed.

13.02 All blanks on the Bid Form must be completed by typing or printing figures where required. No substitution shall be made in the phraseology of the forms. Ditto marks are not considered writing or printing and shall not be used.

13.03 Bids by corporations must be executed in the corporate name by the president or a vice-president (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation must be shown above the signature.

13.04 Bids by partnerships must be executed in the partnership name and signed by a partner, whose title must appear on the line below the signature.

13.05 All names must be typed or printed in black ink below the signature.

13.06 The bid shall contain an acknowledgment of receipt of all Addenda (the numbers of which must be filled in on the Bid Form).

13.07 The address and telephone number for communications regarding the Bid must be shown.

13.08 Proposals will be rejected if they show any omission, alteration of form, additions not called for, conditional or alternate bids, or irregularities of any kind.

ARTICLE 14 - MODIFICATIONS AND WITHDRAWAL OF BIDS

14.01 Bids may be modified or withdrawn by an appropriate document duly executed (in the manner that a Bid must be executed) and delivered to the place where Bids are to be submitted at any time prior to the opening of Bids.

14.02 If within twenty-four 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, that Bidder will be disqualified from further bidding on the Work to be provided under the Contract Documents.

ARTICLE 15 - SUBMISSION OF BIDS

15.01 Bids shall be submitted at the time and place, and in the manner set forth in the Advertisement For Bids. Enclose Bids in an opaque sealed envelope, marked with the Project Title (and, if applicable, the designated portion of the Project for which Bid is submitted) and name and address of Bidder and accompanied by the Bid security and other required documents. If the Bid is sent through the mail or other delivery system the sealed envelope shall be enclosed in a separate envelope with the notation "BID ENCLOSED" on the face of it. All bids received will be safeguarded until opened.

15.02 Only one Bid from any individual, firm, partnership, or corporation, under the same or different names, will be considered. Should it appear to the Owner that any Bidder is interested in more than one Bid for Work contemplated, all Bids in which such Bidder is interested will be rejected.

ARTICLE 16 - OPENING OF BIDS

16.02 Bids will be opened at the place where bids are to be submitted. An abstract of the amounts of the base bids and major alternates (if any) will be made available to Bidders within seven days after the date of Bid opening.

ARTICLE 17 - BIDS TO REMAIN SUBJECT TO ACCEPTANCE

17.01 The time period for holding bids is sixty days, (Saturdays, Sundays, and legal holidays excluded), after the opening of bids.

ARTICLE 18 - BASIS OF AWARD AND AWARD OF CONTRACT

18.01 If the Contract is to be awarded, Owner will give Successful Bidder a Notice of Award within thirty days after the day of the Bid opening, Saturdays, Sundays and legal holidays excluded.

18.02 Owner reserves the right to reject any or all Bids, including without limitation, the rights to reject any or all nonconforming, nonresponsive, unbalanced or conditional Bids and to reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standards or criteria established by Owner. Owner also reserves the right to waive all informalities not involving price, time or changes in the Work. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

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

18.04 Owner may conduct such investigations as Owner deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications and financial ability of Bidders and

other persons and organizations to perform and furnish the Work in accordance with the Contract Documents to Owner's satisfaction within the prescribed time.

ARTICLE 19 - CONTRACT SECURITY AND INSURANCE

19.01 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 must be accompanied by such bonds.

ARTICLE 20 - EXECUTION OF AGREEMENT

20.01 When Owner gives a Notice of Award to the Successful Bidder, it will be accompanied by unsigned copies of the Agreement and other appropriate documents. Within ten (10) days (not including Sunday) from the date of the award, the party to whom the contract is awarded shall submit to the Engineer its Standard Hourly Wage Rates and its Standard Equipment Billing Rate Schedule to Owner.

20.02 Within ten (10) days (not including Sunday) from the date of the Notice of Award the party to whom the contract is awarded shall submit to the Engineer a completed Agreement, Insurance Certificates with list of additional insured and required bonds.

20.03 Within ten (10) days (not including Sunday) from the date of the Notice of Award, the party to whom the Contract is awarded shall submit to the Engineer for review and approval, a Schedule of Values for all 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 over head and profit applicable to each item of work.

20.04 Within ten (10) days (not including Sunday) from the date of the Notice of Award, the party to whom the Contract is awarded shall also submit to the Engineer for review and approval, a Cash Flow Projection.

20.05 In the event of failure of the Successful Bidder to sign the Agreement and provide an acceptable Performance and Payment Bond(s), insurance certificate(s), Responsible Contractor Policy, and other required documents, the Owner may award the contract to the next lowest, responsive, responsible Bidder.

ARTICLE 21 - SALES AND USE TAX

21.01 Materials and supplies used in the construction of this project will be exempt from the State of Connecticut sales and use tax. Owner shall provide a Certificate of Exemption Number. Bidders shall take this exemption into account in preparing their bid.

21.02 The Norwich Public Utilities of Connecticut is exempt from Connecticut State Sales and Use Taxes on materials and equipment to be incorporated in this work. The Contractor may purchase materials or supplies to be consumed in the performance of this contract without payment of tax and shall not include taxes in his Contract Price.

ARTICLE 22 - SAFETY AND HEALTH REGULATIONS

22.01 This Project is subject to all of the Safety and Health regulations (CFR 29, Part 1926 and all subsequent amendments) as promulgated by the U. S. Department of Labor on June 24, 1974 and CFR 29, Part 1910, General Industry Safety and Health regulations Identified as Applicable to Construction.

22.02 The Successful Bidder shall comply with the Department of Labor Safety and Health Regulations for Construction promulgated under the Occupational Safety and Health Act of 1970 (PL-91-596) and under Section 107 of the Contract Work Hours and safety Standards Act (PL-91-54).

ARTICLE 23 – MISCELLANEOUS

23.01 All licenses and permits for complying with any applicable Federal, State, and Municipal laws, codes, and regulations in connection with the prosecution of the work shall be obtained by the Contractor, at no additional cost to the Owner.

23.02 If the work should be stopped under an order of any court or other public authority, for a consecutive period of not less than ninety (90) days, through no act or fault of the Contractor or of anyone employed by him, then the Contractor may upon seven (7) days written notice to Owner and Engineer, and provided Owner and Engineer do not remedy such suspension or failure within that time, terminate this Contract and recover from the Owner payment for all work executed.

23.03 Attorneys-in-fact who sign contract bonds must file, with each bond, a certified and effectively dated copy of their power of attorney.

23.05 NON-RESIDENT CONTRACTORS

Connecticut General Statute §12-430(7) requires that:

When a non-resident contractor enters into a contract they must post a 5% cash or guarantee bond for the total amount with the Commissioner of Revenue Services; or any person dealing with a non-resident contractor without first obtaining a certificate of compliance must deduct 5% from the amount payable to the non-resident contractor and submit it to the state.

If the requirements are not met, the general contractor will be liable for all Connecticut taxes imposed.

All questions shall be directed to the State of Connecticut Department of Revenue Services Discovery Unit at 860-541-3280

END OF INSTRUCTIONS TO BIDDERS

SECTION 00300

BID FORM

The bid of _____ (hereinafter called "Bidder"), organized and existing under the laws of the State of _____ doing business as

_____

(Insert "a corporation", "a partnership", or "an individual", as applicable)

to Norwich Public Utilities, (hereinafter called "Owner")

In compliance with your Advertisement for Bids, Bidder hereby proposes to perform all work for the Deep River Water Treatment Plant Transmission Main Rehabilitation Project, Bid No. 7435, in strict accordance with the Contract Documents, within the time set forth therein, and at the prices stated below.

By submission of this Bid Form, each Bidder certifies, and in the case of a joint Bid, each party thereto certifies as to his own organization, that this Bid Form has been arrived at independently, without consultation, communication, or agreement, as to any matter relating to this Bid Form with any other Bidder or with any competitor.

Bidder hereby agrees to commence work under this contract on or before a date to be specified in the Notice To Proceed and to fully complete the project within 150 consecutive calendar days thereafter. Bidder further agrees to pay as liquidated damages, the sum of $1,300 for each consecutive calendar day thereafter.

To the Awarding Authority:

1. The undersigned proposes to furnish all labor and materials required for Deep River Water Treatment Plant Transmission Main Rehabilitation Project, in accordance with the accompanying Contract Documents prepared by Tata & Howard, Inc., for the Proposed Contract Price specified herein, subject to additions and deductions according to the terms of the Contract Documents.

2. Bidder acknowledges receipt of the following Addenda:

Addendum #	_____	Dated:	_____
Addendum #	_____	Dated:	_____
Addendum #	_____	Dated:	_____

Bidder understands that the Owner reserves the right to reject any or all bids, to waive any informalities in the bidding or to reduce the scope of the Work to stay within budget restraints.

Bid security in the form of a bid bond, cash certified check, treasurer's or cashier's check, payable to the Owner, in a dollar amount of 5 percent of the total bid, in accordance with the conditions in the Instructions To Bidders, has been attached to this bid.

The Bidder agrees that this bid shall be good and may not be withdrawn for a period of 30 calendar days after the actual date of opening thereof.

Upon receipt of written notice of the acceptance of this bid, Bidder will execute the formal contract attached within 5 days (Saturdays, Sundays and legal holidays excluded) and deliver a Surety Bond or Bonds as required by ARTICLE 5 of the General Conditions. The Bid Security, attached, in the sum of

_____(Words)

Dollars ($_____) is to become the property of the Owner, in the event the Contract and Bond are not executed within the time above set forth, as liquidated damages for the delay and additional expense to the Owner caused thereby.

The undersigned 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 in this subsection the word "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity.

The undersigned further certifies under penalty of perjury that the said undersigned is not presently debarred from doing public construction work in the State of Connecticut under the provisions of Section thirty one (31) A of Chapter thirty one (31) or any other applicable debarment provisions of any other Chapter of the General Statutes or any rule or regulation promulgated thereunder.

Pursuant to pertinent portions of the Connecticut General Statutes, I certify under the penalties of perjury that I, to my best knowledge and belief, have filed all State Tax Returns and paid all State Taxes required under the Connecticut General Statutes.

Date_____

If the Bidder is a corporation, indicate State of incorporation, and affix corporate seal.

_____
(Name of General Bidder)

By_____
(Name of Person Signing Bid and Title)

_____
(Business Address)

_____
(City and State)

Amounts are to be shown in both words and figures. In cases of discrepancy, the amount shown in words will govern.

The unit and lump sum prices shall include all labor, equipment, materials, overhead, profit, insurance, bond, etc. to cover the finished work of the several kinds called for.

The Contractor's attention is directed to the fact that information relative to existing structures, piping or buried cables, apparent and latent conditions and natural phenomena as furnished to him in the Contract Documents, carries no guarantee expressed or implied as to its completeness or accuracy and he has made all due allowance therefore.

The Bidder also understands that the quantities of work tabulated in this Bid Form or indicated in the Contract Documents are only approximate and are subject to increase or decrease.

The following schedule of bid items shall be completed in ink or typewritten. All unit prices must be entered in both words and figures and extended by the Bidder. In case there is a discrepancy between the total amount of bid and the correct extension and sum of the amounts for each bid item, the unit prices and their correct extension will govern.

The total bid price for the contract, correctly calculated in this Section, is to be used for the comparison of bids to determine the apparent low Bidder.

SCHEDULE OF BID ITEMS

The following unit prices as defined in the Contract Documents are designated for items of work on the basis of quantities estimated by the Engineer. The unit or lump sum price shall be entered in both words and figures in the appropriate space for each item description. Actual payment for unit price items will be for actual quantity of each item, approved by the Engineer, at the unit price bid.

ITEM NO	ESTIMATED QUANTITY	ITEM DESCRIPTION AND UNIT AND LUMP SUM PRICES IN WORDS	UNIT PRICES DOLLARS/CENTS IN FIGURES	EXTENDED AMOUNT DOLLARS/CENTS IN FIGURES
1	200 C.Y.	Over-Excavation		
			$	$
		Per Cubic Yard in Words		
2	50 C.Y.	Rock/Ledge Excavation		
			$	$
		Per Cubic Yard in Words		
3	350 C.Y	Gravel Borrow		
			$	$
		Per Cubic Yard in Words		
4	100 C.Y.	Sand Borrow		
			$	$
		Per Cubic Yard in Words		
5	70 L.F.	6-Inch Restrained Joint Ductile Iron Water Main		
			$	$
		Per Linear Foot in Words		
6	420 L.F.	24-Inch Restrained Joint Ductile Iron Water Mains		
			$	$
		Per Linear Foot in Words		
7	3 Each	Hydrants		
			$	$
		Per Each in Words		
8	16000 LBS.	Ductile Iron Fittings		

			$	$
		Per Pound in Words		
ITEM NO	ESTIMATED QUANTITY	ITEM DESCRIPTION AND UNIT AND LUMP SUM PRICES IN WORDS	UNIT PRICES DOLLARS/CENTS IN FIGURES	EXTENDED AMOUNT DOLLARS/CENTS IN FIGURES
9	3 Each	Manual Air Release Valves		
			$	$
		Per Each in Words		
10	2 Each	6-Inch Gate Valves		
			$	$
		Per Each in Words		
11	4 Each	16-Inch Gate Valves		
			$	$
		Per Each in Words		
12	5 Each	24-Inch Butterfly Valves		
			$	$
		Per Each in Words		
13	2 Each	30-Inch Butterfly Valves		
			$	$
		Per Each in Words		
14	7000 L.F.	Sixteen-inch Temporary Bypass		
			$	$
		Per Linear Foot in Words		
15	3500 L.F.	24” Fusible PVC Slip Lining of 30-inch Diameter Mains		
			$	$
		Per Linear Foot in Words		
16	3500 L.F.	Television Inspection		
			$	$
		Per Linear Foot in Words		

17	2 Each	Obstructions		
			$	$
		Per Each in Words		
ITEM NO	ESTIMATED QUANTITY	ITEM DESCRIPTION AND UNIT AND LUMP SUM PRICES IN WORDS	UNIT PRICES DOLLARS/CENTS IN FIGURES	EXTENDED AMOUNT DOLLARS/CENTS IN FIGURES
18	2600 L.F.	Environmental Controls		
			$	$
		Per Linear Foot in Words		
19	310 S.Y.	Bituminous Concrete - Trench Paving		
			$	$
		Per Square Yard in Words		
20	940 S.Y.	Bituminous Concrete – Overlay Paving		
			$	$
		Per Square Yard in Words		
21	150 S.Y.	Lawn & Landscaping Restorations		
			$	$
		Per Square Yard in Words		
22	90 L.F.	Bituminous Concrete Curbing		
			$	$
		Per Linear Foot in Words		
23	19 Each	Evergreen Trees		
			$	$
		Per Each in Words		
24	2 Each	Tubular Barrier Gate		
			$	$
		Per Each in Words		
25	760 S.Y	Rip Rap		

			$	$
		Per Square Yard in Words		
26	80 L.F.	36" Reinforced Concrete Pipe		
			$	$
		Per Linear Foot in Words		
ITEM NO	ESTIMATED QUANTITY	ITEM DESCRIPTION AND UNIT AND LUMP SUM PRICES IN WORDS	UNIT PRICES DOLLARS/CENTS IN FIGURES	EXTENDED AMOUNT DOLLARS/CENTS IN FIGURES
27	2500 L.F.	Gravel Access Road		
			$	$
		Per Linear Foot in Words		
28	750 L.F.	Grass Access Road		
			$	$
		Per Linear Foot in Words		

ALTERNATIVE 1

(A Grass Access Drive in place of Items 27 & 28)

ITEM NO	ESTIMATED QUANTITY	ITEM DESCRIPTION AND UNIT AND LUMP SUM PRICES IN WORDS	UNIT PRICES DOLLARS/CENTS IN FIGURES	EXTENDED AMOUNT DOLLARS/CENTS IN FIGURES
29	3250 L.F.	Grass Access Road		
			$	$
		Per Linear Foot in Words		

TOTAL BASE BID PRICE

1. Total Amount of Bid (Total of Item Nos. **1** through **28**):

   (In numbers) $_____

   (In words) _____ Dollars

   and _____ Cents

2. Total Amount of Bid (Total of Item Nos. **1** through **26**, plus Item No. **29**)
   (In numbers) $_____

   (In words) _____ Dollars

   and _____ Cents

Respectfully Submitted:

_____	_____
Signature	Address
_____	_____
Title	Date
_____	
License No. (If Applicable)	

Seal - (If Bid is By Corporation)

Bidders shall submit the following completed forms with their bid:

1. Bid Bond

Failure to submit the Bid Bond with the Bid Form shall be cause for rejection of the Bid Form.

END OF BID FORM

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

Clean Water Fund Memorandum
April 17, 2013

TO: All Connecticut Municipalities and Engineering Consultants

FROM: Denise Ruzicka, Director of Planning & Standards, Bureau of Water Protection & Land Reuse

RE: Disadvantaged Business Enterprise (DBE) Subcontractor Participation on Clean Water Fund (CWF) Construction Projects

I. PURPOSE

The municipality, through its Prime Contractor must make specified good faith efforts to attain the DBE goals as specified in this document. This is an administrative condition of the U.S. Environmental Protection Agency (EPA) Grant which funds Clean Water Fund Projects.

II. GOVERNING STATUTE OR REGULATION

General Compliance (Federal), 40 CFR, Part 33: The municipality, through its Prime Contractor must comply with the requirements of EPA's Program for Utilization of Small, Minority, and Women's Business Enterprises (MBE/WBE).

III. EPA REQUIREMENTS

The following clause shall be included in all construction contract documents for goods and services to be funded under the CWF:

> The requirement for DBE subcontractor participation, expressed as a percentage of the total eligible contract amount, shall be a minimum of 8.0 percent with the following makeup:
>
> MBE 3.0 percent WBE 5.0 percent
>
> Failure to meet or exceed the required percentage may render a bid non-responsive and may cause the rejection of the bid.

A DBE must be certified at the time that the subcontract for their services is executed. A business that is pending certification or whose certification has expired cannot be counted toward the goals. This is also the case if the business is pending recertification of its expired status as a DBE.

IV. THE SIX GOOD FAITH EFFORTS AS SPECIFICALLY DEFINED BY EPA

The Six Good Faith Efforts are required methods employed by all DEEP Clean Water Fund recipients to ensure that all DBEs have the opportunity to compete for procurements funded by DEEP financial assistance dollars.

1. Ensure DBEs are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities. For Indian Tribal, State and Local and Government recipients, this will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources.

2. Make information on forthcoming opportunities available to DBEs and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.

3. Consider in the contracting process whether firms competing for large contracts could subcontract with DBEs. For Indian Tribal, State and local Government recipients, this will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.

4. Encourage contracting with a consortium of DBEs when a contract is too large for one of these firms to handle individually.

5. Use the services and assistance of the SBA and the Minority Business Development Agency of the Department of Commerce.

6. If the Prime Contractor awards subcontracts, require the Prime Contractor to take the above steps.

The Prime Contractor's certification as a DBE has no effect on this requirement. Therefore, if the Prime Contractor is a DBE, the Six Good Faith Efforts defined above must be employed in the procurement of subcontracts to be secured to achieve the MBE 3.0% and WBE 5.0% participation. Also, for subcontracts for material suppliers, only 25% of the dollar value of their contracts may be applied toward the required percentage listed above unless that supplier manufactures those supplies and/or adds specialized input to the process.

V. ACCEPTABLE CERTIFICATION OPTIONS

1. **Connecticut Department of Administrative Services (DAS)** - DEEP will continue to accept DAS certification until such time as other State entities are identified whose certification processes meet the EPA criteria. DAS will only certify Connecticut based firms that meet the criteria under CGS 4a-60g. It is sometimes considered an acceptable practice to count a WBE as a MBE; however, it is at the DEEP Municipal Facilities Unit's discretion in cooperation with the DEEP Clean Water Fund Administration Unit as to whether or not this will be permitted. Requests concerning all such cases must be requested in writing through the DEEP Municipal Facilities Engineer assigned to the project for a determination.

2. **Connecticut Department of Transportation (ConnDOT)** - Companies that desire to do business with ConnDOT as well as the DEEP should seek ConnDOT certification which will be

accepted by the DEEP. DBE firms are advised that the certification process can take 90 days to complete. ConnDOT will certify both in state as well as out of state firms.

3. **The Environmental Protection Agency (EPA)** – In the event an entity cannot be certified by ConnDOT as a DBE, that entity should seek certification with EPA. Such entities must provide EPA with evidence from ConnDOT denying certification.

4. **Small Business Administration (SBA-Federal)**-SBA certification is available to companies under the Woman Owned Small Business (WOSB) program and the SBA 8(a) Business Development Program (www.sba.gov/8abd/) which has a net worth ceiling of $250,000 for initial applicants.

5. **Other states certification-** Prime Contractors and Engineering Consultants may utilize certification from other states. Such certification must specify the DBE designation. Where there is no DBE certification option within a state, the instance must be presented to the DEEP Financial Administrator assigned to the project for consideration on a per case basis.

VI. DBE COMPLIANCE PROCESS

Within fourteen (14) calendar days after bid opening the apparent low bidder shall complete and submit to the municipality the Subcontractor Verification Form provided in the contract documents along with corresponding DBE certification for each subcontractor. The municipality must then submit copies as part of the bid application to DEEP as demonstration of compliance with this memorandum. **Failure to submit these documents by the close of business of the fourteenth calendar day after bid opening may result in the bid being deemed non-responsive and may cause the rejection of the bid.** Two executed copies of the DBE subcontracts must be submitted to the municipality, who must then submit one copy to the DEEP Financial Administrator as demonstration of compliance with this memorandum.

No payment requests will be processed by DEEP until the executed copies of the subcontracts are on file in the DEEP office.

It is understood that the Prime Contractor must make and document the good faith efforts as defined above. Should the contractor not meet the goals, documentation of good faith efforts will be required to be submitted to the DEEP Municipal Facilities Engineer for consideration that the good faith effort was extensive enough to warrant the acceptance of a lower goal for the specific contract in question.

I hereby verify that I have read and understand the DBE requirements in this memorandum and will procure subcontracts whose percentages will meet or exceed the minimums listed above.

Contract Name _____

Prime Contractor Company Name _____

Prime Contractor Authorized Signature _____ Date _____

VII. DEFINITIONS

CGS: Connecticut General Statutes

ConnDOT: Connecticut Department of Transportation

CWF: Clean Water Fund

DAS: Connecticut Department of Administrative Services

DBE: Disadvantaged Business Enterprise

DEEP: Department of Energy and Environmental Protection

EPA: Environmental Protection Agency (Federal)

MBE: Minority Business Enterprise

SBA: Small Business Administration (Federal)

WBE: Woman Business Enterprise

WOSB: Woman Owned Small Business (Federal program - SBA)

Disadvantage Business Enterprise (DBE)

Subcontractor Verification Form

Note to general contractor: You are required to complete this form for each DBE (MBE or WBE) subcontractor to be employed in the completion of this contract, and submit an original of each completed form, along with each subcontractor's current, valid DBE certification, to the municipality within 14 days of bid opening. Failure to submit this form and the DBE certification within 14 days of bid opening may render your bid non-responsive and result in the rejection of your bid.

Name of subcontractor: _____

Address: _____

Contact person: _____

Phone number: _____ Is the subcontractor a ☐ MBE or ☐ WBE?

Type of work to be performed:

_____

Estimated dollar amount of subcontract: $_____

Percent of total contract: _____%

Please attach a current, valid copy of the subcontractor's DBE certification form to this document.

The completion and submission of this form does not constitute a contractual agreement between the general contractor and the named subcontractor, but is solely for documenting proposed compliance with DBE participation under the Department of Public Health's (DPH) Drinking Water State Revolving Fund (DWSRF). Should another subcontractor be substituted in place of the firm named above, both the municipality and the DPH (Drinking Water Section – Capacity Development Unit, 410 Capitol Ave, MS #51WAT, PO Box 340308, Hartford, CT 06134-0308) should be notified in writing within three (3) business days of the change, and a copy of this form must be completed for the replacement subcontractor. The DBE percentages shall be maintained or exceeded in the event of one subcontractor being substituted for another.

Contract name: _____

Prime contractor company name: _____

Prime contractor authorized signature: _____ Date: _____

4-19-2013

SECTION 00410

BID BOND FORM

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned,

_____ as Principal,

and _____ as Surety,

are hereby held and firmly bound unto Norwich Public Utilities, as

Owner in the penal sum of _____ Dollars

for the payment of which, well and truly to be made, we hereby jointly severally bind

ourselves, successors, and assigns.

Signed, this _____ day of _____, 20____ .

The condition of the above obligation is such that whereas the Principal has submitted to Norwich Public Utilities a certain Form For General Bid, attached hereto and hereby made a part hereof to enter into a contract in writing for the Deep River Water Treatment Plant Transmission Main Rehabilitation Project, Bid No. 7435.

NOW, THEREFORE,

(a) If said Form For Bid shall be rejected, or

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

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

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

_____ (L.S.)
Principal

_____
Surety

By: _____

IMPORTANT - Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State of Connecticut.

END OF BID BOND FORM

SECTION 00452
NONCOLLUSIVE BIDDING CERTIFICATION

State of _____

ss. at_____

County of _____

This Affidavit made to the _____ by the undersigned ("Bidder") in connection with The Bid ("Bid") submitted by the Bidder in response to _____ competitive bid solicitation process.

_____ hereby deposes and says:

1. THAT all representations made and contained in the Bid are true, accurate and complete;

2. THAT neither Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest has (i) in any way colluded, conspired, connived, or agreed, directly or indirectly, with any other bidder, firm or person to submit or to refrain from submitting, a competing bid in connection with this bid submission, or (ii) in any manner, directly or indirectly, sought by agreement or collusion of communication or conference with any other bidder, firm or person to fix the price or prices in the Bid or any bid of any other bidder or to fix any overhead, profit or cost element of said Bid or another bid or bidder, or (iii) sought in any way to secure through collusion, conspiracy, connivance or agreement any advantage against _____ or any person interested in the proposed Contract;

3. THAT the Bid has been determined independently by Bidder, its team members or representatives, without consultation, communication or agreement for the purpose of restricting competition, and is not tainted by any collusion or conspiracy by any parties in interest, including Bidder;

4. THAT the Bid has not been disclosed by Bidder to any other bidder, potential bidder and will not be disclosed by Bidder, prior to bid opening, directly or indirectly to any other Bidder or potential bidder;

5. THAT no person acting for or employed by _____ is now or will hereafter be directly or indirectly interested therein or in any portion of the profits thereof in any manner which is contrary to law or is unethical. And that no person acting for or employed by the _____ is now or will hereafter benefit financially directly or indirectly from bidder's award of the proposed Contract or participation in the bidding process;

6. THAT bidder has submitted only the Bid and has not directly or indirectly used a related company, agent, employee, officer, partner, representation or nominee to submit any other bid;

The undersigned, who is responsible for determining the prices being offered in the Bid, has read the foregoing and the same is true and correct to the best of his or her knowledge, information and belief;

_____
(Signature of Bidder)

_____
(Printed or Typed Name of Bidder)

_____
(Title)

Subscribed and Sworn to before me this _____ day

of _____, 20___.

(SEAL)

_____
Notary Public

My Commission expires

_____

Notice Concerning Legal Action

Any person who knowingly makes false statement or otherwise executes a document he/she knows to be false, with the intent to mislead a municipality is in violation of Connecticut General Statute 53a-157b, "Making a False Statement, and shall be subject to penalty"

END OF SECTION

SECTION 00500

NOTICE OF AWARD

DATED: _____

TO: _____
(Bidder)

ADDRESS: _____

_____

OWNER: Norwich Public Utilities

ADDRESS: 16 South Golden Street, Norwich, Connecticut 06360

BID No. 7435

DEEP RIVER WATER TREATMENT PLANT TRANSMISSION MAIN REHABILITATION PROJECT

Owner has considered the Bid Form submitted by you for the above described Work in

response to its Adveritsement for Bids dated _____, 20____

and Instructions to Bidders.

The Contract Price of your contract is:

_____ Dollars

($_____).

Six (6) copies of the proposed Contract Documents accompany this Notice of Award.

You must comply with the following conditions precedent within ten (10) days, Saturdays, Sundays and legal holidays excluded, of the date of this Notice Of Award.

1. You must deliver to the Owner six (6) fully executed counterparts of the Agreement including all the Contract Documents. Each of the Contract Documents must bear your signature on the cover page.
2. You must deliver with the executed Contract Documents, the Contract Security (Bonds, and Certificates of Insurance) as specified in the Instructions to Bidders, General Conditions, Supplementary Conditions and Special Conditions.

If you fail to execute said Agreement and to furnish said Bonds within ten (10) days (Saturdays, Sundays and legal holidays excluded) from the date of this notice, said Owner will be entitled to consider all your rights arising out of the Owner's acceptance of your Bid Form as abandoned and as a forfeiture of your Bid Bond. The Owner will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this Notice of Award to the Owner.

Dated this _____ day of _____, 20____

OWNER:

By _____ _____
(Authorized Signature) (Title)

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged this the

_____ day of _____, 20____

By _____ _____
(Authorized Signature) (Title)

END OF NOTICE OF AWARD

SECTION 00510

CONTRACT AGREEMENT

THIS AGREEMENT made as of the _____ day of _____, in the year 20____

by and between the Norwich Public Utilities hereinafter called OWNER and

_____ with legal address and principal

place of business at _____

hereinafter called CONTRACTOR. OWNER and CONTRACTOR in consideration of the

mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1-WORK

CONTRACTOR shall complete all Work as specified in the Contract Documents. The Work of this Contract generally consists of the Deep River Water Treatment Plant Transmission Main Rehabilitation Project.

ARTICLE 2-ENGINEER

2.01 The Project has been designed by Tata & Howard Inc., 321 Research Parkway, Suite 204, Meriden, CT 06450, who is hereinafter called ENGINEER and who is to act as OWNER's representative, assume all duties and responsibilities and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 3-CONTRACT TIME

3.01 The Work will be substantially completed within 120 calendar 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 150 days after the date when the Contract Times commence to run.

3.02 CONTRACTOR and OWNER recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not completed within the times specified in Paragraph 3.01 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 providing 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 $1,300 for each calendar day of delay until the Work is complete.

3.03 Provided that CONTRACTOR shall not be charged with liquidated damages or any excess cost when the delay in completion of the Work is for reasons included in Paragraph 12.03 of the General Conditions.

3.04 Provided further, that CONTRACTOR shall furnish OWNER the required notification of such delays in accordance with Paragraph 12.02 of the General Conditions.

ARTICLE 4-CONTRACT PRICE

4.01 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 4.01A below.

4.01A For the complete Work, at the price stated in CONTRACTOR's Bid Form, attached hereto as an exhibit.

ARTICLE 5-PAYMENT PROCEDURES

5.01 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.

5.02 OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR's Application for Payment as recommended by Engineer, monthly during construction as provided below. All progress payments will be on the basis of the progress of the Work measured by the schedule of values provided for in Paragraph 14.01 of the General Conditions. To insure the proper performance of this contract, the Owner shall retain five percent (5%) of the amount of each estimate until final completion and acceptance of all work covered by this contract: Provided, that the Contractor shall submit his estimate not later than the first day of the month; Provided, further, that the Owner may at any time after fifty percent (50%) of the work has been completed, if it finds that satisfactory progress is being made, may make any of the remaining progress payments in full; Provided, further, that on completion and acceptance of each separate building, public work, or other division of the contract, on which the price is stated separately in the contract, payment may be made in full, including retained percentages thereon, less authorized deductions.

5.03 OWNER will make progress and final payments as provided in Article 14 of the General Conditions of the Contract and in accordance with the applicable Connecticut Statutes.

5.04 With each Application for Payment or Invoice, CONTRACTOR shall submit documentation supporting the quantities and costs that are for all materials, equipment, and labor entering into the Work. For water main extension, replacement and relocation projects, supporting documentation shall also include a copy of the inspection report signed by the Construction Inspector and the CONTRACTOR. Furthermore, the CONTRACTOR shall keep such full and detailed accounts as may be necessary for proper financial management under this Agreement, and the accounting methods shall be satisfactory to OWNER. OWNER shall be afforded access to all CONTRACTOR's records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and CONTRACTOR's fee. CONTRACTOR shall preserve all such documents for a period of three years after the final payment by OWNER.

ARTICLE 6-CONTRACTOR'S REPRESENTATIONS

6.01 CONTRACTOR has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.

6.02 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.

6.03 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.

6.04 CONTRACTOR has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies, and date concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR, and safety precautions and programs incident thereto.

6.05 CONTRACTOR has correlated the information known to CONTRACTOR, information and observations obtained from visits to the Site, reports and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.

6.06 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.

6.07 The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE-7 CONTRACT DOCUMENTS

7.01 The Contract Documents which comprise the Contract between OWNER and CONTRACTOR are attached hereto and made a part hereof and consist of the following:

7.01.1 Advertisement For Bids
7.01.2 Instructions To Bidders
7.01.3 Bid Form
7.01.4 Bid Bond
7.01.5 Notice of Award
7.01.6 This Agreement
7.01.7 Notice to Proceed
7.01.8 Performance Bond, EJCDC Document (C-610 2007 Edition)
7.01.9 Payment Bond, EJCDC Document (C-615A 2007 Edition)
7.01.10 General Conditions, EJCDC Document (C-700 2007 Edition)
7.01.11 Supplementary Conditions
7.01.12 Norwich Public Utilities Special Conditions
7.01.13 Specifications (as listed in Table of Contents)
7.01.14 Drawings numbered: C-1 thru C-10
7.01.15 Addenda numbers _____ to _____ , inclusive

7.01.16 Any modifications, including Change Orders, duly delivered after execution of Agreement.

7.02 The Contract Documents may only be amended, modified, or supplemented as provided in Paragraph 3.04 of the General Conditions.

ARTICLE 8-MISCELLANEOUS

8.01 Terms used in this Agreement will have the meanings indicated in the General Conditions.

8.02 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, monies that may become due and monies 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.

8.03 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.

8.04 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.

8.05 CONTRACTOR and all Subcontractors shall conform to the requirements set under the OWNER's Guidelines for Contractors included in these Contract Documents.

IN WITNESS WHEREOF, the parties hereto have signed this Agreement in sextuple. Four copies each have been delivered to OWNER and one copy each to CONTRACTOR and Engineer. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR or by Engineer on their behalf.

This Agreement will be effective on _____, 20____

OWNER:	CONTRACTOR:
_____	_____
By:_____	By:_____
(CORPORATE SEAL)	(CORPORATE SEAL)

Attest	Attest
_____	_____
Address for giving notices:	Address for giving notices:
_____	_____
_____	_____
_____	_____

Note: If CONTRACTOR is a corporation, an affidavit giving the principal the right to sign the Agreement must accompany the executed Agreement.

This is to certify that the OWNER has an appropriation which is adequate to cover the cost of this Contract.

By: _____ Date: _____

_____ _____
(Name) (Title)

END OF CONTRACT AGREEMENT

SECTION 00520

NOTICE TO PROCEED

DATED: _____

TO: _____

ADDRESS: _____

_____

OWNER: Norwich Public Utilities

ADDRESS: 16 South Golden Street, Norwich, Connecticut 06360

BID NO. 7435

DEEP RIVER WATER TREATMENT PLANT TRANSMISSION MAIN REHABILITATION PROJECT
You are hereby notified to commence work in accordance with the Contract dated

_____, 20____, on or before _____, 20____,

and you are to complete all Work within 150 consecutive calendar days thereafter.

The date of completion of all Work is therefore _____, 20____.

OWNER:

By _____ _____
(Authorized Signature) (Title)

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged this the

_____ day of _____, 20____

By _____ _____
(Authorized Signature) (Title)

END OF NOTICE TO PROCEED

PERFORMANCE BOND

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

CONTRACTOR (*Name and Address*):

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

OWNER (*Name and Address*):

CONTRACT
Effective Date of Agreement:
Amount:
Description (*Name and Location*):

BOND
Bond Number:
Date (*Not earlier than Effective Date of Agreement*):
Amount:
Modifications to this Bond Form:

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

_____ (Seal)
Contractor's Name and Corporate Seal

By: _____
Signature

_____
Print Name

_____
Title

Attest: _____
Signature

_____
Title

SURETY

_____ (Seal)
Surety's Name and Corporate Seal

By: _____
Signature (Attach Power of Attorney)

_____
Print Name

_____
Title

Attest: _____
Signature

_____
Title

Note: Provide execution by additional parties, such as joint venturers, if necessary.

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

1. If Contractor performs the Contract, Surety and Contractor have no obligation under this Bond, except to participate in conferences as provided in Paragraph 2.1.

2. If there is no Owner Default, Surety's obligation under this Bond shall arise after:
   - 2.1 Owner has notified Contractor and Surety, at the addresses described in Paragraph 9 below, that Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with Contractor and Surety to be held not later than 15 days after receipt of such notice to discuss methods of performing the Contract. If Owner, Contractor, and Surety agree, Contractor shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive Owner's right, if any, subsequently to declare a Contractor Default; and
   - 2.2 Owner has declared a Contractor Default and formally terminated Contractor's right to complete the Contract. Such Contractor Default shall not be declared earlier than 20 days after Contractor and Surety have received notice as provided in Paragraph 2.1; and
   - 2.3 Owner has agreed to pay the Balance of the Contract Price to:
     1. Surety in accordance with the terms of the Contract; or
     2. Another contractor selected pursuant to Paragraph 3.3 to perform the Contract.

3. When Owner has satisfied the conditions of Paragraph 2, Surety shall promptly, and at Surety's expense, take one of the following actions:

   - 3.1 Arrange for Contractor, with consent of Owner, to perform and complete the Contract; or
   - 3.2 Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or
   - 3.3 Obtain bids or negotiated proposals from qualified contractors acceptable to Owner for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by Owner and contractor selected with Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Contract, and pay to Owner the amount of damages as described in Paragraph 5 in excess of the Balance of the Contract Price incurred by Owner resulting from Contractor Default; or
   - 3.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:
     1. After investigation, determine the amount for which it may be liable to Owner and, as soon as practicable after the amount is determined, tender payment therefor to Owner; or
     2. Deny liability in whole or in part and notify Owner citing reasons therefor.

4. If Surety does not proceed as provided in Paragraph 3 with reasonable promptness, Surety shall be deemed to be in default on this Bond 15 days after receipt of an additional written notice from Owner to Surety demanding that Surety perform its obligations under this Bond, and Owner shall be entitled to enforce any remedy available to Owner. If Surety proceeds as provided in Paragraph 3.4, and Owner refuses the payment tendered or Surety has denied liability, in whole or in part, without further notice Owner shall be entitled to enforce any remedy available to Owner.

5. After Owner has terminated Contractor's right to complete the Contract, and if Surety elects to act under Paragraph 3.1, 3.2, or 3.3 above, then the responsibilities of Surety to Owner shall not be greater than those of Contractor under the Contract, and the responsibilities of Owner to Surety shall not be greater than those of Owner under the Contract. To the limit of the amount of this Bond, but subject to commitment by Owner of the Balance of the Contract Price to mitigation of costs and damages on the Contract, Surety is obligated without duplication for:

5.1 The responsibilities of Contractor for correction of defective Work and completion of the Contract;
5.2 Additional legal, design professional, and delay costs resulting from Contractor's Default, and resulting from the actions of or failure to act of Surety under Paragraph 3; and
5.3 Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of Contractor.

6. Surety shall not be liable to Owner or others for obligations of Contractor that are unrelated to the 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 Owner or its heirs, executors, administrators, or successors.

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

8. 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 Contractor Default or within two years after Contractor ceased working or within two years after Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

9. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the address shown on the signature page.

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

11. Definitions.

11.1 Balance of the Contract Price: The total amount payable by Owner to Contractor under the Contract after all proper adjustments have been made, including allowance to Contractor of any amounts received or to be received by Owner in settlement of insurance or other Claims for damages to which Contractor is entitled, reduced by all valid and proper payments made to or on behalf of Contractor under the Contract.
11.2 Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.
11.3 Contractor Default: Failure of Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.
11.4 Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract or to perform and complete or otherwise comply with the other terms thereof.

FOR INFORMATION ONLY – (*Name, Address and Telephone*) Surety Agency or Broker: Owner's Representative (*Engineer or other party*):

PAYMENT BOND

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

CONTRACTOR (*Name and Address*):

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

OWNER (*Name and Address*):

CONTRACT
Effective Date of Agreement:
Amount:
Description *(Name and Location)*:

BOND
Bond Number:
Date (*Not earlier than Effective Date of Agreement*):
Amount:
Modifications to this Bond Form:

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

_____ (Seal)
Contractor's Name and Corporate Seal

By: _____
Signature

_____
Print Name

_____
Title

Attest: _____
Signature

_____
Title

SURETY

_____ (Seal)
Surety's Name and Corporate Seal

By: _____
Signature (Attach Power of Attorney)

_____
Print Name

_____
Title

Attest: _____
Signature

_____
Title

Note: Provide execution by additional parties, such as joint venturers, if necessary.

1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner to pay for labor, materials, and equipment furnished by Claimants for use in the performance of the Contract, which is incorporated herein by reference.

2. With respect to Owner, this obligation shall be null and void if Contractor:

   2.1 Promptly makes payment, directly or indirectly, for all sums due Claimants, and

   2.2 Defends, indemnifies, and holds harmless Owner from all claims, demands, liens, or suits alleging non-payment by Contractor by any person or entity who furnished labor, materials, or equipment for use in the performance of the Contract, provided Owner has promptly notified Contractor and Surety (at the addresses described in Paragraph 12) of any claims, demands, liens, or suits and tendered defense of such claims, demands, liens, or suits to Contractor and Surety, and provided there is no Owner Default.

3. With respect to Claimants, this obligation shall be null and void if Contractor promptly makes payment, directly or indirectly, for all sums due.

4. Surety shall have no obligation to Claimants under this Bond until:

   4.1 Claimants who are employed by or have a direct contract with Contractor have given notice to Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.

   4.2 Claimants who do not have a direct contract with Contractor:
      1. Have furnished written notice to Contractor and sent a copy, or notice thereof, to Owner, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials or equipment were furnished or supplied, or for whom the labor was done or performed; and
      2. Have either received a rejection in whole or in part from Contractor, or not received within 30 days of furnishing the above notice any communication from Contractor by which Contractor had indicated the claim will be paid directly or indirectly; and
      3. Not having been paid within the above 30 days, have sent a written notice to Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to Contractor.

5. If a notice by a Claimant required by Paragraph 4 is provided by Owner to Contractor or to Surety, that is sufficient compliance.

6. Reserved.

7. Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by Surety.

8. Amounts owed by Owner to Contractor under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any performance bond. By Contractor furnishing and Owner accepting this Bond, they agree that all funds earned by Contractor in the performance of the Contract are dedicated to satisfy obligations of Contractor and Surety under this Bond, subject to Owner's priority to use the funds for the completion of the Work.

9. Surety shall not be liable to Owner, Claimants, or others for obligations of Contractor that are unrelated to the Contract. Owner shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or

otherwise have obligations to Claimants under this Bond.

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

11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Paragraph 4.1 or Paragraph 4.2.3, 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 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.

12. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, Owner, or Contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

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

14. Upon request of any person or entity appearing to be a potential beneficiary of this Bond, Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.

15. Definitions

15.1 Claimant: An individual or entity having a direct contract with Contractor, or with a first-tier subcontractor of Contractor, to furnish labor, materials, or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of Contractor and 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.

15.2 Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.

15.3 Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract, or to perform and complete or otherwise comply with the other terms thereof.

FOR INFORMATION ONLY – (*Name, Address, and Telephone*)
Surety Agency or Broker:
Owner's Representative (*Engineer or other*):

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

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement*—The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.

3. *Application for Payment*—The form 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.

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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.

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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.

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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

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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:*

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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.

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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

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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:*

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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

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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

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Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefore as provided in Paragraph 10.05.

B. 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

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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.

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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.

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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

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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.

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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.

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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,

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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

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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.

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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.

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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.

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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.

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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.

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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.

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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

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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

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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

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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.

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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

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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.

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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

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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;

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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.

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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 thereof 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

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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.

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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

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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.

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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

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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,

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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 therefore as provided in Paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

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

10.03 *Execution of Change Orders*

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

1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or 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

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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.

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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.

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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:

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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, expediters, 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

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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.

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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.

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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.

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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.

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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,

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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.

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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.

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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

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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:

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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.

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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:

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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

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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.

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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);

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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

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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

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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.

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SUPPLEMENTARY CONDITIONS

SECTION 00800

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SECTION 00800
SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (EJCDC C-700, 2007 Edition) and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions will have the meanings indicated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings indicated below, which are applicable to both the singular and plural thereof, and are gender inclusive.

ARTICLE 1 DEFINITIONS AND TERMINOLOGY

SC-1.01.A.42

Delete paragraph A.42 of the General Conditions in its entirety and insert the following in its place:

> "42. Specifications--Sections included under Division 1 through Division 2 of the Project Manual."

SC-1.01.A.44

Insert the following at the beginning of the definition:

> "44. The Work required by the Contract has been completed except for work having a Contract Price of less than one (1) percent of the then adjusted total Contract Price, or"

SC-1.02.F

Add the following paragraph immediately after paragraph 1.02.F of the General Conditions:

> "G. Where references are made in the Contract Documents and/or Specifications to the terms "he, him, his, himself", or variations thereof, these shall be construed as being gender inclusive, and reference the terms "she, her, hers, herself", or variations thereof as well."

ARTICLE 2 - PRELIMINARY MATTERS

SC-2.01.B

Delete paragraph 2.01.B 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 the Owner, with copies to the Engineer and each additional insured identified in Article 5 of the Supplementary Conditions, certificates of insurance (and other evidence requested by the

Owner) which Contractor is required to purchase and maintain in accordance with the requirements of Article 5."

ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

SC-3.01.C

Add the following new paragraph immediately after paragraph 3.01.C of the General Conditions:

"D. Each and every provision of law and clause required by law to be inserted in these Contract Documents shall be deemed to be inserted herein, and they shall be read and enforced as though it were included herein, and if through mistake or otherwise, any such provision is not inserted, or if not correctly inserted, then upon the application of either party, the Contract Documents shall forthwith be physically amended to make such insertion."

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

SC-4.03

Delete paragraph 4.03 of the General Conditions in its entirety and insert the following in its place:

"4.03 Differing Subsurface or Physical Conditions

"If, during the progress of the work, the Contractor or the awarding authority discovers that the actual subsurface or latent physical conditions encountered at the site differ substantially or materially from those shown on the plans or indicated in the contract documents either the contractor or the contracting authority may request an equitable adjustment in the contract price of the contract applying to work affected by the differing site conditions. A request for such an adjustment shall be in writing and shall be delivered by the party making such claim to the other party as soon as possible after such conditions are discovered. Upon receipt of such a claim from a contractor, or upon its own initiative, the contracting authority shall make an investigation of such physical conditions, if they differ substantially or materially from those shown on the plans or indicated in the contract documents or from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the plans and contract documents and are of such a nature as to cause an increase or decrease in the cost of performance of the work or a change in the construction methods required for the performance of the work which results in an increase or decrease in the cost of the work, the contracting authority shall make an equitable adjustment in the contract price and the contract shall be modified in writing accordingly."

SC-4.04.A.2.d

Add the following new paragraph immediately after paragraph 4.04.A.2.d of the General Conditions:

"e. Contractor's attention is directed to the requirements of Public Act 77-350, regarding the notification of owners of underground facilities."

ARTICLE 5 - BONDS AND INSURANCE

SC-5.01.A

Delete the third sentence of paragraph 5.01.A of the General Conditions and replace it with the following:

> "Contractor shall also furnish Efficiency Guarantee Bonds in accordance with Article entitled 'Manufacturer's Experience' in the Instructions to Bidders and executed on forms approved by the Owner.

SC-5.04

Builder's Risk Insurance (Fire and Extended Coverage): Until the project is completed and accepted by the Owner, the Owner or the Contractor is required to maintain Builder's Risk Insurance (fire and extended coverage) on a 100 percent completed value basis on the insurable portion of the project for the benefit of the Owner, the Contractor, Subcontractors as their interests may appear. The Contractor shall not include any costs for Builder's Risk Insurance (fire and extended coverage) premiums during construction unless the Contractor is required to provide such insurance; however, this provision shall not release the Contractor from his obligation to complete, according to plans and specifications, the project covered by the contract, and the Contractor and his Surety shall be obligated to full performance of the Contractor's undertaking.

The limits of liability for the insurance required by paragraph 5.04 of the General Conditions shall provide the following coverage's for not less than the following amounts or greater where required by Laws or Regulations:" and as so amended paragraph 5.04 remains in effect.

5.04.A.1 and 5.04.A.2 Worker's Compensation, etc. under paragraphs 5.04.A.1 and 5.04.A.2 of the General Conditions

(1) Workers Compensation in accordance with Title 31 Chapter 568 of the Connecticut General Statutes

(2) Employer's Liability: $100,000

5.04.A.3, 5.04.A.4, and 5.04.A.5 Comprehensive General Liability including Premise/Operations; Explosion, Collapse and Underground Property Damage; Products/Completed Operations, Broad Form Contractual, Independent Contractors; Broad Form Property Damage; and Personal Injury Liabilities.

(1)	Bodily Injury:	$1,000,000 Each Occurrence $2,000,000 Annual Aggregate
(2)	Property Damage:	$1,000,000 Each Occurrence $2,000,000 Annual Aggregate

5.04.A.6

Comprehensive Automobile Liability including all owned (private and other), hired and non-owned vehicles:

(1)	Bodily Injury:	$1,000,000 Each Person $1,000,000 Each Accident
(2)	Property Damage:	$1,000,000 Each Occurrence

SC-5.04.B.6

Add the following new paragraph immediately after paragraph 5.04.B.6 of the General Conditions:

> "7. Contractor shall purchase and maintain excess liability insurance in the umbrella form in order to satisfy the limits of liability required for the insurance to be purchased and maintained in accordance with paragraph 5.04. Evidence of such excess liability shall be delivered to Owner in accordance with paragraph 2.05 in the form of a certificate indicating the policy numbers and limits of liability of all underlying insurance. The umbrella liability insurance shall have a combined single limit of not less than $5,000,000."

SC-5.05.A

Delete paragraph 5.05.A of the General Conditions in its entirety and insert the following in its place:

> "A. Contractor shall purchase and maintain a separate Owner's Protective Liability policy, issued to Owner at the expense of Contractor, including Owner and Engineer as named insured. This insurance shall provide coverage for not less than the following amounts. A rider on the Contractor's Liability insurance shall not be acceptable."

5.05.A.1	Bodily Injury:	$1,000,000 Each Occurrence
5.05.A.2	Property Damage:	$1,000,000 Each Occurrence $2,000,000 Annual Aggregate

SC-5.06

Delete paragraph 5.06 of the General Conditions in its entirety.

SC-5.07.A

Delete paragraph 5.07.A of the General Conditions in its entirety.

SC-5.08.A

Delete paragraph 5.08.A of the General Conditions in its entirety.

SC-5.08.B

Delete paragraph 5.08.B of the General Conditions in its entirety.

SC-5.09.A

Delete paragraph 5.09.A of the General Conditions in its entirety and insert the following in its place:

"A. If Owner has any objection to the coverage afforded by or other provisions of the insurance required to be purchased and maintained by Contractor in accordance with Article 5 on the basis of its not complying with the Contract Documents, Owner will notify Contractor in writing thereof within ten (10) days of the date of delivery of such certificates to Owner in accordance with paragraph 2.05. Contractor will provide such additional information in respect of insurance provided by Contractor as Owner may reasonably request."

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

SC-6.01.B

Add the following new paragraphs immediately after paragraph 6.01.B of the General Conditions:

"C. The Contractor shall give his personal attention constantly to the faithful prosecution of the work and shall be present, either in person or by a duly authorized representative, on the site of the work continually during its progress to receive directions or instructionsfrom the Engineer. The Contractor shall employ at the site during performance of the work, a competent superintendent or foreman who shall be satisfactory to the Engineer, and who shall not be changed except with the consent of the Engineer, unless he shall cease to be an employee of the Contractor. Such superintendent or foreman shall represent and have full authority to act for the Contractor in his absence and all directions and instructions given such superintendent or foreman shall be binding as is given to the Contractor."

"D. The Contractor will not be required to maintain an office at the site(s) of the work. However, the Contractor or his authorized agent shall be present while work is in progress. Copies of the Contract Drawings and working drawings and of the Specifications shall be kept on file at the job site for reference at any time.

It will not be necessary for the Contractor to construct or maintain an office for the sole use of the Resident Engineer."

SC-6.02.B

Add the following new paragraphs immediately after paragraph 6.02.B of the General Conditions:

"C. Regular working hours are defined as eight (8) hours per day, Monday through Friday, excluding holidays, between the hours of 7:00 AM and 4:00 PM. Requests to work other than regular working hours shall be submitted to Engineer not less than 48 hours prior to any proposed weekend work or scheduled extended work weeks.

Occasional unscheduled overtime on weekdays may be permitted provided two (2) hours notice is given to Engineer. The Contractor agrees to conduct the work at all times in such a manner that public travel shall not be inconvenienced needlessly nor shall it be wholly obstructed at any point"

"D. Contractor shall reimburse the Owner for additional engineering and/or inspection costs incurred as a result of overtime work in excess of the regular working hours stipulated in Article SC-6.02.C. At Owner's option, overtime costs may either be deducted from the Contractor's monthly payment request or deducted from the Contractor's retention prior to release of final payment. Overtime costs for the Owner's personnel shall be based on the individual's current overtime wage rate. Overtime costs for personnel employed by the Engineer or Owner's independent testing laboratory shall be calculated in accordance with the terms of their respective contracts with the Owner."

"E. This agreement is subject to the applicable provisions of the Contract Work Hours and Safety Standards Act, Public Law 87-581 87th Congress. No Contractor or Subcontractor contracting for any part of the Work shall require or permit any laborer or mechanic to be employed on the Work in excess of forty hours in any work week unless such laborer or mechanic receives compensation at a rate not less than one and one-half times that persons basic rate of pay for all hours worked in excess of forty hours in such work week."

"F. Contractor and Subcontractors shall, insofar as practicable, give preference in the hiring of workers for the Project to qualified local residents with first preference being given to citizens of the United States who have served in the armed forces of the United States and have been honorably discharged therefrom or released from active duty therein."

"G. Contractor agrees and warrants that, in the performance of this Contract, he will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, sex, religion, or national origin in any manner prohibited by State, Federal, County, or Municipal law."

SC-6.06.A

Delete paragraphs 6.06.A and 6.06.B of the General Conditions in their entirety and insert the following in their place:

"A. Contractor shall not employ any Subcontractor, Supplier or other person or organization, (including those who are to furnish the principal items of materials or equipment), whether initially or as a substitute, against whom Owner may have reasonable objection. Acceptance of any Subcontractor, other person or organization by Owner shall not constitute a waver of any right of Owner to reject defective Work. Contractor shall not be required to employ any Subcontractor, other person or organization against whom Contractor has reasonable objection."

"B. Should the Engineer notify the Contractor in writing that any man on the work is, in his opinion, incompetent, unfaithful, disorderly, or otherwise unsatisfactory, such man shall be discharged from the work and shall not again be employed on it, except with the consent of the Engineer"

SC-6.06.C.2

Add the following new paragraph immediately after paragraph 6.06.C.2 of the General Conditions:

> "3. Contractor shall make payments to Subcontractors in accordance with the applicable Connecticut General Statutes."

SC-6.06.E

Add the following language at the end of paragraph 6.06.E of the General Conditions:

> "Owner or Engineer may furnish to any such Subcontractor, Supplier or other person or organization, to the extent practicable, information about amounts paid on their behalf to Contractor in accordance with Contractor's Application for Payment."

SC-6.06.F

Add the following language at the end of paragraph 6.06.F of the General Conditions:

> "Except as required otherwise under the applicable Connecticut General Statutes."

SC-6.09

Add the following new paragraph immediately following paragraph 6.09.C

> "D. The municipality shall comply with the following Federal Laws and Executive Orders: Archeological and Historic Preservation Act of 1974, P.L. 93-291; and have provisions for reporting and recovering archaeological finds (i.e. notification list, requirement to report, stop work, etc.)."

SC-6.10.A

Add the following new paragraph immediately after paragraph 6.10.A of the General Conditions:

> "B. The materials and supplies to be used in the Work under this Contract are exempt from the State of Connecticut Sales and Use Tax. Contractor shall obtain the proper certificates, maintain the necessary records and otherwise comply with the requirements of the State of Connecticut applicable laws and any amendments thereto.

SC-6.12.A

Add the following new paragraph immediately after paragraph 6.12 A of the General Conditions:

> "B. The Contractor shall return to the Engineer, one set of the Contract Drawings overmarked in colored pencil, showing all changes made during construction and including the location, by dimensions and elevations, of installed equipment, and underground facilities that will become hidden or buried by the construction. This shall include ties to all valves, fittings, couplings, corporations, etc. measured from permanent structures."

SC-6.17.D.1

Add the following language at the end of paragraph 6.17.D.1 of the General Conditions:

> "Approval of Shop Drawings for equipment requiring Efficiency Guarantee Bonds will be withheld until the receipt of such Bonds."

SC-6.20.A

Add the following language at the end of paragraph 6.20.A of the General Conditions:

> "If through the acts of neglect on the part of Contractor, any other Contractor or any Subcontractor shall suffer loss or damage on the Work, Contractor shall settle with such other Contractor or Subcontractor by agreement or arbitration if such other Contractor or Subcontractor will so settle. If such other Contractor or Subcontractor shall assert any claim against Owner on account of any damage alleged to have been sustained, Owner shall notify Contractor, who shall indemnify and save harmless Owner against any such claims."

SC-6.20.C

Delete paragraphs 6.20.C, 6.20.C.1. and 6.20.C.2 of the General Conditions in their entirety.

SC-6.21

Add the following new paragraph immediately after paragraph 6.21 of the General Conditions:

> "6.22 Contractor's Records
>
> A. Contractor shall comply with all applicable provisions of the Connecticut General Statutes regarding Contractor's records."

ARTICLE 8 - OWNER'S RESPONSIBILITIES

SC-8.06

Delete paragraph 8.06. of the General Conditions in its entirety.

ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

SC-10.03

Add the following statement immediately after paragraph 10.03.A.3 of the General Conditions:

> "4. Recommended by the Regulations of Connecticut State Agencies (RCSA) Section 22a-482-4(k)6, change order profit amounts should be a maximum mark-up of 15 percent on labor and material costs, and 5 percent on costs incurred by a subcontractor."

ARTICLE 11 - COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

SC-11.01.A.1

Delete the second sentence in paragraph 11.01.A.1 of the General Conditions and replace it with the following:

"Such employees shall include foremen at the site."

SC-11.02.A

Delete paragraphs 11.02.A, 11.02.B, 11.02.C and 11.02.D of the General Conditions in their entirety.

ARTICLE13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

SC-13.05.A

Add the following new paragraph immediately after paragraph 13.05.A of the General Conditions:

"B. If Owner stops Work under paragraph 13.05.A, Contractor shall not be entitled to any extension of Contract Time or any increase in Contract Price."

SC-13.09.A

In the first sentence of paragraph 13.09.A delete the word "seven" and replace with the word "ten".

ARTICLE14 - PAYMENTS TO CONTRACTOR AND COMPLETION

SC-14.02.A.3

Add the following new paragraph immediately after paragraph 14.02.A.3 of the General Conditions:

"4.On about the last day of the month, the Engineer shall make an approximate estimate of the value of the work done and of the materials incorporated into the work.

5. Contractor shall furnish evidence that payment received on the basis of materials and equipment not incorporated and suitably stored, has in fact been paid to the respective supplier(s) within sixty days of payment by Owner. Failure to provide such evidence of payment may result in the withdrawal of previous approval(s) and removal of the cost of related materials and equipment from the next submitted Application for Payment."

SC-14.03.A

Add the two following new paragraphs immediately after paragraph 14.03.A of the General Conditions:

"B. No materials or supplies for the Work shall be purchased by Contractor or Subcontractor subject to any chattel mortgage or under a conditional sale contract or

other agreement by which an interest is retained by the seller. Contractor warrants that Contractor has good title to all materials and supplies used by Contractor in the Work, free from all liens, claims or encumbrances."

"C. Contractor shall indemnify and save Owner harmless from all claims growing out of the lawful demands of Subcontractors, laborers, workmen, mechanics materialmen, and furnishers of machinery and parts thereof, equipment, power tools, and all supplies, including commissary, incurred in the furtherance of the performance of this Contract. Contractor shall at Owner's request, furnish satisfactory evidence that all obligations of the nature hereinabove designated have been paid, discharged, or waived. If Contractor fails to do so, then Owner may, after having served written notice on the said Contractor, either pay unpaid bills, of which Owner has written notice, direct, or withhold from the Contractor's unpaid compensation, a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged; whereupon payment to Contractor shall be resumed in accordance with the terms of this Contract, but in no event shall the provisions of this sentence be construed to impose any obligation upon Owner to either Contractor, or Contractor's Surety. In paying any unpaid bills of the Contractor, Owner shall be deemed the agent of Contractor and any payment so made by Owner, shall be considered as payment made under the Contract by Owner to Contractor and Owner shall not be liable to Contractor for any such payment made in good faith."

SC-14.07.B.1

Delete paragraph 14.07.B.1 of the General Conditions and replace it with the following:

"1. If, on the basis of Engineer's observations of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation, all as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations including but not limited to payment of bills, labor and materials, and service of any subcontractor, under the Contract Documents have been fulfilled, Engineer will indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. Thereupon Engineer will 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. If the Application and accompanying documentation are appropriate as to form and substance, Owner shall within thirty (30) days after the final estimate is approved, pay Contractor the amount recommended by the Engineer.

2. If the Owner shall, at any time, fail to make to the Contractor a monthly payment at the time herein specified, such failure shall not be held to vitiate or void this Contract, but in such case the Contractor shall be entitled to interest at the rate of one percent (1%) per month on the amount unpaid until payment shall have been made."

ARTICLE15 - SUSPENSION OF WORK AND TERMINATION

SC-15.01.A

Delete paragraph 15.01.A of the General Conditions in its entirety and insert the following in its place:

"A. Owner may order, at any time and without cause, suspension of the Work in accordance with the applicable Connecticut General Statute.

SC-15.02.A.4

Add a new paragraph immediately after paragraph 15.02.A.4 of the General Conditions.

"5. If Contractor abandons the Work, or sublets this Contract or any part thereof, without the previous written consent of Owner, or if the Contract or any claim thereunder shall be assigned by Contractor otherwise than as herein specified."

ARTICLE16 – DISPUTE RESOLUTION

SC 16.01.A

Add a new sentence at the end of paragraph 16.01.A of the General Conditions:

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

ARTICLE17 - MISCELLANEOUS

SC-17.05.A

In paragraph 17.05.A, delete the words "state in which the Project is located" and substitute "State of Connecticut".

SC-17.06

Add the following new paragraph immediately after paragraph 17.06 of the General Conditions:

"SC-17.07 Addresses

A. Both the address given in the Bid Form upon which this Agreement is founded, and Contractor's office at or near the site of the Work are hereby designated as places to either of which notices, letters, and other communications to Contractor shall be certified, mailed, or delivered. The delivering at the above named places, or depositing in a postpaid wrapper directed to the first-named place, in any post office box regularly maintained by the post office department, of any notice, letter or other communication to Contractor shall be deemed sufficient service thereof upon Contractor; and the date of said service shall be the date of such delivery or mailing. The first-named address may be changed at any time by an instrument in writing, executed and acknowledged by Contractor, and delivered to Owner and Engineer. Nothing herein contained shall be deemed to preclude or render inoperative the service of any notice, letter, or other communication upon Contractor personally."

Add the following new paragraph immediately after paragraph 17.07 of the General Conditions:

"17.08 No Waiver of Rights

A. No Certificate given or payment made under this Contract, except the final certificate or final payment, shall be evidence of the performance of the Contract either wholly or in part, and no payment shall be construed to be an acceptance of defective work or improper materials. No act of the Owner or of the Engineer, or of any representatives of either of them in inspecting the work, nor any extension of time for the completion of the work, shall be regarded or taken as an acceptance of such work, or any part thereof, or materials used therein of thereof, either wholly or in part; but such acceptance shall be evidenced only by the final certificate of the Engineer. Before any final certificate shall be allowed, the Contractor shall be required, and he hereby agrees, to sign and attest on said certificate a statement that he accepts the same in full payment and settlement of all claims on account of work done and material furnished under this Contract, and furthermore, that all claims for materials provided or labor performed have been paid and satisfied in full. No Waiver of any breach of this Contract by the Owner or anyone acting for it, or on its behalf, shall be held as a waiver of any other or subsequent breach thereof.

"17.09 Owner's Right to Use

A. The Owner reserves the right to use or occupy any portion of the work considered by the Engineer as ready for use or occupancy. Such use or occupancy shall not be held, in any way, as final acceptance of the work or any portion thereof, or as a waiver of any portion of this Contract."

END OF SUPPLEMENTARY CONDITIONS

SECTION 00810

NORWICH PUBLIC UTILITIES SPECIAL CONDITIONS

Term

The contract shall become effective when executed by both parties and shall continue in full force and effect until the completion of the work and the expiration of all guarantees, warranties and indemnities provided.

Scope of Work

The intent of these General Conditions is to outline in general the rights and responsibilities of Norwich Public Utilities (NPU), NPU's Representative (any engineer or inspector whom NPU may designate to inspect, test or oversee the work), and Contractor, and to establish policies and procedures to be followed during the execution of this Contract. Included in these General Conditions are the general requirements that must be satisfied before the work covered by the Contract can be considered complete. Any modifications to these conditions, which are special to the particular project under considerations, will be made in the Special Conditions or Addenda.

The Contractor agrees to perform all the work and do all that is necessary to do the work in accordance with the Contract including all Contract Documents. The Contractor assumes full responsibility for the work until its acceptance by NPU.

Familiarity with Work

The Contractor represents that it has fully acquainted itself with, and has carefully examined all document and conditions relevant to its work to ensure that they are sufficient to properly complete the work; all relevant plans, surveys, measurements, dimensions, calculations, and estimates to be sure that they contain no errors or inaccuracies; the nature and location of the work, the character of equipment, materials and facilities needed preliminary to and during the prosecution of the work; the general and local conditions (including environmental conditions and labor relations); and all other matters which can in any way affect the work and its cost under the Contract.

Lack of knowledge of any of the foregoing matters shall not constitute an excuse for delay or failure of performance under the Contract, nor shall it justify any increase in the price as determined under the Contract.

The Contractor hereby represents that it has all information and documentation with respect to equipment, materials, facilities or any other matters which are or will be necessary to enable the Contractor to safely and reliably perform the work.

Except as is otherwise specified within the Contract, all loss or damage to the Contractor arising out of its performance of the work whether due to the elements, unforeseen circumstances, and subsurface conditions or otherwise, shall be sustained and borne by the Contractor at its sole cost and expense. NPU makes no warranty regarding the detail, accuracy, or completeness of the Contract Documents.

Changes in Work

NPU reserves the right to make minor changes or alterations in the work from time to time, or to order additions, deletions or revisions in the work not involving extra cost and not inconsistent with the overall intent of the Contract Documents. If NPU authorizes a change which adds to or decreases the cost of the work, the Contractor shall proceed with the work as changed, and NPU shall, in its sole discretion, adjust the price by (1) a mutually agreed upon lump sum or unit price, (2) a unit price as set forth in the Contract or, (3) in accordance with the following:

- Reimbursement for all labor, based on the actual direct verifiable amount of time expended in performing the changes at the rates set forth in the Contract;
- Reimbursement for equipment, based on the actual direct verifiable amount of time expended in performing the changes at the rates set forth in the Contract and including costs for fuel, oil, grease, repair, parts, service and maintenance;
- Reimbursement for rental of equipment not set forth in the Contract based on the actual verifiable cost for rental and necessary attachment, to the extent actually incurred in performing the changes plus the hourly operating cost found in the Rental Rate Blue Book for Construction Equipment. (Reimbursement for any equipment or tools with a new cost of five hundred dollars ($500) or less each, shall not be allowed);
- In the event that the Contractor is to be paid pursuant to the above factors, the Contractor shall furnish NPU with itemized daily work reports documenting the costs requested.
- If NPU authorizes a change in the work which decreases the amount and cost of the work, such decrease shall not constitute a basis for a claim by the Contractor for any loss or damages including anticipated profit,
- NPU shall not accept any changes made by the Contractor after final payment is made.

Temporary Suspension of the Work

NPU shall have the authority to suspend the work wholly or in part for such period(s) as may be deemed necessary due to unsuitable weather or other conditions considered unfavorable for performing the work. No allowance will be made for such suspension of work except an equivalent extension of time for completion of the Contract.

NPU's Right to do the Work

NPU reserves the right to perform additional work related to the Project with its own forces or may let other direct contracts in connection with this work, provided said contracts shall contain General Conditions similar to these. The Contractor shall afford other such Contractors or NPU, reasonable opportunity for the introduction and storage of their materials and the execution of their work, and shall properly connect and coordinate his work with theirs.

Standard of Performance and Warranties

The Contractor shall provide all supervision and labor necessary for performing the work. The Contractor and all subcontractors shall employ only competent and experienced personnel. Whenever required by federal state or local statures, laws, rules regulations, by-laws, or ordinances, or other applicable governmental approval, the Contractor shall employ only licensed and properly trained personnel in the performance of the work. In the event that NPU believes that any of the Contractor's personnel are objectionable, NPU shall notify the Contractor and the Contractor shall promptly investigate and take corrective action as needed, up to and including removal of such personnel and replacement with personnel approved by NPU.

All work under this Contract shall be done in a professional and workmanlike manner, and to the complete satisfaction of NPU or its representatives. It shall be performed with standard care, skill, and diligence consistent with recognized and sound construction practices and procedures.

The Contractor shall provide the materials, tools, equipment, and subcontracted items for the performance of the work as set forth in the Project Specifications. The Contractor shall ensure that such equipment and material shall be new, of current production, fit for the purpose for which they are intended, of size, capability, and materials sufficient to meet in all respects the requirements and conditions specified in the Contract. The Contractor guarantees the strength and quality of the materials used, and agrees to replace any defective or imperfect material or workmanship with material or workmanship satisfactory to NPU requested within twelve (12) months after completion. The Contractor shall be solely responsible for storage and protection of equipment and material, whether NPU or Contractor furnished, against deterioration, corrosion damage, or vandalism in accordance with this Contract and all manufactures recommendations.

Materials shall not be substituted for those specified, nor shall "or equal" items be furnished pursuant to the specification without NPU's prior written approval.

Any defective or imperfect work or material shall be removed immediately and replaced by the Contractor at its sole cost to the complete satisfaction of NPU. In the event of failure to do so, NPU may do such work at the expense of the Contractor and without limiting other remedies available may offset the cost of such work against any payments otherwise owing to the Contractor.

The Contractor will promptly notify NPU in the event it and or its facilities lose the permits licenses, approvals or other authority to perform the work during the term of this Contract.

The Contractor agrees to secure all necessary permits, licenses, and approvals and shall comply with all federal state or local statutes, laws rules, regulations, by-laws, ordinances or other governmental authorities in any way relating to or applicable to, the conduct of the work, the materials used, or the labor used.

The Contractor shall not enter into negotiations with any governmental authority or agency for acceptance of variations from or revisions to safety or health or air, water or noise pollution laws or regulations relating to the Contract or to the performance thereof without NPU's prior written consent.

The Contractor shall be responsible to repair or replace at its own cost any damages that it causes to any NPU facility resulting from performance of the work In the event of failure to do so, NPU may do such work at the expense of the Contractor and without limiting other remedies available may offset the cost of such work against any payments otherwise owing to the Contractor.

Time of Performance

The Contractor agrees to commence the work at the time specified and to carry it on continuously with such diligence that the work will be completed on schedule.

The Contractor shall submit a schedule and scheduling progress and update information as required and set forth in the Contract.

The Contractor shall maintain a labor force of sufficient size and competence to conform to and complete all work on schedule and within the scheduled hours and days set forth in the schedule unless otherwise directed or approved by NPU.

If at any time during the term of the Contract, in the opinion of NPU, the Contractor does not meet the schedule as agreed in the Construction Schedule, NPU may for each incident of delay, at no additional cost to NPU:

- Require the Contractor to conform to the schedule by working additional shifts and/or additional days and/or increase its manpower, supervision, tools, and/or equipment and/or
- Treat such failure as a material breach and terminate the Contract and recover damages.

If the Contractor incurs delays and believes that changes in the Project or conditions beyond the Contractor's control are the cause of the delay, the Contractor shall provide written notice to NPU and if NPU agrees with the Contractor, NPU will approve an extension of time for completion of the work. Such extensions shall not include any additional payment for extended overhead.

Materials and Equipment

Unless otherwise specified, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, supervision, temporary construction of any nature, and all other services and facilities of any nature necessary to execute, complete and deliver the work within the specified time. All materials shall be new and of the best quality and workmanship. Manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with manufacturer's directions.

Materials and equipment shall be stored and handled as to insure the preservation of their quality and fitness for the work. They shall be transported to the worksite from storage in a manner that will prevent loss or segregation of materials after loading so that there may be no inconsistencies in the quantities of materials as received at the place of operation. The Contractor shall be solely responsible for the safety and protection of all materials stored for the work and shall be responsible for all losses due to theft or any other reason. The Contractor shall pay all expenses in connection with acquiring and maintaining suitable storage locations.

The Contractor shall be responsible for furnishing sufficient quantity of tools and equipment of a capacity and type which shall safely perform the work specified, and he shall be solely responsible for the care preservation, conservation and protection of all such tools and equipments. All tools, materials and equipment shall be maintained and used in a manner which will not create a hazard to persons or property or cause a delay in the progress of the work.

Permits and Rights-Of –Way

NPU will secure all necessary rights-of-way for the proper completion of the work to the Contractor. Where permits are required in areas of public dedication or easements must be obtained across private property, NPU shall provide to the Contractor information that describes the land owned and rights-of-way acquired, along with any special conditions that must be satisfied by NPU or the Contractor.

NPU will provide no right-of-way over adjacent property, and the Contractor shall not enter upon private property for any purpose without obtaining permission from the landowner. The

Contractor shall provide at his own expense and without liability to NPU any additional land and access thereto that the Contractor may desire for temporary construction or storage of materials.

It shall be the responsibility of the Contractor to preserve all public property, trees, monuments, structures and improvements, along and adjacent to the street and or right-of-way, and the Contractor shall use every precaution necessary to prevent damage or injury to that property.

It shall also be the responsibility of the Contractor, prior to the installation of construction on easements through private or public property, to inform the property owner of his intent to begin construction. The Contractor shall abide by all regulations and conditions stipulated in any and all permits granted to NPU, whether on public or private property, any such conditions and requirements are hereby made a part of these General Conditions. Failure of the Contractor to examine permits granted to NPU shall not relieve the Contractor from compliance with the requirements stated herein.

The Contractor shall, if required by the City, County, or State, provide a bond in the amount and form designated before commencing work.

Protection of Work and Property

The Contractor shall take proper means to protect and safely guard NPU's property from injury or loss in connection with this contract. The Contractor shall at all times safely guard and protect from damage his own work, and that of adjacent or adjoining property or properties in any way encountered which might be injured or seriously affected by any process of construction to be undertaken. All passageways, guard fences, lights or other facilities required for protection by State or Municipal laws and regulations must be provided and maintained by the Contractor. All trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation and/or replacement shall be protected.

NPU assumes no responsibility for the failure to show any or all structures or to show them in their exact locations on any drawings provided to the Contractor. It is mutually agreed that such failure shall not be considered sufficient basis for claims for additional compensation for extra work or for increased pay quantities in any manner whatsoever unless the obstruction encountered necessitates changes in the lines or grades or requires the building of special work, provisions for which are not made in the plans and proposal, in which case the provisions in these specifications for extra work shall apply.

Taxes and Charges

The Contractor shall pay all sales, consumer, use and other similar taxes required in accordance with the laws of the State of Connecticut or any other laws in effect. Additionally, the Contractor shall withhold and pay any and all withholding taxes whether State or Federal, and pay all Social Security charges, along with all State Unemployment Compensation charges which may be required to be paid or withheld under any laws.

Purchases made by Norwich Public Utilities are considered exempt from the payment of Federal Excise taxes, Connecticut sales taxes, etc., and such taxes must be identified separately or excluded fro the bid prices. Exemption certifications will be furnished as required.

Clean Up
The Contractor shall at all times, at his own expense, keep property on which work is in progress and the adjacent property free from accumulations in waste material or rubbish caused by employees or by the work. Upon completion of the work, all rubbish and unused material, tools temporary structures and construction equipment shall be promptly removed and the premises left in a condition satisfactory to NPU. All property disturbed or damaged during the prosecution of the work shall be restored to its original condition or better at the Contractor's expense.

Safety
The Contractor shall take necessary precautions for the safety of its employees, its subcontractors' employees, NPU employees and representatives, and the public during the duration of the Contract. The Contractor shall be required to provide a copy of its Health and Safety plan to NPU prior to start of work. All work must be performed in accordance with NPU's attached safety guidelines.

Environmental
For purposes of this contract, the term "Hazardous Material" shall mean, without limitation, any substance deemed to be a hazardous substance, waste, or material within the meaning of Connecticut law. The Contractor shall conduct all operations to minimize the impact upon the natural environment and shall comply with all permit conditions, all solid waste, hazardous material, health and safety, environmental protection laws, rules regulations, requirements, orders, directives, ordinances, codes and standards of all federal state and local governmental agencies having jurisdiction over NPU, the Contractor and/or the subcontractors. If any violation of environmental permits, licenses, approvals, or other environmental regulations occurs and in the event of a release or discovery of hazardous material, the Contractor shall take immediate action to mitigate any further violation or release. The Contractor shall, at its expense, take all actions necessary to protect NPU, its employees, subcontractors, and the public from any exposure to, or hazards of, hazardous material.

The Contractor understands the currently known hazards on the site which are presented to persons, property, and the environment in the performance of the work and in the transportation, storage, treatment, remediation, recycling, and/or disposal of waste material and/or hazardous waste. Any materials that can not be put back into trench should not be considered clean fill and will be the responsibility of the Contractor to dispose of in accordance with all applicable federal, state, and local laws, rules, statutes bylaws, ordinances; disposal method will be subject to prior approval by NPU. The Contractor represents that it and all treatment storage and disposal facilities to which it sends waste materials and hazardous materials hold all necessary permits, licenses and approvals.

Indemnification
The Contractor agrees to indemnify, save harmless and defend NPU and its directors, officers, employees, and representatives from and against any and all liabilities, claims, penalties, forfeitures, sites, and the associated costs and expenditures which NPU may incur, become responsible for or pay out as a result of death re: bodily injuries to any person, destruction or damage to any property, contamination of or adverse effects on the environment, injury, destruction or loss of natural resources, or any violation of applicable federal, state and local statutes, laws, rules, ordinances, bylaws, or regulations caused by the Contractor's breach of any

term or provision of this contract, or the acts or omissions of the Contractor, its employees or subcontractors.

Assignment and Subcontracting

The Contractor shall not assign the contract without the prior written consent of NPU. If the Contractor proposes to subcontract any of the work it shall give written notice to NPU specifying the name, address, qualifications, and experience of the subcontractor and shall specify the specific work the subcontractor will perform. All work performed for the Contractor by a subcontractor shall be subject to all requirements noted in this contract. The Contractor shall be fully responsible to NPU for all work performed by subcontractors and of persons directly or indirectly employed by them as it is for the acts and omissions of the persons directly employed by the Contractor as if no subcontractors were in place. No subcontractor is intended to be or shall be deemed a third party beneficiary of the Contract and as a condition of the subcontract the Contractor shall require any subcontractor to acknowledge the fact and waive any claim it might have against NPU.

Inspections and Audits

NPU shall have the right, at its own expense, to inspect all written licenses, permits, or approvals issued to the Contractor which are applicable to this contract, inspect all work covered by this contract, and inspect or audit any of the Contractor's or subcontractor's records and accounts pertaining to this contract. The Contractor shall, upon request, promptly furnish to NPU such licenses, permits, or approvals, records, accounts and other related documents required by NPU.

Termination/Damages

Notwithstanding any other provision of this contract, NPU may terminate this contract for its convenience, in whole or part, at any time by written notice to the Contractor in which event NPU's sole obligation shall be to reimburse the Contractor for those goods actually shipped and accepted by NPU up to the date of termination and direct verifiable reasonable costs incurred by the Contractor for unfinished goods or services specifically furnished for NPU.

Notwithstanding any other provision of this contract, NPU may terminate this contract for cause, in whole or part, at any time without prejudice to any other right or remedy, by written notice to the Contractor if: 1) a receiver for the Contractor is appointed or applied for; or 2) a petition in bankruptcy is filed by or against the Contractor; or 3) the Contractor makes an assignment for the benefit of its creditors; or 4) the Contractor fails to comply with any terms and/or conditions of this contract; or 5) the Contractor experiences a labor dispute which threatens to have a substantial adverse effect upon the schedule and/or price of the work.

In the event NPU terminates this contract for cause, NPU may contract with others or use its own employees and equipment to complete the work. The Contractor shall pay any increased cost for completion of the work; the increased cost will be determined by the amount paid or expended for the work over and above the prices noted in this contract and will include NPU's administrative and overhead costs. If the amount that NPU is required to pay or expend for completion of the work is less than the prices specified, the Contractor waives all claims to the difference as compensation to NPU for its added expense and effort to effect completion of the work.

Performance of this contract may be suspended by either party in the event performance of this contract is prevented by a cause or causes beyond reasonable control of such parties. Such causes

shall include but not be limited to: acts of God, acts of war, riot, fire, explosion, accidents, inclement weather or sabotage, lack of adequate fuel, power, raw materials, labor or transportation facilities; changes in federal, state or local laws, regulations, bylaws, or ordinances; or defense requirements; restraining orders, labor disputes, strike, lock-out or injunction or other similar causes as long as events are beyond the control of the party's reasonable effort to prevent, avoid or mitigate; the party uses every reasonable effort to prevent, avoid, or mitigate; and prompt written notice of such delay or suspension is given by the affected party to the other.

Insurance

The Contractor shall obtain, at his own expense, and keep in force the insurance coverage as required to protect the Contractor from any claims which may arise out of or result from the Contractor's operations under this contract, whether such operations by himself or by any Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable. The Contractor shall provide certificates that their insurance company is authorized to transact business in the State of Connecticut. **Minimum limits of coverage for each type of insurance shall be shown as Attachment A**. The Contractor shall obtain, at a minimum, the following:

a) **General Liability Insurance:** The Contractor shall take out and maintain during the life of this Contract such General Liability Insurance as will provide coverage for claims for damages for personal injury including accidental death as well as for claims for damages for property damage which may arise directly or indirectly from operations under this Contract, whether such operations by himself, by a subcontractor, or by anyone directly or indirectly employed by either of them. The property damage portion of this coverage shall include where applicable vandalism, fire, explosion, and underground exposure coverage.

b) **Combined Pollution and Professional Liability Insurance:** Unless otherwise modified in the Contract Documents, the Contractor shall secure and maintain during the life of this Contract, Combined Pollution and Professional Liability Insurance coverage as identified in Attachment B.

c) **Automobile Liability Insurance:** The Contractor shall take out and maintain during the life of the Contract and shall cause all subcontractors to take out and maintain Automobile Liability Insurance coverage on all self-propelled vehicles and mobile equipment used in connection with the Contract, whether owned, non-owned, or hired, Any such automobile liability insurance policies shall also include NPU, NPU representatives, agents, or employees as additional insured for any claims arising out of the work performed under this Contract.

d) **Workers Compensation, including Occupational Disease and Employer's Liability Insurance:** The Contractor shall take out and maintain during the life of this Contract the Statutory Worker's Compensation and Occupational Disease Disability Insurance for all employees to be engaged in work under this Contract, and if any work is sublet, The Contractor shall require the subcontractor's employees to be adequately covered while engaged in such work.

e) **Contractual Liability, Special Conditions Coverage:** Each and every policy for liability insurance by either the Contractor or any subcontractor shall include a Contractual Liability Coverage endorsement sufficiently broad to insure the provisions under the Indemnity section set forth.

Whenever the construction is to be accomplished within a public or private right-of-way requiring special insurance coverage, the Contractor shall conform to the particular requirements, as set forth in the special conditions, and provide the required insurance. The Contractor shall include in his liability policy all endorsements that said authority, its officers, agents and employees may or might require.

Before commencing any of the work, the Contractor shall file with NPU valid certificates of insurance showing the type, amount, class of operations covered, effective dates, and date of policy expiration. The certificates shall not be cancelled or altered without 30 days prior notice to NPU. Certificates must be issued by an authorized representative of a recognized insurance company licensed to do business in Connecticut.

The Contractor shall not commence work under this Contract until all required insurance has been obtained, reviewed and approved by NPU. Nothing in these requirements shall be interpreted as limiting the extent of the Contractor's responsibility and/or legal liability for payment of damages resulting from his operation under this contract. Any insurance bearing an adequacy of performance shall be maintained after completion of the project for the full warranty period.

Each bidder must be able to enter into contract, covering the work, within 10 days from the acceptance of his proposal. The successful bidder must, within 10 days from the date of acceptance of his proposal, file with NPU, Workmen's Compensation, Comprehensive General Liability, Comprehensive Auto Liability, Certificates of Insurance, satisfactory to NPU, in compliance with the law, and in the following form and amount:

Comprehensive General Liability	
Premises – Operations – Products/Completed Operations	
General Aggregate	$2,000,000.00
Occurrence	$1,000,000.00
Comprehensive Automobile Liability	
Combined Single Limit	$1,000,000.00
Workmen's Compensation	Statutory
Employer's Liability	$100,000.00

Fire and Special Extended Coverage in Builder's Risk policy in the amount of 100% of insurable completed value.

A copy of a valid Connecticut Contractor's license must accompany each bid.

If subcontractors are employed, same limits as named above shall apply and the certificate of insurance must be filed with NPU.

No contract shall be binding upon NPU until such bond shall have been given and until Comprehensive General Liability, Comprehensive General Auto Liability and Workmen's Compensation policy certificates indicated above have been filed with NPU and approved as to form and sufficiency by NPU. The insurance certificate policy provided by the successful bidder and all subcontractors shall carry a statement by the insurance company that NPU will receive at least ten (10) days prior to cancellation of any portion of the policies or any modifications in the

insurance coverage that may affect NPU's interest. The cost of all insurance coverage shall be included in the price of the contract cost.

The insurance company must be licensed to do business in the State of Connecticut and must be satisfactory to the City of Norwich. NORWICH PUBLIC UTILITIES AND THE CITY OF NORWICH MUST BE NAMED AS ADDITIONAL INSURED.

Payment Terms

NPU agrees to pay the Contractor the contract price, as set forth in the contract which shall be equitably adjusted to cover any additions, deletions or changes to the project. The contract price shall include sales, use and similar taxes. NPU shall not be responsible for any federal, state, and/or local, personal property, license, privilege or other like taxes, which may now or hereafter be applicable to the transactions under the contract.

The Contractor shall submit invoice(s) in accordance with the contract. Said invoice(s) shall include cost breakdowns and unit quantities as specified by NPU. All invoices shall include the name of the NPU contact. All invoices and required documentation shall be submitted to NPU within ten (10) days of a completed job. For work exceeding a four week duration, partial invoices may be submitted. Partial invoices are to include the dates that the work was performed. The last invoice for the project shall be clearly marked as "Final Invoice".

Except as otherwise provided for in the contract, all invoices will be due and payable sixty (60) days from receipt of a proper invoice and required documentation.

Payment by NPU shall not relieve the Contractor of any responsibility or obligation under the contract, nor shall it constitute a waiver by NPU of any claim arising hereunder. No payment made shall be considered as acceptance of any work. All payments shall be subject to correction or adjustment in subsequent payments.

Purchases made by Norwich Public Utilities are considered exempt from the payment of Federal Excise taxes, Connecticut sales taxes, etc., and such taxes must be identified separately or excluded fro the bid prices. Exemption certifications will be furnished as required.

Additional Provisions

Independent Contractor

The Contractor is and shall be an independent contractor in the performance of the work covered by this contract. Nothing herein shall be construed as to constitute the Contractor an agent or representative of NPU, and the Contractor shall have no authority to and shall not make any warranty or representation or incur any obligation, liability or indebtedness whatsoever on NPU. The Contractor acknowledges that NPU reserves no control whatsoever over the Contractor's manner or method of conducting business or over the Contractor's subcontractors or employees.

Liens

To the extent permitted by law, the Contractor shall keep NPU's property free and clear of all liens, encumbrances and claims arising from the performance of this contract. If a lien is placed on the property by the Contractor, NPU shall have the right to withhold any payment due the Contractor to bond the lien. If a lien is placed by a subcontractor, the Contractor shall: within

forty-eight hours post a bond covering the lien; shall discharge the lien within thirty days; and indemnify and save harmless NPU, its officers, directors, employees, and assigns from said lien.

Documentation
All field data, notes, laboratory tests data, calculations, estimates, reports and other documents, which the Contractor prepares in connection with the work, shall remain the property of NPU.

Confidential Information
The Contractor shall hold confidential all business and technical information obtained or generated in the performance of the work. The Contractor shall not disclose such information without NPU's consent except to the extent required for performance of the work; compliance with reporting obligations under federal, state or local laws, rules, bylaws, statutes, regulations, and ordinances; and compliance with any court order or governmental directive. The Contractor's obligations shall not apply to information existing in the public domain without breach of this contract by Contractor or lawfully acquired on a non-confidential basis from others.

Waiver
Any waiver by either party of any provision or condition of this contract shall not be construed or deemed to be a waiver of any other provision or condition of this contract, nor a waiver of a subsequent breach of the same provision or condition.

Severability
If any section, sentence, or clause of this contract shall be deemed to be illegal, invalid or unenforceable for any reason, such illegality or unenforceability shall not affect the legality, validity or enforceability of other sections of this contract.

Law to Apply
The validity, interpretation and performance of this contract shall be governed and construed in accordance with the laws of the State of Connecticut and insofar as federal law is applicable, by federal law, and the parties agree to submit to the jurisdiction of the courts of the State of Connecticut or the United States District Court for the State of Connecticut to the extent that the United States District Court has jurisdiction over the matter, for any disputes arising under this agreement.

Discrepancies and Omissions
All discrepancies or omissions found in the contract documents shall be reported to NPU. NPU representatives will clarify discrepancies or omissions in writing, within a reasonable time, and that decision will be final and binding on all parties to the contract. The Contractor shall not take advantage of any discrepancies or omissions in the contract documents. Should conflicts be found between two or more sections of the contract documents, precedence shall be given in the following order:

1. Invitations for Bids
2. Terms and Conditions for Invitations for Bids
3. Addenda
4. Proposal, Contract, Performance and Payment Bonds
5. Special and Supplementary Conditions
6. General Conditions
7. Technical Specifications

8. Maps, Drawings, and Plans
9. Any other documents, instructions or bonds so designated
10. Figure dimensions shall govern over scaled dimensions, detailed drawings shall govern over general drawings, and words shall govern over figures.

Oral Agreements

No oral order, objection, claim or notice by any party to the others shall affect or modify any of the terms or obligations contained in any of the contract documents, and none of the provisions of the contract documents shall be held to be waived or modified by reason of any act whatsoever, other than by a definitely agreed waiver of modification thereof, in writing, and no evidence shall be introduced in any proceeding of any other waiver of modification.

Change Order

No. _____

Date of Issuance: _____ Effective Date: _____

Project: Deep River Water Treatment Plant Transmission Main Rehabilitation Project	Owner: Norwich Public Utilities	Owner's Bid No.: 7435
Contract:		Date of Contract:
Contractor:		Engineer's Project No.: 2652

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 days ☐ 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 No. _____ to No. _____: 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 Order: $_____	Contract Times with all approved Change Orders: Substantial completion (days or date): _____ Ready for final payment (days or date): _____

RECOMMENDED:	ACCEPTED:	ACCEPTED:
By: _____	By: _____	By: _____
Engineer (Authorized Signature)	Owner (Authorized Signature)	Contractor (Authorized Signature)
Date: _____	Date: _____	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.

WAGE RATES

SECTION
00830

Sec. 31-53b. Construction safety and health course. New miner training program. Proof of completion required for mechanics, laborers and workers on public works projects. Enforcement. Regulations. Exceptions. (a) Each contract for a public works project entered into on or after July 1, 2009, by the state or any of its agents, or by any political subdivision of the state or any of its agents, described in subsection (g) of section 31-53, shall contain a provision requiring that each contractor furnish proof with the weekly certified payroll form for the first week each employee begins work on such project that any person performing the work of a mechanic, laborer or worker pursuant to the classifications of labor under section 31-53 on such public works project, pursuant to such contract, has completed a course of at least ten hours in duration in construction safety and health approved by the federal Occupational Safety and Health Administration or, has completed a new miner training program approved by the Federal Mine Safety and Health Administration in accordance with 30 CFR 48 or, in the case of telecommunications employees, has completed at least ten hours of training in accordance with 29 CFR 1910.268.

(b) Any person required to complete a course or program under subsection (a) of this section who has not completed the course or program shall be subject to removal from the worksite if the person does not provide documentation of having completed such course or program by the fifteenth day after the date the person is found to be in noncompliance. The Labor Commissioner or said commissioner's designee shall enforce this section.

(c) Not later than January 1, 2009, the Labor Commissioner shall adopt regulations, in accordance with the provisions of chapter 54, to implement the provisions of subsections (a) and (b) of this section. Such regulations shall require that the ten-hour construction safety and health courses required under subsection (a) of this section be conducted in accordance with federal Occupational Safety and Health Administration Training Institute standards, or in accordance with Federal Mine Safety and Health Administration Standards or in accordance with 29 CFR 1910.268, as appropriate. The Labor Commissioner shall accept as sufficient proof of compliance with the provisions of subsection (a) or (b) of this section a student course completion card issued by the federal Occupational Safety and Health Administration Training Institute, or such other proof of compliance said commissioner deems appropriate, dated no earlier than five years before the commencement date of such public works project.

(d) This section shall not apply to employees of public service companies, as defined in section 16-1, or drivers of commercial motor vehicles driving the vehicle on the public works project and delivering or picking up cargo from public works projects provided they perform no labor relating to the project other than the loading and unloading of their cargo.

(P.A. 06-175, S. 1; P.A. 08-83, S. 1.)

History: P.A. 08-83 amended Subsec. (a) by making provisions applicable to public works project contracts entered into on or after July 1, 2009, replacing provision re total cost of work with reference to Sec. 31-53(g), requiring proof in certified payroll form that new mechanic, laborer or worker has completed a 10-hour or more construction safety course and adding provision re new miner training program, amended Subsec. (b) by substituting "person" for "employee" and adding "or program", amended Subsec. (c) by adding "or in accordance with Federal Mine
Safety and Health Administration Standards" and setting new deadline of January 1, 2009, deleted former Subsec. (d) re "public building", added new Subsec. (d) re exemptions for public service company employees and delivery drivers who perform no labor other than delivery and made conforming and technical changes, effective January 1, 2009.

Informational Bulletin

THE 10-HOUR OSHA CONSTRUCTION SAFETY AND HEALTH COURSE

(applicable to public building contracts entered into *on or after July 1, 2007*, where the total cost of all work to be performed is at least $100,000)

(1) This requirement was created by Public Act No. 06-175, which is codified in Section 31-53b of the Connecticut General Statutes (pertaining to the prevailing wage statutes);

(2) The course is required for public building construction contracts (projects funded in whole or in part by the state or any political subdivision of the state) entered into on or after July 1, 2007;

(3) It is required of private employees (not state or municipal employees) and apprentices who perform manual labor for a general contractor or subcontractor on a public building project where the total cost of all work to be performed is at least $100,000;

(4) The ten-hour construction course pertains to the ten-hour Outreach Course conducted in accordance with federal OSHA Training Institute standards, and, for telecommunications workers, a ten-hour training course conducted in accordance with federal OSHA standard, 29 CFR 1910.268;

(5) The internet website for the federal OSHA Training Institute is http://www.osha.gov/fso/ote/training/edcenters/fact_sheet.html;

(6) The statutory language leaves it to the contractor and its employees to determine who pays for the cost of the ten-hour Outreach Course;

(7) Within 30 days of receiving a contract award, a general contractor must furnish proof to the Labor Commissioner that all employees and apprentices performing manual labor on the project will have completed such a course;

(8) Proof of completion may be demonstrated through either: (a) the presentation of a *bona fide* student course completion card issued by the federal OSHA Training Institute; *or* (2) the presentation of documentation provided to an employee by a trainer certified by the Institute pending the actual issuance of the completion card;

(9) Any card with an issuance date more than 5 years prior to the commencement date of the construction project shall not constitute proof of compliance;

(10) Each employer shall affix a copy of the construction safety course completion card to the certified payroll submitted to the contracting agency in accordance with Conn. Gen. Stat. § 31-53(f) on which such employee's name first appears;

(11) Any employee found to be in non-compliance shall be subject to removal from the worksite if such employee does not provide satisfactory proof of course completion to the Labor Commissioner by the fifteenth day after the date the employee is determined to be in noncompliance;

(12) Any such employee who is determined to be in noncompliance may continue to work on a public building construction project for a maximum of fourteen consecutive calendar days while bringing his or her status into compliance;

(13) The Labor Commissioner may make complaint to the prosecuting authorities regarding any employer or agent of the employer, or officer or agent of the corporation who files a false certified payroll with respect to the status of an employee who is performing manual labor on a public building construction project;

(14) The statute provides the minimum standards required for the completion of a safety course by manual laborers on public construction contracts; any contractor can exceed these minimum requirements; and

(15) Regulations clarifying the statute are currently in the regulatory process, and shall be posted on the CTDOL website as soon as they are adopted in final form.

(16) Any questions regarding this statute may be directed to the Wage and Workplace Standards Division of the Connecticut Labor Department via the internet website of http://www.ctdol.state.ct.us/wgwkstnd/wgemenu.htm; or by telephone at (860)263-6790.

THE ABOVE INFORMATION IS PROVIDED EXCLUSIVELY AS AN EDUCATIONAL RESOURCE, AND IS NOT INTENDED AS A SUBSTITUTE FOR LEGAL INTERPRETATIONS WHICH MAY ULTMATELY ARISE CONCERNIG THE CONSTRUCTION OF THE STATUTE OR THE REGULATIONS.

November 29, 2006

Notice

To All Mason Contractors and Interested Parties Regarding Construction Pursuant to Section 31-53 of the Connecticut General Statutes (Prevailing Wage)

The Connecticut Labor Department Wage and Workplace Standards Division is empowered to enforce the prevailing wage rates on projects covered by the above referenced statute.

Over the past few years the Division has withheld enforcement of the rate in effect for workers who operate a forklift on a prevailing wage rate project due to a potential jurisdictional dispute.

The rate listed in the schedules and in our Occupational Bulletin (see enclosed) has been as follows:

Forklift Operator:

- **Laborers (Group 4) Mason Tenders** - operates forklift solely to assist a mason to a maximum height of nine feet only.

- **Power Equipment Operator (Group 9)** - operates forklift to assist any trade and to assist a mason to a height over nine feet.

The U.S. Labor Department conducted a survey of rates in Connecticut but it has not been published and the rate in effect remains as outlined in the above Occupational Bulletin.

Since this is a classification matter and not one of jurisdiction, effective January 1, 2007 the Connecticut Labor Department will enforce the rate on each schedule in accordance with our statutory authority.

Your cooperation in filing appropriate and accurate certified payrolls is appreciated.

STATUTE 31-55a

- SPECIAL NOTICE -

To: All State and Political Subdivisions,Their Agents, and Contractors

Connecticut General Statute 31-55a - Annual adjustments to wage rates by contractors doing state work.

Each contractor that is awarded a contract on or after October 1, 2002, for (1) the construction of a state highway or bridge that falls under the provisions of section 31-54 of the general statutes, or (2) the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public works project that falls under the provisions of section 31-53 of the general statutes shall contact the Labor Commissioner on or before July first of each year, for the duration of such contract, to ascertain the prevailing rate of wages on an hourly basis and the amount of payment or contributions paid or payable on behalf of each mechanic, laborer or worker employed upon the work contracted to be done, and shall make any necessary adjustments to such prevailing rate of wages and such payment or contributions paid or payable on behalf of each such employee, effective each July first.

The prevailing wage rates applicable to any contract or subcontract awarded on or after October 1, 2002 are subject to annual adjustments each July 1st for the duration of any project which was originally advertised for bids on or after October 1, 2002.

Each contractor affected by the above requirement 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 Web Site. The annual adjustments will be posted on the Department of Labor Web page: www.ctdol.state.ct.us. For those without internet access, please contact the division listed below.

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.

Any questions should be directed to the Contract Compliance Unit, Wage and Workplace Standards Division, Connecticut Department of Labor, 200 Folly Brook Blvd., Wethersfield, CT 06109 at (860)263-6790.

CERTIFIED PAYROLL FORM WWS - CPI

Employee Complaint Forms
Employer Forms
Laws/Legislation
Manuals and Publications
Compliance Assistance
Prevailing Wages
Standard Wage Rates
Workplace Standards
Employment of Minors
FMLA
Joint Enforcement Commission For Worker Misclassification (JEC)
Stop Work Orders
Reports of Activities
FAQs
Contact Us

In accordance with Connecticut General Statutes, 31-53 Certified Payrolls with a statement of compliance shall be submitted monthly to the contracting agency.

Note: Once you have downloaded these forms and are ready to print them out, set the print function on your PC to the horizontal print orientation.

Note2: Please download both the Payroll Certification for Public Works Projects **and** the Certified Statement of Compliance for a complete package. The Certified Statement of Compliance appears on the same page as the Fringe Benefits Explanation page.

Announcement: The Certified Payroll Form WWS-CPI can now be completed on-line!

- Certified Payroll Form WWS-CPI (PDF, 727KB)
- Sample Completed Form (PDF, 101KB)

200 Folly Brook Boulevard, Wethersfield, CT 06109 / Phone: 860-263-6000

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[New] In accordance with Section 31-53b(a) of the C.G.S. each contractor shall provide a copy of the OSHA 10 Hour Construction Safety and Health Card for each employee, to be attached to the first certified payroll on the project.

In accordance with Connecticut General Statutes, 31-53
Certified Payrolls with a statement of compliance
shall be submitted monthly to the contracting agency.

PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS

WEEKLY PAYROLL

Connecticut Department of Labor
Wage and Workplace Standards Division
200 Folly Brook Blvd.
Wethersfield, CT 06109

CONTRACTOR NAME AND ADDRESS:

SUBCONTRACTOR NAME & ADDRESS

WORKER'S COMPENSATION INSURANCE CARRIER

POLICY #

EFFECTIVE DATE:
EXPIRATION DATE:

PAYROLL NUMBER	Week-Ending Date	PROJECT NAME & ADDRESS

PERSON/WORKER, ADDRESS and SECTION	APPR RATE %	MALE/ FEMALE AND RACE*	WORK CLASSIFICATION / Trade License Type & Number - OSHA 10 Certification Number	DAY AND DATE S	M	T	W	TH	F	S	Total ST Hours / Total O/T Hours	BASE HOURLY RATE / TOTAL FRINGE BENEFIT PLAN CASH	TYPE OF FRINGE BENEFITS Per Hour 1 through 6 (see back)	GROSS PAY FOR ALL WORK PERFORMED THIS WEEK	TOTAL DEDUCTIONS FICA	FEDERAL WITH-HOLDING	STATE WITH-HOLDING	LIST OTHER	GROSS PAY FOR THIS PREVAILING RATE JOB	CHECK # AND NET PAY
				HOURS WORKED EACH DAY																
												$ Base Rate	1. $ 2. $ 3. $							
												$ Cash Fringe	4. $ 5. $ 6. $							
												$ Base Rate	1. $ 2. $ 3. $							
												$ Cash Fringe	4. $ 5. $ 6. $							
												$ Base Rate	1. $ 2. $ 3. $							
												$ Cash Fringe	4. $ 5. $ 6. $							
												$ Base Rate	1. $ 2. $ 3. $							
												$ Cash Fringe	4. $ 5. $ 6. $							

12/9/2013 *IF REQUIRED
WWS-CP1

*SEE REVERSE SIDE

PAGE NUMBER _____OF

OSHA 10 ~ATTACH CARD TO 1ST CERTIFIED PAYROLL

***FRINGE BENEFITS EXPLANATION (P):**

Bona fide benefits paid to approved plans, funds or programs, except those required by Federal or State Law (unemployment tax, worker's compensation, income taxes, etc.).

Please specify the type of benefits provided:

1) Medical or hospital care _____ 4) Disability_____

2) Pension or retirement _____ 5) Vacation, holiday_____

3) Life Insurance _____ 6) Other (please specify) _____

CERTIFIED STATEMENT OF COMPLIANCE

For the week ending date of _____,

I, _____of _____, (hereafter known as

Employer) in my capacity as _____ (title) do hereby certify and state:

Section A:

1. All persons employed on said project have been paid the full weekly wages earned by them during the week in accordance with Connecticut General Statutes, section 31-53, as amended. Further, I hereby certify and state the following:

a) The records submitted are true and accurate;

b) The rate of wages paid to each mechanic, laborer or workman and the amount of payment or contributions paid or payable on behalf of each such person to any employee welfare fund, as defined in Connecticut General Statutes, section 31-53 (h), are not less than the prevailing rate of wages and the amount of payment or contributions paid or payable on behalf of each such person to any employee welfare fund, as determined by the Labor Commissioner pursuant to subsection Connecticut General Statutes, section 31-53 (d), and said wages and benefits are not less than those which may also be required by contract;

c) The Employer has complied with all of the provisions in Connecticut General Statutes, section 31-53 (and Section 31-54 if applicable for state highway construction);

d) Each such person is covered by a worker's compensation insurance policy for the duration of his employment which proof of coverage has been provided to the contracting agency;

e) The Employer does not receive kickbacks, which means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided directly or indirectly, to any prime contractor, prime contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a prime contractor in connection with a subcontractor relating to a prime contractor; and

f) The Employer is aware that filing a certified payroll which he knows to be false is a class D felony for which the employer may be fined up to five thousand dollars, imprisoned for up to five years or both.

2. OSHA~The employer shall affix a copy of the construction safety course, program or training completion document to the certified payroll required to be submitted to the contracting agency for this project on which such persons name first appears.

_____	_____	_____
(Signature)	(Title)	Submitted on (Date)

*****THIS IS A PUBLIC DOCUMENT*****
*****DO NOT INCLUDE SOCIAL SECURITY NUMBERS*****

Weekly Payroll Certification For Public Works Projects (Continued)

PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS

Week-Ending Date:
Contractor or Subcontractor Business Name:

WEEKLY PAYROLL

PERSON/WORKER, ADDRESS and SECTION	APPR RATE %	MALE/ FEMALE AND RACE*	WORK CLASSIFICATION Trade License Type & Number - OSHA 10 Certification Number	DAY AND DATE S	M	T	W	TH	F	S	Total ST Hours Total O/T Hours	BASE HOURLY RATE TOTAL FRINGE BENEFIT PLAN CASH	TYPE OF FRINGE BENEFITS Per Hour 1 through 6 (see back)	GROSS PAY FOR ALL WORK PERFORMED THIS WEEK	TOTAL DEDUCTIONS FICA	FEDERAL WITH-HOLDING	STATE WITH-HOLDING	LIST OTHER	GROSS PAY FOR THIS PREVAILING RATE JOB	CHECK # AND NET PAY
				HOURS WORKED EACH DAY																
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													3. $							
												$ Cash Fringe	4. $							
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*IF REQUIRED

12/9/2013
WWS-CP2

NOTICE: THIS PAGE MUST BE ACCOMPANIED BY A COVER PAGE (FORM # WWS-CP1)

[New] In accordance with Section 31-53b(a) of the C.G.S. each contractor shall provide a copy of the OSHA 10 Hour Construction Safety and Health Card for each employee, to be attached to the first certified payroll on the project.

In accordance with Connecticut General Statutes, 31-53 Certified Payrolls with a statement of compliance shall be submitted monthly to the contracting agency.

PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS

WEEKLY PAYROLL

Connecticut Department of Labor
Wage and Workplace Standards Division
200 Folly Brook Blvd.
Wethersfield, CT 06109

CONTRACTOR NAME AND ADDRESS:
Landon Corporation, 15 Connecticut Avenue, Northford, CT 06472

SUBCONTRACTOR NAME & ADDRESS
XYZ Corporation
2 Main Street
Yantic, CT 06389

WORKER'S COMPENSATION INSURANCE CARRIER
Travelers Insurance Company
POLICY # #BAC8888928
EFFECTIVE DATE: 1/1/09
EXPIRATION DATE: 12/31/09

PAYROLL NUMBER	Week-Ending Date	PROJECT NAME & ADDRESS
1	9/26/09	DOT 105-296, Route 82

PERSON/WORKER, ADDRESS and SECTION	APPR RATE %	MALE/ FEMALE AND RACE*	WORK CLASSIFICATION / Trade License Type & Number - OSHA 10 Certification Number	S 20	M 21	T 22	W 23	TH 24	F 25	S 26	Total ST Hours / Total O/T Hours	BASE HOURLY RATE / TOTAL FRINGE BENEFIT PLAN CASH	TYPE OF FRINGE BENEFITS Per Hour 1 through 6 (see back)	GROSS PAY FOR ALL WORK PERFORMED THIS WEEK	TOTAL DEDUCTIONS: FICA	FEDERAL WITH-HOLDING	STATE WITH-HOLDING	LIST OTHER	GROSS PAY FOR THIS PREVAILING RATE JOB	CHECK # AND NET PAY
				HOURS WORKED EACH DAY																
Robert Craft 81 Maple Street Willimantic, CT 06226		M/C	Electrical Lineman E-1 1234567 Owner OSHA 123456		8	8	8	8	8		S-TIME 40	$ 30.75 Base Rate	1. $ 5.80 2. $ 3. $ 2.01	$1,582.80				P-xxxx	$1,582.80	#123 $ xxx.xx
											O-TIME	$ 8.82 Cash Fringe	4. $ 5. $ 6. $							
Ronald Jones 212 Elm Street Norwich, CT 06360	65%	M/B	Electrical Apprentice OSHA 234567		8	8	8	8	8		S-TIME 40	$ 19.99 Base Rate	1. $ 2. $ 3. $	$1,464.80	xx.xx	xxx.xx	xx.xx	G-xxx	$1,464.80	#124 $xxx.xx
											O-TIME	$ 16.63 Cash Fringe	4. $ 5. $ 6. $							
Franklin T. Smith 234 Washington Rd. New London, CT 06320 SECTION B		M/H	Project Manager			8					S-TIME 8	$ Base Rate	1. $ 2. $ 3. $	$1,500.00	xx.xx	xx.xx	xx.xx	M-xx.x		#125 xxx.xx
											O-TIME	$ Cash Fringe	4. $ 5. $ 6. $							
											S-TIME	$ Base Rate	1. $ 2. $ 3. $							
											O-TIME	$ Cash Fringe	4. $ 5. $ 6. $							

7/13/2009
WWS-CP1

*IF REQUIRED

*SEE REVERSE SIDE

PAGE NUMBER 1 OF 2

OSHA 10 ~ATTACH CARD TO 1ST CERTIFIED PAYROLL

***FRINGE BENEFITS EXPLANATION (P):**

Bona fide benefits paid to approved plans, funds or programs, except those required by Federal or State Law (unemployment tax, worker's compensation, income taxes, etc.).

Please specify the type of benefits provided:

1) Medical or hospital care Blue Cross 4) Disability_____

2) Pension or retirement _____ 5) Vacation, holiday_____

3) Life Insurance Utopia 6) Other (please specify) _____

CERTIFIED STATEMENT OF COMPLIANCE

For the week ending date of 9/26/09,

I, Robert Craft of XYZ Corporation, (hereafter known as

Employer) in my capacity as Owner (title) do hereby certify and state:

Section A:

1. All persons employed on said project have been paid the full weekly wages earned by them during the week in accordance with Connecticut General Statutes, section 31-53, as amended. Further, I hereby certify and state the following:

a) The records submitted are true and accurate;

b) The rate of wages paid to each mechanic, laborer or workman and the amount of payment or contributions paid or payable on behalf of each such employee to any employee welfare fund, as defined in Connecticut General Statutes, section 31-53 (h), are not less than the prevailing rate of wages and the amount of payment or contributions paid or payable on behalf of each such employee to any employee welfare fund, as determined by the Labor Commissioner pursuant to subsection Connecticut General Statutes, section 31-53 (d), and said wages and benefits are not less than those which may also be required by contract;

c) The Employer has complied with all of the provisions in Connecticut General Statutes, section 31-53 (and Section 31-54 if applicable for state highway construction);

d) Each such employee of the Employer is covered by a worker's compensation insurance policy for the duration of his employment which proof of coverage has been provided to the contracting agency;

e) The Employer does not receive kickbacks, which means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided directly or indirectly, to any prime contractor, prime contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a prime contractor in connection with a subcontractor relating to a prime contractor; and

f) The Employer is aware that filing a certified payroll which he knows to be false is a class D felony for which the employer may be fined up to five thousand dollars, imprisoned for up to five years or both.

2. OSHA~The employer shall affix a copy of the construction safety course, program or training completion document to the certified payroll required to be submitted to the contracting agency for this project on which such employee's name first appears.

Robert Craft owner 10/2/09

(Signature) (Title) Submitted on (Date)

Section B: Applies to CONNDOT Projects ONLY

That pursuant to CONNDOT contract requirements for reporting purposes only, all employees listed under Section B who performed work on this project are not covered under the prevailing wage requirements defined in Connecticut General Statutes Section 31-53.

Robert Craft owner 10/2/09

(Signature) (Title) Submitted on (Date)

Note: CTDOL will assume all hours worked were performed under Section A unless clearly delineated as Section B WWS-CP1 as such. Should an employee perform work under both Section A and Section B, the hours worked and wages paid must be segregated for reporting purposes.

*****THIS IS A PUBLIC DOCUMENT*****

*****DO NOT INCLUDE SOCIAL SECURITY NUMBERS*****

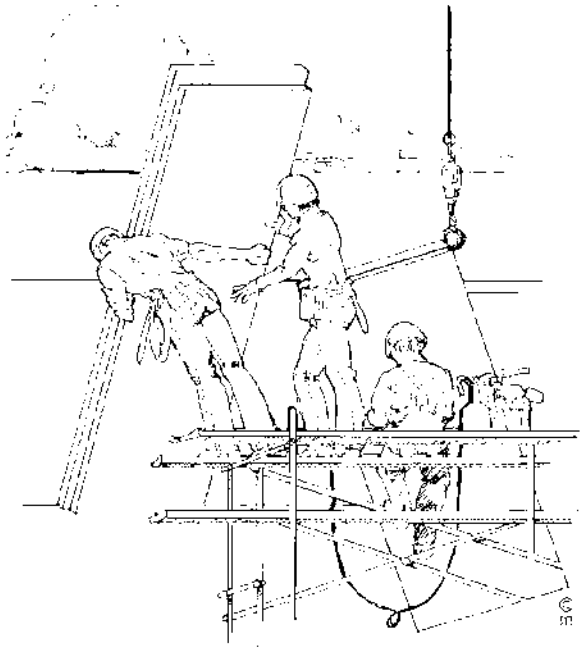
~NOTICE~

TO ALL CONTRACTING AGENCIES

Please be advised that Connecticut General Statutes Section 31-53, requires the contracting agency to certify to the Department of Labor, the total dollar amount of work to be done in connection with such public works project, regardless of whether such project consists of one or more contracts.

Please find the attached "Contracting Agency Certification Form" to be completed and returned to the Department of Labor, Wage and Workplace Standards Division, Public Contract Compliance Unit.

✎ Inquiries can be directed to (860)263-6543.



CONNECTICUT DEPARTMENT OF LABOR
WAGE AND WORKPLACE STANDARDS DIVISION
CONTRACT COMPLIANCE UNIT

CONTRACTING AGENCY CERTIFICATION FORM

I, _____, acting in my official capacity as _____,
authorized representative title

for _____, located at _____,
contracting agency address

do hereby certify that the total dollar amount of work to be done in connection with

_____, located at _____,
project name and number address

shall be $_____, which includes all work, regardless of whether such project

consists of one or more contracts.

CONTRACTOR INFORMATION

Name:_____

Address:_____
Authorized Representative:_____
Approximate Starting Date: _____

Approximate Completion Date:_____

_____ _____
Signature Date

Return To: Connecticut Department of Labor
Wage & Workplace Standards Division
Contract Compliance Unit
200 Folly Brook Blvd.
Wethersfield, CT 06109

Date Issued: _____

CONNECTICUT DEPARTMENT OF LABOR
WAGE AND WORKPLACE STANDARDS DIVISION

CONTRACTORS WAGE CERTIFICATION FORM

Construction Manager at Risk/General Contractor/Prime Contractor

I,_____of _____
Officer, Owner, Authorized Rep. Company Name

do hereby certify that the _____
Company Name

_____
Street

_____
City

and all of its subcontractors will pay all workers on the

_____
Project Name and Number

_____
Street and City

the wages as listed in the schedule of prevailing rates required for such project (a copy of which is attached hereto).

_____
Signed

Subscribed and sworn to before me this _____ day of _____,_____.

_____
Notary Public

Return to:

Connecticut Department of Labor
Wage & Workplace Standards Division
200 Folly Brook Blvd.
Wethersfield, CT 06109

Rate Schedule Issued (Date): _____

Employee Complaint Forms
Employer Forms
Laws/Legislation
Manuals and Publications
Compliance Assistance
Prevailing Wages
Standard Wage Rates
Workplace Standards
Employment of Minors
FMLA
Joint Enforcement Commission For Worker Misclassification (JEC)
Stop Work Orders
Reports of Activities
FAQs
Contact Us

OCCUPATIONAL CLASSIFICATION BULLETIN

The Connecticut Department of Labor has the responsibility to properly determine "job classification" on prevailing wage projects covered under C.G.S. Section 31-53.

Note: This information is intended to provide a sample of some occupational classifications for guidance purposes only. It is not an all-inclusive list of each occupation's duties. This list is being provided only to highlight some areas where a contractor may be unclear regarding the proper classification.

Below are additional clarifications of specific job duties performed for certain classifications:

- **ASBESTOS WORKERS**
  - Applies all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems.
- **ASBESTOS INSULATOR**
  - Handle, install apply, fabricate, distribute, prepare, alter, repair, dismantle, heat and frost insulation, including penetration and fire stopping work on all penetration fire stop systems.
- **BOILERMAKERS**
  - Erects hydro plants, incomplete vessels, steel stacks, storage tanks for water, fuel, etc. Builds incomplete boilers, repairs heat exchanges and steam generators.
- **BRICKLAYERS, CEMENT MASONS, CEMENT FINISHERS, MARBLE MASONS, PLASTERERS, STONE MASONS, PLASTERERS. STONE MASONS, TERRAZZO WORKERS, TILE SETTERS**
  - Lays building materials such as brick, structural tile and concrete cinder, glass, gypsum, terra cotta block. Cuts, tools and sets marble, sets stone, finishes concrete, applies decorative steel, aluminum and plastic tile, applies cements, sand, pigment and marble chips to floors, stairways, etc.
- **CARPENTERS, MILLWRIGHTS. PILEDRIVERMEN. LATHERS. RESILEINT FLOOR LAYERS, DOCK BUILDERS, DIKERS, DIVER TENDERS**
  - Constructs, erects, installs and repairs structures and fixtures of wood, plywood and wallboard. Installs, assembles,

    dismantles, moves industrial machinery. Drives piling into ground to provide foundations for structures such as buildings and bridges, retaining walls for earth embankments, such as cofferdams. Fastens wooden, metal or rockboard lath to walls, ceilings and partitions of buildings, acoustical tile layer, concrete form builder. Applies firestopping materials on fire resistive joint systems only. Installation of curtain/window walls only where attached to wood or metal studs. Installation of insulated material of all types whether blown, nailed or attached in other ways to walls, ceilings and floors of buildings. Assembly and installation of modular furniture/furniture systems. Free-standing furniture is not covered. This includes free standing: student chairs, study top desks, book box desks, computer furniture, dictionary stand, atlas stand, wood shelving, two-position information access station, file cabinets, storage cabinets, tables, etc.
- **CLEANING LABORER**
  - The clean up of any construction debris and the general cleaning, including sweeping, wash down, mopping, wiping of the construction facility, washing, polishing, dusting, etc., prior to the issuance of a certificate of occupancy falls under the *Labor classification.*
- **DELIVERY PERSONNEL**
  - If delivery of supplies/building materials is to one common point and stockpiled there, prevailing wages are not required. If the delivery personnel are involved in the distribution of the material to multiple locations within the construction site then they would have to be paid prevailing wages for the type of work performed: laborer, equipment operator, electrician, ironworker, plumber, etc.

- An example of this would be where delivery of drywall is made to a building and the delivery personnel distribute the drywall from one "stockpile" location to further sub-locations on each floor. Distribution of material around a construction site is the job of a laborer/tradesman and not a delivery personnel.

- **ELECTRICIANS**
  - Install, erect, maintenance, alteration or repair of any wire, cable, conduit, etc., which generates, transforms, transmits or uses electrical energy for light, heat, power or other purposes, including the Installation or maintenance of telecommunication, LAN wiring or computer equipment, and low voltage wiring. ***License required per Connecticut General Statutes: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9.**
- **ELEVATOR CONSTRUCTORS**
  - Install, erect, maintenance and repair of all types of elevators, escalators, dumb waiters and moving walks. ***License required by Connecticut General Statutes: R-1,2,5,6.**
- **FORK LIFT OPERATOR**
  - Laborers Group 4) Mason Tenders - operates forklift solely to assist a mason to a maximum height of nine (9) feet only.
  - Power Equipment Operator Group 9 - operates forklift to assist any trade, and to assist a mason to a height over nine (9) feet.
- **GLAZIERS**
  - Glazing wood and metal sash, doors, partitions, and 2 story aluminum storefronts. Installs glass windows, skylights, store fronts and display cases or surfaces such as building fronts, interior walls, ceilings and table tops and metal store fronts. Installation of aluminum window walls and curtain walls is the "joint" work of glaziers and ironworkers which requires either a blended rate or equal composite workforce.
- **IRONWORKERS**
  - Erection, installation and placement of structural steel, precast concrete, miscellaneous iron, ornamental iron, metal curtain wall, rigging and reinforcing steel. Handling, sorting, and installation of reinforcing steel (rebar). Metal bridge rail (traffic), metal bridge handrail, and decorative security fence installation. Installation of aluminum window walls and

    curtain walls is the "joint" work of glaziers and ironworkers which requires either a blended rate or equal composite workforce. Insulated metal and insulated composite panels are still installed by the Ironworker.
- **INSULATOR**
  - Installing fire stopping systems/materials for "Penetration Firestop Systems": transit to cables, electrical conduits, insulated pipes, sprinkler pipe penetrations, ductwork behind radiation, electrical cable trays, fire rated pipe penetrations, natural polypropylene, HVAC ducts, plumbing bare metal, telephone and communication wires, and boiler room ceilings. Past practice using the applicable licensed trades, Plumber, Sheet Metal, Sprinkler Fitter, and Electrician, is not inconsistent with the Insulator classification and would be permitted.
- **LABORERS**
  - Acetylene burners, asphalt rakers, chain saw operators, concrete and power buggy operator, concrete saw operator, fence and guard rail erector (except metal bridge rail (traffic), metal bridge handrail, and decorative security fence installation.), hand operated concrete vibrator operator, mason tenders, pipelayers (installation of storm drainage or sewage lines on the street only), pneumatic drill operator, pneumatic gas and electric drill operator, powermen and wagon drill operator, air track operator, block paver, curb setters, blasters, concrete spreaders.
- **PAINTERS**
  - Maintenance, preparation, cleaning, blasting (water and sand, etc.), painting or application of any protective coatings of every description on all bridges and appurtenances of highways, roadways, and railroads. Painting, decorating, hardwood finishing, paper hanging, sign writing, scenic art work and drywall hanging+ for any and all types of building and residential work.
- **LEAD PAINT REMOVAL**
  - Painter's Rate
    1. Removal of lead paint from bridges.
    2. Removal of lead paint as preparation of any surface to be repainted.
    3. Where removal is on a Demolition project prior to reconstruction.
  - Laborer's Rate
    1. Removal of lead paint from any surface NOT to be repainted.
    2. Where removal is on a *TOTAL* Demolition project only.
- **PLUMBERS AND PIPEFITTERS**
  - Installation, repair, replacement, alteration or maintenance of all plumbing, heating, cooling and piping. ***License required per Connecticut General Statutes: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2 S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4.***
- **POWER EQUIPMENT OPERATORS**

- **POWER EQUIPMENT OPERATORS**
  - ates several types of power construction equipment such as compressors, pumps, hoists, derricks, cranes, shovels, tractors, scrapers or motor graders, etc. Repairs and maintains equipment. ***License required, crane operators only, per Connecticut General Statutes.**
- **ROOFERS**
  - Covers roofs with composition shingles or sheets, wood shingles, slate or asphalt and gravel to waterproof roofs, including preparation of surface. (tear-off and/or removal of any type of roofing and/or clean-up of any and all areas where a roof is to be relaid)
- **SHEETMETAL WORKERS**
  - Fabricate, assembles, installs and repairs sheetmetal products and equipment in such areas as ventilation, air-conditioning, warm air heating, restaurant equipment, architectural sheet metal work, sheetmetal roofing, and aluminum gutters. Fabrication, handling, assembling, erecting, altering, repairing, etc. of coated metal material panels and composite metal material panels when used on building exteriors and interiors as soffits, facia, louvers, partitions, wall panel siding, canopies, cornice, column covers, awnings, beam covers, cladding, sun shades, lighting troughs, spires, ornamental roofing, metal ceilings, mansards, copings, ornamental and ventilation hoods, vertical and horizontal siding panels, trim, etc. The sheet metal classification also applies to the vast variety of coated metal material panels and composite metal material panels that have evolved over the years as an alternative to conventional ferrous and non-ferrous metals like steel, iron, tin, copper, brass, bronze, aluminum, etc. Insulated metal and insulated composite panels are still installed by the Iron Worker. Fabrication, handling, assembling, erecting, altering, repairing, etc. of architectural metal roof, standing seam roof, composite metal roof, metal and composite bathroom/toilet partitions, aluminum gutters, metal and composite lockers and shelving, kitchen equipment, and walk-in coolers.
- **SPRINKLER FITTERS**
  - Installation, alteration, maintenance and repair of fire protection sprinkler systems. ***License required per Connecticut General Statutes: F-1,2,3,4.**
- **TILE MARBLE AND TERRAZZO FINISHERS**
  - Assists and tends the tile setter, marble mason and terrazzo worker in the performance of their duties.
- **TRUCK DRIVERS**
  - **Definitions:**
    - 1) "Site of the work" (29 Code of Federal Regulations (CFR) 5.2(l)(b) is the physical place or places where the building or work called for in the contract will remain and any other site where a significant portion of the building or work is constructed, provided that such site is established specifically for the performance of the contact or project;
      - (a) Except as provided in paragraph (l) (3) of this section, job headquarters, tool yards, batch plants, borrow pits, etc. are part of the "site of the work"; provided they are dedicated exclusively, or nearly so, to the performance of the contract or project, and provided they are adjacent to "the site of work" as defined in paragraph (e)(1) of this section;
      - (b) Not included in the "site of the work" are permanent home offices, branch plant establishments, fabrication plants, tool yards etc, of a contractor or subcontractor whose location and continuance in operation are determined wholly without regard to a particular State or political subdivision contract or uncertain and indefinite periods of time involved of a few seconds or minutes duration and where the failure to count such time is due to consideration justified by industrial realities (29 CFR 785.47)
    - 2) "Engaged to wait" is waiting time that belongs to and is controlled by the employer which is an integral part of the job and is therefore compensable as hours worked. (29 CFR 785.15)
    - 3) "Waiting to be engaged" is waiting time that an employee can use effectively for their own purpose and is not compensable as hours worked. (29 CFR 785.16)
    - 4) "De Minimus" is a rule that recognizes that unsubstantial or insignificant periods of time which cannot as a practical administrative matter be precisely recorded for payroll purposes, may be disregarded. This rule applies only where there are uncertain and indefinite periods of time involved of a short duration and where the failure to count such time is due to consideration justified by worksite realities. For example, with respect to truck drivers on prevailing wage sites, this is typically less than 15 minutes at a time.
  - **Coverage of Truck Drivers on State or Political subdivision Prevailing Wage Projects**
    - Truck drivers **are covered** for payroll purposes under the following conditions:
      - Truck Drivers for time spent working on the site of the work.
      - Truck Drivers for time spent loading and/or unloading materials and supplies on the site of the work, if such time is not de minimus
      - Truck drivers transporting materials or supplies between a facility that is deemed part of the site of the work and the actual construction site.
      - Truck drivers transporting portions of the building or work between a site established specifically for the

- Truck drivers transporting portions of the building or work between a site established specifically for the performance of the contract or project where a significant portion of such building or work is constructed and the physical places where the building or work outlined in the contract will remain.

For example: Truck drivers delivering asphalt are covered under prevailing wage while" engaged to wait" on the site and when directly involved in the paving operation, provided the total time is not "de minimus"

- Truck Drivers **are not** covered in the following instances:
  - Material delivery truck drivers while off "the site of the work"
  - Truck Drivers traveling between a prevailing wage job and a commercial supply facility while they are off the "site of the work"
  - Truck drivers whose time spent on the "site of the work" is de minimus, such as under 15 minutes at a time, merely to drop off materials or supplies, including asphalt.

These guidelines are similar to U.S. Labor Department policies. The application of these guidelines may be subject to review based on factual considerations on a case by case basis.

For example:

- Material men and deliverymen are not covered under prevailing wage as long as they are not directly involved in the construction process. If, they unload the material, they would then be covered by prevailing wage for the classification they are performing work in: laborer, equipment operator, etc.
- Hauling material off site is not covered provided they are not dumping it at a location outlined above.
- Driving a truck on site and moving equipment or materials on site would be considered covered work, as this is part of the construction process.

Any questions regarding the proper classification should be directed to:

Public Contract Compliance Unit
Wage and Workplace Standards Division
Connecticut Department of Labor
200 Folly Brook Blvd, Wethersfield, CT 06109
(860) 263-6543

200 Folly Brook Boulevard, Wethersfield, CT 06109 / Phone: 860-263-6000
Home | CT.gov Home | Send Feedback<%end if%><%if cbool (request.Cookies(Application("HOME_NAME"))("AA"))=true and request.Cookies(Application("HOME_NAME"))("CA")<>"CF83CBC7" then call Session_WriteString(" | Admin") end if%>
State of Connecticut Disclaimer and Privacy Policy. Copyright © 2002 - 2011 State of Connecticut

Connecticut Department of Labor
Wage and Workplace Standards Division
FOOTNOTES

Please Note: If the "Benefits" listed on the schedule for the following occupations includes a letter(s) (+ a or + a+b for instance), refer to the information below.

Benefits to be paid at the appropriate prevailing wage rate for the listed occupation.

If the "Benefits" section for the occupation lists only a dollar amount, disregard the information below.

Bricklayers, Cement Masons, Cement Finishers, Concrete Finishers, Stone Masons
(Building Construction) and
(Residential- Hartford, Middlesex, New Haven, New London and Tolland Counties)

a. Paid Holiday: Employees shall receive 4 hours for Christmas Eve holiday provided the employee works the regularly scheduled day before and after the holiday. Employers may schedule work on Christmas Eve and employees shall receive pay for actual hours worked in addition to holiday pay.

Elevator Constructors: Mechanics

a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, Christmas Day, plus the Friday after Thanksgiving.

b. Vacation: Employer contributes 8% of basic hourly rate for 5 years or more of service or 6% of basic hourly rate for 6 months to 5 years of service as vacation pay credit.

Glaziers

a. Paid Holidays: Labor Day and Christmas Day.

Power Equipment Operators
(Heavy and Highway Construction & Building Construction)

a. Paid Holidays: New Year's Day, Good Friday, Memorial day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, provided the employee works 3 days during the week in which the holiday falls, if scheduled, and if scheduled, the working day before and the working day after the holiday. Holidays falling on Saturday may be observed on Saturday, or if the employer so elects, on the preceding Friday.

Ironworkers

a. Paid Holiday: Labor Day provided employee has been on the payroll for the 5 consecutive work days prior to Labor Day.

Laborers (Tunnel Construction)

a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. No employee shall be eligible for holiday pay when he fails, without cause, to work the regular work day preceding the holiday or the regular work day following the holiday.

Roofers

a. Paid Holidays: July 4th, Labor Day, and Christmas Day provided the employee is employed 15 days prior to the holiday.

Sprinkler Fitters

a. Paid Holidays: Memorial Day, July 4th, Labor Day, Thanksgiving Day and Christmas Day, provided the employee has been in the employment of a contractor 20 working days prior to any such paid holiday.

Truck Drivers

(Heavy and Highway Construction & Building Construction)

a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas day, and Good Friday, provided the employee has at least 31 calendar days of service and works the last scheduled day before and the first scheduled day after the holiday, unless excused.

Project: Deep River Transmission Main Rehabilitation

Minimum Rates and Classifications
for Heavy/Highway Construction

Connecticut Department of Labor
Wage and Workplace Standards Division

ID#: **H** 18904

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: DWSRF 20101040011C
Project Town: Lebanon
FAP Number:
State Number:
Project: Deep River Transmission Main Rehabilitation

CLASSIFICATION	Hourly Rate	Benefits
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**		
1) Boilermaker	33.79	34% + 8.96
1a) Bricklayer, Cement Masons, Cement Finishers, Plasterers, Stone Masons	32.50	27.06
2) Carpenters, Piledrivermen	30.45	21.65

As of: Wednesday, March 12, 2014

Project: Deep River Transmission Main Rehabilitation

2a) Diver Tenders	30.45	21.65
3) Divers	38.91	21.65
4) Painters: (Bridge Construction) Brush, Roller, Blasting (Sand, Water, etc.), Spray	44.25	17.75
4a) Painters: Brush and Roller	30.62	17.75
4b) Painters: Spray Only	33.62	17.75
4c) Painters: Steel Only	32.62	17.75
4d) Painters: Blast and Spray	33.62	17.75

As of: Wednesday, March 12, 2014

Project: Deep River Transmission Main Rehabilitation

4e) Painters: Tanks, Tower and Swing	32.62	17.75
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)	37.60	22.22+3% of gross wage
6) Ironworkers: Ornamental, Reinforcing, Structural, and Precast Concrete Erection	33.50	28.98
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)	39.31	26.27

----LABORERS---- -

8) Group 1: Laborer (Unskilled), Common or General, acetylene burner, concrete specialist	26.40	17.15
9) Group 2: Chain saw operators, fence and guard rail erectors, pneumatic tool operators, powdermen, air tool operator	26.65	17.15

As of: Wednesday, March 12, 2014

Project: Deep River Transmission Main Rehabilitation

10) Group 3: Pipelayers	26.90	17.15
11) Group 4: Jackhammer/Pavement breaker (handheld); mason tenders (cement/concrete), catch basin builders, asphalt rakers, air track operators, block pavers and curb setters	26.90	17.15
12) Group 5: Toxic waste removal (non-mechanical systems)	28.40	17.15
13) Group 6: Blasters	28.15	17.15
Group 7: Asbestos Removal, non-mechanical systems (does not include leaded joint pipe)	27.40	17.15
Group 8: Traffic control signalmen	16.00	17.15

----LABORERS (TUNNEL CONSTRUCTION, FREE AIR). Shield Drive and Liner Plate Tunnels in Free Air.----

As of: Wednesday, March 12, 2014

Project: Deep River Transmission Main Rehabilitation

13a) Miners, Motormen, Mucking Machine Operators, Nozzle Men, Grout Men, Shaft & Tunnel Steel & Rodmen, Shield & Erector, Arm Operator, Cable Tenders	31.28	17.15 + a
13b) Brakemen, Trackmen	30.37	17.15 + a

----CLEANING, CONCRETE AND CAULKING TUNNEL----

14) Concrete Workers, Form Movers, and Strippers	30.37	17.15 + a
15) Form Erectors	30.68	17.15 + a

----ROCK SHAFT LINING, CONCRETE, LINING OF SAME AND TUNNEL IN FREE AIR:----

16) Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers	30.37	17.15 + a

As of: Wednesday, March 12, 2014

Project: Deep River Transmission Main Rehabilitation

17) Laborers Topside, Cage Tenders, Bellman	30.26	17.15 + a
18) Miners	31.28	17.15 + a

----TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED AIR: ----

18a) Blaster	37.41	17.15 + a
19) Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders	37.22	17.15 + a
20) Change House Attendants, Powder Watchmen, Top on Iron Bolts	35.35	17.15 + a
21) Mucking Machine Operator	37.97	17.15 + a

As of: Wednesday, March 12, 2014

Project: Deep River Transmission Main Rehabilitation

----TRUCK DRIVERS----(*see note below)

Two axle trucks	27.88	18.27 + a
Three axle trucks; two axle ready mix	27.98	18.27 + a
Three axle ready mix	28.03	18.27 + a
Four axle trucks, heavy duty trailer (up to 40 tons)	28.08	18.27 + a
Four axle ready-mix	28.13	18.27 + a
Heavy duty trailer (40 tons and over)	28.33	18.27 + a

As of: Wednesday, March 12, 2014

Project: Deep River Transmission Main Rehabilitation

Specialized earth moving equipment other than conventional type on-the road trucks and semi-trailer (including Euclids)	28.13	18.27 + 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. (Trade License Required)	36.05	21.55 + a
Group 2: Cranes (100 ton rate capacity and over); Backhoe/Excavator over 2 cubic yards; Piledriver ($3.00 premium when operator controls hammer). (Trade License Required)	35.73	21.55 + 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)	34.99	21.55 + a
Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper)	34.60	21.55 + a
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)	34.01	21.55 + a

As of: Wednesday, March 12, 2014

Project: Deep River Transmission Main Rehabilitation

Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller.	34.01	21.55 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	33.70	21.55 + 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).	33.36	21.55 + a
Group 8: Mechanic, Grease Truck Operator, Hydroblaster, Barrier Mover, Power Stone Spreader; Welder; Work Boat under 26 ft.; Transfer Machine.	32.96	21.55 + 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).	32.53	21.55 + a
Group 10: Vibratory Hammer, Ice Machine, Diesel and Air Hammer, etc.	30.49	21.55 + a
Group 11: Conveyor, Earth Roller; Power Pavement Breaker (whiphammer), Robot Demolition Equipment.	30.49	21.55 + a

As of: Wednesday, March 12, 2014

Project: Deep River Transmission Main Rehabilitation

Group 12: Wellpoint Operator.	30.43	21.55 + a
Group 13: Compressor Battery Operator.	29.85	21.55 + a
Group 14: Elevator Operator; Tow Motor Operator (Solid Tire No Rough Terrain).	28.71	21.55 + a
Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	28.30	21.55 + a
Group 16: Maintenance Engineer/Oiler	27.65	21.55 + a
Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator.	31.96	21.55 + a
Group 18: Power Safety Boat; Vacuum Truck; Zim Mixer; Sweeper; (minimum for any job requiring CDL license).	29.54	21.55 + a

As of: Wednesday, March 12, 2014

Project: Deep River Transmission Main Rehabilitation

**NOTE: SEE BELOW

----LINE CONSTRUCTION----(Railroad Construction and Maintenance)----

20) Lineman, Cable Splicer, Dynamite Man	44.36	3% + 13.70
21) Heavy Equipment Operator	39.92	3% + 13.70
22) Equipment Operator, Tractor Trailer Driver, Material Men	37.71	3% + 13.70
23) Driver Groundmen	33.27	3% + 13.70

----LINE CONSTRUCTION----

As of: Wednesday, March 12, 2014

Project: Deep River Transmission Main Rehabilitation

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

As of: Wednesday, March 12, 2014

Project: Deep River Transmission Main Rehabilitation

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*

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 journeyperson 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.

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.

As of: Wednesday, March 12, 2014

Project: Deep River Transmission Main Rehabilitation

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.

As of: Wednesday, March 12, 2014

General Decision Number: CT140017 01/31/2014 CT17

Superseded General Decision Number: CT20130017

State: Connecticut

Construction Type: Heavy

County: New London County in Connecticut.

HEAVY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	01/03/2014
1	01/31/2014

* BRCT0001-011 12/30/2013

	Rates	Fringes
BRICKLAYER	$ 32.50	27.06

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* BRCT0001-012 12/30/2013

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 32.50	27.06

CARP0024-007 05/06/2013

	Rates	Fringes
CARPENTER		
CARPENTERS, PILEDRIVERS	$ 30.45	21.65
DIVER TENDERS	$ 30.45	21.65
DIVERS	$ 38.91	21.65
MILLWRIGHTS	$ 30.78	22.15

ELEC0035-011 06/01/2013

Bozrah, Colchester, Franklin, Griswold, Lebanon, Ledyard, Lisbon, Montville, North Stonington, Norwich, Preston, Salem, Sprague, Stonington and Voluntown

	Rates	Fringes
ELECTRICIAN	$ 37.60	23.35

ELEC0090-003 06/01/2010

East Lyme, Groton, New London, Old Lyme, Waterford, plus the part of Ledyard wherein the property of the Submarine Base is located

	Rates	Fringes
ELECTRICIAN	$ 35.20	20.51

ENGI0478-001 04/07/2013

	Rates	Fringes
Power equipment operators:		
GROUP 1	$ 36.05	21.55
GROUP 2	$ 35.73	21.55
GROUP 3	$ 34.99	21.55
GROUP 4	$ 34.60	21.55
GROUP 5	$ 34.01	21.55
GROUP 6	$ 33.70	21.55
GROUP 7	$ 33.36	21.55
GROUP 8	$ 32.96	21.55
GROUP 9	$ 32.53	21.55
GROUP 10	$ 30.49	21.55
GROUP 11	$ 30.49	21.55
GROUP 12	$ 30.43	21.55
GROUP 13	$ 31.96	21.55
GROUP 14	$ 29.85	21.55
GROUP 15	$ 29.54	21.55
GROUP 16	$ 28.71	21.55
GROUP 17	$ 28.30	21.55
GROUP 18	$ 27.65	21.55

Hazardous waste premium $3.00 per hour over classified rate.

Crane with boom, including jib, 150 feet - $1.50 extra.
Crane with boom, including jib, 200 feet - $2.50 extra.
Crane with boom, including jib, 250 feet - $5.00 extra.
Crane with boom, including jib, 300 feet - $7.00 extra.
Crane with boom, including jib, 400 feet - $10.00 extra

a. PAID HOLIDAYS: New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, provided the employee works 3 days during the week in which the holiday falls, if scheduled, and if scheduled, the working day before and the working day after the holiday.

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

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. and over.

GROUP 2: Cranes (100 ton capacity & over), Excavator over 2 cubic yards, piledriver ($3.00 premium when operator controls hammer).

GROUP 3: Excavator, 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 or operation) Rubber

Tire Excavator (drott 1085 or similar); Grader Operator; Bulldozer Fine Grade (slopes, shaping, laser or GPS, etc.)

GROUP 4: Trenching machines, lighter derrick, concrete finishing machine, CMI machine or similar, Koehring Loader (skooper).

GROUP 5: Specialty railroad equipment, asphalt spreader, asphalt reclaiming machine, line grider, concrete pumps, drills with self contained power units, boring machine, post hole digger, auger, pounder, well digger, milling machine (over 24' mandrel), side boom, combination hoe and loader, directional driller.

GROUP 6: Front end loader (3 cu. yds. up to 7 cu. yards), bulldozer (Rough grade dozer) .

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).

GROUP 8: Mechanic, grease truck operator, hydoblaster, barrier mover, power stone spreader, welder, work boat under 26 ft. transfer machine.

GROUP 9: Front end loader (under 3 cubic yards), skid steer loader (regardless of attachments), bobcat or similar, forklift, power chipper, landscape equipment (including hydroseeder).

GROUP 10: Vibratory hammer,ice machine, diesel & air, hammer, etc.

GROUP 11: Conveyor, earth roller, power pavement breaker (whiphammer), robot demolition equipment.

GROUP 12: Wellpoint operator.

GROUP 13: Portable asphalt plant operator, portable concrete plant operator, portable crusher plant operator.

GROUP 14: Compressor battery operator.

GROUP 15: Power Safety boat, Vacuum truck, Zim mixer, Sweeper; (Minimum for any job requiring a CDL license) .

GROUP 16: Elevator operator, tow motor operator (solid tire no rough terrain).

GROUP 17: Generator operator, compressor operator, pump operator,welding machine operator; Heater operator.

GROUP 18: Maintenance engineer.

ENGI0478-008 04/07/2013

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Asphalt Paver	$ 34.01	21.55
Asphalt Roller	$ 33.36	21.55
Asphalt Spreader	$ 34.01	21.55
Backhoe/Excavator 2 cubic yards and over	$ 35.73	21.55
Backhoe/Excavator under 2 cubic yards	$ 34.99	21.55
Bulldozer (Rough Grade Dozer)	$ 33.70	21.55
Bulldozer Fine Grade(includes slopes, shaping, laser or gps)	$ 34.99	21.55
Crane handling or erecting structural steel or stone	$ 36.05	21.55
Cranes (100 ton capacity & over)	$ 35.73	21.55
Cranes (under 100 ton rated capacity)	$ 34.99	21.55
Drills with self contained power units; Directional driller	$ 34.01	21.55
Earth Roller	$ 30.49	21.55
Forklift	$ 32.53	21.55
Front End Loader (3 cubic yards up to 7 cubic yards)	$ 33.70	21.55
Front End Loader (7 cubic yards or over)	$ 36.05	21.55
Front End Loader (under 3 cubic yards)	$ 32.53	21.55
Grader/Blade	$ 34.99	21.55
Maintenance Engineer/Oiler	$ 27.65	21.55
Mechanic	$ 32.96	21.55
Rubber Tire Backhoe/Excavator	$ 34.99	21.55

a. PAID HOLIDAYS: New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, provided the employee works 3 days during the week in which the holiday falls, if scheduled, and if scheduled, the working day before and the working day after the holiday.

b. Crane with boom, including jib, 150 feet - $1.50 extra .
Crane with boom, including jib, 200 feet- $2.50 extra.
Crane with boom, including jib, 250 feet - $5.00 extra.
Crane with boom, including jib, 300 feet - $7.00 extra.
Crane with boom, including jib, 400 feet - $10.00 extra.

IRON0015-008 07/01/2013

	Rates	Fringes
IRONWORKER, REINFORCING AND		

STRUCTURAL.....$ 33.50 28.98

a. PAID HOLIDAY: Labor Day provided employee has been on the payroll for the 5 consecutive work days prior to Labor Day.

LABO0056-004 04/07/2013

	Rates	Fringes
Laborers: (TUNNEL CONSTRUCTION)		
CLEANING, CONCRETE AND CAULKING TUNNEL:		
Concrete Workers, Form Movers and Strippers	$ 30.37	16.89
Form Erectors	$ 30.68	16.89
ROCK SHAFT, CONCRETE, LINING OF SAME AND TUNNEL IN FREE AIR:		
Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers	$ 30.37	16.89
Laborers Topside, Cage Tenders, Bellman	$ 30.26	16.89
Miners	$ 31.28	16.89
SHIELD DRIVE AND LINER PLATE TUNNELS IN FREE AIR:		
Brakemen and Trackmen	$ 30.37	16.89
Miners, Motormen, Mucking Machine Operators, Nozzlemen, Grout Men, Shaft and Tunnel, Steel and Rodmen, Shield and Erector, Arm Operator, Cable Tenders	$ 31.28	16.89
TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED AIR:		
Blaster	$ 37.41	16.89
Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders	$ 37.22	16.89
Change House Attendants, Powder Watchmen, Top on Iron Bolts	$ 35.35	16.89
Mucking Machine Operator	$ 37.97	16.89

a. PAID HOLIDAYS: On tunnel work only: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

No employee shall be eligible for holiday pay when he fails, without cause, to work the regular work day preceding the holiday or the regular work day following the holiday.

LABO0056-007 04/07/2013

	Rates	Fringes
LABORERS		
GROUP 1	$ 26.40	17.15
GROUP 2	$ 26.65	17.15
GROUP 3	$ 26.90	17.15
GROUP 4	$ 27.40	17.15
GROUP 5	$ 28.15	17.15
GROUP 6	$ 28.40	17.15
GROUP 7	$ 16.00	17.15

LABORERS CLASSIFICATIONS

GROUP 1: Laborers (Unskilled), acetylene burner, concrete specialist

GROUP 2: Chain saw operators, fence and guard rail erectors, pneumatic tool operators and powdermen.

GROUP 3: Pipelayers, Jackhammer/Pavement breaker (handheld), mason tenders/catch basin builders, asphalt rakers, air track operators, block paver and curb setter

GROUP 4: Asbestos/lead removal

GROUP 5: Blasters

GROUP 6: Toxic waste remover

GROUP 7: Traffic control signalman

PAIN0011-013 06/01/2013

	Rates	Fringes
PAINTER		
Brush and Roller	$ 30.62	17.75
Spray Only	$ 33.62	17.75
Steel Only	$ 32.62	17.75

TEAM0064-001 04/07/2013

	Rates	Fringes
Truck drivers:		
2 Axle Ready Mix	$ 27.98	18.27
2 Axle	$ 27.88	18.27
3 Axle Ready Mix	$ 28.03	18.27
3 Axle	$ 27.98	18.27
4 Axle Ready Mix	$ 28.13	18.27
4 Axle	$ 28.08	18.27
Heavy Duty Trailer 40 tons		

and over.....$ 28.33 18.27
Heavy Duty Trailer up to
40 tons.....$ 28.08 18.27
Specialized (Earth moving
equipment other than
conventional type on-the-
road trucks and semi-
trailers, including
Euclids).....$ 28.13 18.27

Hazardous waste removal work receives additional $1.25 per hour.

a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day and Good Friday, provided the employee has at least 31 calendar days of service and works the last scheduled day before and the first scheduled day after the holiday, unless excused.

TEAM0064-006 04/07/2013

	Rates	Fringes
TRUCK DRIVER: 4 Axle Truck.....	$ 28.08	18.27

Hazardous waste removal work receives additional $1.25 per hour.

a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day and Good Friday, provided the employee has at least 31 calendar days of service and works the last scheduled day before and the first scheduled day after the holiday, unless excused.

SUCT2002-012 12/16/2008

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	$ 25.52	8.49
TRUCK DRIVER: 3 Axle & Semi - Truck.....	$ 19.93	7.01

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

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

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters , PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable , i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

WAGE DETERMINATION APPEALS PROCESS

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

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

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

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

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

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

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

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

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

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

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

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END OF GENERAL DECISION

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DIVISION 1 GENERAL REQUIREMENTS

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SECTION 01010

SUMMARY OF WORK

PART 1 GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

A. The work to be done under this contract is for the furnishing of all labor, tools, and equipment required for the Deep River Water Treatment Plant 30-inch Transmission Main rehabilitation with PVC slip lining, installation and removal of temporary bypass piping, and an access road built over the top of the existing 30-inch main, as shown on the drawings and specified herein.

B. The furnishing of all labor, tools, and equipment for restoration of landscaping disturbed in conjunction with performing the work noted above or otherwise disturbed in performing required work.

C. The Work of this Contract is located in general on Reservoir Road in Lebanon, Connecticut and Camp Moween/Lynch Road in Lebanon, Connecticut. Designated areas of the Work including but not limited to the access road and slip lining access pits will also occur off-road as shown on the Contract Drawings.

D. The Work Generally Consists of, but is not limited to the following:

1. Dewater, prepare and coordinate approximately 3500 linear feet of 30-inch cast iron water transmission main for Fusible PVC™ Slip lining.
2. 12 foot wide access drive with associated grading over the top of the transmission main.
3. Two 16-inch temporary bypass lines and connections (approx. 7000-ft length in total)
4. Testing and disinfection of the installed piping and appurtenances.
5. Road work required for maintaining traffic and paving.
6. All temporary facilities.
7. All site preparation and finish site work.

1.02 WORK BY OWNER

A. OWNER is responsible for operating all valves in water mains and stopping the inflow of water into mains from connecting lines or services.

1.03 WORK SEQUENCE

A. The work shall be prosecuted in such order and manner as the ENGINEER or his Designee shall approve. The CONTRACTOR shall, immediately after award of the contract, work out in detail a progress schedule covering all parts of the work, which shall be submitted to the ENGINEER for approval. The progress schedule shall state the method and shall forecast the dates for carrying out each portion of the work to be done.

B. If the progress of the work has been or will be materially affected by changes in the work, or if the CONTRACTOR'S performance has materially failed to conform to the approved schedule, the CONTRACTOR shall, upon request by the ENGINEER, submit for approval a revised progress schedule for the balance of the work.

C. Before beginning any portion of the work, the CONTRACTOR shall give the ENGINEER due notice and ample time for making his necessary preparations.

1.04 CONTRACTOR'S OBLIGATION

A. The CONTRACTOR shall and will, in good workmanlike manner, do and perform all work and furnish all supplies and materials (not furnished by the OWNER), machinery, equipment, facilities and means, except as herein otherwise expressly specified, necessary or proper to perform and complete all the work required by this contract, within the time herein specified in accordance with the provisions of this contract and said specifications and in accordance with the plans and Drawings covered by this contract and any and all supplemental plans and drawings, and in accordance with the directions of the Agent as given from time to time during the progress of the work. He shall furnish, erect, maintain and remove such construction plant and such temporary work as may be required. The CONTRACTOR shall observe, comply with, and be subject to all terms, conditions, requirements, and limitations of the contract and specifications, and shall do, carry on, and complete the entire work to the satisfaction of the Agent and the OWNER.

B. The CONTRACTOR shall keep at the site of the work one (1) copy of the Contract Drawings and Specifications, and shall give the Agent and other representatives of the OWNER, access to them. In case of any conflict between the Contract Drawings and the Specifications, the discrepancy shall be submitted by the CONTRACTOR to the Agent whose decision shall be final.

C. The fact that specific mention of any part of the work is omitted in the Specifications, when the same is clearly shown or indicated on the Contract Drawings, or is customarily required to complete fully such work as is specified herein will not entitle the CONTRACTOR to consider action in the matter of any claim for extra compensation, but the said fixtures or work or both, must be installed or done, the same as if called for by both the Contract Drawings and the Specifications.

1.06 ARRANGEMENT OF LABORERS

A. The CONTRACTOR shall arrange his forces and regulate his operations that, while complying with the provisions of any labor laws applicable to this work he shall leave his work at the end of working periods in condition satisfactory to the Agent.

B. The CONTRACTOR shall employ a suitable superintendent or foreman to represent him at all the several parts of the work and he shall be present at all times while the work entrusted to him is in progress and shall be informed thoroughly regarding it. The foreman, mechanics, and others employed by the CONTRACTOR shall be skilled and experienced in the particular work, which is given them to do.

C. The CONTRACTOR shall furnish the Agent such information relating to the employees upon the work as the Agent may from time to time request. If any person employed on the work by the CONTRACTOR be insubordinate, or appears to the Agent to be incompetent, unfaithful or disorderly, he shall be discharged immediately on the demand

of the OWNER and shall not be again employed on the work without the approval of the Agent.

1.07 CORRECTION OF WORK

A. All work, all materials, whether incorporated in the work or not, all processes of manufacture, and all methods of construction shall be at all times and places subject to the inspection of the Agent who shall be the final judge of the quality and suitability of the work, materials, processes of manufacture, and methods of construction for the purposes for which they are used. Should they fail to meet his approval they shall be forthwith reconstructed, made good, replaced and/or corrected, as the case may be, by the CONTRACTOR at his own expense. Rejected material shall immediately be removed from the site. If, in the opinion of the Agent, it is undesirable to replace any defective or damaged materials or to reconstruct or correct any portion of the work injured or not performed in accordance with the Contract Documents, the compensation to be paid to the CONTRACTOR hereunder shall be reduced by such amount as in the judgment of the Agent shall be equitable.

1.08 ADDITIONAL WORK AND DETAIL DRAWINGS

A. The CONTRACTOR will be furnished additional instructions and detail drawings as necessary to carry out the work included in the contract.

B. The additional drawings and instructions thus supplied to the CONTRACTOR will coordinate with the Contract Documents. The CONTRACTOR shall carry out the work in accordance with the additional detail drawings and instructions. The CONTRACTOR and the Agent will prepare jointly (a) a schedule, fixing the dates at which specials detail drawings will be required, such drawings, if any, to be furnished by the Agent in accordance with said schedule, and (b) a schedule fixing the respective dates for the submission of shop drawings, the beginning of manufacture testing and installation of materials, supplies and equipment, and the completion of the various parts of the work; each such schedule to be subject to change from time to time in accordance with the progress of the work.

1.09 ITEMS PROVIDED BY OWNER

A. The OWNER will provide land and easements for all permanent structures called for by the Contract. Any additional easements which the CONTRACTOR may wish to use in carrying out his construction operations must be obtained by the CONTRACTOR, at his own expense. The CONTRACTOR shall protect and save harmless all structures on the OWNER'S property or rights of way belonging to the OWNER or others who have rights on or across the OWNER'S property or rights of way. Prior to the start of construction, the OWNER shall obtain all land rights-of-way necessary for the carrying out and completion of work to be performed under this contract.

1.10 INCIDENTAL WORK

A. The CONTRACTOR expressly undertakes at his own expense the performance of all incidental work required to complete the project such as:

1. Storing his apparatus, all materials, supplies and equipment in such orderly fashion at the site of the work as will not unduly interfere with the progress of his work or the work of any other CONTRACTORS;

2. Effecting all cutting, fitting or patching of his work required to make the same to conform to the plans and specifications and except with the consent of the Agent, not cutting or otherwise altering the work of any other CONTRACTOR;

3. Cleaning up frequently all refuse, rubbish, scrap materials, and debris caused by his operations, to the end that at all times the site of the work shall present a neat, orderly and workmanlike appearance;

4. Before final payment removing all surplus material, false work, temporary structures, including foundations thereof, plant of any description and debris of every nature resulting from his operations, and putting the site in a neat, orderly condition.

1.11 WEATHER CONDITIONS

A. No work shall be done when, in the opinion of the Agent, the weather is unsuitable. No concrete, earth backfill, embankment or piping shall be placed during freezing weather or upon frozen material. If there is delay or interruption in the work due to weather conditions, the necessary precautions must be taken to bond new work to old.

1.12 EXCESS SOIL WASTE

A. Excess soil, which is deemed suitable for backfill, may be wasted on the site to the extent of the contour lines shown on the grading plan or at locations designated by the OWNER. All waste soil in excess of that allowed by the grading plan shall be disposed of off-site. All excavated material not meeting backfill requirements shall be disposed of off-site.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION

SECTION 01013
FACILITY INTERFERENCE WITH PROPOSED WORK

PART 1 GENERAL

1.01 LOCATION OF UNDERGROUND FACILITIES

A. Facilities and other underground locations shown on the Drawings are from the best sources available to the Owner at the time of this Contract preparation and are furnished only for information and convenience of the Contractor and are not guaranteed.

1. It is agreed and understood that the Owner does not warrant or guarantee that the subsurface locations of existing pipes, structures or other underground phenomena actually encountered during construction shall be the same as those shown on the Drawings.
2. It is further agreed and understood that the Contractor shall not use or be entitled to use any of the information made available to him on the plans or obtained in any examination made by him as a basis of any claim or demand against the Owner or the Engineer, because of any variance between the information made available and the subsurface locations of natural phenomena, existing pipes or other structures as -actually encountered during the construction work, except as may otherwise be provided for this Section.
3. In general, main line facilities only are shown and not individual connections from main line to buildings.
4. The presence of a structure along a proposed pipeline generally indicates that there will be a corresponding connection to it from whatever main line facilities are in the street.
5. The Contractor shall take all necessary steps, including field inspections and consultations with the Utility Owner and Property Owners, to insure that the most up to date information and accurate information available is used to mark the field location of the facilities, including service connections, prior to construction.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.03 PIPE LOCATIONS

A. Pipe lines and structures installed under this Contract will be located substantially as indicated on the Drawings. The Engineer reserves the right to make such modifications in location and grade as may be found desirable to avoid interference with existing structures and/or facilities or to avoid unsatisfactory locations, all as he may see fit as in the best interests of the Owner.

1.04 PROTECTION OF UNDERGROUND FACILITIES AND DAMAGES THERETO

A. The CONTRACTOR shall notify all utility companies of his operations sufficiently in advance of construction and take all measures necessary to avoid damage or undue interruption to the utilities' normal services.

B. The CONTRACTOR shall pay, at no additional expense to the OWNER, all costs associated with:
   1. Protecting and supporting underground facilities.
   2. Repairing, replacing, or relocating underground facilities which are damaged by the CONTRACTOR'S operations.
   3. Temporarily or permanently relocating underground facilities for the CONTRACTOR'S convenience.

C. The CONTRACTOR shall take all prudent steps to make himself aware of the physical condition of the existing underground facilities expected to be encountered.
   1. Claims by the CONTRACTOR for repair of damages alleged to be the result of the physical condition or faulty installation workmanship of the existing underground facilities, outside of the specified trench width, will in general not be considered by the OWNER for extra work payment.
   2. For such underground facilities within the specified trench width, claims will be considered if, in the opinion of the ENGINEER, such damage was unavoidable.

1.05 CONDITION OF EXISTING FACILITIES

A. In general, poor physical condition of existing facilities shall not be an acceptable basis for claiming additional compensation.
   1. Further, protection or repair of existing facilities outside of the Trench Width, W, shall not be considered as a valid basis for additional compensation.
   2. The Contractor shall take all prudent steps to make himself aware of the physical condition of the existing facilities expected to be encountered, and to adjust his operations accordingly.

PART 2 PRODUCTS (not applicable)

PART 3 EXECUTION

3.01 INTERFERENCE AND RELOCATION OF FACILITIES

A. INTERFERENCE BY UTILITIES
   1. Interference shall be considered to exist when the facility intrudes within the Trench Width, W, for various depths to invert, as tabulated on the Drawings.

3.02 INTERFERENCE COSTS AND CLAIMS

A. Claims for the costs of protecting, repairing and/or replacing facilities which interfere will only be considered when the Engineer determines that:
   1. The facility is not shown on the Drawings.

2. The facility is shown but the facility is found in a location substantially different from the location shown.
3. The Contractor has necessarily incurred additional cost because of the interference.
4. In general, claims will not be considered for cross trench service connections which are not shown on the Drawings or incorrectly shown.

B. It is routine and customary in work of this kind to encounter subsurface or other conditions which require changes in pipe line grade, alignment and/or relocation of facilities or other adjustments which may necessitate rescheduling of the Contractor's work.
1. The Contractor should allow contingency in his bid for schedule adjustments commonly encountered.
2. The Engineer shall in general not approve claims for delay because of changes in alignment or rescheduling of construction.

C. Where facilities are shown on the Drawings to interfere, the Contractor is required to maintain facilities in operation in their existing locations.
1. Such interferences and the protection and repair of such facilities shall not constitute the basis of an approvable claim.
2. The cost to maintain such facilities in operation in their existing location shall be included by the Contractor in his bid.

3.03 RELOCATION OF FACILITIES

A. Relocation of facilities is required:
1. Where indicated on the Drawings.
2. When a 3-inch or less vertical and horizontal separation cannot be achieved between the existing facility and the new pipe line.
3. To comply with minimum water/sewer separation.
4. To comply with minimum requirements of the utility owner.

Relocation may be avoided in certain cases by line and grade adjustments.

B. Existing facilities shall not be disturbed until the facility owner and the Engineer agree to the arrangements and the Engineer requests the relocation to proceed in writing.
1. If the owners of the facilities permit, and the Engineer so requests, the Contractor shall do the whole or any portion of the relocation work.
2. Relocation of facilities will generally be by new pipe and appurtenances, approved and furnished by the facility owner, except where it is feasible in the opinion of the Engineer and facility owner to utilize existing materials.
3. If so requested by the facility owner, the Engineer may direct the Contractor to furnish the material.
4. All removed materials remain the property of the facility owner.

3.04 RELOCATION COSTS AND CLAIMS

A. All costs of temporary relocations for the Contractor’s convenience shall be borne by the Contractor.

B. Relocation costs for all facilities specified on the Drawings to be relocated shall be the responsibility of the Contractor and be included in the Contractor's bid prices, including those specifically for facility relocations, if such are included.

C. Relocation costs for publicly owned facilities not specified on the Drawings to be relocated, but directed to be relocated by the Engineer in writing, shall be paid in accordance with General Conditions Par. 4.04, B.

D. Relocation costs for privately owned utilities for which relocation is required by the work of this Contract, will not be approved by the Engineer for payment as Extra Work.

E. Exceptions as determined by the Engineer shall be paid in accordance with General Conditions Par. 4.04, B.

3.05 PRIVATE FACILITY COMPANY CLAIM DISTINCTIONS

A. Claims against the Owner by the Contractor for the cost of delays or damage repair sustained by the Contractor because of damage to or interferences between privately owned public facilities and the proposed work will not be considered valid for additional compensation.
   1. Claims involving privately owned facilities must be settled between the Contractor and the facility owner.

B. The Owner reserves the right to exercise, or not to exercise, any rights he may have to require relocation of privately owned public facilities at the facility company's expense in case of interferences.
   1. If the Owner does not exercise such rights, no claims against the Owner for not exercising such rights shall be approved by the Engineer.

3.06 FACILITY SERVICE CONNECTIONS AND WORK

A. The Contractor shall make all arrangements with the facility companies for temporary and permanent services and relocations required under this Contract, subject to the conditions described elsewhere in these Specifications.
   1. Facility companies in the area of work, and/or expected to provide service to the work, shall be arranged for and if required paid for at no additional expense to the Owner.

END OF SECTION

SECTION 01019
DRAWINGS

PART 1 GENERAL

1.01 DESCRIPTION

A. The Contract Drawings may be modified by addenda and shall be issued for construction purposes.
   1. These Drawings may be supplemented or superseded by such additional general and detail drawings as may be necessary and desirable as the work progresses.
   2. The Drawings issued for construction at that time or after the signing of the Contract Documents shall become the Contract Drawings.

B. Dimensions:
   1. Except where noted, the Drawings are made to scale, but all working dimensions shall be taken from the figured dimensions or by actual measurements at the work, and in no case by scaling the prints.
   2. The Contractor shall study and compare all Drawings and verify all figures before laying out or constructing the work and shall be responsible for any and all errors in the Contract work which might have been avoided thereby.
   3. The Contractor shall take all measurements of existing established conditions notwithstanding the figured dimensions on the Drawings.
   4. When figured dimensions are not in agreement with the Contractor's measurements, the Engineer shall be immediately notified and the Engineer will promptly adjust the same.
   5. Whether or not an error is believed to exist, deviations from the Drawings and the dimensions given thereon shall be made only after approval in writing is obtained from the Engineer.

C. Diagrammatic Drawings:
   1. Plans or Drawings where the work is shown diagrammatically indicate approved working systems. Every piece of material, fittings, fixtures or small equipment is not shown, nor every difficulty or interference that may be encountered to carry out the true intent and purpose of the Contract Documents.
   2. All necessary parts to make complete, approved working systems or installation shall be included as if detailed on these Drawings.
   3. The location of pipe lines and appurtenances shown on the Drawings, unless exactly dimensioned, shall be considered as approximate only.
   4. The Contractor shall adjust the position of the pipe lines and appurtenances in accordance with good working practices to meet interferences, provide proper clearance and provide proper access space for operation and maintenance.

D. Typical Details:
   1. Where shown on the Drawings, typical details shall apply to each and every item of the Contract work where such items are incorporated and the detail is applicable.
   2. Unless noted otherwise, such typical details shall be applicable in full.

E. Copies of Drawings Furnished:
   1. The Engineer shall furnish the Contractor, without charge, up to six copies of the Drawings and Specifications for execution of the Contract work.
   2. Additional copies will be furnished at the Contractor's expense when requested, except that any copies of available plans and specifications returned from the bidders in good condition will be furnished to the Contractor without charge.
   3. All Drawings and Specifications are the property of the Owner.
   4. The Contractor shall return all copies if so requested.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 EXISTING AND ADJACENT CONDITIONS

A. Wherever existing conditions or construction not required as part of the work of the Contract are shown, they are so shown as a source of information only. The Engineer, while believing such information is substantially correct, assumes no responsibility thereof.
   1. Before starting any work that might be affected by such existing construction or conditions, the Contractor shall have made himself familiar with all conditions affecting the nature and manner of performing the work, and shall not be entitled to any extra compensation for any work or expense arising from or caused by his neglect to have verified all existing conditions and requirements.

3.02 DISCREPANCIES

A. If the Contractor during the progress of the work, discovers any discrepancies between the Drawings and the Specifications, any errors or omissions on the Drawings, or any discrepancies between the physical condition of the Work and the Drawings, then the Contractor shall immediately notify the Engineer, who will promptly adjust the same. Any work performed after such discovery without the approval of the Engineer, shall be at the risk and expense of the Contractor.

END OF SECTION

SECTION 01025

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 DESCRIPTION

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 Bid Form. If no bid item appears in the Bid Form for any of the following described items, no work of that description is anticipated on the project.

1. The Contractor shall thoroughly review the work required for each payment item.
2. The Contractor shall have included in his various bid items, an amount to cover costs for additional work which may be necessary, to construct the water mains in the close proximity of underground facilities, services, poles and other facilities which may exist.
3. The discovery of an underground facility during the construction, not shown on the Contract Drawings shall not constitute automatic initiation of a change order. The additional work to cross or pass this underground facility must be substantial for consideration for additional payment.
   a. The word “substantial” as used above shall mean that an additional amount of work is required, beyond the work that is normally required in the crossing or paralleling of an underground facility.

1.02 RELATED WORK

A. Documents affecting the work of this Section include General Conditions, Supplementary Conditions, and all Divisions of these Specifications.

1.03 TRENCH PAYMENT LIMITS

A. The measurements for trench payment limits shall be used for the volume of computing excavation below grade.

1. Trench limits in earth and rock shall be measured within vertical lines. The measured lines shall not exceed the trench width shown on the Drawings.
2. Depth shall be measured as shown on the Drawings for excavations in earth and/or rock.
3. In paved roadways the trench width at the roadway surface shall not exceed the width shown on the Drawings.
4. If the Owner orders additional width beyond the above-specified limits, or below grade excavation, the width or depth ordered will be considered for payment, as will the refill material.

1.04 EARTH EXCAVATION FOR PIPELINE TRENCHES

A. Earth excavation for pipeline trenches from the existing ground surface to pipe sub-grade shall not be paid for separately, and all costs for this excavation shall be included in the unit prices paid for the various pipe laying items.

1.05 TRENCH BRACING AND SUPPORT

A. All costs for furnishing, installing and removing sheeting, bracing or the use of a steel support box shall be included in the various pipe laying items. Sheeting specifically shown on the Contract Drawings shall be paid for under the unit bid item for Sheeting Left In Place.

1.06 PIPE BEDDING

A. All costs for stockpiling, loading, hauling, placing and compacting pipe bedding shall be included in the various pipe-laying items.

1.07 SURPLUS MATERIAL

A. All costs for stockpiling, loading, hauling and legal disposing of surplus material shall be included in the various pipe laying items.

1.08 DEWATERING

A. All costs for furnishing, installing and operating a dewatering system shall be included in the various pipe laying items.

1.09 EXCESS EXCAVATED MATERIAL

A. All costs for transporting, placing and compacting excess material obtained within this Contract shall be included in the various pipe laying items.

1.10 CRUSHED STONE BEDDING, BANK-RUN SAND AND GRAVEL

A. There will be no separate measurement or payment for furnishing and placing, crushed stone bedding, bank run sand and gravel. The cost of such materials and work shall be included in the unit price for the various pipe laying items.

1.11 PRESSURE/LEAKAGE TESTING AND DISINFECTION

A. No separate payment shall be made for labor, materials, tools and equipment necessary for or incidental to the performance of the pressure/leakage tests and the disinfection of the water main and its appurtenances. The costs associated with pressure/leakage testing and disinfection shall be included in the unit price for the various pipe-laying items.

1.12 REMOVING AND STACKING OF HYDRANTS & GATE VALVES

A. No separate payment shall be made for labor, materials, tools and equipment necessary for or incidental to the removal of and stacking of the designated hydrant(s) or gate valves locations determined by the Owner. The cost for this item shall be included in the unit price for the various pipe-laying items.

1.12.1 CAPPING REMOVAL AND ABANDONMENT (IN-PLACE) OF OLD MAINS

A. No separate payment shall be made for labor, materials, tools and equipment necessary for or incidental to the capping of and abandonment (in-place) or the removal and disposal of the water mains and valves including pavement replacement. The cost for this item shall be included in the unit price for the various pipe-laying items.

1.14 RESTORATION OF DAMAGED AREAS

A. All costs for restoration of damaged areas, including but not necessarily limited, to existing sidewalks, curbs, shrubs, trees, stone walls, lawns, loam and seed shall be included in the unit price for the various pipe-laying items.

B. Paved gutters and driveways shall not be measured for separate payment, but shall be considered incidental to the work.

C. All public or private monuments, iron pipes or other types of property line and geodetic markers damaged or disturbed by operations under this Contract shall be reset by a licensed land surveyor - all at no additional cost to the Owner. All other work, under this Section, shall not be paid separately, but shall be considered incidental to the work and included in the unit price and lump sum items.

1.15 UNIFORMED POLICE OFFICERS

A. The Police Department will generally bill the Contractor weekly, and the Contractor shall pay the Police Department bills within a ten (10) working day period for uniformed Police Officers provided on the job site. The billing shall include a weekly statement outlining the days worked, hours worked, location of the work and rate for all officers providing service during that billing period. The Police Chief must sign all bills.

B. Traffic persons ordered by the Contractor for his convenience or unforeseen problems which are not part of the original project shall be paid at his own expense.

C. The Contractor is responsible for contacting the Police Department in regards to scheduling requirements.

D. Uniformed Police Officers required for purposes other than public safety and/or control of traffic shall not be eligible for reimbursement of payment. No payment will be made for overtime traffic persons unless emergency conditions exist. If the Contractor elects to work more than eight (8) hours in one day, or more than forty (40) hours in one week, he shall assume all such costs and will not be reimbursed under any bid item. However, if the Owner approves emergency overtime, the Owner shall pay the Police Department directly for services rendered.

1.16.1 TRAFFIC REGULATION

A. Except for the payment of uniformed police officers as outlined in 1.15, there shall be no separate measurement or payment for the work performed under Section 01570 – Traffic Regulation. All costs for furnishing lighted barricades, variable message sign and traffic protection devices and for labor, equipment and services involved in the erecting, maintaining, moving, adjusting, relocating and storing of signs, flashers, lights, barricades, traffic cones, traffic delineators and other devices furnished by the Contractor, as well as the cost of all labor and equipment involved in the maintenance of traffic lanes and detours ordered or included in the approved scheme for maintenance of traffic shall be included in the unit price bid for the various pipe laying items.

1.17 MEASUREMENT OF QUANTITIES

A. The quantities of the various items of work performed shall be determined, for purposes of progress and final payment, by the Contractor and reviewed by the Engineer.

B. The method of measurements to be used in the determination of quantities of the work of this Contract shall be as specified in this Section.

1. Area Measurements
   a. Unless otherwise specified, measurement for area computations shall be made along the surface and taken to the nearest half (1/2) foot.
2. Linear Measurements
   a. All items such as pipe, service tubing, pavement and curbing, etc., shall be made along the alignment of the item, at the surface, and taken to the nearest foot.
3. Volume Measurements - In figuring volumes the following shall apply:
   a. Excavation Below Grade: Measurements shall be taken to the grade actually excavated as ordered, and within the trench payment limits specified in this Section.
   b. Test Pits: Measurements shall be taken to the lines and grade actually excavated.
   c. Rock and Boulder: Only boulders greater than one (1) cubic yard in volume and rock as defined in Section 02227, shall be measured for payment. Measurements shall be taken to the lines and grades as specified, in the trench payment limits in this Section.
4. Weight Measurements: Measurement for fittings shall be measured for payment by the pound excluding weight of accessories such as bolts, nuts, glands and gaskets. Weights shall be based on approved shop drawings.
5. Lump Sum: The term "lump sum" when used as a unit of payment, shall mean complete payment for the work described in the Contract Documents.
6. Per Each: The term "per each" when used as a unit of payment, shall mean complete payment for each unit furnished and installed, completed and accepted, as described in the Contract Documents.
7. Ton: When used as a pavement payment item, shall be arrived at by the following method:
   a. Payment shall be calculated by measurements of the surface area, within the payment limits, by square yards, times the depth of the pavement, times a factor of .056, for a conversion to ton basis.
   b. A five (5) percent service factor shall be allowed if a comparison between measurements and delivery slips indicate that additional material was placed. If a comparison between delivery slips and measurements indicate less material was placed, the slip quantity shall be used for payment. The Contractor shall submit to the Engineer, one (1) copy of the certified weight slips for all asphaltic concrete used in the Work.

1.18 ASPHALTIC CONCRETE PAVEMENT

A. MEASUREMENT

1. "Trench" Pavement shall be measured by the actual linear feet installed along the full length of the street for the standard trench width as identified in the specifications and on the Drawings.
   a. Included in this item shall be the adjustment of all castings if required to finish grade within the trench area, and a binder course.

2. "Overlay" Pavement shall be measured by the actual linear feet installed along the full length of the street for the entire width as identified in the on the Drawings.
   a. Included in this item shall be the adjustment of all castings if required to finish grade within the overlay area, a binder course, and 6-foot aprons to side streets and driveways.
3. No separate measurement shall be made for cutting of existing pavement, cutting of edges, tack coating, backfilling, compaction, preparation of subgrade; furnishing and installing additional gravel base course; or disposal of materials.
4. No separate measurement shall be made for repair of traffic loop detectors; furnishing and installing reflectorized pavement markings; and the removal and resetting manhole frames, gate boxes, catch basins and private utility castings.
5. The replacement, removal and/or resetting of bituminous, granite or concrete curbing shall not be measured for separate payment. All cost associated with replacing, removing and/or resetting curbing shall be included in the cost per linear foot of Temporary Pavement.

1.19 DUST CONTROL

A. MEASUREMENT

1. All costs for furnishing, stockpiling, hauling, placing and spread materials required for dust control (i.e. calcium chloride, water) shall be included in the various pipe-laying items.

1.20 PAYMENT

ITEM NO	DESCRIPTION
1	Over-Excavation
2	Rock/Ledge Excavation
3	Gravel Borrow
4	Sand Borrow
5	6-Inch Restrained Joint D.I. Water Mains
6	24-Inch Restrained Joint D.I. Water Mains
7	Hydrants
8	Ductile Iron Fittings
9	Manual Air Release Valves
10	6-Inch Gate Valves
11	16-Inch Gate Valves
12	24-Inch Butterfly Valves
13	30-Inch Butterfly Valves
14	Sixteen-Inch Temporary Bypass
15	24" Fusible PVC Slip Lining of 30" Diameter Mains
16	Television Inspection
17	Obstructions
18	Environmental Controls
19	Bituminous Concrete – Trench Paving
20	Bituminous Concrete – Overlay Paving
21	Lawn & Landscaping Restoration
22	Bituminous Concrete Curbing
23	Evergreen Trees

ITEM NO	DESCRIPTION
24	Tubular Barrier Gate
25	Rip Rap
26	36" Reinforced Concrete Pipe
27	Gravel Access Road
28	Grass Access Road
Add. Alt. No. 1	
29	Grass Access Road

A. Payment of the unit or lump sum bid price on the Bid Form shall fully compensate the Contractor for furnishing all labor, materials, equipment, and incidentals required to complete the Work outlined above. Payment shall also include full compensation for all other work outlined above. Payment shall also include full compensation for all other work required to complete the Work as described in the Project Manual and/or shown on the Drawings but not specifically included under Detailed Specification Sections 02015 through 02950.

B. No direct or separate payment will be made for providing miscellaneous temporary or accessory works, plant, services, Contractor's field office, layout surveys, job signs, sanitary requirements, testing, safety devices, approval and record drawings, water supplies, power, heat, maintaining traffic, removal of waste, watchmen, taxes, bonds, insurance, mobilization and demobilization, environmental protection, erosion control, policing and sediment control, photographs, and all other requirements of the General Conditions, Supplementary Conditions, General Requirements and other sections of the Project Manual. Compensation for all such services, things, and materials shall be included in the prices stipulated for the lump sum bid price.

C. The unit and lump sum bid price will be deemed to include an amount considered by the Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

Item No. 1 Over-Excavation

a. Measurement. The quantity of over-excavation to be paid for under Item 1 in the Schedule of Prices is the number of cubic yards of material so excavated by order of the Engineer, beyond what is typically required to complete the work, as measured before excavation.

b. Payment shall be made at the unit price bid per cubic yard under Bid Item No. 1 in the Bid Form. The unit price bid shall be full compensation furnishing all materials, labor, tools and construction equipment and for performing all work required for over-excavation, dewatering, removal and disposal of unsuitable material and furnishing, placing and compaction of the refill material, all as directed by the Engineer.

Payment for refill material will be made under the unit prices bid for Gravel Borrow and measured within the specified trench payment limits. Excavation or material placed in

excess of the specified trench limits shall be done at the Contractor's expense, and shall not be eligible for payment, unless additional width is requested by the Engineer.

Item No. 2 Rock/Ledge Excavation

a. Measurement. The quantity of rock excavation to be paid for under Item 2 shall be the number of cubic yards of ledge rock or boulders exceeding one cubic yard in volume in place, as measured before excavation, that would have been removed if the excavation had been made everywhere to a depth as specified hereinafter below the underside of the pipe or masonry, and to a width of 12 inches greater on each side than the outside dimensions of said pipe or masonry.

b. Payment. Payment under Item 2 at the contract unit price per cubic yard shall be full compensation for furnishing all materials, labor, tools and equipment and for performing all work including the disposal of all materials excavated in embankments, fills, backfills, or off the site, as directed by the Engineer.

Item No. 3 Gravel Borrow

a. Measurement. The quantity of gravel borrow to be paid for under Item 3 shall be the number of cubic yards of off site gravel borrow furnished, placed and compacted as directed by the Engineer and measured in place in the work.

b. Payment. Payment under Item 3 at the contract unit price per cubic yard shall be full compensation for furnishing, transporting, placing and compacting gravel borrow for fill or embankment, to replace unsuitable material, and elsewhere as the Engineer may require. Gravel for pavement sub-base shall be measured and paid for under Item 14.

Item No. 4 Sand Borrow

a. Measurement. The quantity of sand borrow to be paid for under Item 4 shall be the number of cubic yards of offsite sand borrow furnished, placed and compacted as directed by the Engineer and measured in place in the work.

b. Payment shall be made at the unit price per cubic yard under Bid Item No. 4 in the Schedule of Bid Items, measured as the actual quantity furnished and placed within the trench limits where requested by the Engineer. The unit price bid shall be full compensation for furnishing, placing, grading and compacting within the trench payment limits, and furnishing, installing, and removal of plates all as required by the Contract Documents.

Item Nos. 5 & 6 6-Inch & 24-Inch Restrained Joint Ductile Iron Water Mains

a. Measurement. The quantity of pipe to be paid for under Items 5 & 6 in the Schedule of Bid Items shall be the number of linear feet of the pipe furnished and installed complete in place. The lengths paid for are to be the lengths in feet measured along the centerline of the pipe as laid. No deductions will be made for gate valves or standard fittings.

Hydrant connections will be measured from the center of the main to the center of the hydrant.

b. Payment. Payment Under Items 5 & 6 shall be full compensation for all earth excavation; removal and disposal of all types of surface materials and pavements encountered except concrete base; removing and replacing traffic signs, curbing, guardrails, route markers, and similar items; for all temporary sheeting and bracing; pumping, draining and backfilling; cutting of pipes; furnishing all fittings indicated on the Contract Drawings; relocating and/or renewing, in part or whole, water, sewer and/or other service pipes where they interfere with the grade of the new water mains; connecting new pipes to existing pipes; furnishing and installing any sleeves or flexible couplings necessary to connect new pipes to existing pipes; and for all other pipeline work and appurtenances, except that for which a definite payment item is included in the Schedule of Prices.

The prices stated in Items 5, 6 & 7 shall also be full compensation for performing all field strength and leakage tests, bacteriological testing, including all labor, equipment, apparatus, and material necessary for making the tests; replacing materials damaged by the Contractor in handling or found to be defective after being installed.

No additional payment shall be made for the extra cost of Evening, Saturday or Sunday work, if required.

Item No. 7 Hydrants

a. Measurement. The quantity to be paid for under Item 7 in the Schedule of Bid Items is the number of hydrants set complete in place.

b. Payment. Payment under Item 7 is full compensation for furnishing and installing fire hydrants; for all hauling of materials; cutting of pipe; for all excavation, pumping and draining, and for backfilling; for furnishing all jointing material; all labor, tools, and construction equipment; and for all work and expense incidental thereto, including the expense of replacing material found to be defective after being installed.

Item No. 8 Ductile Iron Fittings

a. Measurement. The quantity to be paid for under Item 8 in the Schedule of Bid Items is the number of pounds of standard fittings, excepting flexible couplings and sleeves, furnished and installed by order of the Engineer in excess of the total weight of all fittings indicated by the Contract Drawings and/or Specifications. The weights paid for shall be the standard weights, excluding accessories, given by the specifications of the AWWA/ANSI Standards for the fittings as specified in Section 02611 – Ductile Iron Pipe and Fittings.

b. Payment. Payment under Item 8 at the contract unit price per pound shall be full compensation for furnishing, handling, and installing additional pipe fittings and all other necessary work incidental thereto.

Item No. 9 & 15 Manual Air Release Valves & PVC Slip Lining 30-inch Diameter Mains

Payment shall be made for Bid Item 10 at the unit price bid per each Manual Air Release Valves to be installed in the areas shown in the Contract Drawings with all necessary piping and appurtenances.

Payment shall also be made per linear foot under Bid Item 15 in the Schedule of Bid Items for the actual number of linear feet of 30-inch cast iron pipe slip lined with 24-inch fusible PVC pipe. Payment will also be included for Payment shall be full compensation for pipe, excavation, installation of the pipe, dewatering, transition couplings, joint restraints, connections to and capping and abandoning of existing water mains, removal and disposal of existing water mains, installation and removal of temporary taps for disinfection or testing, annular space grouting, pipe system connections, closing of predetermined gate valves and removal of gate boxes, removal of old and addition of new Manual Air Release Valves, removal and stacking and delivery of hydrants, concrete encasement of water main at sewer crossings, insulation, dust control, loam and seed, sidewalk replacement, curb replacement, catch basin siltation sacks, traffic regulation including detour plans, street opening permits, trench opening permits, sheeting and bracing, disinfection and testing, and preconstruction video recording all as required by the Contract Documents.

Item No. 10, 11, 12 & 13 6-Inch Gate Valves, 24-Inch and 30-Inch Butterfly Valves

a. Measurement. The quantity to be paid for under Items 10, 11, 12 and 13 in the Schedule of Bid Items is the number of Valves set complete in place.

b. Payment. Payment under Items 10, 11, 12 & 13 is full compensation for furnishing and installing all Valves; for all hauling of materials; cutting of pipe; for all excavation, pumping and draining, and for backfilling; for furnishing all jointing material; all labor, tools, and construction equipment; and for all work and expense incidental thereto, including the expense of replacing material found to be defective after being installed.

Item No. 14 Sixteen-inch Temporary Bypass

a. Measurement. The quantity of bypass pipe to be paid for under Item 14 in the Schedule of Bid Items shall be the number of linear feet of the pipe furnished and installed complete in place. The lengths paid for are to be the lengths in feet measured along the centerline of the pipe as laid. No deductions will be made for gate valves or standard fittings.

b. Payment shall be made at the unit price bid per linear foot under Bid Item No. 14 in the Schedule of Bid Items of temporary by-pass piping completed in place, including but not limited to tapping sleeve and gate valve, butterfly valves, HDPE pipe, trench excavation, temporary trench overlay and all piping and appurtenances disinfected and ready for use. Payment shall be full compensation for all materials, labor, tools and equipment incidental to and necessary for the provision, maintenance and removal of by-pass pipe as required by the Contract Documents.

Item No. 16 Television Inspection

Payment shall be made at the unit price bid per linear foot under Bid Item No. 16 in the Schedule of Bid Items. Payment shall be full compensation for television inspection of the existing water main prior to slip lining as required by the Contract Documents.

Item No. 17 Obstructions

Obstructions shall be defined as described in Section 02621, Part 3.05.A.2. Payment shall be made at the unit price bid per each under Bid Item No. 17 in the Schedule of Bid Items. Payment shall be full compensation for all work required to remove the obstruction, including pipe repair, excavation, dewatering, backfilling, permits and traffic control as required by the Contract Documents.

Item No. 18 Environmental Controls (Hay bales and Siltation Fence)

Payment shall be made at the unit bid price per linear foot under Bid Item No. 18 in the Schedule of Bid Items. Payment shall be full compensation for furnishing and placing erosion controls, including haybales, siltation fence, and oak posts, excavation, restoration of disturbed areas, and removal at completion of work and compliance with additional requirements for work within the buffer zone all as required by the Order of Conditions and the Contract Documents. Payment for temporary siltation controls such as furnishing haybales around existing catch basins shall not be included in this unit item, but shall be included in the cost per linear foot of the various pipe laying items.

Item No. 19 Bituminous Concrete – Trench Paving

a. Measurement. The quantity of bituminous concrete trench pavements to be paid for under Item 19 in the Schedule of Bid Items shall be the number of square yards of temporary or permanent trench pavement measured in place and placed by order of the Engineer. Thickness of trench pavements shall be as hereinafter specified.

b. Payment. Payment under Item 19 at the contract unit price per square yard bid shall be full compensation for furnishing all materials, equipment, tools and labor and for performing all work required to install the trench pavements as specified. The work shall include, but is not limited to, cutting pavements; furnishing, placing and compacting gravel subbase; removing and disposing of surplus subsurface materials; reshaping, recompacting and rerolling subbase; placing and compacting pavements; removal of surface pavements as specified; and for all other incidental work and expense. Payment under Item 19 shall also be full compensation for maintaining temporary trench pavements, including all work, additional materials and expense associated therewith.

Item No. 20 Bituminous Concrete – Overlay Paving

a. Measurement. The quantity to be paid for under Item 20 in the Schedule of Bid Items is the actual number of square yards of bituminous concrete material used to reconstruct full width road pavement to the limits as indicated on the Drawings and as hereinafter specified. The number of square yards to be paid for under this Item shall be determined by the material supplier's invoices, which the Contractor shall submit to the Engineer.

b. Payment. Payment under Item 20 at the contract unit price bid shall be full compensation for furnishing all materials, tools, equipment and labor; and for performing all work required to construct the full width road pavement including reshaping, recompacting, and rerolling subbase, placing and compacting pavements and for all other incidental work and expense.

Item No. 21 Lawn & Landscaping Restorations

a. Measurement. The quantity to be paid for under Item 21 in the Schedule of Bid Items is the actual number of square yards of lawn and landscaping restorations ordered placed by the Engineer or required by the specifications and drawings and as hereinafter specified.

b. Payment shall be made at the unit bid price bid per square yard under Bid item No. 21 in the Schedule of Bid Items. Payment shall be full compensation for lawn and landscaping restoration including, but not limited to, all labor, tools, equipment and materials necessary to complete the work as required by the Contract Documents.

Item No. 22 Bituminous Concrete Curbing Replacement

a. Measurement. The quantity to be paid for under Item 22 in the Schedule of Bid Items is the actual number of linear feet of bituminous concrete material used to reconstruct bituminous concrete curbing to the limits as indicated on the Drawings and as hereinafter specified in Section 02516.

b. Payment. Payment under Item 22 at the contract unit price bid shall be full compensation for furnishing all materials, tools, equipment and labor; and for performing all work required to construct bituminous concrete curbing including reshaping, and recompacting, and for all other incidental work and expense.

Item No. 23 Evergreen Trees

a. Measurement. The quantity to be paid for under Bid Item No. 23 in the Schedule of Bid Items shall be the unit price bid per each tree planted and installed complete in place as indicated on the Contract Drawings.

b. Payment. The price stated in Item 23 is for full compensation for furnishing all tools, equipment, materials and labor and performing all work required to plant and complete the installation of all evergreen trees. Payment under Item 23 shall also be full

compensation for furnishing and installing the evergreen trees; for all handling and hauling of materials, watering, etc., and for all other work and expense incidental thereto.

Item No. 24 Tubular Barrier Gate

a. Measurement. The quantity to be paid for under Bid Item No. 24 in the Schedule of Bid Items shall be the unit price bid per each tubular gate installed complete in place as indicated on the Contract Drawings.

b. Payment. The price stated in Item 24 is for full compensation for furnishing all tools, equipment, materials and labor and performing all work required to assemble and install each gate. Payment under Item 24 shall also be full compensation for furnishing and installing the gates; for all handling and hauling of materials, setting, etc., and for all other work and expense incidental thereto.

Item No. 25 Rip Rap

a. Measurement. The quantity of rip rap to be paid for under Item 25 in the Schedule of Bid Items shall be the number of square yards of rip rap measured as indicated on the Contract Drawings. The material shall conform to rip rap defined in Section 02222.

b. Payment. Payment under Item 25 at the contract unit price per square yard bid shall be full compensation for furnishing all materials, equipment, tools and labor and for performing all work required to furnish and install the rip rap as specified. The work shall include, but is not limited to, excavation; furnishing, placing and installing to the defined slope and grade; removing and disposing of surplus subsurface materials; reshaping; and for all other incidental work and expense.

Item No. 26 36” Reinforced Concrete Pipe

a. Measurement. The quantity of pipe to be paid for under Item 26 in the Schedule of Bid Items shall be the number of linear feet of the pipe furnished and installed complete in place. The lengths paid for are to be the lengths in feet measured along the centerline of the pipe as laid.

b. Payment. Payment Under Item 26 shall be full compensation for all earth excavation; removal and disposal of all types of surface materials and pavements encountered except concrete base; removing and replacing traffic signs, curbing, guardrails, route markers, and similar items; for all temporary sheeting and bracing; pumping, draining and backfilling; cutting of pipes; furnishing all reinforced concrete pipe (RCP) indicated on the Contract Drawings; relocating and/or renewing, in part or whole, water, sewer and/or other service pipes where they interfere with the grade of the RCP; and for all other pipeline work and appurtenances, except that for which a definite payment item is included in the Schedule of Prices.

No additional payment shall be made for the extra cost of Evening, Saturday or Sunday work, if required.

Item No. 27 Gravel Access Road

Payment shall be made at the unit bid price under Bid Item No. 27 in the Schedule of Bid Items for the actual number of linear feet of gravel access road measured in place. Payment shall be full compensation for furnishing, hauling, grading, shaping and compacting gravel borrow for the construction of the gravel access road as shown on the drawings and required by the Contract Documents.

Item No. 28 & 29 Grass Access Road (Alternate No.1)

Payment shall be made at the unit bid price under Alternative No. 1 for Bid Item Nos. 28, & 29 in the Schedule of Bid Items for the actual number of linear feet of grass access road measured in place. Payment shall be full compensation for furnishing, hauling, grading, shaping, top soil and seed and loam for the construction of the grass access road as shown on the drawings as the gravel access road, and required by the Contract Documents.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION

SECTION 01026

SCHEDULE OF VALUES

PART 1 GENERAL

1.01 DESCRIPTION

A. Work Included: Provide a detailed breakdown of the agreed Contract Sum showing values allocated to each of the various parts of the Work, as specified herein and in other provisions of the Contract Documents.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division o and Division 1 of these Specifications.

1.03 GENERAL

A. For accounting purposes for the Engineer's convenience and as an aid in determining progress payments and price additions or deductions for Contract modifications, the Contractor shall furnish to the Engineer a schedule of values which shall be approved.

1. The schedule of values shall apportion the total amount of the Contract price(s) for each separate item among the main features or costs that form the completed Work.
2. The price breakdown shall be in sufficient detail to permit an analysis of all material, labor, equipment, subcontract and overhead costs, as well as profit, and shall cover all work involved for the properly completed item and feature listed.
3. Any amount claimed for subcontracts shall be supported by a similar schedule of values with the total amount shown by this price under the Contract price stated in the bid form.

1.04 SUBMITTALS

A. Prior to first application for payment, submit a proposed Schedule of Values to the Engineer.

1. Meet with the Engineer and determine additional data, if any, required to be submitted.
2. Secure the Engineer’s approval of the Schedule of Values prior to submitting first application for payment.

END OF SECTION

SECTION 01027

APPLICATION FOR PAYMENT

PART 1 GENERAL

1.01 DESCRIPTION

A. Work Included: Comply with procedures described in this Section when applying for progress payment and final payment under this Contract.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these specifications.

B. Progress payments are described in the General Conditions.

C. Payments upon Substantial Completion and Completion of the Work are described in the General Conditions.

1.03 QUALITY ASSURANCE

A. Prior to start of construction, secure the Engineer's approval of the Schedule of Values required to be submitted under Section 01026, Schedule of Values.
   1. During progress of the Work, modify the Schedule of Values as approved by the Engineer to reflect changes in the Contract Sum due to change orders or other modifications to the Contract.
   2. Base requests for payment on the approved Schedule of Values.

1.04 SUBMITTALS

A. Informal Submittal: Unless otherwise directed by the Engineer;
   1. Make an informal submittal of Request for Payment by filling in, with erasable pencil, pertinent portions of AIA Document G702, "Application and Certificate for Payment", plus continuation sheet or sheets.
   2. Make this preliminary submittal to the Engineer at the end of each month.
   3. Revise the informal submittal of Request for Payment as agreed, between both parties, initialing all copies.

B Formal Submittal: Unless otherwise directed by the Engineer;
   1. Make formal submittal of Request for Payment by filling in the agreed data, typewritten, on AIA Document G702, "Application and Certificate for Payment", plus continuation sheet or sheets.
   2. Sign and notarize the Application and Certificate for Payment.
   3. Submit the original of the Application and Certificate for Payment, plus six (6) identical copies of the continuation sheet or sheets, to the Engineer.

4. The Engineer shall compare the formal submittal with the approved informal submittal and when approved, shall sign the Application and Certificate of Payment, will make required copies and will distribute:
   a Two copies to Contractor
   b Two copies to Owner
   c Two copies to Engineer's file.

PART 2 PRODUCTS (Not Applicable).

PART 3 EXECUTION (Not Applicable).

END OF SECTION

SECTION 01050

FIELD ENGINEERING

PART 1 GENERAL

1.01 DESCRIPTION

A. Work included: Provide such field engineering services as are required for proper completion of the work including, but not necessarily limited to:
   1. Establishing and maintaining lines and levels.
   2. Structural design of shores, forms and similar items provided by the Contractor as part of his means and methods of construction.

1.02 RELATED WORK

A. Documents affecting work of this section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

B. Additional requirements for field engineering may also be described in other Sections of these Specifications.

1.03 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for the proper performance of the work of this Section.

1.04 PROCEDURES

A. In addition to procedures directed by the Contractor for proper performance of the Contractor's responsibilities:
   1. Locate and protect control points before starting work on the site.
   2. Preserve permanent reference points during progress of the work.
   3. Verification of all reference points.
      a. If a discrepancy is found, promptly notify the Engineer.
   4. Promptly advise the Engineer when a reference point is lost or destroyed, or requires relocation because of other changes in the Work.
      a. Upon direction of the Engineer, require the Field Engineer to replace reference stakes or markers.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION

SECTION 01092

ABBREVIATIONS

PART 1 GENERAL

1.01 DESCRIPTION

A. Listing of Abbreviations: The listing of abbreviations in this Specification Section represent the Standard Organization named.

B. Related Work:
1. Documents affecting work of this section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
2. All related Specification Sections shall be used in conjunction with this Section.

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 stringent requirements are specified or are required by applicable codes.

B. Conform to reference standard by date of issue current on date for receiving bids.

1.03 LISTING OF STANDARD ORGANIZATIONS AND THEIR ABBREVIATIONS

AA	Aluminum Association
AAN	American Association of Nurserymen
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
ACPA	American Concrete Pipe Institute
ADC	Air Diffusion Council
AGA	American Gas Association
AGCA	Associated General Contractors of America
AHDGA	American Hot Dip Galvanizers Association
AI	Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Constructors
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute
APA	American Plywood Association
API	American Petroleum Institute
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society of Testing and Materials
AWPA	American Wood Preservers Association

AWS	American Welding Society
AWWA	American Water Works Association
BIA	Brick Institute of America
CRSI	Concrete Reinforcing Steel Institute
CSA	Canadian Standards Association
DCAM	Comm. of Massachusetts Division of Capital Asset Management
DEP	Department of Environmental Protection
DPH	Department of Public Health
DHI	Door and Hardware Institute
DIPRA	Ductile Iron Pipe Research Association
EJCDC	Engineers Joint Contract Documents Committee
EPA	Environmental Protection Agency
FM	Factory Mutual
Fed. Spec.	Federal Specification
HI	Hydraulic Institute
IEEE	Institute of Electrical and Electronics Engineers
ISA	Instrument Society of America
ISO	International Standards Organization
MIA	Masonry Institute of America
MIL.	Military Specification
MSBC	Massachusetts State Building Code
MSS	Manufacturers Standardization Society of the Valve and Fitting Industry
NAAMM	National Association of Architectural Metal Manufacturers
NCMA	National Concrete Masonry Association
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NRCA	National Roofing Contractors Association
NSPC	National Standard Plumbing Code
OSHA	Occupational Safety and Health Administration
PCA	Portland Cement Association
PCI	Prestressed Concrete Institute
PPI	Plastic Pipe Institute
PS	Product Standards of the National Bureau of Standards
SDI	Steel Door Institute
SIGMA	Sealed Insulating Glass Manufacturers Association
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SPI	Society of the Plastics Industry
SSPC	Steel Structures Painting Council
TCA	Tile Council of America
TPI	Truss Plate Institute
UL	Underwriters Laboratories

END OF SECTION

SECTION 01100

SPECIAL PROJECT PROCEDURES

PART 1 GENERAL

1.01 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, Sections in Division 1, and Appendix D.

B. The two (2) 16-inch diameter temporary bypass lines shall be installed before construction of the access road has been complete. The Contractor shall not remove stumps prior to placing the bypass into service. Trees and brush may be cleared along the bypass line. Care shall be taken to protect the existing main from any physical damage. The Contractor shall be responsible for any damage to the existing water main. See Section 02667 – Temporary Water Piping and Service Connections for more details.

C. The Contractor is responsible for erecting a sign at the project site prior to the start of construction in an area designated and approved by the Engineer. The project sign will indicate, but is not limited to informing the public that the Connecticut Department of Public Health is providing the funding. For a more detailed description and instructions for the project sign Appendix D includes the sign requirements and template.

1.02 STAGING AREA

A. The Contractor shall coordinate the staging area location(s) with Owner. All details, permission and restoration requirements will need to be coordinated through Norwich Public Utilities.

1.03 ADDITIONAL NOTES

A. Norwich Public Utilities shall operate all valves and hydrants. If water is required for construction a meter and backflow device shall be installed and the Contractor shall pay for water used at the standard resident rate.

B. The Deep River Water Treatment Plant operates 24-hours a day and will not be shut down for this project. The Contractor shall maintain access to the facility at all times. Proper traffic controls for vehicles and pedestrian shall be employed to maintain access for employees, visitors, deliveries and emergency vehicles.

C. Norwich Public Utilities shall be notified prior to (48 hours notice) and be present for:

1. Filling and flushing of water mains.
2. Locating and/or removal of any and all taps.
3. Location, selection and collection of bacteria and VOC samples.
4. Dechlorination and disposal of flushing water.

PART 2 MATERIALS (Not Applicable)

PART 3 EXECUTION

3.01 CONTRACTOR'S EMERGENCY SERVICE

A. Contractor must make satisfactory arrangements with the Norwich Public Utilities to service emergencies or complaints which may occur at night, over the week-end, or when the job is shut down. If he does not, the Owner may make arrangements and the cost will be charged to the Contractor.

B. Before the final estimate is certified for payment, the Contractor shall make similar arrangements to cover the guarantee period.

3.02 CONTAINMENT SYSTEM

A. Specified boundaries in the project work area is within wetlands, and have been defined on the Drawings. The Contractor must provided containment for any potential contaminants necessary for completion of the work stored on site to prevent pollution of the wetlands. Repair of oil or gasoline bearing equipment and vehicles on site is prohibited. The Contractor shall take all appropriate precautions to protect all upland and wetland areas and all watercourses and water bodies from contamination.

3.03 SITE RESTORATION

A. The staging and construction area for the project site is deciduous forest and wetlands, north of an abandoned state road extension and south of a state highway. The Contractor shall restore any areas used for equipment or any disturbed area in general to the original state or better upon completion of the work.

END OF SECTION

SECTION 01120

ENVIRONMENTAL CONTROLS

PART 1 GENERAL

1.01 DESCRIPTION

A. The work covered by this Section consists of furnishing all labor, materials and equipment and performing all work required for the prevention of environmental pollution in conformance with applicable laws and regulations, during and as the result of construction operations under this Contract. For the purpose of this Specification, environmental pollution is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to man; or degrade the utility of the environment for aesthetic and/or recreational purposes.

B. The control of environmental pollution requires consideration of air, water and land, and involves management of noise and solid waste, as well as other pollutants.

C. Schedule and conduct all work in a manner that will minimize the erosion of soils in the area of the work. Provide erosion control measures such as diversion channels, sedimentation or filtration systems, berms, staked hay bales, seeding, mulching or other special surface treatments as are required to prevent silting and muddying of streams, rivers, impoundments, lakes, etc. All erosion control measures shall be in place in an area prior to any construction activity in that area.

D. These Specifications are intended to ensure that construction is achieved with a minimum of disturbance to the existing ecological balance between a water resource and its surroundings. These are general guidelines. It is the Contractor's responsibility to determine the specific construction techniques to meet these guidelines.

E. Compensation for compliance with the requirements of this Section shall be included under the payment items for the various types of work affected by the provisions contained herein. No separate payment will be made for costs associated with environmental protection.

1.02. RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.03 DEFINITIONS

A. Resource Areas

1. Those areas, conditions or features which may suffer adverse environmental impacts when disturbed by construction activities. Such areas include, but are not limited to, densely wooded areas, wetland areas, streams, rivers, and other water crossings, steep slopes and drainage systems.

1.04 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

B. Product data: Within 35 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
   1. Materials list of items proposed to be provided under this section.
   2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.

1.05 NOTIFICATIONS

A. The Engineer will notify the Contractor in writing of any non-compliance with the foregoing provisions or of any environmentally objectionable acts and corrective action to be taken. State or local agencies responsible for verification of certain aspects of the environmental protection requirements shall notify the Contractor in writing, through the Engineer, of any non-compliance with State or local requirements. The Contractor shall, after receipt of such notice from the Engineer or from the regulatory agency through the Engineer, immediately take corrective action. Such notice, when delivered to the Contractor or his/her authorized representative at the site of the work, shall be deemed sufficient for the purpose. If the Contractor fails or refuses to comply promptly, the Owner may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess costs or damages by the Contractor unless it is later determined that the Contractor was in compliance.

1.06 IMPLEMENTATION

A. Prior to commencement of the work, meet with the Engineer to develop mutual understandings relative to compliance with this provision and administration of the environmental pollution control program.

B. Remove temporary environmental control features, when approved by the Engineer, and incorporate permanent control features into the project at the earliest practicable time.

PART 2 PRODUCTS

2.01 SILT FENCE

A. Silt fence shall be Geotex 2131 as produced by Propex, Chattanooga, TN or an approved equal.
   1. Physical requirements: (Minimum Average Roll Values)

a.	Grab Strength	ASTM D-4632	124 lbs,
b.	Grab Elongation	ASTM D-4632	15%,
c.	Trapezoid Tear Strength	ASTM D-4833	65 lbs,
d.	Mullen Burst Strength	ASTM D-3786	300 psi,
e.	Permittivity	ASTM D-4491	0.10 sec-1,
f.	Water Flow Rate	ASTM D-4491	10 gpm/ft2.

   2. Resistant to ultraviolet rays.
   3. Minimum width of thirty six (36) inches.

2.02 WIRE FENCE REINFORCEMENT

A. Wire fence reinforcement for fabric silt fence shall be a minimum of thirty (30) inches in height, a minimum of 14-gauge and shall have a maximum mesh spacing of six (6) inches.
   1. The wire fence reinforcement shall be used with all filter fabrics.

2.03 SILT FENCE POSTS

A. Silt fence posts shall be of wood or steel and a minimum of 4 feet long.
   1. Wood posts shall be nominal 1 x 1 inches.
   2. Steel posts shall be round or U, T, or C shaped with a minimum weight of 1.3 pounds per foot, and have projections for fastening the wire to the fence.

2.04 HAY BALES

A. Hay bales shall consist of hay from acceptable grasses and legumes, free from weeds, reeds, twigs, chaff, debris, other objectionable material or excessive amounts of seeds and grains. Hay shall be free from rot or mold.
   1. The hay bale shall be securely baled with wire to permit rehandling.
   2. Individual bales shall be of a longitudinal shape not exceeding one hundred (100) pounds.

2.05 CATCH BASIN SILT FILTERING SYSTEM

A. Silt filtering system for catch basins accepting drainage from the site shall be Siltsack as manufactured by ACF Environmental Inc. Richmond, VA. and distributed by A. H. Harris, or approved equal.
   1. Manufactured to fit opening of catch basins or drop inlet.
   2. Two dump straps attached to the bottom to facilitate emptying the sack.
   3. Lifting loops as an integral part of the Siltsack to be used in lifting the Siltsack from the basin.
   4. A restraint cord approximately halfway up the sack to keep the sides away from the catch basin walls.
   5. Manufactured from woven polypropylene fabric with the following properties:

a.	Grab Tensile	ASTM D-4632	300 lbs.
b.	Grab Elongation	ASTM D-4632	20%
c.	Puncture	ASTM D-4833	120 lbs.
d.	Mullen Burst	ASTM D-3786	800 psi.
e.	Trapezoid Tear	ASTM D-4533	120 lbs.
f.	Apparent Opng.	ASTM D-4751	40 US Sieve
g.	Flow Rate	ASTM D-4491	40 gpm/sf

PART 3 EXECUTION

3.01 SEDIMENTATION AND EROSION CONTROL

A. Plan and execute all operations, particularly those associated with excavation and backfilling, in such a manner as to minimize the amount of excavated and exposed fill or other foreign material that is washed or otherwise carried into wetlands waterways and drainage systems.

B. Provide hay bales, silt fencing, Siltsacks, and other materials necessary for sedimentation and erosion control for streams wetlands and drainage systems.

C. In the event of sedimentation or siltation prevention measures used by the Contractor prove to be inadequate, the Contractor shall adjust his operations to the extent necessary to prevent any such sedimentation or siltation from occurring.

D. Keep streams, brooks and other water crossings clear of mud, silt, debris and other objectionable materials from construction operations.
   1. Maintain flow capacity of river and stream channels to prevent unnatural flooding.
   2. Use temporary vegetation, soil stabilization matting, and mulching to protect areas exposed during construction.
   3. Minimize the amount of bare earth exposed at any one time during construction, and minimize the length of time bare earth is exposed.
   4. Excavated material to be stockpiled for reuse shall be stored away from brooks, streams and wetland areas to prevent the erosion from washing back into the resource area.

E. Baled hay shall be placed to form temporary water stops, dams, diversions dikes, berms and for other uses connected with water pollution control.
   1. Should any bales become too clogged to be effective, they shall be removed from the site and new hay bales provided.
   2. Bales shall be replaced as often as necessary to provide effective sediment control.
   3. Following completion of construction activities in a particular area, bales shall be legally disposed of, by the Contractor, off-site in an environmentally sound manner.

F. Sediment laden water that is being pumped from the trenches or excavations shall not be pumped directly into water courses or drainage systems.
   1. Sedimentation basins, filter fabric fencing, hay bales or other means shall be used for this purpose.

G. The silt fence shall be maintained at no additional cost to the Owner as follows:
   1. Inspect silt fences and filter barriers immediately after each rainfall and at least daily during prolonged rainfall.
   2. Provide any required repairs immediately.
   3. Should the fabric on a fabric silt fence decompose or become ineffective prior to the end of the expected usable life and the barrier still be necessary, replace the fabric promptly.
   4. Remove sediment deposits after each storm event.
   5. As a minimum, remove sediment when deposits reach approximately one-third the height of the barrier.
   6. Dispose of sediment deposits off-site.
   7. Maintain the fabric silt fence until all upslope soils are permanently stabilized by vegetation.

3.02 PROTECTION OF AIR RESOURCES

A. During the progress of work, the Contractor shall conduct his operations and maintain the area of his activities, including sweeping and sprinkling of water as necessary, so as to minimize the creation and dispersion of dust.

B. Burning of rubbish and waste material on the site shall not be permitted.

3.03 CLEAN UP

A. After the Contractor has stabilized/re-vegetated all disturbed areas are to match or exceed pre-existing conditions, the Contractor shall notify the Engineer in order to arrange an inspection by the Owner.

B. Upon review and approval of the Owner, the Engineer shall notify the Contractor to remove and legally dispose of the environmental controls.

3.04 COMPLIANCE

A. The construction project shall be in compliance with all Federal, State and Local laws with respect to hazardous materials.

B. All clean up and disposal operations shall comply with all applicable Federal, State and Local statutes, regulations and ordinances and anti-pollution laws.

C. Comply with all requirements of all applicable Federal, State and Local regulations and all permits issued for the Contract.

END OF SECTION

SECTION 01200
PROJECT MEETINGS

PART 1 GENERAL

1.01 DESCRIPTION

A. Preconstruction Conference:
   1. The Contractor shall not commence work until a conference has been held at which representatives of the Contractor, Engineer, and Owner are present. The preconstruction conference will be arranged by the Engineer.
   2. The sequence of construction will be established during the preconstruction conference.

B. Progress Meetings:
   1. The Contractor shall be available for progress meetings on site during construction every week, or as determined by the Engineer/Owner, dependent on the status of the project.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION

SECTION 01300

SUBMITTALS

PART 1 GENERAL

1.01 BEFORE STARTING WORK

A. Preliminary Progress Schedule

In accordance with Section 2.05 of the General Conditions, the CONTRACTOR shall prepare and submit to the ENGINEER for review, a preliminary construction progress schedule. This submittal is to be made within ten (10) days from the effective date of Agreement. The method of schedule preparation required is generally referred to as the Critical Path Method (CPM).

B. The Buy American requirements of the "Consolidated Appropriations Act, 2014" are applicable to all dollars within the contract made available by the SRF construction loan. All of the iron and steel products used in the project shall be produced in the United States. The Contractor shall provide documentation that iron and steel products will be produced in the United States with shop drawing submittals for approval. The Contractor shall submit certification that all iron and steel products have been produced in the United States at the time of delivery of materials to the project site. No waiver of any provision of this section will be granted unless approved by the United States Environmental Protection Agency.

C. Shop Drawings and Samples Submittal Schedule

The preliminary progress schedule shall contain activities in the network representing submittal and review of shop drawings and material samples. The shop drawing and sample submittal schedule required per Paragraph 2.05 of the General Conditions shall be developed by sorting these activities from the progress schedule. The schedule shall be presented in a report format containing the following information:

1. activity number
2. activity description (including reference to the appropriate specification section)
3. early and late start dates
4. early and late finish dates
5. total and free float
6. successor activities

D. Schedule of Values

In accordance with Section 2.05 of the General Conditions the CONTRACTOR shall submit to the ENGINEER a schedule of values representing a detailed subdivision of the unit price items Contract amount. This subdivision, when approved by the ENGINEER, will become the basis for computing the contractor's monthly progress payments. If practical, the schedule of values shall be developed by assigning a cost value to the appropriate activities contained in the preliminary progress schedule. If activities, or other line items, in the schedule of values contain costs associated with

material, labor or subcontracts these costs are to be identified separately by listing the activity multiple times and identifying material, labor and subcontract with a suffix M, L and S respectively. Cost values for activities representing materials/equipment only shall be assigned to the activity representing delivery of such material/equipment to the job site.

In addition to the cost of material, labor and subcontracts, the following costs are to be identified separately in the schedule of values accompanied by such supporting documentation as required by the ENGINEER to substantiate the amounts listed.

1. Mobilization - To include CONTRACTOR's actual cost to setup temporary facilities at the job site.

2. Bonds, Insurance - To reflect premiums paid, or to be paid, for Bonds and insurance required to be provided per the Contract Documents. Additional insurance coverage or bonds purchased by the CONTRACTOR at his option shall be considered general overhead and apportioned to construction activity costs.

3. Job Site Overhead - To reflect the cost of maintaining the temporary facilities at the job site including the cost of direct field supervision. This value, when approved, will be paid to the CONTRACTOR in equal monthly increments based on the number of months between mobilization and final completion.

4. Demobilization - To reflect the cost of removing the temporary facilities and final site cleanup.

5. Permits - To include fees required for any permits which CONTRACTOR is required to obtain including inspection fees associated with such permits.

The cost of home office overhead, profit, financing, contingencies, etc. are to be apportioned to the construction activities in the schedule of values based on the percentage that each construction activity cost represents when compared to the subtotal of all construction activity costs. This subtotal is excluding mobilization, demobilization, job site overhead, permits, home office overhead, profit, financing, contingencies, etc. The total of all items in the schedule of values shall equal the Contract Price.

E. Cash Flow Schedule

Accompanying the CPM Schedule required above, the CONTRACTOR shall also submit to the ENGINEER, for approval, a Cash Flow Schedule. The Cash Flow Schedule shall show the amounts of money by months which will be required to reimburse the CONTRACTOR for Work performed during each month of the Contract Times. The sum of all the monthly cash requirements shall equal the Contract Price. The monthly cash requirements shall be proportioned based on the CPM Schedule. The initial cash flow schedule shall depict monthly cash requirements based on the early start dates of the CPM Schedule as well as the monthly cash requirements based on late start dates of the CPM Schedule. The

approved cash flow schedule will be developed by the ENGINEER and will reflect the CONTRACTOR's schedule performance as of the date of approval. This process of approving cash flow schedules will occur with each required schedule update.

The approved Cash Flow Schedule will be used by the OWNER to program funds for progress payments to the CONTRACTOR. Monthly payments will be made to the CONTRACTOR in accordance with the Contract Agreement, but at no time will the aggregate amount of payments exceed the accumulated amount of payments for the same period of the approved Cash Flow Schedule.

F. Preconstruction Video Recording

Prior to mobilization at the site, the CONTRACTOR shall furnish to the ENGINEER a video recording of all planned construction areas, material storage areas, areas adjacent to these areas, including but not limited to, streets, driveways, sidewalks, curbs, ditches, fencing, railing, visible utilities, retaining structures and adjacent building structures. The purpose of the videotaping is to document existing conditions and to provide a fair measure of required restoration. Care should be taken to record all existing conditions which exhibit deterioration, imperfections, structural failures or situations that would be considered substandard.

The recording shall include an audio soundtrack to provide the following information:

- detailed description of location being viewed referenced to Contract Drawings (i.e. station no., building designation, pipeline route etc.)
- direction (N, S, E, W, looking up, looking down, etc.) of camera view
- date, time, temperature, environmental conditions at time of taping.

Any areas not readily visible by video recording methods shall be described in detail.

As many tapes as are necessary to satisfy the requirements of this section shall be prepared. The original tapes shall be submitted to the ENGINEER accompanied by a detailed log of the contents of each tape. The log should include location descriptions with corresponding tape counter numbers to facilitate the quick location of information contained on the tapes. The tapes will be maintained by the ENGINEER during construction and may be viewed at any time by CONTRACTOR upon request. Upon final acceptance, the tapes will become the permanent property of the OWNER.

1.02 FINALIZING SCHEDULES

The CONTRACTOR shall be prepared to present and discuss at the preconstruction meeting, the schedules submitted in accordance with this specification. Unless additional information is required to be submitted by the CONTRACTOR, the ENGINEER will, within 15 working days of the preconstruction conference, provide comments to the CONTRACTOR. The CONTRACTOR shall then resubmit the affected schedules addressing the ENGINEER's comments.

Approval of the final schedules by the ENGINEER is advisory only and shall not relieve the CONTRACTOR of responsibility for accomplishing the work within the Contract Times.

Omissions and errors in the approved CPM schedule shall not excuse performance less than that required by the Contract. Approval by the ENGINEER in no way makes the ENGINEER an insurer of the success of those schedules or liable for time or cost overruns flowing from shortcomings in such schedules.

1.03 REQUIREMENTS FOR CONFORMING WITH SCHEDULE

If, in the opinion of the ENGINEER, the CONTRACTOR falls behind the progress schedule, the CONTRACTOR shall take such steps as will be necessary to improve his progress, and ENGINEER may require CONTRACTOR to increase the number of shifts and/or overtime operations, days of work, and/or the amount of construction planned, and to submit for approval such supplementary schedule or schedules as may be deemed necessary to demonstrate the manner in which the agreed rate of progress will be regained, all without additional cost to the OWNER. An updated cash flow schedule will be required in this occurrence and will be provided with the supplementary schedules referenced above.

1.04 UPDATING SCHEDULES

The CONTRACTOR shall submit to the ENGINEER monthly updates of the schedules required per this specification section.

Progress and shop drawing schedule updates shall reflect the progress to date by providing actual start dates for activities started, actual finish dates for completed activities, and identifying out of sequence work, schedule logic changes and any circumstances or events impacting the current schedule. The updates shall also contain the CONTRACTOR's best estimate of the remaining duration for activities not complete as of the date of the update. All graphic presentations, reports and computer discs required per the initial submittal of these schedules shall be provided with each update.
The schedule of values and cash flow schedules shall be updated to reflect any changes.

1.05 ADJUSTMENT OF PROGRESS SCHEDULE AND CONTRACT TIMES

1. If the CONTRACTOR desires to make changes in his method of operating which affect the approved progress schedule, he shall notify the ENGINEER in writing stating what changes are proposed and the reason for the change. If the ENGINEER approves these changes, the CONTRACTOR shall revise and submit for approval, without additional cost to the OWNER, all of the affected portions of the schedule.

2. Shop drawings and samples which are not approved on the first submittal or within the schedule time shall be immediately rescheduled, as well as any work which fails to pass specified tests or has been rejected.

3. The Contract Times will be adjusted only for causes specified in the General Conditions. In the event the CONTRACTOR requests an adjustment of the Contract times, he shall furnish such justification and supporting evidence as the ENGINEER may deem necessary for a determination as to whether the CONTRACTOR is entitled to an adjustment of Contract Times under the provisions of the General Conditions. The ENGINEER will, after receipt of such justification and supporting evidence, make findings of fact and will advise the CONTRACTOR in writing thereof. If the ENGINEER finds that

the CONTRACTOR is entitled to any adjustment of the Contract Times the ENGINEER's determination as to the total number of days adjustment shall be based upon the currently approved progress schedule and on all data relevant to the adjustment. The CONTRACTOR acknowledges and agrees that actual delays in activities which, according to the progress schedule, do not affect the Contract completion date shown by the critical path in the network will not be the basis for an adjustment of Contract Times.

4. From time to time it may be necessary for the progress schedule and/or Contract Times to be adjusted by the OWNER to reflect the effects of job conditions, weather, technical difficulties, strikes, unavoidable delays on the part of the OWNER, and other unforeseeable conditions which may indicate schedule and/or Contract Times adjustments. Under such conditions, the ENGINEER shall direct the CONTRACTOR to reschedule the work and/or Contract Time to reflect the changed conditions, and the CONTRACTOR shall revise his schedule accordingly. No additional compensation shall be made to the CONTRACTOR for such changes except as provided in the General Conditions. Unless otherwise directed, the CONTRACTOR shall take all possible actions to minimize any extension to the Contract Times and any additional cost to the OWNER.

1.06 SHOP DRAWINGS

The CONTRACTOR shall promptly supply to the ENGINEER for review, shop drawings with details and schedules for all items contained in the list of required Shop Drawings included at the end of this Section, or for other items as may be required by the ENGINEER.

A sufficient number of copies to allow the ENGINEER to retain two (2) reviewed copies, schedules and brochures shall be submitted for approval. Black line prints, blue line prints or reproducible transparencies are required. Blueprints (white lines on a blue background) are not acceptable. Each submittal shall have the job name on it and the appropriate specification section or contract drawing reference.

Each copy of the submittals made to the ENGINEER for review shall be prepared by the CONTRACTOR and shall have an identifying title stamp as follows:

Norwich Public Utilities, Norwich, Connecticut
Deep River Water Treatment Plant Transmission Main Rehabilitation
Specification Section _____
Shop Drawing No. _____ Rev. _____

As required by the General Conditions, each copy of the submittals shall also be stamped with the CONTRACTOR's approval indicating that the shop drawing has been reviewed for conformance to the Contract Documents and has been coordinated with all other work and/or trades. The CONTRACTOR shall identify and bring to the attention of the ENGINEER any deviations to the Contract Documents contained in the submittal. For shop drawings being resubmitted the CONTRACTOR shall identify and bring to the attention of the ENGINEER any revisions other than those originally requested by the ENGINEER.

Submittals smaller than 8½x11 inches shall be secured to paper 8½x11 inches.

Submittals will be returned, stamped with the following classifications:

a) "No Exception Taken" - There are no notations or comments on the submittal and, in our opinion, the submittal meets the requirements of the Contract Documents and the CONTRACTOR may release the equipment for production.

b) "Make Corrections Noted" - Notations have been made on the submittals to insure conformance with the Contract Documents. The CONTRACTOR may release the equipment for production in accordance with the notations.

c) "Amend and Resubmit" - When the material submitted is incorrect or insufficient to review properly and it is necessary to see the complete package again.

d) "Rejected" - The submittal does not meet the requirements of the Contract Documents, are incomplete or difficult to read. The CONTRACTOR must submit the specified product.

Where a submittal indicates a departure from the Contract which the ENGINEER deems to be a minor adjustment in the interest of the OWNER not involving a change in Contract Price or extension of Contract Times, the ENGINEER may accept the submittal but the acceptance will contain, in substance, the following notation:

> "The modification indicated on the attached submittal is approved in the interest of the OWNER to effect an improvement for the Project and is accepted with the understanding that it does not involve any change in the Contract Price or Times; that it is subject generally to all Contract stipulations and covenants; and that it is without prejudice to any and all rights of the OWNER under the Contract Bonds."

It is emphasized that the ENGINEER's review of CONTRACTOR's submitted data is for general conformance to the Contract Drawings and Specifications, but subject to the detailed requirements of Drawings and Specifications. Although the ENGINEER may check submitted data in more or less detail, such checking is an effort to discover errors and omissions in CONTRACTOR's drawings and to assist the CONTRACTOR in coordinating and expediting his work, and shall in no way relieve the CONTRACTOR of his responsibility to engineer the details of the Work in such manner that the purpose and intent of the Contract will be achieved, nor shall such detail check by the ENGINEER be construed as placing on the ENGINEER, any responsibility for the accuracy, and for proper fit, functioning and performance of any phase of the Work included under this Contract.

1.07 SAMPLES

When required by the ENGINEER or where noted in other Sections of these Specifications, samples or materials shall be submitted for review.

Submit samples to illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
Submit samples of finishes from the full range of manufacturer's standard colors, textures, and patterns for ENGINEER's selection.

Include identification on each sample, with full project information.

Submit the number or samples specified in individual specification sections; one of which will be retained by ENGINEER.

Reviewed samples which may be used in the Work are indicated in individual specification sections.

1.08 PROGRESS PAYMENTS

The detailed arrangement for submittal of progress payment requests shall be discussed at the preconstruction meeting. In general, progress payments shall be submitted monthly in a format acceptable to the ENGINEER. The progress payment request shall be based on the agreed to schedule of values and should provide the percentage of completion, total dollar value completed, dollar value completed prior to the current payment, and the amount requested for this progress payment for each line item contained in the schedule of values. Progress payment requests for material and/or equipment suitably stored but not yet incorporated into the work shall be accompanied by a copy of the appropriate manufacturers invoice, shipping order, bill of lading, etc. and the progress payment amount shall be the direct cost to the CONTRACTOR, or subcontractor, for such material and/or equipment. Payment will not be made to the CONTRACTOR if, upon inspection by the ENGINEER, it is determined that the material and/or equipment does not conform to the requirements of the Contract Documents including proper storage, receipt of approved shop drawings, receipt of any special guarantees, Bonds, insurance coverage, any evidence of damage or imperfections, etc.

1.09 CONTRACTOR'S DAILY REPORTS

If requested by the ENGINEER or the Resident Project Representative, the CONTRACTOR shall prepare and submit daily reports containing the following information:

- The number of craftsmen and hours worked of each subcontractor,
- the number of hours worked by each trade,
- the number of hours worked of each type of equipment,
- a description of work activities performed,
- a description of any material or equipment deliveries,
- description of obstructions encountered,
- temperature and weather conditions.

The daily reports shall be submitted on a daily basis, by the end of the next business day. Information provided on the daily report shall not constitute notice of delay or any other notice required by the Contract Documents. Notice shall be as required therein.

1.10 AS-BUILT DRAWINGS

The CONTRACTOR shall maintain one record set of Contract Documents at the site in good order for the purpose of recording changes and as-installed conditions of the work. The CONTRACTOR shall, concurrent with the progress of the work, have the as-built information neatly recorded on the record set. This set shall be maintained on site for the sole

purpose of recording as-built information, shall be kept current with the work in progress, and shall be available to the OWNER and ENGINEER at all times during the life of the project.

Where other sections of this specification specifically address as-built drawings and information to be maintained. The extent and detail shall be as specified in the application section.

As a minimum, record drawings shall include changes made to locations of buried and exposed piping, equipment changes, substitutions and all variations from the Contract Documents. Buried piping, fittings, ducts, equipment and structures shall have elevations recorded and shall be dimensionally located relative to permanent exposed structures or survey lines. Any existing piping, fittings, ducts, equipment or structures encountered which differ or are not shown on the Contract Documents shall be similarly located and recorded.

As a pre-requisite to the final Application for Payment, the record information shall be neatly transferred onto the set of reproducible Contract Drawings given to the CONTRACTOR at the start of the project. Two copies of the as-builts sets shall be provided by the CONTRACTOR. One set shall be retained by the OWNER and the other set shall be returned to the ENGINEER. The information recorded shall be in a manner acceptable to the ENGINEER.

PART 2 PRODUCTS

A. The Buy American requirements of the "Consolidated Appropriations Act, 2014" are applicable to all dollars within the contract made available by the SRF construction loan. All of the iron and steel products used in the project shall be produced in the United States. The Contractor shall provide documentation that iron and steel products will be produced in the United States with shop drawing submittals for approval. The Contractor shall submit certification that all iron and steel products have been produced in the United States at the time of delivery of materials to the project site. No waiver of any provision of this section will be granted unless approved by the United States Environmental Protection Agency.

PART 3 EXECUTION (Not Applicable)

END OF SECTION

SECTION 01310

CONSTRUCTION SCHEDULES

PART 1 GENERAL

1.01 SUMMARY

A. To assure adequate planning and execution of the work so that the Work is completed within the number of calendar days allowed in the Contract, and to assist the Engineer in appraising the reasonableness of the proposed schedule and in evaluating progress of the Work, prepare and maintain the schedules and reports described in this Section.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   1. Construction period: Contract Agreement

B. Definitions:
   1. "Day", as used throughout the Contract unless otherwise stated, means "calendar day".

1.03 QUALITY ASSURANCE

A. Employ a scheduler who is thoroughly trained and experienced in compiling construction schedule data and in preparing and issuing periodic reports as required by this Specification.

B. Perform data preparation, analysis, charting and updating in accordance with standards approved by the Engineer.

C. Reliance upon the approved schedule:
   1. The construction schedule as approved by the Engineer shall be an integral part of the Contract and shall establish interim completion dates for the various activities under the Contract.
   2. Should any activity not be completed within 5 days after the stated scheduled date, the Engineer may request the reason for the delay in schedule from the Contractor. The Contractor shall supply the requested information and the steps which he intends to take to get back on schedule.

   3. It is expressly understood and agreed that failure by the Engineer to exercise the option either to order the Contractor to expedite an activity or to expedite the activity by other means shall not be considered to set a precedent for any other activities.

1.04 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

B. Preliminary Analysis: Within five (5) calendar days after the Contractor has received the Owner's Notice to Proceed, submit four (4) prints of a preliminary construction schedule to Owner and Engineer.

C. Construction Schedule: Within ten (10) calendar days after the Contractor has received the Owner's Notice to Proceed submit a Critical Path Method (CPM) network and a computer generated print out of a construction schedule prepared in accordance with Part 2 of this Section to Owner and Engineer.

D. Periodic Reports: See paragraph 2.02-B of this Section.

PART 2 PRODUCTS

2.01 CONSTRUCTION ANALYSIS

A. Supplemental to the critical path schedule, the Contractor shall provide a detailed work schedule, projected at least a month in advance. The implementation of the work schedule and the coordination required shall constitute the basic agenda of the coordination and planning meetings.

B. The order of new construction shall be discussed with the Engineer well in advance of the contemplated construction and the intended schedule shall meet with his approval. The Contractor, prior to starting work, shall submit to the Engineer a written description of the methods he plans to use in doing the work, including any necessary plans depicting the proposed details as well as a schedule of expected dates for beginning and completing the various buildings, structures and appurtenances which make up the work. Work shall not commence on a given portion of the project until the schedule for that portion (and preferably the entire schedule) has been approved by the Engineer. The Contractor shall be required to update this schedule periodically as necessary.

C. A guideline CPM network shall be submitted for approval to include the following items: A feasible plan to complete the project within the time specified in this contract; Mandatory milestone dates - Milestones shall be designated in the guideline CPM network by asterisks; Calendar dates will be substituted when the construction start date is established.

2.02 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. This schedule shall include a Critical Path Network and a computer generated print out. The schedule shall account for all subcontracts in addition to the work of the Contractor.

B. The network shall be provided in the form of a time scaled schedule. The computer print out shall include as a minimum, the earliest starting, earliest finish, latest starting, latest finish dates, and the total float for each activity. The Contractor shall update (monitor) and run the schedule at least monthly and shall submit to the Engineer both the network

and computer print out, both in duplicate, at the same time the pay estimate is prepared. The schedule shall contain all of the items of the periodic estimate and pay schedule.

PART 3 EXECUTION

3.01 SCHEDULE AND UPDATES

A. The monthly schedule update (monitoring) shall include the following items.

1. Network: Activities that are completed or in process are to be identified on the network by contrasting heavy lines. Each activity and work done should be proportional to the percentage of progress achieved to date.
2. Computer print out: The percentage progress status of each activity shall be shown on the computer print out. The percentage progress status will be used to support the Contractor's periodic pay estimate. Actual start and completion dates are to be included in the computer print out. All activities started and in process should be flagged in the computer print out.
3. The Engineer reserves the right to modify any schedule as required to meet the prevailing conditions. Review of the work schedules by the Engineer shall not relieve the Contractor of responsibilities regarding specified project completion times and liquidated damages.

END OF SECTION

SECTION 01380

CONSTRUCTION PHOTOGRAPHS

PART 1 GENERAL

1.01 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.02 DESCRIPTION

A. As provided herein the Contractor shall furnish to the Owner photographs in the number and type noted below.
   1. Photographs shall be taken using a digital camera approved by the Engineer.

B. The photographer shall take construction photographs over the course of the work.
   1. A minimum of fifteen (15) photos shall be taken on not less than six different occasions at such times as construction activity warrants. The first set of photographs shall be taken prior to any construction activity on the site.

   2. Two (2) CD's with copies of the photos shall be provided for the Engineer.

END OF SECTION

SECTION 01450

SAFETY GUIDELINES

PART 1 - GENERAL

1.0 SUMMARY

A. The following information is provided to the Contractor by the Owner with the understanding that these guidelines for safe work practices while working on the Owner's property are not intended in any way to be all-inclusive or to relieve the Contractor of any part of the responsibility for the safe performance of the work. If discrepancies exist between the sections or federal guidelines, the most stringent criteria shall govern.

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract apply to work in this section. Reference Article 6 – General Conditions

PART 2 - PRODUCTS

2.01 All safety related equipment including items such as cables, lanyards, and harnesses shall meet all applicable OSHA requirements and be in good working condition.

PART 3 - EXECUTION

3.01 DESIGNATION OF CONTRACTOR SITE SAFETY COORDINATOR

A. The Contractor shall designate a specific competent member of its management organization at the job site as its Safety Coordinator. The designee's duty shall be the prevention of accidents and other job losses and must have control of and be familiar with day-to-day construction activities of the Contractor. This person shall be responsible for initiating, maintaining, and supervising all safety and loss prevention programs and procedures in connection with the Work.

3.02 REGULATORY COMPLIANCE

A. All work must be completed in compliance with all applicable occupational and environmental safety and health laws, regulations, standards, ordinances, codes and other similar requirements. Such requirements shall serve as minimum guidelines for all actives of the Contractor in connection with the Work.

3.03 REPORTING AND INVESTIGATION OF OCCUPATIONAL INJURIES AND ILLNESSES

A. The Contractor shall require that all of its employees, all of its Subcontractors employees and all Third Parties report all occupational injuries and illnesses relating to the Work immediately to the Contractor.

B. The Contractor shall report all such cases to the Owner on a daily basis. Serious injuries and illnesses, fatalities or any cases involving any Owner personnel or property must be reported immediately to the Owner.

3.04 PERSONAL PROTECTIVE EQUIPMENT

A. All employees of the Contractor and other persons entering onto Owner's property in connection with the Work shall wear appropriate protective equipment at all times. Special personal protective devices and/or equipment must be used where needed for the hazards of the Work. Such equipment shall be provided by the Contractor for all Contractor, Subcontractor, and any Third Party employee, including, but not limited to:
   1. Hearing protection.
   2. Respirator protection devices.
   3. Fall protection devices.
   4. Temperature protection equipment.
   5. Full-face protection devices.
   6. Hand protection equipment.
   7. Life-lines and safety belts/harnesses.
   8. Personal floatation device.
   9. Any other special equipment/devices necessary to provide appropriate protection in their work.

B. Contractor, Subcontractor, or any Third Party is not only obligated to provide appropriate personal protective equipment to its employees, but is further obligated to stop the Work of any employee that fails to use the personal protective equipment properly.

C. All personal protective equipment shall meet the applicable requirements of NIOSH, OSHA, ANSI, and/or other applicable regulations, standards, or codes.

3.05 VESSEL OR CONFINED SPACE ENTRY

A. During the Work, it may be necessary for Contractor employees to enter vessels or confined spaces (areas of limited access or egress). The Contractor must have a written, enforced policy to assure the safety of all personnel under its supervision or control who enter any confined space or vessel in the performance of the Work. Such policies and procedures must comply with all applicable safety and health regulations.

B. The Contractor's procedure for safe entry and Work in vessels and in other confined spaces must include at least specific provisions on:
   1. Employee education and training.
   2. Use of a permit system.
   3. Atmosphere testing and appropriate ventilation.
   4. Use of appropriate respiratory protection.
   5. Use of safety belts and lanyards.
   6. Use of outside observer at all times.
   7. Emergency action provisions.

3.06 WORK ABOVE GROUND LEVEL

A. Whenever Work is to be done above ground level or above walking or working areas which may present a hazard to personnel or property below, all necessary action shall be taken by the Contractor to prevent falls from elevated Work areas and to protect personnel and equipment below from falling materials, tools, or other objects. This action shall include, without limitations, roping of the area and posting of warning signs to caution personnel below from falling materials. If necessary, a flagman shall be stationed below to warn persons in the area. All such barriers and signs shall be removed as soon as the Work is completed.

B. All personnel under Contractor supervision or control, who could fall from elevated Work areas, shall be protected by guardrails, safety belts and lanyards, safety nets or other effective means which comply with applicable Federal, State and Local regulations.

3.07 LADDERS

A. The Contractor shall provide employees with ladders that are constructed from non-conductive materials such as fiberglass. Ladders shall be equipped with anti-slip shoes and secured as required. As a minimum, the ladder must extend three feet above the upper floor landing.

3.08 RIGGING EQUIPMENT

A. Rigging equipment for material handling shall be inspected prior to use on each shift and as necessary during use to ensure that it is safe.

3.09 SCAFFOLDING

A. Scaffolds shall be erected in accordance with requirements of OSHA standards, 29 CFR 1926.451 - Scaffolding.

3.10 CRANE OR DERRICK SUSPENDED WORK PLATFORMS

A. Contractor owned or leased platforms suspended from lifting cranes or derricks for work to be performed at elevations that cannot normally be reached by other types of scaffolds or aerial work platforms, shall be designed and/or approved by a qualified engineer, periodically inspected for soundness and adequately maintained according to applicable Federal, State, and/or Local standards. Personnel on the work platforms shall adhere to Federal, State and/or Local safety work performance standards.

3.11 VEHICLE MOUNTED ELEVATING/ROTATING WORK PLATFORMS

A. Operation of vehicle mounted aerial platform devices shall be restricted to only those individuals that have been trained and are familiar with the vehicle's operation and emergency procedures.

B. Safe operation of aerial devices may require the presence of two or more persons, depending on the type of work being performed and the vehicular traffic in the area. As a minimum, a safety watch on the ground is required during welding or burning performed in the aerial

device.

C. Aerial devices, unless specifically designed for and certified for such Work, shall not be used to work on energized electrical equipment.

D. Signs shall be posted and barricades erected in the area directly under the work area so that personnel cannot enter the Work area.

E. Employees working in the bucket shall keep BOTH feet on the floor of the bucket and be tied off to the bucket with an approved safety belt.

3.12 EXCAVATIONS

A. The Contractors shall have an enforced written policy requiring barrier protection for all excavations, pits, or open holes.

B. The Contractor's procedure for guarding excavations, pits, and holes must include as a minimum, specific provisions for:
   1. Employee training.
   2. Adequate barrier protection (*e.g.,* shoring, sloping).
   3. Posting of signs warning of the hazard.

3.13 CHEMICAL SAFETY AND INDUSTRIAL HYGIENE

A. The Contractor shall obtain all information necessary to be fully aware of all potential exposures to hazardous materials and physical or biological agents in the performance of the Work. The Contractor shall provide to its employees, Subcontractors and Third Parties, all information and training on the nature of these potential hazards as required by Federal, State or Local Laws or Regulations, regardless of the source of such hazards.

B. The Contractor's program must include as a minimum, specific provisions for:
   1. The location of potential hazards.
   2. The potential adverse health effects posted by such hazards.
   3. Proper safe work practices to prevent or reduce potential exposure.
   4. Proper protective measures and equipment required.
   5. Proper use of protective equipment.
   6. Proper response to exposure incidents.

C. The Contractor shall provide all personal protective equipment to its employees required by the nature of the hazard. Such protective equipment must include at least the following items:
   1. NIOSH-approved respirator protection equipment (for dusts, mists, fumes, gasses, etc.).
   2. Hearing protection (plugs, muffs, etc.).
   3. Protective clothing (chemical goggles, gloves, resistant clothing, etc.).

D. Certain chemical and physical agents (*i.e.,* asbestos, PCB=s, radiation sources, etc.), are specifically regulated by Federal, State and/or Local agencies. When the Work involves a potential exposure to any such hazards, the Contractor shall assure compliance with all of those specific regulations. If spills, releases, disposal or exposure occur which may require

reporting to regulator agencies, the Contractor shall notify the Owner immediately of the nature of the incident.

3.14 CHEMICALS/"RIGHT TO KNOW" LAWS

A. The Contractor shall provide to the Owner the manufacturer's current and complete MSDS for every chemical that the Contractor will be bringing onto the site before the chemical comes onto the site.

B. The safety requirements on the MSDS will be followed by the Contractor, and he assumes sole responsibility and liability for compliance with such requirements.

C. Small portions of material which may be used on a daily basis will be handled in accordance with all applicable laws and disposed of and/or removed from the site at the end of each work day. Small buckets or personal containers that by law do not have to be labeled when used by one person on their shift will not be left on site with residue in them.

D. Upon completion of the work, the Contractor will be responsible for the proper clean-up, removal, and/or disposal of chemicals. Disposal methods and locations must be licensed for applicable chemical.

3.15 WELDING, BURNING AND FIRE SAFETY

A. The Contractor shall take all necessary precautions to prevent fire or other injury or damage relative to welding, burning or other spark or flame producing processes and procedures. Contractors shall also establish procedures for storage, handling and use of flammable or combustible materials which comply with all applicable laws, regulations and fire codes.

B. The Contractor shall assure that its employees and all Third Parties are familiar with fire protection and fire alarm systems in the area of the Work. The Contractor shall also be responsible for fire alarm systems in the area of the Work. The Contractor shall also be responsible for supplying and maintaining a sufficient number of the appropriate type of fire extinguishers to support the Work involved. As a minimum, all employees of the Contractor, Subcontractor, and other Third Parties must be trained by the Contractor on:
   1. Proper operation of fire extinguishers or other fire apparatus.
   2. Emergency evacuation routes and procedures.

C. All fires and other emergencies are to be reported immediately by the Contractor to the Owner. The Contractor shall also report all impairments in fire detection or suppression systems occurring in the course of the Work to the Owner in advance of such impairment and the contractor shall establish alternate methods of detection or suppression, as may be necessary during the impairment to adequately safeguard personnel and property.

D. At any time during the Work where spark or flame producing operations are conducted (such as welding, cutting, or burning), a fire watch shall be established by the Contractor during and after such operations (for at least 30 minutes) to assure that fires do not ignite. The Contractor shall assure that fire watch personnel are trained in fire fighting and are aware of procedures for sounding alarms and making notifications in the event of a fire.

E. The Contractor shall take all action required to prevent fire on the site from any sources

associated with the Work. Smoking control is particularly important. Personnel shall not smoke in areas which are not specifically designated smoking areas.

3.16 HOUSEKEEPING

A. The Contractor shall keep the Work site clean and orderly at all times. All material must be stored in locations and in such a manner that it will not interfere with operations or constitute any hazard to personnel, equipment or the environment. All paper, wood, chemicals or other scrap or Work material must be cleaned up regularly by the Contractor and removed from the Work site and disposed of in a lawful, safe and environmentally sound manner.

B. Upon completion of the Work, the entire Work site must be cleaned by the Contractor, removing all chemicals, scrap, materials, tools, equipment, temporary structures or other items not intended as part of the finished project.

3.17 HEAVY EQUIPMENT OPERATION

A. No machinery or heavy equipment shall commence operation without undergoing a safety inspection. All machinery and heavy equipment shall be operated only by trained and qualified operators.

B. All mobile equipment shall be equipped with warning lights and/or audible alarms to indicate when the machinery is operating in reverse or when the line of site is limited.

C. Cranes shall be equipped with a proximity warning device, or equivalent, to warn the operator and other workers when the crane boom is brought near electrically charged equipment.

D. Contractors, Subcontractors, and all Third parties shall maintain records covering operator qualifications, and hands-on mobile equipment testing. Machinery and equipment inspection records shall be maintained in accordance with OSHA regulatory requirements and be made available for inspection by the Owner upon request.

3.18 GROUND FAULT PROTECTION

A. It shall be the Contractor's responsibility to provide the necessary equipment for ground fault protection or the implementation of an assured equipment grounding conductor program in connection with the use of portable power tools.

3.19 MEDICAL AND FIRST AID FACILITIES

A. The Contractor shall make provisions for adequate first aid and other medical treatment for occupational injuries and illnesses which may occur to employees of the Contractor, Subcontractor, or to Third Parties.

3.20 DRUG & ALCOHOL POLICY

A. Drugs: To the use, possession, transfer, sale or purchase or any drug or illegal or controlled substance on or off the Owner's property or job sites, other than possession of over-the-

counter drugs and prescription medications for which the employee has a valid prescription, by the Contractor employees is prohibited. In addition, Contractor employees are prohibited from using or being impaired by any drug or substance of whatever type or legality that interferes with the person's ability to perform the job in a safe manner. Possession of paraphernalia used in connection with any drug or substance subject to this rule shall be a violation of this rule.

B. Alcohol: The use, possession or transportation of alcoholic beverages during working hours, (including regular or overtime or emergency call out), on Owner's property of job sites by Contractor employees is prohibited. In addition, no Contractor employee shall report to work impaired by alcoholic beverages.

3.21 CONDUCT OF CONTRACTOR'S EMPLOYEES

A. The following is a list of prohibited actives which is not intended to be all inclusive. If employees of Contractors engage in any of these activities, it shall constitute a default under the contract which may result in removal of the Contractor from the work site or barring the employee from the work site in addition to any other remedy available to the Owner. Failure by the Owner to discover or act on any such default shall not constitute an excuse for or a waiver of such default.

1. Willful violations of project safety or security rules.
2. Acts of sabotage to project or plant property, equipment, machinery or systems.
3. Sleeping on the job.
4. Engaging in horseplay or fighting. (Horseplay or fighting is defined as, but not limited to pushing, slapping, hitting, tripping, or any physical contact or other action which may cause or result in injury or bodily harm to any individual).
5. Use or possession of firearms or ammunition on the job site.
6. Suspected use, possession, and/or working under the influence of alcoholic beverages or drugs on Owner's property.
7. Failure to use sanitary facilities.
8. Failure to report accidents, job related injuries, and/or fires to supervision.
9. Removal of equipment safety devices, *e.g.,* alarms, guards, etc.

3.22 EMERGENCIES

A. In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto the Contractor, without special instruction or authorization from Owner, is obligated to act to prevent threatened damage, injury or loss. Contractor shall give Owner immediate notification of any and all emergencies. Contractor shall give Owner prompt written notice of any significant changes in the Work or deviations from the Contract Documents caused thereby.

END OF SECTION

SECTION 01505

MOBILIZATION

PART 1 GENERAL

1.01 DESCRIPTION

A. Work Includes: The transportation and storage of all equipment and materials necessary to the Work and the field offices.

B. RELATED WORK
1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 thru Division 2 of these Specifications.

PART 2 MATERIALS (Not Applicable)

PART 3 EXECUTION

3.01 STORAGE AREA

A. It shall be the Contractor's sole responsibility to procure and maintain a suitable storage area for tools, materials and equipment necessary to perform the work.
1. The storage area obtained by the Contractor shall not obstruct or interfere with pedestrian or vehicular movement, and shall not occupy any space within the public right-of-way, except with specific permission from the Owner.
2. The storage area shall be kept neat at all times.
3. The Owner shall not be a party to negotiations related to acquisition of areas for storage or cleanup of the same (unless the storage area is on Owner's property), but reserves the right to inspect such area(s) for compliance with Local regulatory requirements.
4. Contractor shall not use storage area for bulk storage of hazardous materials (e.g., gasoline, solvents, oil).

3.02 EQUIPMENT

A. Contractor shall transport all equipment to the site, assemble the equipment as needed to proceed with the work and maintain the equipment as needed during the work. Daily greasing and routine maintenance is acceptable. No mechanical work or equipment maintenance that could present a risk to the environment will be allowed.

B. Contractor shall provide spill containment for fueling and be prepared for an immediate response to spillage of any material that could be harmful to the environment or contaminate the water supply.

END OF SECTION

SECTION 01510

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.

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.

END OF SECTION

SECTION 01570
TRAFFIC REGULATION

PART 1 GENERAL

1.01 DESCRIPTION

A. The work under this Section shall consist of maintaining and protecting traffic in the project area to the satisfaction of the applicable Local Regulatory Agencies, and the Owner.
   1. Unless otherwise specified within the Contract Documents, the Contractor must maintain pedestrian and vehicular traffic and permit access to businesses, factories, residences, and intersecting streets.
   2. The Contractor must contact the Lebanon Highway Foreman for a pre-construction conference and must notify the town of the date that work is expected to commence.

PART 2 PRODUCTS

2.01 TRAFFIC SIGNS

A. The Contractor shall furnish light(s) and maintain traffic signs as may be directed, or may be necessary for the safe regulation, or convenience of traffic.
   1. Said signs shall be as shown or noted on the Contract Drawings or elsewhere herein, or if not specified, they shall be adequate for the regulation, safety and convenience of traffic and in conformance with the applicable requirements of the State/Federal Manual on Uniform Traffic Control Devices.

2.02 BARRICADES

A. Suitably lighted barriers or barricades shall be furnished by the Contractor and put up and maintained at all times during the night or daytime, around all open ditches, trenches, excavation, or other work potentially dangerous to traffic.
   1. Such barricades shall be as shown on the Contract Drawings, or if not shown, shall be constructed of 2 inch by 8 inch rough lumber, securely supported, braced and at least 3 feet high above the ground.
   2. Barricades shall be placed on all sides and throughout the entire length and breadth of all open ditches, trenches, excavations, or other work which must be barred to the general public.
   3. Barricades shall be properly painted to the satisfaction of the Local Regulatory Agency in order to retain a high degree of visibility to vehicular and pedestrian traffic.

2.03 FLASHERS

A. The Contractor shall furnish and securely fasten flashing units to signs, barricades, and other objects in such numbers and for such lengths of time as are required for the maintenance and protection of traffic.
   1. The flashers shall be in operation during all hours between sunset and sunrise, and during periods of low visibility.

2. Suitably lighted barricades shall be defined as barricades lit by flashers in accordance with this Section or other lighting methods approved by the Local Regulatory Agency in lieu thereof.
3. Flashers shall be placed along the entire length of the barricades at an interval no greater than 8 feet, center to center. Flashers shall be power operated, lens directed, enclosed light units which shall provide intermittent light from 70 to 120 flashers per minute, with the period of light emittance occurring not less than 25 percent of each on-off cycle, regardless of temperature.
4. The emitted light shall be yellow in color and the area of light on at least one face of the unit shall be not less than 12 square inches. The discernible light shall be bright enough to be conspicuously visible during the hours of darkness at a minimum distance of 800 feet from the unit under normal atmospheric conditions.
5. For units which beam light in one or more directions, the foregoing specifications shall apply 10 degrees or more to the side and 5 degrees or more above and below the photometric axis.

2.04 TEMPORARY BRIDGING

A. The Contractor shall include in his bid, bridging for trenches at the Deep River Water Treatment Plant and all street and driveway crossings in such manner as the Local Regulatory Agency may direct for the accommodation and safety of the traveling public, to provide facilities for access to private driveways for vehicular use, and to prevent blocking of intersecting traffic.
   1. The Contractor shall erect suitable barriers around the excavation to prevent accidents to the public and shall place and maintain, during the night, sufficient lights on or near the work.
   2. A space of 20 feet must be left so that free access may be had at all times to fire hydrants and proper precautions shall be taken so that the entrances to fire hydrants and fire stations shall not be blocked or obstructed.

2.05 DETOURS

A. Temporary detours shall be constructed on the site as proposed by the Contractor and approved by the Applicable State and/or Local Authorities required by the Contract Drawings or specified elsewhere herein.
   1. Detours shall not have grades in excess of 10% anywhere along their lanes unless otherwise shown on the Contract Drawings. Detours shall be smooth riding.
   2. Suitable barricades shall be installed continuously along both sides of a detour where:
      a. The adjacent side slope is steeper than 1 on 6 inches.
      b. The Contractor's operations or equipment may operate within 20 feet of the detour.
      c. Other unsafe conditions requiring them for the protection of traffic along the line of detour.

2.06 MISCELLANEOUS

A. The Contractor may be required to employ traffic persons and/or uniform police officers as required and take other such reasonable means or precautions as the Local Regulatory Agency may direct, or as may be needed to prevent damage or injury to persons,

vehicles, or other property, and to minimize the inconveniences and danger to the public by his construction operations.

PART 3 EXECUTION

3.01 CONTROL OF TRAFFIC

A. It shall be the sole responsibility of the Contractor to keep the Local Regulatory Agencies (including but not limited to the Police and Fire Departments) pre-warned at least 72 hours in advance of changes in traffic patterns due to reduction of pavement widths or closing of streets.

B. The Contractor shall supply, install, maintain, adjust, move, relocate, and store all signs, suitably lighted barricades, traffic cones, and traffic delineators, as necessary to carry out the traffic routing plan and maintain vehicular and pedestrian traffic.
   1. All of this work shall meet with the requirements of the Local Regulatory Agencies.
   2. The Contractor shall maintain, relocate and operate barricades and flashers throughout the life of this Contract.

C. Should the Contractor or his employees neglect to set out and maintain barricades or lights, as required in these Specifications, the Owner immediately, and without notice, may furnish, install and maintain barricades or lights.
   1. The cost thereof shall be borne by the Contractor and may be deducted from any amount due or to become due to the Contractor under this Contract.

3.02 ACCESS TO PROPERTY AND UTILITIES

A. The Contractor shall arrange his operations to provide access to properties along the street including temporary bridges to driveways, and provide access to fire hydrants, manholes, gate boxes, or other utilities.
   1. Whenever any trench obstructs traffic in or to any public street, private driveway, or property entrance, the Contractor shall take such steps as required to maintain necessary traffic and access including temporary bridging if required.
   2. The Contractor shall confine his occupancy of public or traveled ways to the smallest space compatible with the efficient and safe performance of the work contemplated by the Contract.
   3. If the Contractor's operations or occupancy of any public street or highway, or the uneven surfaces over any trenches being maintained by the Contractor, interfere with the removal or sanding of snow or ice by the public authorities or adjoining land owners, in an ordinary manner with regular highway equipment, the Contractor shall be required to perform such services for the public authorities or adjoining owners without charge.
   4. If the Contractor fails to do so, he shall reimburse the said authorities or adjoining owners or the Owner for any additional cost to them for doing such work occasioned by conditions arising from the Contractor's operations, occupancy, or trench surfaces, together with any damage to the equipment of said parties by those conditions or claims of any parties for damage or injury or less by reason of failure to remove snow or ice or to sand icy spots under these conditions.

5. The Contractor shall observe and obey all local and state laws, ordinances, regulations and permits in relation to the obstruction of streets and highways, keeping passageways open and protecting traffic where there may be danger from blasting or other construction activities.

B. The Contractor shall be held responsible for any damages that the Engineer, Owner, Governmental units, or their heirs or assigns may have to pay as a consequence of the Contractor's failure to protect the public from injury, and the same may be deducted from any payments that are due or may become due to the Contractor under this Contract.

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(s), 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 Engineer may reject as non-complying such material and products that do not bear identification satisfactory to the Engineer 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 pipe shall be covered to protect it from UV degradation.

1.06 REPAIRS AND REPLACEMENTS

A. In event of damage, promptly make replacements and repairs to the approval of the Engineer at no additional cost to the Owner.

B. Additional time required to secure replacements and to make repairs will not be considered by the Engineer to justify an extension in the Contract Time of Completion.

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 MATERIALS (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. All local water courses, catch basins and drains discharge into the drinking water reservoir. No material or debris shall be washed or flowed into or be placed in water-courses, ditches, gutters, drains, catchbasins, 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., shall be protected from spillage and 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. Tear down and remove all temporary buildings and structures built by him.
   2. Remove all temporary works, tools, and machinery or other construction equipment furnished by him.
   3. 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).

4. Remove all rubbish from any grounds which he has occupied.
5. 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 to an equivalent depth any loam that has been removed during the excavation.
   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

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SECTION 02015

TEST PITS

PART 1 GENERAL

1.01 DESCRIPTION

A. Work included: Provide test pits where noted/shown on the Drawings or at locations requested by the Engineer.
   1. In general the work under this Section shall consist of the excavation of test pits or other miscellaneous excavations not specified for payment elsewhere, by the Contractor where it may be necessary to locate or examine soils, groundwater, drains, pipes, rock, public utilities, subsurface structures, or any other possible obstacle or condition.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   1. Section 02140 Site Drainage and Dewatering
   2. Section 02222 Earthwork for Water Distribution Systems

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 COORDINATION WITH UTILITY OWNERS

A. The Contractor shall coordinate the excavation of all test pits with the respective utility owners having facilities in the vicinity of the location of test pits.
   1. All utilities shall be informed of the necessity of work under this Section and the Contractor shall give sufficient notice to the respective utility owners to afford reasonable time for coordination.
   2. If so desired by respective utility owners, all or part of the work under this Section may be accomplished by their crews and/or supervised by them.

3.02 EXCAVATION

A. Unless otherwise specified, the Contractor shall dig test pits as required by the Contract Documents, and the Contractor shall notify the Engineer of the results immediately and prior to the start of any underground installations within said test pit areas.
   1. The Owner/Utility Companies shall be notified well in advance of excavation so that they also may make the necessary measurements to locate all objects within test pits.

2. Excavation of test pits shall be accomplished by such means as are required to ensure that any underground utilities or structures that may be encountered are not damaged
3. It shall be the Contractor's responsibility for any damages incurred during the excavation operations. Any such damages shall be repaired by him (if permitted) to the satisfaction of the Responsible Agency at the Contractor's own expense. Where the repair and/or replacement must be done by the Responsible Agency, any and all costs thereof shall be borne by the Contractor.
4. The Contractor shall notify the Engineer and/or utility companies of any conflicts uncovered which may require design revisions, relocations and/or adjustment.
5. No work shall be started within these areas of conflict until so authorized by the Engineer.
6. Test pit excavation and backfill shall comply with the applicable provisions of Section 02200.
7. Hand excavation shall be performed where necessary to prevent damage to the existing utilities.

3.03 MEASUREMENT

A. The Contractor shall measure and record the size, configuration, horizontal and vertical location of all utilities, pipes or other obstacles uncovered in the various test pits dug under this Section.
   1. Size of test pits shall be as directed by the Engineer.

3.04 RESTORATION

A. Where an existing pavement has been removed for the test pit excavation, the surface shall be restored to grade. The top 12 inches shall be compacted gravel.
   1. In all other areas, the surface of test pit areas shall be restored to a condition equal to or better than original.

END OF SECTION

SECTION 02110

CLEARING AND GRUBBING

PART 1 GENERAL

1.01 DESCRIPTION

A. Work included: Clear and grub the project site to the limits required by the Contract Documents.
   1. In general the limit of work area shall be cleared and grubbed.

1.02. RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   1. Section 02140 Site Drainage and Dewatering
   2. Section 02210 Site Grading
   3. Section 02222 Earthwork for Water Distribution Systems

1.03 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
   1. Use equipment adequate in size, capacity, and numbers to accomplish the work in a timely manner.

1.04 COORDINATION

A. Coordinate clearing and grubbing with Owner.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

B. Flag limits of clearing.

3.02 PROTECTION

A. Only trees and brush within the limits of the project site shall be cleared. Trees flagged by the engineer along the limit of clearing shall remain.

   1. All areas not designated to be cleared shall be protected from damage.

2. Clearing operations shall be conducted such that cut trees are felled and existing trees designated to remain, are protected from damage.
3. Protect control points, benchmarks and existing work.
4. Maintain access to the site at all times.

3.03 CLEARING AND GRUBBING

A. Within the area to be cleared:
1. Fell trees and brush.
2. Chip all wood and waste.
3. Remove all stumps. Where trees/stumps occur directly within the boundaries of the access drive, the stumps will be ground to below grade to ensure no harm is done to the 30-inch transmission main.
4. Grub out all roots 1 inch in diameter and larger to a depth of at least 12 inches below the existing ground surface.

3.04 CONSERVATION OF TOPSOIL

A. After the area has been cleared of vegetation, strip the existing top-soil.
1. Stockpile in an area clear of new construction.
2. Maintain the stockpile in a manner which will not obstruct the natural flow of drainage.
a. Maintain stockpile free from debris and trash.
b. Keep top-soil damp to prevent dust.
c. Place hay bales around stockpile.

3.05 REMOVAL AND DISPOSAL

A. All debris, wood waste, trees, shrubs, brush, roots, stumps and etc. cleared and grubbed from the site shall be removed from the site and disposed of in accordance with all local and state Regulations.
1. Burning and/or burial of cleared and grubbed material on the site shall not be permitted.
2. Depressions remaining from the removal of stumps shall be filled with gravel borrow and/or loam, whichever is appropriate to the existing ground surface.

3.06 UTILITIES

A. Protect existing utilities indicated or made known.
1. Coordinate with utility companies and agencies as required.

END OF SECTION

SECTION 02140

SITE DRAINAGE AND DEWATERING

PART 1 GENERAL

1.01 DESCRIPTION

A. Provide drainage and dewatering as required by the Contract Documents.
   1. In general the Contractor shall furnish all materials, equipment, labor and incidentals necessary to provide dewatering and drainage control during construction.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications.
   1. Section 02222 Earthwork for Water Distribution Systems
   2. Section 02611 Ductile Iron Pipe and Fittings
   3. Section 02621 Fusible PVC Slip Lining
   4. Section 01120 Environmental Controls

1.03 SUBMITTALS

A. None required.

PART 2 PRODUCTS

2.01 EROSION AND SEDIMENTATION CONTROL

A. Devices for erosion and sedimentation control for effluent of dewatering operations shall be as specified in Section 01120, Environmental Controls.

PART 3 EXECUTION

3.01 INSTALLATION

A. To insure proper conditions at all times during construction the Contractor shall provide and maintain ample means and devices with which to remove and dispose of all water entering trenches and other excavations.
   1. Means of water removal and disposal shall include but not be limited to wells, surface pumps, and/or well point systems, to the extent required to prevent "boils" or softening of the foundation soils.
   2. The Contractor shall pitch the ground around the excavation to prevent water from running into excavated areas and to prevent damage to other structures or work on adjacent property.

3. The Contractor shall remove immediately any surface or seepage water or water from sewers, drains, creeks, or other sources, which may accumulate during the excavation and construction work.

B. Excavations shall be kept dry until the structures, pipes and appurtenances, to be built or installed therein, have been completed and backfilled to such extent that they shall not float or otherwise be damaged by water in the excavation.
   1. In no event shall water rise to cause unbalanced pressure on the pipe or other structures. The Contractor shall prevent flotation of the pipe or structures.
   2. Pipe, masonry and concrete shall not be placed in water. Water shall not submerge new masonry or concrete within four (4) hours after placement.

C. Sufficient stand-by pumping equipment shall be installed and mounted for immediate use in case of emergencies. The Contractor shall be responsible for the adequacy of their dewatering equipment and system in controlling the water and for protection to adjacent public and private property from damage. Any damage to permanent work or existing property resulting from the failure of the Contractor to provide an adequate dewatering system shall be repaired by the Contractor at their expense.
   1. Wells, well points and pump sumps shall be installed with adequate filters to prevent loss of fine grained soils.

3.02 DISPOSAL OF DRAINAGE WATER

A. All water pumped or drained from the work shall be disposed of in such a manner as to not cause injury to public health, damage to public or private property, interference with other work or adverse impacts to adjacent wetlands.
   1. Effluent from dewatering operations shall not be discharged directly to wetlands or waterways and shall not be discharged to storm drain systems prior to being filtered through a siltation basin.
   2. Discharge shall be such that no erosion occurs. Erosion protection shall be as specified in Section 01120, Environmental Controls.

END OF SECTION

SECTION 02160

SUPPORT OF EXCAVATION

PART 1 GENERAL

1.01 DESCRIPTION

A. Provide excavation support as required by the Contract Documents.
   1. In general this work shall consist of furnishing and placing timber and/or steel sheeting and shoring of the types and dimensions required for proper excavation support.

1.02 DEFINITIONS

A. Shoring shall mean the use of a steel trench box, steel sheeting, or timber sheeting braced as required.

B. Timber sheeting shall mean the use of tongue and groove wood sheeting or steel soldier beams with wood lagging braced as required.

C. Steel sheeting shall mean the use of steel sheet pilings with interlocking joints, braced by steel members as required.

1.03 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications.
   1. Section 02140 Site Drainage and Dewatering
   2. Section 02222 Earthwork for Water Distribution Systems
   3. Section 02611 Ductile Iron Pipe and Fittings
   4. Section 02621 Fusible PVC Slip Lining

B. As established in the General Conditions of the Contract, the Contractor is solely responsible for means and methods of construction and for the sequence and procedures to be used.

1.04 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
   1. The Contractor shall not perform excavations in unstable ground and shall employ a positive means of containing the unstable ground behind shoring, before excavation may proceed.

B. Employ a qualified Professional Engineer, licensed in the State of Connecticut, to provide such services at the location of the work, to design the shoring system and to inspect and report on the quality of its construction.

C. Comply with all pertinent requirements of governmental agencies having jurisdiction.

1.05 STANDARDS

A. The following Standards form a part of this Specification as referenced:
1. ASTM A328, Specification for Steel Sheet Piling
2. State of Connecticut DOT Standard Specifications.
3. Code of Federal Regulations (CFR), 29 CFR 1926, OSHA Standards - Excavation.

1.06 SUBMITTALS

A. Submit shoring design to Engineer for record purposes only.

PART 2 PRODUCTS

2.01 DESIGN

A. Design a shoring system which will safely and adequately prevent collapse of adjacent materials and which will permit construction of the Work to the arrangement shown on the Drawings.

B. All shoring systems shall be designed so as to support all vertical and lateral loads and other surcharge loads imposed on the system during construction, including earth pressures, utility loads and other surcharged loads in order to provide safe and expeditious construction of the permanent structures and prevent movement and/or damage to adjacent soil, buildings, structures and utilities.

C. Secure all needed approvals, including those of governmental agencies having jurisdiction and of adjacent property owners if required, at no additional cost to the Owner.

2.02 MATERIALS

A Material shall include, but not necessarily be limited to sheet piling, solder piles, lagging, bracing members such as wales, struts, shores and tieback anchors.

B. Lumber for timber sheeting and shoring:
1. Shall be sound Spruce, Douglas Fir, white or yellow Lodgepole, Ponderosa pine, or western hemlock plank, planed on one side and either tongue and grooved or splined.

C. Steel sheeting:
1. Shall be of approved section and quality, either new or secondhand, conforming to the requirements of ASTM A328.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which the work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

3.02 INSTALLATION

A. Construct and install the shoring system in strict accordance with the design engineer's requirements.
   1. When using soldier piles and lagging, where boulders or cobbles are encountered, soldier piles shall be installed in pre-augered holes over the full depth as required to prevent misalignment and damage.
   2. Vibration monitoring during installation and extraction of braced excavation shall be provided wherever the excavation is within 100 feet of existing structures.

3.03 SHEETING REMOVED

A. All sheeting not left in place shall be carefully removed in such manner as to not endanger the construction or other structures, utilities, or property.
   1. All voids left or caused by withdrawal shall be immediately refilled with approved material, and compacted with tools especially adapted to that purpose.
   2. Vibratory extraction methods shall be used only when it can be demonstrated that settling of pipe and structures will not occur. If such settling occurs, it shall be corrected at the Contractor's expense.

3.04 TRENCH BOX OR SHIELD

A. Use of a trench box or shield shall not relieve the Contractor of any liability for damages to persons or property growing out of a failure of the Contractor to leave in place sufficient sheeting and bracing to prevent the caving or moving of the ground or disturbance of the completed work.
   1. Care shall be taken, when a trench box or shield is moved ahead, so as not to pull apart the joints of pipe already placed or leave voids around the pipe wall.
   2. At no time shall the portable box or shield be allowed to be positioned below the spring line of the pipe.
   3. The width of the trench box or shield shall be such that a minimum 6 inch horizontal clearance is maintained between the pipe and shield at all times
   4. If the pipe has moved, it shall be reset to the proper line and grade.
   5. Any voids between the trench box or shield and the undisturbed trenchwall within the pipe zone (bottom of trench to top of cover material) shall be filled with crushed stone, bank run gravel, or approved material, immediately after the box or shield is positioned.

END OF SECTION

SECTION 02210

SITE GRADING

PART 1 GENERAL

1.01 DESCRIPTION

A. Work included: Excavate, backfill, compact, and grade work associated with the Fusible PVC™ slip lining of the transmission main to the elevations shown on the Drawings, as required by the Contract Documents.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
1. Section 01050 Field Engineering
2. Section 02110 Clearing and Grubbing
3. Section 02140 Site Drainage and Dewatering
4. Section 02222 Earthwork for Water Distribution Systems

1.03 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Use equipment adequate in size, capacity, and numbers to accomplish the work in a timely manner.

PART 2 PRODUCTS

2.01 SOIL

A. Fill Material:
1. The soil to be used for grading shall be obtained from the site cuts or a designated borrow area on the site.
2. Do not permit rocks having a dimension greater than 8 inches in the upper 12 inches of fill or embankment.

2.02 TOPSOIL

A. Where shown on the Drawings or otherwise required, provide topsoil consisting of friable, fertile soil of loamy character, containing an amount of organic matter normal to the region, capable of sustaining healthy plant life, and reasonably free from subsoils, roots, heavy or stiff clay, stones larger than 2 inches in greatest dimension, noxious weeds, sticks, brush, litter and other deleterious matter.

B. Obtain topsoil from sources within the project limits, or provide imported topsoil obtained from sources outside the project limits, or from both sources.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 FINISH ELEVATIONS AND LINES

A. Comply with pertinent provisions of Section 01050, Field Engineering.

3.03 PROCEDURES

A. Utilities:
1. Unless shown to be removed, protect active utility lines shown on the Drawings or otherwise made known to the Contractor prior to excavating. If damaged, repair or replace at no additional cost to the Owner.
2. If active utility lines are encountered, and are not shown on the Drawings or otherwise made known to the Contractor, promptly take necessary steps to assure that service is not interrupted.
3. If existing utilities are found to interfere with the permanent facilities being constructed under this Section, immediately notify the Engineer.
4. Do not proceed with permanent relocation of utilities until written instructions are received from the Engineer.

B. Protection of Persons and Property:
1. Barricade open holes and depressions occurring as part of this work, and post warning lights on property adjacent to or with public access.
2. Operate warning lights during hours from dusk to dawn each day and as otherwise required.
3. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, washout, and other hazards created by operations under this Section.

C. Dewatering:
1. Remove all water, including rain water, encountered during trench and substructure work to an approved location by pumps, drains and other approved methods as specified in Section 02140.
2. Keep excavations and site construction area free from water.

D. Use means necessary to prevent dust becoming a nuisance to the public, to neighbors, and to other work being performed on or near the site.

E. Maintain access to adjacent areas at all times.

3.04 EXCAVATING

A. Perform excavating within the limits of the Work to the lines, grades, and elevations shown on the Drawings and specified herein.

B. Satisfactory Excavated Materials:
1. Transport to, and place in, fill or embankment areas within the limits of the Work.

C. Excavate and backfill in a manner and sequence that will provide proper drainage at all times.

D. Ditches and Gutters:
1. Cut accurately to the cross sections, grades and elevations shown.
2. Maintain excavations free from detrimental quantities of leaves, sticks, trash and other debris until completion of the Work.
3. Dispose of excavated materials as shown on the Drawings or directed by the Engineer.

E. Unauthorized Excavation:
1. Unauthorized excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific instruction from the Engineer.

F. Ground Surface Preparation:
1. Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from the ground surface prior to placement of fills.
2. Plow, strip, or break up surfaces steeper than one vertical to four horizontal (1:4), so that fill material will bond with existing services.
3. When existing ground surface has a density less than that specified under "compacting" for the particular area, break up the ground surface, pulverize, moisture-condition to the optimum moisture content, and compact to required depth and percentage of maximum density.
4. At exposed soils in areas to be paved, scarify to a minimum depth of 6 inches, and recompact at a moisture content that will permit proper compaction as specified for fill.

3.05 GRADING

A. General:
1. Uniformly grade the areas within limits of grading under this Section, including adjacent transition areas.
2. Smooth the finished surfaces within specified tolerance.
3. Compact with uniform levels or slopes between points where elevations are shown on the Drawings, or between such points as existing grades.
4. Where a change of slope is indicated on the Drawings, construct a rolled transition section have a minimum radius of approximately 8 feet, unless adjacent construction will not permit such a transition or if such a transition defeats positive control of drainage.

B. Grading Outside Building Lines:
1. Grade areas adjacent to buildings to achieve drainage away from the structures, and to prevent ponding.
2. Finish the surfaces to be free from irregular surface changes, and:
   a. Shape the surface of areas scheduled to be under walks to line, grade and cross-section, with finished surface not more than 0.10 feet above or below the required subgrade elevation.
   b. Shape the surface of areas scheduled to be under pavement to line, grade, and cross-section, with finished surface not more than 0.05 feet above or below the required subgrade elevation.

3.06 COMPACTING

A. Control soil compaction during construction to provide the minimum percentage of density specified for each area.

B. Provide not less than the following maximum density of soil material compacted at optimum moisture content for the actual density of each layer of soil material in place, and as approved by the Engineer.
   1. Structures:
      a. Compact the top 8" of subgrade and each layer of fill material or backfill material to 95% of maximum density.
   2. Lawn and unpaved areas:
      a. Compact the top 8" of subgrade and each layer of fill material or backfill material to 85% of maximum density.
      b. Compact the upper 12" of filled areas, or natural soils exposed by excavating, at 85% of maximum density.
   3. Walks:
      a. Compact the top 8" of subgrade and each layer of fill material or backfill material to 95% of maximum density.
   4. Pavements:
      a. Compact the top 8" of subgrade and each layer of fill material or backfill material to 95% of maximum density for cohesive soil material.

C. Moisture Control:
   1. Where subgrade or layer of soil material must be moisture-conditioned before compacting, uniformly apply water to surface of subgrade or layer of soil material to prevent free water appearing on surface during or subsequent to compacting operations.
   2. Remove and replace, or scarify and air dry, soil material that is too wet to permit compacting to the specified density.
   3. Soil material that has been removed because it is too wet to permit compacting may be stockpiled or spread and allowed to dry. Assist drying by dicing, harrowing, or pulverizing until moisture content is reduced to a satisfactory value as determined by moisture-density relation tests approved by the Engineer.

3.07 FIELD QUALITY CONTROL

A. If, in the Engineer's opinion based on reports of the testing laboratory, subgrade or fills which have been placed are below specified density, provide additional compacting and testing under the provisions of Section 02200, of these Specifications.

3.08 MAINTENANCE

A. Protection of Newly Graded Areas:
   1. Protect newly graded areas from traffic and erosion, and keep free from trash and weeds.
   2. Repair and re-establish grades in settled, eroded and rutted areas to the specified tolerances.

B. Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify the surface, reshape and compact to the required density prior to further construction.

END OF SECTION

SECTION 02222

EARTHWORK FOR WATER DISTRIBUTION SYSTEMS

PART 1 GENERAL

1.01 DESCRIPTION

A. Work Included: Provide all earthwork as required by the Contract Documents.

B. In general the work of this Section shall include but not necessarily be limited to, excavation, trenching, filling, backfilling, compaction and grading for water distribution systems.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Section 02140 Site Drainage and Dewatering
2. Section 02160 Support of Excavation
3. Section 02227 Rock removal
4. Section 02611 Ductile Iron Pipe and Fittings
5. Section 02621 Fusible PVC Slip Lining
6. Section 02640 Buried Valves and Appurtenances
7. Section 02930 Loam and Seed
8. Section 01013 Facility Interference with Proposed Work
9. Section 01300 Submittals
10. Section 01570 Traffic Regulation

1.03 SITE INVESTIGATION

A. The grades and other site information have been compiled by field surveys.

1. The Contractor acknowledges that he has satisfied himself as to the nature and location of the work.
2. Failure by the Contractor to acquaint himself with all available information concerning the site will not relieve him from the responsibility, for estimating properly, the difficulty or cost of successfully performing the work.

1.04 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1. Use equipment adequate in size, capacity, and numbers to accomplish the work in a timely manner.

1.05 PROTECTION OF PROPERTY AND UTILITIES

A. Extreme care shall be exercised to prevent damage to existing trees, shrubs, utilities, walls, sidewalks , fences and private property.

1. Any damage to these items as a result of work performed by the Contractor shall be repaired by the Contractor at his own expense.

2. Existing property boundary markers, control points and datum elevation markers or bench marks shall be preserved.
   a. All such items which are displaced or destroyed by the Contractor shall be replaced by a registered Engineer or Land Surveyor, as required, with all expenses paid by the Contractor.

B. Utility agencies shall be contacted and advised of proposed work prior to the start of work by the Contractor.
1. Notify Dig Safe.
2. Obtain information from the proper sources and authorities concerning locations of all utilities within the scope of this work.
3. If and when encountered, utilities shall be supported and protected, and the Engineer shall be notified.
   a. Ample time shall be allowed for entrance and taking such measures as may be required for the continuance of such services by the utility owner.
4. Rules and regulations governing the respective utilities shall be observed. The Contractor's responsibilities with respect to utility locations, protection, interferences and relocations shall be as further specified in Section 01013.

1.06 REFERENCE STANDARDS

A. The CONTRACTOR shall comply with the provisions of the following agencies as they apply to this project and as referenced:
1. Associated General CONTRACTORS of America, Inc. (AGCA) "Manual of Accident Prevention in Construction".
2. Occupational Safety and Health Administration (OSHA), United States Department of Labor Requirements.
3. American National Standards Institute (ANSI) "Safety Requirements for Construction and Demolition".
4. State of Connecticut Department of Transportation, "Standard Specifications for Roads, Bridges and Incidental Construction".
5. American Water Works Association Standards (AWWA)

B. The following American Society for Testing and Materials (ASTM) standards form a part of this specification as referenced:
1. ASTM C33 Concrete Aggregates
2. ASTM D422 Particle-Size Analysis of Soils
3. ASTM D6938 - 10 Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
4. ASTM D1557 Tests for Moisture-Unit Weight Relationship of Soils, and Soil-Aggregate Mixtures Using 10-lb. Rammer and 18-inch Drop
5. ASTM D2217 Wet Preparation of Soil Samples for Particle-Size Analysis and Determination of Soil Constants

C. The following State of Connecticut Department of Transportation, Standard Specifications for Roads, Bridges and Incidental Construction form a part of this specification as referenced:
1. Section M.02 Granular Fill, Subbase, Granular Base and Surfaces, Stone Base, Pervious Structure Backfill, Free-Draining Material, Crusher-Run Stone

1.07 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

B. Testing and Samples:
1. Test reports on backfill materials, moisture density tests, in place density tests (ASTM D 1557 and D 1556).
2. Representative backfill and bedding samples and gradation tests (ASTM D 422).
3. Tests shall be in conformance with paragraph 3.16; compaction requirements and testing as specified herein.

1.08 TRAFFIC

A. While excavating and backfilling is in progress, traffic shall be maintained in a manner as specified in Section 01570 Traffic Regulation.

PART 2 Products

2.01 GENERAL

A. Except as specified for pipe bedding, pipe cover, roadway subbase, and refill for rock and unsuitable materials, backfill materials may be as follows:
1. Suitable materials for trench backfill shall be the material excavated during the course of construction, but excluding debris, pieces of pavement, frozen materials, organic matter, silt, top soil, ledge excavation and rocks over six inches in largest dimension.
2. Gradation of material shall be generally as specified for gravel borrow except that maximum size of stone shall be 6 inches.
3. The suitability of existing material for use as backfill will be determined by the Engineer.
4. All unsuitable materials shall be disposed of as per paragraph 3.18 A.

2.02 PIPE BEDDING AND COVER MATERIAL

A. Ductile Iron Pipe:
1. Gravel borrow shall be a granular material, well graded from fine to coarse, with gradation as specified in paragraph 2.05 of this specification section, obtained from approved natural deposits and unprocessed except for the removal of unacceptable material and stones larger than the maximum size permitted.
2. It shall not contain vegetation, masses of roots, or individual roots.
3. It shall be free from loam and other organic matter, clay, and other fine or harmful substances.
4. Gravel borrow shall conform to requirements as specified in paragraph 2.05 herein.

2.03 CONCRETE SAND

A. Concrete sand shall meet ASTM C-33 for fine aggregate.

2.04 STRUCTURAL FILL

A. Structural fill shall generally range from gavelly sand to gravel, free of organic material, trash, loam, ice, snow, frozen soil and other objectionable material, and shall conform to the following:

Sieve Size	Percent Passing by Weight
6 inch	100
No. 4	30-80
No. 40	5-35
No. 200	0-8

2.05 GRAVEL BORROW

A. Gravel borrow shall be a granular material, well graded from fine to coarse, with a maximum size of 3 inches, obtained from approved natural deposits and unprocessed except for the removal of unacceptable material and stones larger than the maximum size permitted.

1. It shall not contain vegetation, masses of roots, or individual roots.
2. It shall be substantially free from loam and other organic matter, clay, and other fine or harmful substances.
3. Gravel borrow shall have the following gradation:

Sieve Size	Percent Passing by Weight
3 inch	95-100
1/2 inch	50-85
No. 4	40-75
No. 50	8-28
No. 200	0-8

2.06 PROCESSED GRAVEL FOR ROADWAY BASE (Gravel Base)

A. Shall meet the requirements of the of Connecticut Department of Transportation, Standard Specifications for Roads, Bridges and Incidental Construction Section M.02

Sieve Size	Percent Passing by Weight
3 1/2 inch	100
1 1/2 inch	55-100
1/4 inch	25-60
No. 10	15-45
No. 40	5-25
No. 100	0-10
No. 200	0-5

2.07 CRUSHED STONE (Access Road top layer, Hydrant Drains)

A. Crushed Stone: Shall consist of durable crushed stone or durable crushed gravel stone, washed, free from ice and snow, stone dust, sand, clay, loam, or other deleterious material. The crushed stone shall be uniformly blended and conform to the following:

Sieve Size	Percent Passing by Weight
3 1/2 inch	100
1 1/2 inch	55-100
1/4 inch	25-60
No. 10	15-45
No. 40	5-25
No. 100	0-10
No. 200	0-5

2.08 RIP RAP

A. Rip rap shall conform to Section 7.03 standards from the State of Connecticut Department of Transportation "The Standard Specifications for Roads, Bridges and Incidental Construction Form 816" merged with Supplemental Specifications July 2012:

1. Riprap: Materials for this item shall consist of sound, tough, durable and angular rock, free from decomposed stones or other defects impairing its durability. The size of a stone as hereinafter specified shall be its least dimension. Broken concrete or rounded stones are not acceptable. The type of material to be used shall be as noted on the plans, in the special provisions or as may be ordered by the Engineer.

2. Standard Riprap: This material shall conform to the following requirements:
   (a) Not more than 15% of the riprap shall be scattered spalls and stones less than 6 inches size.
   (b) No stone shall be larger than 30 inches in size, and at least 75% of the weight shall be stones at least 15 inches in size.

3. Intermediate Riprap: This material shall conform to the following gradation:

Stone Size	**% of the Weight**
18 inches	0
10 inches to 18 inches	30-50
6 inches to 10 inches	30-50
4 inches to 6 inches	20-30
2 inches to 4 inches	10-20
Less than 2 inches	0-10

4. Modified Riprap: This material shall conform to the following gradation:

Stone Size	**% of the Weight**
10 inches	0
6 inches to 10 inches	20-50
4 inches to 6 inches	30-60
2 inches to 4 inches	30-40
1 inch to 2 inches	10-20
Less than 2 inches	0-10

5. Special Riprap shall conform to the gradation of Article M.01.01 for No. 3 stone.

B. Slope Paving: The stone for this work shall consist of sound, tough, durable rock, free from decomposed stone or other defects impairing its durability. Each piece shall have an area on its exposed surface of not less than 2 square feet and a thickness not less than 9, except that stone for the two bottom rows shall be of such size that they can be embedded at least 2 feet into the ground; and they shall have a thickness of not less than 12 inches. Concrete slabs shall conform to the dimensions given above for stone, except that the maximum surface dimensions shall not exceed 10 linear feet in any direction. The concrete shall conform as regards materials and proportions, to the requirements of Article M.03.01 for Slope Paving Concrete

2.09 GEOTEXTILE

A. Geotextile shall conform to Section 7.55 standards from the State of Connecticut Department of Transportation "The Standard Specifications for Roads, Bridges and Incidental Construction Form 816" merged with Supplemental Specifications July 2012:

1. Materials: Geotextile shall conform to the requirements of M.08.01-26. Materials incidental to and necessary for the installation of the geotextile, such as, but not limited to sewing thread, staples, pins, etc., shall conform to the requirements of the manufacturer of the geotextile.

2. Construction Method: The geotextile shall be installed at the locations and to the dimensions shown on the plans or as directed by the Engineer. Geotextile shall be installed as recommended by the manufacturer for the specific use or purpose intended, or as otherwise approved by the Engineer.

3. The geotextile shall be non-rotting, acid and alkali resistant and have sufficient strength and permeability for the purpose intended, including handling and backfilling operations. Fibers shall be low water absorbent. The fiber network must be dimensionally stable and resistant to delamination. The geotextile shall be free of any chemical treatment or coating that will reduce its permeability. The geotextile shall also be free of any flaws or defects which will alter its physical properties. Torn or punctured geotextiles shall not be used. For each specific use, only geotextiles which are already on the Connecticut Department of Transportation's Approved Products List for the geotextile type will be used. The Engineer reserves the right to reject any geotextile which he deems unsatisfactory for a specific use. The brand name shall be labeled on the geotextile or the geotextile container. Geotextiles which are susceptible to damage from sunlight or heat shall be so identified by suitable warning information on the packaging material. Geotextiles susceptible to sunlight damage shall not be used in any installations where exposure to light will exceed 30 days, unless specifically authorized in writing by the Engineer.

A nonwoven, geotextile liner shall be installed first and remain underneath the Standard Rip Rap, as shown on the Contract Plans. The geotextile liner shall meet the following conditions:

Weight	Water Flow Rate	Tensile Strength
4.5 oz/sy	120 gal/min/sf	120 lbs

PART 3 EXECUTION

3.01 TRENCH EXCAVATION

A. The Contractor shall make all excavation in earth and in rock, necessary or incidental to the proposed construction under the terms of this Contract and as herein specified or indicated on the Drawings.
   1. All trench excavation shall be accomplished by open cut method.
   2. All excavation shall be made in such manner and to such widths as will give ample room for properly installing, constructing and inspecting pipe lines and structures they are to contain.
   3. The width of trenches shall be sufficient to allow thorough compacting of the refill adjacent to the lower quarters of the pipe. At pipe joints such additional width and depth shall be excavated as is necessary to give ample room for properly making and inspecting the pipe joint.
   4. Bracing and support of all trench excavation shall meet all requirements of Local and State ordinances and OSHA regulations.
      a. Sheeting and bracing, or the use of a steel support box shall be used where required to maintain a safe working condition and provide protection from collapse of the trench walls.
   5. During excavations, material determined by the Engineer to be suitable for backfilling, shall be placed a sufficient distance from the banks of the trench to avoid slides or cave-ins. Unsuitable material shall be disposed of as specified in paragraph 3.18 and replaced with surplus suitable material and gravel borrow to the extent necessary.
   6. Should conditions make it impractical or unsafe to place material along the trench, it shall be hauled and stored at a location provided by the Engineer and acceptable to the Owner. When required, it shall be re-handled and used in backfilling the trench. No additional compensation will be made for re-handling this material.
   7. Pipe trenches shall be backfilled as soon as practical after the pipes have been laid, jointed and inspected by the Engineer. The extent of excavation open at any one time shall be no more than 50 linear feet of trench during working hours and no more than 20 linear feet during non-working hours.

3.02 EXCAVATION CLASSIFICATION

A. Earth excavation shall comprise all materials not classified as rock excavation and shall include clay, silt, sand, muck, gravel, hardpan, loose shale, pavement, pavement bases, loose stone in masses, and boulders measuring less than one cubic yard in volume.

B. Rock: See Section 02227 Rock Removal.

3.03 TRENCH EXCAVATION IN PAVED ROADWAYS

A. In excavating trenches in roadways having an improved pavement, the Contractor shall cut the pavement twice; once prior to excavation and again prior to permanent resurfacing.
   1. The first cut may be made using a water cooled abrasive saw, pneumatic chisel or a wheel cutter attached to a front end loader.
   2. The second and final cut shall be made with a water cooled abrasive saw.

3. In all cases a trial section shall be cut to indicate the performance of the equipment to be used.
4. Pavement removed shall not be mixed with other excavated materials, but shall be disposed of away from the site of the work before the remainder of the excavation is made.
5. Existing pavement and base course to remain shall be protected by the Contractor. All existing pavements and base courses which are to remain and have been damaged, shall be restored or replaced by Contractor to match existing pavements, base courses and grades, at no additional expense to the Owner.

3.04 UNSUITABLE MATERIAL

A. All pipes and structures are to be laid on a stable foundation. If material at grade is determined to be unsuitable by the Engineer, the Contractor shall excavate a further depth and/or width, and refill with an approved material. Refill material shall be structural fill, gravel borrow or crushed stone as determined by the Engineer.
   1. Where fine sand and silt are encountered at the bottom of the trench, it shall be the option of the Engineer to require a 6-inch compacted depth of concrete sand meeting ASTM C-33 for fine aggregate to be installed beneath the pipe bedding to the full width of trench.
   2. Payment width limits shall be the same as specified for trench excavation, unless an additional width of trench is ordered by the Engineer.
   3. Any excavation in excess of the amount ordered by the Engineer shall be backfilled and compacted with an approved granular material, at the Contractors expense.

3.05 ROCK REMOVAL

A. See Specification Section 02227.

3.06 DEWATERING

A. See Specification Section 02140.

3.07 BACKFILLING AND COMPACTING

A. Backfill shall be placed in uniform layers. Each layer shall be thoroughly compacted by tamping or vibrating with mechanical compacting equipment.
   1. Care shall be taken to compact the backfill materials throughout the full width of the excavation and beneath all pipes and structures.
   2. The backfilling of trenches shall proceed as soon as the laying of the pipe (s) or installation of the structures will allow.
   3. Pipe bedding shall be required below and up to the springline of all pipe.
      a. Pipe bedding shall be placed to the full width of the trench and to a depth of 6 inches below the bottom of the pipe barrel as indicated on the Drawings.
   4. Pipe bedding shall be placed 12 inches beyond the widths of a utility structure foundation (base) and to a depth of 6 inches below the foundation (base) or as indicated on the Drawings.
   5. After a pipe has been placed and bedded, the trench shall be filled to the centerline of the pipe with pipe bedding and compacted.
      a. Material under and around the pipe shall be carefully and thoroughly compacted and tamped with approved compacting equipment.

6. From the centerline of the pipe to a point 12 inches above the top of the pipe, the fill shall be pipe bedding.

B. Placement of Backfill Above the Pipe Bedding
1. Above the pipe bedding, backfill shall be suitable material from the excavation or, if ordered by the Engineer, gravel borrow.
a. This backfill shall be placed in layers 12 inches deep in loose measure, and each layer shall be thoroughly compacted.
b. This backfill shall be placed up to the bottom of materials specified to be placed for surfacing requirements.

C. Roadway Trench
1. The following additions shall apply specifically to trenches within roadways:
a. The top twelve (12) inches of trench refill, roadway sub-base, shall be comprised of processed gravel furnished, placed, graded and compacted by the Contractor. This material shall be placed during the backfilling operation.
b. The Contractor shall fine grade the surface, apply dust control treatment and maintain the surface in a condition which will allow safe vehicular traffic until resurfacing is placed.
2. The length of unsurfaced trench shall not exceed 500 linear feet, and shall be maintained to the Owner's satisfaction, in a condition to allow safe vehicular traffic.
a. If the trench is not maintained in a satisfactory condition, the allowable length of unsurfaced trench shall be reduced accordingly.

3.08 TRENCH SIZE

A. Trenches shall be excavated to the necessary width and depth for proper laying of pipe and placement of concrete and other materials and shall have vertical sides to 12 inches above the pipe.
1. Widths of trenches shall be as shown on the drawings.
2. The depth of trench shall be a minimum 6 inches below the pipe barrel, or as shown on the Drawings

3.09 STRIPPING TOPSOIL

A. Topsoil shall be carefully stripped and separately stored to be used again for topsoiling and seeding on off-pavement areas within which excavations are to be made.

3.10 EXCAVATION NEAR EXISTING STRUCTURES AND UTILITIES

A. It is called to the attention of the Contractor that there are utilities and other underground pipes along the course of the work. Information shown on the Drawings as to the location of said utilities and pipes is from the best available sources, but no guarantee is implied, nor is it to be assumed that such information is accurate or complete. Utility lines shall be crossed in the course of the work.

B. The Contractor shall exercise special care during his operations to avoid injury to all such underground utilities and structures.
1. When necessary, the Contractor shall cooperate with, and consult with representatives of the Owner and the utility companies in order to avoid damage to the utilities.

2. The Contractor shall arrange for or furnish and erect suitable supports and shoring or other means of protection where required to protect the utilities, all at no additional cost to the Owner.
3. Hand methods of excavating shall be used around buried utilities and is included in the work to be done under this Contract, at no additional cost to the Owner.
4. Interference between the proposed work and existing utilities, relocation of existing utilities, repair or damage to existing utilities, and protection and support of existing utilities during construction of the proposed work will be as specified in Section 01013.

3.11 EXCAVATION WITHIN BORDERING VEGETATED WETLAND (BVW)

A. All excavation within the BVW shall comply with the following:
1. Erosion control barrier shall be in place.
2. Heavy duty tarpaulins shall be laid alongside the work area, within the upland adjacent to the proposed wetland work area, for the temporary storage of soil.
   a. The tarpaulins shall be placed within the upland, near the point where the work enters the wetland to allow the temporary storage of soils.
3. During soil excavation within the wetland, organically enriched topsoil shall be excavated first and segregated on the tarpaulin noted above.
4. To the extent possible, plant material will be allowed to remain in the topsoil. This includes herbaceous vegetation (e.g. ferns) shrubs and saplings. Other soils shall be placed on the tarp and kept apart from the topsoil.
5. Subsoils excavated from below the topsoil layer from the next pipe section shall be utilized as backfill over the pipe and bedding for the previously laid pipe.
   a. Use of native subsoils for backfill will help to restore original patterns of groundwater movement.
6. Topsoil from the next pipe section, with as much plant material as possible being allowed to remain, shall be carefully cut out in sod-like sections, and placed over the backfilled prior pipe sections.
7. The above steps are to be repeated as necessary for the entire length of the wetland crossing.
8. All restored areas shall be immediately seeded with an herbaceous seed mix.

3.12 PROTECTION OF PROPERTY

A. The Contractor shall, at his own expense, preserve and protect from injury all property either public or private along and adjacent to the line of work, and be responsible for and repair any and all damage and injury thereto, arising out of or in consequence of any act or omission of the Contractor.
1. All existing pipes, culverts, poles, wires, fences, mailboxes, stone walls, curbs, bounds, etc., shall be temporarily removed, supported in place or otherwise protected from injury, and shall be restored to at least as good condition as that in which they were found immediately prior to the start of work.
2. Lawns, shrubs, bushes, planting beds and decorative trees disturbed or damaged shall be restored to a condition equal to that found prior to the start of construction, either by temporary transplant or replacement in kind, except as otherwise indicated on the Drawings.

3.13 SAFETY AND ACCOMMODATION

A. The Contractor shall provide, at his own expense, suitable bridges over trenches where required for the accommodation and safety of the traveling public, and provide facilities for access to private driveways for vehicular use.

1. He shall erect suitable barriers around the excavation to prevent accidents to the public and shall place and maintain during the night, sufficient lights on or near the work.
2. A space of twenty (20) feet shall be left so that free access may be had at all times to fire hydrants and proper precautions shall be taken so that the entrances to fire hydrants and fire stations shall not be blocked or obstructed.

3.14 DETOURS

A. It is the intent of this Contract to keep the roadways open to two way traffic at all times. In order to obtain permission for the closing of the roadway, the Contractor shall satisfy the Owner, Police Chief and Fire Chief, that his operations will allow emergency access at all times.
   1. See Section 01570, Traffic Regulations.

3.15 COMPACTION REQUIREMENTS AND TESTING

A. All backfill materials shall be thoroughly compacted by rolling, tamping or vibrating with approved mechanical or pneumatic compacting equipment so that pipe, structures, paving and other construction will not settle at the time of construction or in the future. The responsibility for thorough compaction is that of the Contractor irrespective of methods of backfill and depth of backfill layers placed.

B. All percentages of compaction specified herein shall be of the maximum dry density at the optimum moisture content as established by Method D of AASHTO Standard T180 (ASTM D1557) (Modified Proctor) and verified by AASHTO Standard T147 (ASTM D 1556). When the term "thoroughly compacted" is used in these specifications, it shall mean compaction to at least 95% of the maximum density of the soils at optimum moisture content.

C. The following numbers and types of soil tests shall be made where directed by the Engineer. These tests shall be made by qualified personnel of an independent testing laboratory, acceptable to the Engineer and paid by the Contractor. The testing laboratory shall deliver directly to the Engineer three copies of all test results.

   1. Particle-Size analysis of Soils and Backfill Materials in accordance with ASTM D422. A total of 5 satisfactory tests.
   2. Moisture-Density Relationship of soil in accordance with ASTM D1557, Method D. A total of 5 satisfactory tests.
   3. In-Place Density Tests of materials in accordance with ASTM D1556. One in-place density test shall be performed every 300 linear feet, or as directed by the Engineer. Compaction tests will be taken at random on compaction layers below and at finished surfaces.
   4. Failed tests shall be repeated at the Contractor's expense.

D. The Owner reserves the right to have additional compaction tests performed by an independent laboratory with testing costs borne by the Owner, except that failed tests shall be repeated at the Contractor's expense.

E. If any of the field density test results fail to met the density as specified herein for the earthwork involved, then the Contractor shall remove all of the earthwork in that portion of the work involved as determined by the Engineer, and shall replace it in accordance with these Specifications to the required density. After the work is replaced, additional field density tests will be made by an independent testing laboratory retained by the

Owner, and the Contractor shall reimburse the Owner for all costs for such additional testing.

1. Compaction shall be to the following densities:

Fill and Backfill Location	Modified Proctor Density (Percent)
Under structures and pipes	95
Beside structure foundation walls	95
Top two feet under pavements	95
Under pavements below top two feet	95
Trenches through unpaved areas	90
In embankment	90

F. Puddling and jetting of the backfill shall not be permitted except in special cases approved by the Engineer.

3.16 TRENCH EXCAVATION IN FILL

A. Where the existing ground surface does not permit at least 4 feet of cover over the finished pipe, and where indicated on the Drawings, the Contractor shall place and compact suitable fill material to the depth necessary to provide the 4 foot minimum cover, including loam to a minimum top width of 6 feet, or as otherwise shown on the Drawings
   1. Minimum side slopes shall be two horizontal to one vertical.
   2. Fill material shall be from surplus suitable material or gravel borrow, and be clean, dry, and capable of satisfactory compaction, all as approved by the Engineer, and shall be placed in layers not exceeding 8 inches thick and compacted.
   3. The trench shall be excavated in the compacted fill and the remainder of the work shall be in accordance with other portions of these Specifications.

3.17 DISPOSAL OF SURPLUS AND UNSUITABLE EXCAVATED MATERIAL

A. All surplus excavated material and any material unsuitable for use shall be disposed of in disposal areas provided by the Contractor.
   1. It is the Contractor's responsibility to dispose of unsuitable excavated material in an approved manner.
   2. The Contractor shall not dispose of surplus materials on wetlands or other areas prohibited by the Corps of Engineers or the Commonwealth of Massachusetts Department of Environmental Protection, or any other local authority having jurisdiction.

3.18 DUST CONTROL

A. The Contractor shall perform dust control operations as specified in Section 01120.

3.19 CLEAN-UP

A. The Contractor shall remove all surplus materials (earth, pipe, fittings, storage and office trailers, barricades, etc.), from the construction site.
   1. All paved roadways affected by the construction shall have their full width swept clean (paved edge to paved edge) using methods which control the dust.

2. Before the Contractor may proceed to another roadway, clean up of the previous roadway must be complete.

END OF SECTION

SECTION 02227

ROCK REMOVAL

PART 1 GENERAL

1.01 DESCRIPTION

A. Work included: Remove all rock encountered while excavating for structures, roadways, or utility trenches as required by the Contract Documents.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications.
   1. Section 02140 Site Drainage and Dewatering
   2. Section 02222 Earthwork for Water Distribution Systems

1.03 DEFINITIONS

A. Rock excavation: Rock which requires explosives, wedging or impact hammer for its removal. Concrete shall be classified as rock.

B. Boulders, slabs or other single pieces of material encountered, which are less than one (1) cubic yard shall not be considered rock.

1.04 STANDARDS

A. All handling of explosives and blasting shall be in compliance with the pertinent sections of the supplement to the State of Connecticut General Statutes Title 29, Chapter 541, Section 29-349.

1.05 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.

B. Comply with all pertinent requirements of governmental agencies having jurisdiction.

1.06 SUBMITTALS

A. Submit plans for proposed pre-blast survey (Record purposes only).

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 NOTIFICATION

A. When rock is encountered, it shall be uncovered and the Engineer notified.
   1. The Contractor shall provide the Engineer with cross sections of the rock surface or a profile of the rock where trenches are concerned.
   2. The Engineer shall be present when the cross sections or profiles are taken.
   3. The average end area method shall be used in computing the volumes wherever practicable.

3.02 LIMITS OF EXCAVATION IN ROCK

A. Excavation in rock shall be performed, so that no projection shall come within vertical planes twelve (12) inches outside of the structure being built or twelve (12) inches below the bottom of the structure base slab and footings.

B. In trenches, the rock shall be removed to the limits shown on the typical trench section.
   1. Where excavation is carried beyond the above determined limits, the additional space shall be refilled at the Contractor's expense with concrete or other specified materials.

3.03 BLASTING

A. Pre-Blast Survey: Prior to any blasting, the Contractor shall submit a pre-blast survey.
   1. The survey shall satisfy the insurance requirements of the Contractor and be acceptable to the Contractor's insurance carrier, as well as provide data to assess damages to personal property and real estate due to blasting operations.
   2. The survey shall be complete as warranted by the nature of the work.

B. Take all precautions necessary to warn and/or protect any individuals exposed to his operations. Such precautions shall include but not be restricted to the following:
   1. Present written certificate of insurance showing evidence that his insurance includes coverage for blasting operations, before doing any blasting work.
   2. Make necessary arrangements as may be required by the applicable Federal, State, County or Municipal codes, rules, regulations and laws, and shall be responsible for compliance.
   3. Obtain a permit from the local authorities to perform blasting operations.
      a. The Engineer shall be notified in writing that such permit has been obtained.
   4. Schedules for blasting shall be thoroughly coordinated with the proper authorities – Federal, State and Local.
      a. No blasting shall be done unless the Contractor has notified all concerned parties that he may blast.
      b. The Contractor shall also notify any commercial installation in the immediate area whose operations or instrumentation may be affected by blasting, at least twenty four (24) hours prior to blasting operations.
   5. Seismographic recordings shall be made of all blasting operations on the project by a qualified testing agency hired and coordinated by the Contractor.
      a. A copy of these recordings shall be made available to the Engineer.

6. Blasting shall be performed by persons who are licensed to use explosives.
7. The Contractor shall keep an accurate record of each blast and submit a copy to the Engineer. The record shall show the date, time, exact stationing of the blast, the depth and number of drill holes, and kind and quantity of explosive used, and any other data required for a complete record.
8. The Contractor shall be fully responsible for damages caused by his blasting operations.
9. If rock below the limits of excavation is shattered by blasting, caused by holes drilled to deep, too heavy a charge of explosives or any other circumstance due to blasting, the shattered rock shall be removed and the void refilled with gravel borrow at the expense of the Contractor.
    a. Gravel borrow shall be as specified in Section 02200 Earthwork.

3.04 DISPOSAL AND REPLACING OF ROCK

A. Remove and dispose of all pieces of rock which are not suitable for use in other parts of the Work.
    1. Rock disposed of by hauling away to spoil areas shall be replaced by surplus excavation obtained elsewhere on the site, insofar as it is available.

B. Fragments of rock approximately twenty five (25) pounds or less may be used in the fill areas of the site (roadway areas excluded).
    1. The Contractor shall place these pieces of rock in thin layers alternating them with layers of earth to be sure that all voids between the rock are completely filled with earth.
    2. If in the opinion of the Engineer the quantity is excessive, he may order the removal and disposal of the rock.

C. Be responsible for obtaining spoil locations and the removal of all excess rock from the site.

END OF SECTION

SECTION 02513

BITUMINOUS CONCRETE PAVEMENT

PART 1 GENERAL

1.01 DESCRIPTION

A. Provide bituminous concrete pavement and appurtenant items as required by the Contract Documents.
   1. In general the Contractor shall provide all labor, equipment, and materials, and perform all operations in connection with the installation of bituminous concrete, pavement, berms, pavement markings, calcium chloride, final grade adjustments of valve boxes, manhole and catch basin castings, and preparation of the trench.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications.
   1. Section 02222 Earthwork for Water Distribution Systems

1.03 STANDARDS

A. All paving shall comply with the State of Connecticut Department of Transportation Standard Specifications for Roads, Bridges and Incedental Construction Form 816 (most recent version), hereinafter called Standard Specifications, as referenced.

1.04 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

B. Product data: Within 30 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
   1. Materials list of items proposed to be provided under this Section.
   2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.

PART 2 PRODUCTS

2.01 GRAVEL SUBBASE

A. Shall be as specified in Section 02222, Earthwork for Water Distrbution Systems.

2.02 BITUMINOUS CONCRETE PAVEMENT

A. Binder and Top Course:
   1. Shall be Class I bituminous concrete conforming to Sections 420, 460 and M3 of the Standard Specifications.

2.03 ASPHALT TACK COAT

A. Shall consist of either emulsified asphalt, grade RS-1 conforming to Section M3.03.1, or cutback asphalt, grade RC-70 or RC-250 conforming to Section M3.02.0 of the Standard Specifications.

2.04 PAVEMENT MARKING PAINT

A. Shall be High Heat Rapid Drying Traffic Marking Material conforming to Section M7.01.09, (Yellow High Heat Rapid Drying Traffic Marking Material) of the Standard Specifications.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 FINAL PREPARATION OF SUBGRADES

A. Gravel Subbase:
   1. Minimum compacted depth of 12 inches as measured from the bottom of the pavement.
   2. Spread and compacted in layers not exceeding 6 inches in depth, compacted measurement.
   3. All layers shall be compacted to not less than 95 percent of the maximum dry density of the material as determined by the standard AASHO Test Designation T99 Compaction Test Method C at optimum moisture content.

3.03 GENERAL

A. All bituminous concrete thickness referred to in this Section shall be compacted thickness.

B. No bituminous concrete shall be placed when the air temperature is below forty (40) degrees Fahrenheit, or when the material on which the mix is to be placed contains frost.

C. Maintain bituminous concrete under this Contract during the guarantee period of one (1) year.
   1. Promptly refill and re-pave all areas which have settled or are otherwise unsatisfactory for traffic.

3.04 PLACEMENT OF BITUMINOUS CONCRETE PAVING

A. Base Course - Roadways:
   1. Pavement compacted thickness shall be two (2) inches, placed in a single lift.
   2. Placed with a self propelled spreader.
   3. Compaction shall be accomplished with a self propelled roller, with a weight of approximately 285 pounds per inch of roller width.

4. Base course pavement shall be maintained by the Contractor until permanent top course pavement is placed.

B. Trench Top Course Resurfacing - Roadways:
1. Base course pavement shall remain in place.
2. The base course shall be swept clean of all foreign matter and loose material.
3. Depressions in the base course resurfacing shall have a leveling course applied before the top course paving begins.
4. The surface receiving the top course shall be completely dry prior to the application of the tack coat.
5. Tack coat shall be applied at the rate of 0.25 gallons per square yard. The contact surface of the curbing, castings and other structures shall be painted with the tack coat.
6. All castings (frames and covers, valve boxes), shall be raised to finish grade before the top course is applied.
7. The equipment used for spreading and finishing shall be a mechanical self powered paver capable of spreading and finishing the mixture true to line, grade, width and crown by means of fully automated controls for both longitudinal and transverse slope.
8. Top Course pavement compacted thickness shall be two (2) inches, placed in a single lift.
9. Compaction shall be accomplished with a self propelled roller with a weight of approximately 285 pounds per inch of roller width.

3.05 CASTING ADJUSTMENTS

A. Where asphalic conrete pavement is to be applied, manhole and catch basin frames and valve boxes are to be adjusted to the grade of the new pavement.
1. A neat line shall be cut in the pavement around the existing frames and valve boxes.
2. The material; gravel, pavement and concrete collar (if there) shall be removed down to six (6) inches below the frame.
3. The frame shall be freed from its existing grout bed and shimmed with steel shims of the appropriate thickness, at a minimum of four (4) alternate locations, so as to insure that the frame will not rock. The frame shall then be set into a full bed of grout, and a concrete collar placed around the frame, up to within two (2) inches of finish grade.
4. The frame shall be protected from damage from traffic until the concrete has taken a firm set.

3.06 BERMS

A. Bituminous Concrete Berms:
1. Berms shall be class I bituminous concrete Type I-1.
2. The mixture shall be placed and compacted with a machine acceptable and approved by the Engineer, for the type of berm required.
3. Placing and forming of berms by hand shall not be allowed.

3.07 DUST CONTROL TREATMENT

A. Calcium chloride shall be applied only upon direction of the Engineer.
1. The roadway shall be swept clean and calcium chloride spread at a uniform rate over the prepared gravel trench surface.

3.08 PAVEMENT MARKINGS

A. Pavement markings shall be applied as shown on the contract drawings or at locations directed by the Engineer.
   1. Pavements shall have been in place 48 hours prior to the application.
   2. The surface shall be prepared to accept the application in compliance with the paint manufacturer's requirements.
   3. Applied to a dry film thickness of fifteen (15) mils.
   4. The temperature of the pavement shall be between forty (40) degrees and one hundred twenty (120) degrees Fahrenheit.
   5. No thinners are to be used for the pavement markings.
   6. The equipment used for the application of pavement markings, shall be of standard commercial manufacturer. All other equipment and devices necessary for the application of pavement markings and protection thereof and for the protection of the traveling public, shall be as usually required for work of this type, and shall be furnished by the Contractor.
   7. Pavement markings shall be either a single continuous line or broken line, four (4) inches wide.
   8. If for any reason material is spilled or tracked on the pavement or any markings applied by the Contractor the Contractor shall remove such material.
      a. The material shall be removed by a method that is not injurious to the roadway surface and is acceptable to the Engineer.
      b. Clean the roadway surface and prepare the surface for a re-application of the pavement markings.

END OF SECTION

SECTION 02516

BITUMINOUS CONCRETE CURBING

PART 1 GENERAL

1.01 DESCRIPTION

A. Provide bituminous concrete curbing and appurtenant items as required by the Contract Documents.
   1. In general the Contractor shall provide all labor, equipment, and materials, and perform all operations in connection with the installation of bituminous concrete curbing disturbed during the course of the Work.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   1. Section 02015 Test Pits
   2. Section 02160 Support of Excavation
   3. Section 02222 Earthwork for Water Distribution Systems
   4. Section 02513 Bituminous Concrete Pavement

1.03 STANDARDS

A. State of Connecticut Department of Transportation "Standard Specifications for Roads, Bridges and Incidental Construction", Section 8.15.

1.04 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

B. Product data: Within 30 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
   1. Materials list of items proposed to be provided under this Section.
   2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.

1.05 QUALITY ASSURANCE

A. The Contractor shall restore and curbing, of any type disturbed during the course of the Work to at least as good condition as prior to the Work.

B. Prior to disturbing any curbing, the Contractor should take photographs of the preconstruction curb showing curb type, height, length, shape and condition.

C. The contractor shall adhere to any State or municipal specifications which are more restrictive than or have additional requirements over this specification.

PART 2 PRODUCTS

2.01 MATERIALS

A. Bituminous materials, including tack coat, for this work shall conform to the requirements of Section M.04, Bituminous Class 3, of the referenced cited above.

PART 3 EXECUTION

3.01 GENERAL

A. The Contractor shall take all precautions necessary in the performance of the Work to ensure that only a minimum amount of curbing is disturbed or destroyed during construction.

B. Curbing reconstructed or replaced by the Contractor shall match preconstruction conditions with regards to height above pavement, landscaped area, or sidewalk; thickness; length; color of bituminous concrete; material; depth below grade, and shape. The shape of hand-laid bituminous curbing shall match, in all respects, the shape of existing adjacent curbing.

C. New curbing shall not change preconstruction drainage patterns.

D. The ends of existing curbing, to which the new curbing is to meet, shall be saw cut transverse to the curb line so as to form a neat straight joint.

E. Construction joints shall be so constructed so as to preclude the passage of water for the full curb height.

3.02 BITUMINOUS CONCRETE CURBING

A. Shall be machine-laid for any uninterrupted curbing restoration length greater than ten feet.

B. The provisions of Section 4.06 shall govern except that the requirements pertaining to density will not apply. In addition, the curbing shall be constructed in accordance with the following requirements. Prior to the arrival of the mixture on the Project site, the surface of the pavement where the curbing is to be constructed shall be cleaned of all loose and foreign material. The surface, which shall be perfectly dry and clean at the time the mix is placed, shall be coated with an approved tack coat just prior to placing the mixture.

C. On arrival at the site, the mixture shall be transferred from the truck to the hopper of the curbing machine; and the mixture shall be kept clean and free from dirt and foreign materials at all times.

D. The surface of the curbing shall be tested with a 10-foot (3-meter) straightedge, and any variation from a true line exceeding 1/4 inch (6 millimeters) shall be satisfactorily corrected.

E. Where machine work is impractical, the Engineer may permit hand-laid curbing to be constructed to be as thoroughly compacted to match the appearance and density of machine-laid curbing.

F. If the design of the curbing machine is such that the outside wheels operate outside of the curb, the Contractor will be required to obtain a smooth surface by grading and consolidating the area on which the outside wheel of the machine rides, and this work shall be done at the Contractor's expense.

G. After the completion of curbing, traffic shall be kept at a safe distance for a period of not less than 24 hours and until the curbing has set sufficiently to prevent injury or damage to the work.

H. Where curbing is installed, the curbing shall be backed up with suitable backfill material and all disturbed areas topsoiled and seeded to produce an acceptable stand of grass at the end of the 1-year maintenance period. Topsoil and seeding shall be as specified in the State of Connecticut Department of Transportation Standard Specifications for Roads, Bridges and Incidental Construction Form 816, Section 9.44, and the material shall conform to the requirements of Subarticle M.13.01-1.

PART 4 MEASUREMENT AND PAYMENT

4.01 METHOD OF MEASUREMENT

A. This work will be measured for payment along the top of the curb and will be the actual number of linear feet (meters) of bituminous concrete curbing completed and accepted

4.02 BASIS OF PAYMENT

A. This work will be paid for at the contract unit price per linear foot (meter) for "Bituminous Concrete Curbing" of the type specified, complete in place, which price shall include all materials, equipment, tools and labor incidental thereto

END OF SECTION

SECTION 02611

DUCTILE IRON PIPE AND FITTINGS

PART 1 GENERAL

1.01 DESCRIPTION

A. Work Included: Provide buried ductile iron water mains, fittings, and other appurtenances as required by the Contract Documents.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications.

1. Section 02140 Site Drainage and Dewatering
2. Section 02160 Support of Excavation
3. Section 02222 Earthwork for Water Distribution Systems
4. Section 02621 Fusible PVC Slip Lining
5. Section 02640 Buried Valves and Appurtenances
6. Section 02645 Hydrants
7. Section 02650 Thrust Blocks and Joint Restraints
8. Section 02675 Disinfection of Water Mains
9. Section 02676 Testing Piping Systems

1.03 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. All ductile iron pipe and fittings shall be of domestic manufacture.

C. Coordinate the work of this Section with the work of other related Sections.

1.04 INSPECTION, TESTS AND ACCEPTANCE

A. All pipe delivered to the job site shall be accompanied by test reports certifying that the pipe conforms to "AWWA Standard AWWA C151 for Ductile Iron Pipe, for Water and Other Liquids".

B. All tests shall be made in accordance with the methods prescribed by the above mentioned AWWA Standard, and the acceptance or rejection shall be based on the test results.

C. Pipe which does not conform to the requirements of this contract shall be immediately removed from the site and replaced by the Contractor with pipe which does conform.

1.05 STANDARDS

A. The following American Water Works Association (AWWA) standards form a part of this specification as referenced:
   1. AWWA C104 Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water.
   2. AWWA C110 Ductile-Iron and Gray-Iron Fittings, 3 In. through 48 In. for Water and Other Liquids.
   3. AWWA C111 Rubber-Gasket Joints for Ductile-Iron and Gray-Iron Pressure Pipe and Fittings.
   4. AWWA C150 Thickness Design of Ductile-Iron Pipe.
   5. AWWA C151 Ductile-Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds, for Water and Other Liquids.
   6. AWWA C153 Ductile-Iron Compact Fittings, 3 In. through 12 In., for Water and Other Liquids.
   7. AWWA C600 Installation of Ductile Iron Watermain and Their Appurtenances.

1.06 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

B. Product data: Within 30 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
   1. Materials list of items proposed to be provided under this Section.
   2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.

PART 2 PRODUCTS

2.01 PIPE

A. Ductile Iron Pipe (Buried Service):
   1. Pipe shall meet the requirements of ANSI/AWWA C151/A21.51.
   2. Pipe used for hydrant branches (connecting pipe and pipe nipples) shall be at least 6-inches in diameter and shall meet the above specifications.
   3. Pipe shall be supplied with the standard exterior bituminous coating of either coal tar or asphalt base approximately one mil thick.
   4. Pipe shall be manufactured by the U.S. Pipe and Foundry Company, Griffen Pipe, Clow Pipe, Atlantic State Cast Iron Pipe, McWane or approved equal.
      Class: 52
   5. Joints:
      a. Shall be rubber gasket push-on type manufactured in accordance with ANSI/AWWA C111/A21.11.
      b. Mechanical meeting the requirements of ANSI/AWWA C111/A21.11.
      c. U.S. Pipe TR Flex or approved equal
   6. Gaskets: Standard for pipe used and suitable to Norwich Public Utilities. Must conform to ANSI/AWWA C111/A21.11.
   7. Thickness of Cement Lining: Conforming to ANSI/AWWA C104/A21.4
   8. Thickness of cement-mortar lining:
      a. 1/8 inch for pipes 12 inches and smaller.
      b. 3/16 inch for pipe 14 inches and larger.

9. Cement-mortar lining to be seal coated per AWWA C104.
10. Accessories: Pipe shall be provided with all necessary accessories to make-up the joint (glands, tee head bolts, hex nuts, etc.).

2.02 FITTINGS

A. Fittings:
1. Comply with ANSI/AWWA C153/A21.53.
2. Pressure rating: 350 psi.
3. Lining and coating: Same as pipe.
4. Joint: Mechanical joint in compliance with ANSI/AWWA C111/A21.11.
5. Markings on fittings: Comply with ANSI/AWWA C110/A21.10.

B. Closures shall be made with mechanical joint ductile iron solid sleeves and shall be located in straight runs of pipe at minimum cover outside the limits of restrained joint sections. Location of closures shall be subject to approval of the Engineer.

C. Retainer Glands

1. Retainer glands shall be designed to impart multiple wedging action against the pipe, increasing its resistance as the pressure increases. Glands shall be manufactured of ductile iron conforming to ASTM A536-80. Restraining devices shall be manufactured of ductile iron heat-treated to a minimum hardness of 370 BHN. Twist-off nuts shall be used to insure proper actuation of the retainer gland. Dimensions of the gland shall be such that it can be used with the standard mechanical joint bell and tee-headed bolts conforming to ANSI A21.1/AWWA C110 and ANSI A21.5/AWWA C153. The retainer gland shall have a working pressure of 250 psi with a minimum safety factor of 2:1 and shall be certified by the manufacturer to be compatible with the pipe class and pipe manufacturer for all sizes provided on the job. The retainer gland shall be Mega-Lug as manufactured by EBAA Iron, Inc., or approved equal.

2.03 SPECIAL FITTINGS

A. Locking Hydrant Tees: Shall be mechanical joint, each having a bell and plain end, with a split mechanical joint on the plain end. Gate valve shall be secured directly to the tee by using the standard mechanical joint gasket and standard bolts. Hydrant valves should open right per Norwich Public Utilities.

B. Retainer Glands: See Section 02650 – Thrust Blocks and Joint Restraints.

C. Couplings: Shall be cast or ductile iron, consisting of a middle ring, two (2) rubber gaskets, and the followers with stainless steel bolts and nuts. Coupling and gasket shall be sized for the particular application intended. Couplings shall be as manufactured by Rockwell.

D. Plugs: Shall be ductile iron with mechanical or push-on joint and retainer feature.

E. Sleeves: Shall be ductile iron with mechanical joint, long body style meeting or exceeding the requirements of ANSI/AWWA C110/A21.10 or latest revision thereto.

F. Transition Couplings: As required for joining pipes of different diameters shall be furnished as required and designed for compatibility with the pipe and operating pressures encountered.
   1. Transition couplings shall be Dresser Style 162 as manufactured by Dresser Industries Inc., or an approved equal.

2.04 OTHER MATERIALS

A. Provide a flanged Tideflex rubber check valve, or approved equal for each blow off valve discharge end connected to the headwall as shown on the Contract Drawings.

B. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Engineer.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which the work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 FIELD MEASUREMENTS

A. Make necessary measurements in the field to assure precise fit of the items.

3.03 GENERAL

A. Earthwork:
   1. Trench, backfill and compact for the work of this Section in strict accordance with the pertinent provisions of Section 02222, Earthwork.
   2. Shoring for the work of this Section shall be in strict accordance with Section 02160, Support of Excavation.
   3. Control of ground and surface water shall be in strict accordance with Section 02140, Site Drainage and Dewatering.

3.04 PIPE HANDLING
A. Handling:
   1. The Contractor shall take care not to damage pipe by impact, bending, compression, or abrasion during handling, and installation. Joint ends of pipe especially shall be kept clean.
   2. Pipe shall be stored a minimum 4 inches above ground at a height no greater than 5 feet, and with even support for the pipe barrel.
   3. Only nylon-protected slings shall be used for handling the pipe. No hooks or bare cables shall be permitted.
   4. Gaskets shall be shipped in cartons and stored in a clean area, away from grease, oil, heat, direct sunlight and ozone producing electric motors.

3.05 INSTALLATION

A. Pipe:

1. Installation and jointing of ductile iron pipe shall be in accordance with AWWA C600 Sections 9b and 9c, latest revision, as applicable.
2. In general, jointing of ductile iron push-on pipe and fittings shall be done as follows.
3. The last 8 inches of the outside of the spigot end of the pipe and the inside of the bell end of pipe shall be thoroughly cleaned.
4. The joint surfaces and the gasket shall be painted with a lubricant, provided by the pipe manufacturer, just prior to making up the joint. The spigot end shall then be gently pushed home into the bell.
5. The position of the gasket shall be checked to insure that the joint has been properly made and is watertight.
6. Care shall be taken not to exceed the manufacturer's recommended maximum deflection allowed for each joint.
7. When laying is not in progress, including lunch time, the open ends of the pipe shall be closed by a watertight plug.
8. When cutting of pipe is required, the cutting shall be done by machine, leaving a smooth cut at right angles to the axis of the pipe.
   a. Cut ends of pipe to be used with a push-on type bell shall be beveled to conform to the manufactured spigot end.
   b. Cement lining shall be inspected for damage and shall be remortared as required to ensure a continuous lining.

B. Caps and Plugs:

1. Shall be provided with a threaded corporation or bleeder valve so that air and water pressure can be relieved prior to future connection.

C. Thrust Blocking for Fittings:

1. As specified in Section 02650, Thrust Blocks and Joint Restraints.

D. Couplings:

1. Contractor shall provide all adapters and fittings such as transition couplings, as determined in the field, necessary to complete all tie-ins, whether or not specifically stated in the Specifications or on the Contract Drawings.

3.06 SPECIAL CONDITIONS

A. Under no conditions shall ductile iron pipe be installed within 5 feet of gas lines without written permission from the Engineer at the discretion of the Owner.

3.07 TESTING

A. Comply with the pertinent sections of Section 02676, Testing Piping Systems.

3.08 DISINFECTING

A. Comply with the pertinent sections of Section 02675, Disinfection of Water Mains.

END OF SECTION

SECTION 02621

FUSIBLE POLYVINYLCHLORIDE PIPE FOR INSTALLATION BY SLIPLINING

PART 1 –GENERAL

1.01 DESCRIPTION

A SCOPE

1. This section specifies fusible polyvinylchloride pipe, including standards for dimensionality, testing, quality, acceptable fusion practice, safe handling, storage and installation of the pipe by sliplining.

B REQUIREMENTS:

1. Contractor shall provide fusible polyvinylchloride pipe conforming to all standards and procedures, and meeting all testing and material properties as described in this specification for installation by sliplining.
2. Contractor shall be responsible for all installation processes and procedures associated with the installation by sliplining in accordance with this specification.

C PIPE DESCRIPTION

1. Pipe Supplier shall furnish fusible polyvinylchloride pipe conforming to all standards and procedures, and meeting all testing and material properties as described in this specification.
2. Pipe shall conform to the following dimensionality and general characteristics table:

Pipe Description	Nominal Diameter (in.)	DR	Color	Pressure Class (psi)	Required Inner Diameter (in.)
Fusible PVC	24	25	Blue	165	23.61

1.02 QUALITY ASSURANCE

A REFERENCES:

1. This section contains references to the following documents. They are a part of this section as specified and modified. Where a referenced document contains references to other standards, those other standards are included as references under this section as if referenced directly. In the event of a conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.
2. Unless otherwise specified, references to documents shall mean the documents in effect at the time of design, bid, or construction, whichever is earliest. If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued.

3. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether the document has been superseded by a version with a later date, discontinued or replaced.

Reference	Title
ANSI/AWWA C110/A21.10	American National Standard for Ductile-Iron and Gray-Iron Fittings, 3-inch through 48-inch, for Water and Other Liquids
ANSI/AWWA C111/A21.11	American National Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
ANSI/AWWA C153/A21.53	AWWA Standard for Ductile-Iron Compact Fittings for Water Service
AWWA C605	Standard for Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water
AWWA C651	Standard for Disinfecting Water Mains
AWWA C900	Standard for Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 in. through 12 in. (100mm Through 300mm), for Water Distribution
AWWA C905	Standard for Polyvinyl Chloride (PVC Pressure Pipe and Fabricated Fittings, 14 in. through 48 in. (350mm Through 1200mm), for Water Distribution and Transmission
AWWA M23	AWWA Manual of Supply Practices PVC Pipe—Design and Installation, Second Edition
ASTM C923	Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes and Laterals
ASTM D1784	Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
ASTM D1785	Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120
ASTM D2152	Test Method for Degree of Fusion of Extruded Poly(Vinyl Chloride) (PVC) Pipe and Molded Fittings by Acetone Immersion
ASTM D2241	Poly (Vinyl Chloride) (PVC) Plastic Pipe (SDR-PR)
ASTM D2665	Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings
ASTM D3034	Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings
ASTM F477	Elastomeric Seals (Gaskets) for Joining Plastic Pipe
ASTM F679	Standard Specification for Poly(Vinyl Chloride) (PVC) Large Diameter Plastic Gravity Sewer Pipe and Fittings
ASTM F1057	Standard Practice for Estimating the Quality of Extruded Poly (Vinyl Chloride) (PVC) Pipe by the Heat Reversion Technique
ASTM F1417	Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air
UNI-B-6	Recommended Practice for Low-Pressure Air Testing of Installed Sewer Pipe

Reference	Title
UNI-PUB-08	Tapping Guide for PVC Pressure Pipe
NSF-14	Plastics Piping System Components and Related Materials
NSF-61	Drinking Water System Components--Health Effects
PPI TR-2	PVC Range Composition Listing of Qualified Ingredients

B MANUFACTURER REQUIREMENTS

1. All piping shall be made from PVC compound conforming to cell classification 12454 per ASTM D1784.

C FUSION TECHNICIAN REQUIREMENTS

1. Fusion Technician shall be fully qualified by the pipe supplier to install fusible polyvinylchloride pipe of the type(s) and size(s) being used. Qualification shall be current as of the actual date of fusion performance on the project.

D SPECIFIED PIPE SUPPLIERS

1. Fusible polyvinylchloride pipe shall be used as manufactured under the trade names Fusible C-900®, Fusible C-905®, and FPVC®, for Underground Solutions, Inc., Poway, CA, (858) 679-9551. Fusion process shall be as patented by Underground Solutions, Inc., Poway, CA, Patent No. 6,982,051. Owner and engineer are aware of no other supplier of fusible polyvinylchloride pipe that is an equal to this specified pipe supplier and products.

E WARRANTY

1. The pipe shall be warranted for one year per the pipe supplier's standard terms.
2. In addition to the standard pipe warranty, the fusion services shall be warranted for one year per the fusion service provider's standard terms.

F PRE-CONSTRUCTION SUBMITTALS

1. The following PRODUCT DATA is required from the pipe supplier and/or fusion provider:
   1) Pipe Size
   2) Dimensionality
   3) Pressure Class per applicable standard
   4) Color
   5) Recommended Minimum Bending Radius
   6) Recommended Maximum Safe Pull Force
   7) Fusion technician qualification indicating conformance with this specification
2. The following WORK PLAN AND INFORMATION is required from the contractor and/or slipline installer. This WORK PLAN AND INFORMATION shall also be supplied to the pipe supplier, should it be requested:
   1) Work plan shall include for each sliplining installation all excavation locations, interfering utilities, excavation dimensions, flow bypass and traffic control

schematics.

2) At least 2 weeks prior to the start of work, the Contractor shall submit its sliplining schedule identifying daily work hours and working dates for each installation.

3) Grout design mixes, installation plan, and contingency plan for the annular space grout to be used, if grout is to be used for annular space fill.

G POST-CONSTRUCTION SUBMITTALS

1. The following AS-RECORDED DATA is required from the contractor and/or fusion provider to the owner or pipe supplier upon request:

1) Approved datalogger device reports

2) Fusion joint documentation containing the following information:

a) Pipe Size and Thickness

b) Machine Size

c) Fusion Technician Identification

d) Job Identification

e) Fusion Joint Number

f) Fusion, Heating, and Drag Pressure Settings

g) Heat Plate Temperature

h) Time Stamp

i) Heating and Cool Down Time of Fusion

j) Ambient Temperature

2. The following AS-RECORDED DATA is required from the contractor and/or slipline installer to the owner or pipe supplier upon request:

1) Grout testing reports, if grout is to be used for annular space fill.

PART 2 – PRODUCTS

2.01 FUSIBLE POLYVINYLCHLORIDE PRESSURE PIPE FOR POTABLE WATER

A Fusible polyvinylchloride pipe shall conform to AWWA C900, AWWA C905, ASTM D2241 or ASTM D1785 for standard dimensions, as applicable. Testing shall be in accordance with the referenced AWWA standards for all pipe types.

B Fusible polyvinylchloride pipe shall be extruded with plain ends. The ends shall be square to the pipe and free of any bevel or chamfer. There shall be no bell or gasket of any kind incorporated into the pipe.

C Fusible polyvinylchloride pipe shall be manufactured in a standard 40’ nominal length, or custom lengths as specified.

D Fusible polyvinylchloride pipe shall be blue in color for potable water use.

E Pipe shall be marked as follows:

1. Nominal pipe size

2. PVC
3. Dimension Ratio, Standard Dimension Ratio, or Schedule
4. AWWA pressure class, or standard pressure rating for non-AWWA pipe, as applicable
5. AWWA standard designation number, or pipe type for non-AWWA pipe, as applicable
6. NSF-61 mark verifying suitability for potable water service
7. Extrusion production-record code
8. Trademark or trade name
9. Cell Classification 12454 and/or PVC material code 1120 may also be included

F Pipe shall be homogeneous throughout and be free of visible cracks, holes, foreign material, blisters, or other visible deleterious faults.

2.02 FUSION JOINTS

A Unless otherwise specified, fusible polyvinylchloride pipe lengths shall be assembled in the field with butt-fused joints. The Contractor shall follow the pipe supplier's written guidelines for this procedure. All fusion joints shall be completed as described in this specification.

2.03 CONNECTIONS AND FITTINGS FOR PRESSURE APPLICATIONS

A Connections shall be defined in conjunction with the coupling of project piping, as well as the tie-ins to other piping systems.

B DUCTILE IRON MECHANICAL AND FLANGED FITTINGS

Acceptable fittings for use with fusible polyvinylchloride pipe shall include standard ductile iron fittings conforming to AWWA/ANSI C110/A21.10, or AWWA/ANSI C153/A21.53 and AWWA/ANSI C111/A21.11.

1. Connections to fusible polyvinylchloride pipe may be made using a restrained or non-restrained retainer gland product for PVC pipe, as well as for MJ or flanged fittings.
2. Bends, tees and other ductile iron fittings shall be restrained with the use of thrust blocking or other means as indicated in the construction documents.
3. Ductile iron fittings and glands must be installed per the manufacturer's guidelines.
4. Linings for Ductile Iron fittings shall meet and be in accordance with the ANSI A21.4 (AWWA C104), except the cement lining will be twice the standard or normal thickness specified in Section 4-10.1.
5. Coatings for Ductile Iron fittings shall meet and be in accordance with the ANSI/AWWA C151/C110.

C SLEEVE-TYPE COUPLINGS

1. Sleeve-type mechanical couplings shall be manufactured for use with PVC pressure pipe, and may be restrained or unrestrained as indicated in the construction documents.

2. Sleeve-type couplings shall be rated at the same or greater pressure carrying capacity as the pipe itself.

D EXPANSION AND FLEXIBLE COUPLINGS

1. Expansion-type mechanical couplings shall be manufactured for use with PVC pipe, and may be restrained or unrestrained as indicated in the construction documents.

2. Expansion-type mechanical couplings shall be rated at the same or greater pressure carrying capacity as the pipe itself.

E CONNECTION HARDWARE

Bolts and nuts for buried service shall be made of non-corrosive, high-strength, low-alloy steel having the characteristics specified in ANSI/AWWA C111/A21.11, regardless of any other protective coating.

2.04 GROUT

A Grout for use as a filler of the annular space between the fusible polyvinylchloride pipe and the host pipe shall be a low-density, highly flowable mix. Grout shall meet the compressive strength requirements for the installation per the contract documents.

B Testing requirements shall be in accordance with the contract documents. Contractor may incorporate grout additives to improve its flow properties, provided that strength property requirements are met.

2.05 PIPE PULL HEADS

A Pipe pull heads, if utilized, shall employ a positive through-bolt design assuring a smooth walled bolt against the pipe cross-section at all times.

B Pipe pull heads shall be specifically designed for use with fusible polyvinylchloride pipe, and shall be as recommended by the pipe supplier.

2.06 PIPE ROLLERS

A Pipe rollers, if required, shall be of sufficient size to fully support the weight of the pipe during handling and pullback operations.

B A sufficient quantity of rollers and spacing, per the pipe supplier's guidelines shall be used to assure adequate support and resist excessive sagging of the product pipe.

PART 3 --EXECUTION

3.01 DELIVERY AND OFF-LOADING

A All pipe shall be bundled or packaged in such a manner as to provide adequate protection of the ends during transportation to the site. Any pipe damaged in shipment shall be replaced as directed by the owner or engineer.

B Each pipe shipment should be inspected prior to unloading to see if the load has shifted or otherwise been damaged. Notify owner or engineer immediately if more than immaterial damage is found. Each pipe shipment should be checked for quantity and proper pipe

size, color, and type.

C Pipe should be loaded, off-loaded, and otherwise handled in accordance with AWWA M23, and all of the pipe supplier's guidelines shall be followed.

D Off-loading devices such as chains, wire rope, chokers, or other pipe handling implements that may scratch, nick, cut, or gouge the pipe are strictly prohibited.

E During removal and handling, be sure that the pipe does not strike anything. Significant impact could cause damage, particularly during cold weather.

F If appropriate unloading equipment is not available, pipe may be unloaded by removing individual pieces. Care should be taken to insure that pipe is not dropped or damaged. Pipe should be carefully lowered, not dropped, from trucks.

3.02 HANDLING AND STORAGE

A Any length of pipe showing a crack or which has received a blow that may have caused an incident fracture, even though no such fracture can be seen, shall be marked as rejected and removed at once from the work. Damaged areas, or possible areas of damage may be removed by cutting out and removing the suspected incident fracture area. Limits of the acceptable length of pipe shall be determined by the owner or engineer.

B Any scratch or gouge greater than 10% of the wall thickness will be considered significant and can be rejected unless determined acceptable by the owner or engineer.

C Pipe lengths should be stored and placed on level ground. Pipe should be stored at the job site in the unit packaging provided by the manufacturer. Caution should be exercised to avoid compression, damage, or deformation to the ends of the pipe. The interior of the pipe, as well as all end surfaces, should be kept free from dirt and foreign matter.

D Pipe shall be handled and supported with the use of woven fiber pipe slings or approved equal. Care shall be exercised when handling the pipe to not cut, gouge, scratch or otherwise abrade the piping in any way.

E If pipe is to be stored for periods of 1 year or longer, the pipe should be shaded or otherwise shielded from direct sunlight. Covering of the pipe which allows for temperature build-up is strictly prohibited. Pipe should be covered with an opaque material while permitting adequate air circulation above and around the pipe as required to prevent excess heat accumulation.

F Pipe shall be stored and stacked per the pipe supplier's guidelines.

3.03 FUSION PROCESS

A GENERAL

1. Fusible polyvinylchloride pipe will be handled in a safe and non-destructive manner before, during, and after the fusion process and in accordance with this specification and pipe supplier's guidelines.

2. Fusible polyvinylchloride pipe will be fused by qualified fusion technicians, as documented by the pipe supplier.

3. Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) connected to the fusion machine.

4. Only appropriately sized and outfitted fusion machines that have been approved by the pipe supplier shall be used for the fusion process. Fusion machines must incorporate the following elements:

   a) HEAT PLATE - Heat plates shall be in good condition with no deep gouges or scratches. Plates shall be clean and free of any debris or contamination. Heater controls shall function properly; cord and plug shall be in good condition. The appropriately sized heat plate shall be capable of maintaining a uniform and consistent heat profile and temperature for the size of pipe being fused, per the pipe supplier's guidelines.

   b) CARRIAGE – Carriage shall travel smoothly with no binding at less than 50 psi. Jaws shall be in good condition with proper inserts for the pipe size being fused. Insert pins shall be installed with no interference to carriage travel.

   c) GENERAL MACHINE - Overview of machine body shall yield no obvious defects, missing parts, or potential safety issues during fusion.

   d) DATA LOGGING DEVICE – An approved datalogging device with the current version of the pipe supplier's recommended and compatible software shall be used. Datalogging device operations and maintenance manual shall be with the unit at all times. If fusing for extended periods of time, an independent 110V power source shall be available to extend battery life.

5. Other equipment specifically required for the fusion process shall include the following:

   a) Pipe rollers shall be used for support of pipe to either side of the machine

   b) A weather protection canopy that allows full machine motion of the heat plate, fusion assembly and carriage shall be provided for fusion in inclement, extreme temperatures, and /or windy weather, per the pipe supplier's recommendations.

   c) An infrared (IR) pyrometer for checking pipe and heat plate temperatures.

   d) Fusion machine operations and maintenance manual shall be kept with the fusion machine at all times.

   e) Facing blades specifically designed for cutting fusible polyvinylchloride pipe shall be used.

B JOINT RECORDING

Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) connected to the fusion machine. The fusion data logging and joint report shall be generated by software developed specifically for the butt-fusion of fusible polyvinyl chloride pipe. The software shall register and/or record the parameters required by the pipe supplier and these specifications. Data not logged by the data logger shall be logged manually and be included in the Fusion Technician's joint report.

3.04 PIPE CLEANING

A Host pipe shall be cleaned in accordance with all applicable standards and guidelines. Unless otherwise specified, all interior pipe surfaces shall be cleaned per AWWA M28.

B Hazardous materials shall be removed and disposed of per all applicable regulations.

C All pipelines shall be cleaned with as many passes as necessary to create a uniform

interior host pipe surface free of all loose material and sharp edges. Any potentially deleterious areas of the host pipe should be removed or secured in place, prior to the insertion of the fusible polyvinylchloride pipe.

3.05 TV INSPECTION

A The host pipe shall be inspected by TV after or during the cleaning process in accordance with these specifications.

1. TV inspection after host pipe cleaning shall indicate condition of host pipe and suitability of host pipe for fusible polyvinylchloride pipe insertion.

2. Obstructions such as corporation taps, valves and valve bodies, and collapsed piping shall be remedied prior to insertion. Spot repairs shall be made in accordance with the drawings and these specifications.

3.06 FUSIBLE POLYVINYLCHLORIDE PIPE INSERTION AND INSTALLATION

A EXCAVATION AND ACCESS PITS

1. Access pit length shall be such that the minimum bending radius for the fusible polyvinylchloride pipe, per the pipe supplier is maintained. Sheeting, shoring and bracing requirements shall be in accordance with these specifications and applicable jurisdictional standards.

2. Access pit excavations shall be performed at all points where the fusible polyvinylchloride pipe will be inserted into the existing pipeline. When possible, access pit excavations shall coincide with host pipe lateral connection points or other appurtenance installations.

B PULLING EQUIPMENT

1. The pulling mechanism shall be properly connected to the end of the fusible polyvinylchloride pipe via a pulling head or arrangement approved by the pipe supplier.

2. The maximum pulling tension on the fusible polyvinylchloride pipe shall not exceed the pipe supplier's safe pulling force as submitted for this project.

3. Immediately following the completion of an installation by sliplining, if possible, the pipe should be pushed back into the location of the insertion, at the pulling head, until a small amount of movement is realized at the insertion pit on the other side of the installation from the pulling equipment.

C FUSIBLE POLYVINYLCHLORIDE PIPE CARE

1. The fusible polyvinylchloride pipe shall be handled with care to minimize the possibility of it being cut, kinked, gouged, or otherwise damaged. The use of cables or hooks will not be permitted.

2. Sections of the fusible polyvinylchloride pipe damaged, cut, or gouged shall be repaired by cutting out the section of damaged pipe and rejoining.

3.07 ANNULAR SPACE GROUTING

A The annular space between the outside of the fusible polyvinylchloride pipe and the inside of the existing host pipe shall be filled with a flowable grout in accordance with the contract documents.

B Samples of grout shall be obtained in accordance with ASTM C495. One set of four standard cylinders shall be cast for each batch. Special handling and sampling procedures shall be followed if indicated by the grout manufacturer. The samples must meet the design compressive strength of the grout as outlined in this specification and per the grout manufacturer. Samples shall be tested in accordance with ASTM C495.

C Grouting of the annular space shall be done in such a manner as to prevent damage, floating, or collapse of the fusible polyvinylchloride pipe. Grouting operations shall be properly vented. If the distance between grout points exceeds the Contractor's pumping capability additional grouting points shall be excavated. The fusible polyvinylchloride pipe at access pits, service connections, and grouting points shall not be grouted above the springline of the existing host pipe.

D The fusible polyvinylchloride pipe shall be filled with water prior to the grouting procedure. This shall aid in keeping the fusible polyvinylchloride pipe from floating or collapsing during grouting operation and also aid in dissipating the heat of hydration and its effects on the fusible polyvinylchloride pipe as the grout cures. This can be done in coordination with the testing performed on the fusible polyvinylchloride pipe.

3.08 PREPARATION PRIOR TO MAKING CONNECTIONS INTO EXISTING PIPING SYSTEMS

A Approximate locations for existing piping systems are shown in the construction documents. Prior to making connections into existing piping systems, the contractor shall:

1. Field verify location, size, piping material, and piping system of the existing pipe.
2. Obtain all required fittings, which may include saddles, sleeve type couplings, flanges, tees, or others as shown in the construction documents.
3. Have installed all temporary pumps and/or pipes in accordance with established connection plans.

B Unless otherwise approved, new piping systems shall be completely assembled and successfully tested prior to making connections into existing pipe systems.

3.09 PIPE SYSTEM CONNECTIONS

A Pipe connections shall be installed per applicable standards and regulations, as well as per the connection manufacturer’s guidelines and as indicated in the construction documents. Pipe connections to structures shall be installed per applicable standards and regulations, as well as per the connection manufacturer’s guidelines.

3.10 TAPPING FOR POTABLE AND NON-POTABLE WATER APPLICATIONS

A Tapping shall be performed using standard tapping saddles designed for use on PVC piping in accordance with AWWA C605. Tapping shall be performed only with use of tap saddles or sleeves. NO DIRECT TAPPING WILL BE PERMITTED. Tapping shall be performed in accordance with the applicable sections for Saddle Tapping per Uni-Pub-8.

B All connections requiring a larger diameter than that recommended by the pipe supplier, shall be made with a pipe connection as specified and indicated on the drawings.

C Equipment used for tapping shall be made specifically for tapping PVC pipe:

1. Tapping bits shall be slotted “shell” style cutters, specifically made for PVC pipe.

'Hole saws' made for cutting wood, steel, ductile iron, or other materials are strictly prohibited.

2. Manually operated or power operated drilling machines may be used.

D Taps may be performed while the pipeline is filled with water and under pressure ('wet' tap,) or when the pipeline is not filled with water and not under pressure ('dry' tap).

3.11 TESTING

A Testing shall comply with all applicable jurisdictional building codes, statutes, standards, regulations, and laws.

B HYDROSTATIC TESTING AND LEAKAGE TESTING FOR PRESSURE PIPING

1. Hydrostatic and leakage testing for piping systems that contain mechanical jointing as well as fused PVC jointing shall comply with AWWA C605.

2. Unless agreed to or otherwise designated by the owner or engineer, for a simultaneous hydrostatic and leakage test following installation, a pressure equal to 150 psi or 150 percent of the working pressure, whichever is greater, but in no case shall the pressure exceed 250 psi.

3. The duration of the pressure test shall be for two (2) hours.

4. If hydrostatic testing and leakage testing are performed at separate times, follow procedures as outlined in AWWA C605.

5. In preparation for pressure testing the following parameters must be followed:

1) All air must be vented from the pipeline prior to pressurization. This may be accomplished with the use of the air relief valves or corporation stop valves, vent piping in the testing hardware or end caps, or any other method which adequately allows air to escape the pipeline at all high points. Venting may also be accomplished by 'flushing' the pipeline in accordance with the parameters and procedures as described in AWWA C605.

2) The pipeline must be fully restrained prior to pressurization. This includes complete installation of all mechanical restraints per the restraint manufacturer's guidelines, whether permanent or temporary to the final installation. This also includes the installation and curing of any and all required thrust blocking. All appurtenances included in the pressure test, including valves, blow-offs, and air-relief valves shall be checked for proper installation and restraint prior to beginning the test.

3) Temporary pipeline alignments that are being tested, such as those that are partially installed in their permanent location shall be configured to minimize the amount of potentially trapped air in the pipeline.

C DISINFECTION OF THE PIPELINE FOR POTABLE WATER PIPING

1. After installation, the pipeline, having passed all required testing, shall be disinfected prior to being put into service. Unless otherwise directed by the owner or engineer, the pipeline will be disinfected per AWWA C651.

D PARTIAL TESTING

1. Segments of the pipe may be tested separately in accordance with standard testing

procedure, as approved by the owner and engineer.

END OF SECTION

SECTION 02640

BURIED VALVES AND APPURTENANCES

PART 1 GENERAL

1.01 DESCRIPTION

A. Work included: Provide buried valves, valve boxes, and valve accessories, as required by the Contract Documents.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications
   1. Section 02140 Site Drainage and Dewatering
   2. Section 02160 Support of Excavation
   3. Section 02222 Earthwork
   4. Section 02611 Ductile Iron Pipe and Fittings

1.03 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

B. Product data: Within 30 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
   1. Materials list of items proposed to be provided under this Section.
   2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
   3. An exploded view diagram with a materials list.

1.04 STANDARDS

A. The following American Water Works Association (AWWA) standards form a part of this specification as referenced:
   1. AWWA C509 Resilient-Seated Gate Valves for Water Supply Service.
   2. AWWA C504 Rubber-Seated Butterfly Valves.

PART 2 PRODUCTS

2.01 VALVES

A. Resilient Seated Gate Valves: Shall be used on all water mains less than sixteen (16) inches in diameter and all hydrant branches.
   1. Kennedy Valve, M&H Valve, Mueller, Clow Corporation, or approved equal.
   2. Meet or exceed the requirements of ANSI/AWWA C509.
   3. Joints: Mechanical joint conforming to ANSI/AWWA C111/A21.11.

4. Cast iron body.
5. Bronze stem.
6. Resilient sealed wedge type:
   a. Wedge: Fully encapsulated; no exposed iron.
7. Triple O-ring seal stuffing box.
8. Non rising stem.
9. Two (2) inch square operating nut.
10. Rated for 200 psi and tested to 500 psi.
11. Open: Clockwise (right).
12. All internal and external surfaces except rubber coatings shall be coated with fusion bonded epoxy to a minimum thickness of 8 mils:
    a. Coating shall be non-toxic, impart no taste to water and shall conform to AWWA C-550.

B. Butterfly Valves: Shall be used on all water mains sixteen (16) inches in diameter and larger:
1. Designed specifically for underground service meeting or exceeding ANSI/AWWA C504, Class 250B, or approved equal.
2. Joints: Mechanical joint conforming to ANSI/AWWA C111/A21.11.
3. Cast iron body meeting or exceeding the requirements of ASTM A126, Class B.
4. Disc shall be ductile iron:
   a. Disc edge shall be 316 stainless steel.
5. Type 304 stainless steel shaft.
6. Shaft seal shall be 'V'-type Chevron.
7. Totally enclosed and permanently sealed gearing.
8. Two (2) inch square operating nut.
9. Rated for 250 psi and tested to 500 psi.
10. Open: Clockwise (right).
11. All internal iron surfaces shall be coated with fusion bonded epoxy to a minimum thickness of 8 mils:
    a. Coating shall be non-toxic, impart no taste to water and shall conform to AWWA C-550.
12. The valve body, interior, and valve vane shall be manufactured by Kennedy Valve, M&H Valve Company, Desurik, or approved equal.

C. Manual Air Release Valves: Shall be provided for the locations shown at the locations indicated on the Contract Drawings.
1. Corporation Stop shall be Mueller Model No. H10045 or approved equal.
2. Brass pipe elbows shall be extra strong weight with threaded ends.
3. Curb stop shall be Mueller Mark II Oriseal Valve No. H10284 with drain or approved equal.
   a. Curb stop shall be supported with a short length of 2" brass cut to fit the contours of the pipe and stop.
4. One cubic foot fo coarse sand shall be provided at each air release assembly as detailed on the drawings.
5. Air release assemblies shall be designed for a working pressure of: 200 psi.

2.02 VALVE BOXES

A. Valve boxes shall be provided for each buried valve. They shall be:

1. Domestic manufacture,
2. Telescopic in design with a two piece, sliding construction, a top with a cover and a bottom.
3. Heavy Pattern Cast iron with a cast iron cover of at least six (6) inches in diameter,
4. Cover shall have the word "WATER" and an arrow indicating the direction of opening cast into the cover in raised letters,
5. Valve box barrel shall not be less than (5-¼) inches in diameter,
6. Shall be two (2) piece sliding type, providing a minimum overlap of six (6) inches, top shall be 24" bottom shall be 36".
7. The lower section shall enclose the operating nut and stuffing box/gear box of the valve and shall have a minimum diameter of 8 inches,
8. The box shall not transmit shock or stress to the valve.
9. The box shall be manufactured by Buffalo Pipe and Foundry, Mueller Company, J.B. Clow & Sons, Bingham & Taylor, Inc., or equal.

PART 3 EXECUTION

3.01 HANDLING AND INSPECTION

A. Care shall be taken to prevent damage to valves, and appurtenances during handling and installation. All materials shall be carefully inspected for defects in workmanship and materials.

B. All operating mechanisms operated to check their proper functioning, and all nuts and bolts checked for tightness. Valves which do not operate easily or are otherwise defective shall be replaced at the Contractor's expense.

3.02 INSTALLATION

A. General:
1. Construction methods for the work under this Section shall conform to the applicable portions of Section 02611, Buried Ductile Iron Pipe and Fittings, details as shown on the Contract Drawings, manufacturer's recommended installation procedures, and procedures specified herein.

B. Valves and Appurtenances:
1. Generally, valves shall be set and aligned plumb, supported by a flat stone or solid concrete block, with the trench bottom being firmly compacted.
2. Valve boxes shall be set centered and plumb over the operating nuts of all, direct burial valves. The top of each valve box shall be set to finished grade with at least 10 inches of overlap remaining between the upper sections for future vertical adjustment. Minimum overlap for lower, extension pieces shall be 6 inches.
3. Valves, bolts and all other appurtenances shall be thoroughly cleaned and given a shop coat of asphaltum varnish.
4. Ferrous surfaces obviously not to be painted shall be given a shop coat of grease or other suitable rust-resistant coating.

END OF SECTION

SECTION 02645

HYDRANTS

PART 1 GENERAL

1.01 DESCRIPTION

A. Work included: Provide hydrants as required by the Contract Documents.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   1. Section 02222 Earthwork for Water Distribution Systems
   2. Section 02611 Ductile Iron Pipe and Fittings
   3. Section.02640 Buried Valves and Appurtenances
   4. Section 02650 Thrust Blocks and Joint Restraints

1.03 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.
   1. Materials list of items proposed to be provided under this Section.
   2. Manufacturer's specifications and other data needed, to insure compliance with the specified requirements.

1.04 STANDARDS

A. The following American Water Works Association (AWWA) Standards form a part of this specification as referenced:
   1. AWWA C502 Dry-Barrel Fire Hydrants

PART 2 PRODUCTS

2.01 HYDRANTS

A. Hydrants shall be the Mueller Super Centurion with retaining fitting on hydrant shoe:
   1. Barrel sections shall be 5-1/4 inch diameter.
   2. Length of barrel shall be such that when installed with the proper depth of cover on the branch pipeline, the hydrant will be set with the normal ground line of the barrel within 3-inches of the actual finished ground grade surface elevation. Minimum bury length shall be 4 ½ feet.
   3. Two (2) 2-1/2 inch diameter NST hose connections.
   4. One (1) 4-1/2 inch diameter NST steamer connection.
   5. Replaceable brass nozzles.
   6. Breakaway flange.
   7. Six (6) inch mechanical joint shoe.
   8. Open right, clockwise.
   9. Be in full compliance with AWWA C502.
   10. Hydrants shall receive two field coats of red paint meeting the approval of Norwich Public Utilities.

B. Hydrants shall conform to National Standard Specification sizes in threads and nuts. Caps shall have retainer chains and rubber gaskets.
   1. The 2- ½" outlet nozzle threads shall meet the requirements of ANSI B26, "National Standard Fire Hose Coupling Screw Threads"
   2. The 4- ½" outlet nozzle threads shall meet the NPU standard thread size.

2.02 HYDRANT EXTENSION

A. Extension Kit: If required to meet grade on site
   1. Shall be provided by the hydrant manufacturer.
   2. Length shall be as needed to meet finish grade.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and condition under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 FIELD MEASUREMENTS

A. Make necessary measurements in the field to assure fit of items.

3.03 PROPOSED HYDRANT LOCATIONS

A. All new hydrant locations shown on the Contract Drawings shall be subject to field location approval by the Owner or the Engineer.

3.04 INSTALLATION

A. Hydrants:
   1. Trench, backfill and compact for the work of this Section in strict accordance with pertinent provisions of Section 02200, Earthwork.
   2. The hydrant drainage pit shall be approximately three (3) feet in diameter and filled with compacted crushed stone. While backfilling place additional crushed stone to at least six (6) inches above the hydrant drain ports.
   3. After being thoroughly cleaned, all iron work set below ground shall be painted with two coats of asphalt varnish as specified in AWWA C504.
   4. Thrust blocking shall be placed behind the shoe of the hydrants taking care not to block the drain outlets.
   5. The hydrant shall be set plumb and to the proper grade and shall remain properly supported until it is backfilled.
   6. All iron work left above ground shall be shop painted with two coats of paint of quality and color to correspond to the present standard of the Owner.
   7. After the hydrant has been set, it shall be entirely draped with burlap and remain covered until the water distribution system has been accepted and put into service.

END OF SECTION

SECTION 02650

THRUST BLOCKS AND JOINT RESTRAINTS

PART 1 GENERAL

1.01 DESCRIPTION

A. Work included: Provide thrust blocks and joint restraints for the underground water mains as required by the Contract Documents.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   1. Section 02140 Site Drainage and Dewatering
   2. Section 02160 Support of Excavation
   3. Section 02222 Earthwork for Water Distribution Systems

1.03 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.
   1. Materials list of items proposed to be provided under this Section.
   2. Manufacturer's specifications and other data needed, to insure compliance with the specified requirements.

PART 2 PRODUCTS

2.01 CONCRETE

A. Concrete shall be as specified in Section 03300, Cast-In-Place Concrete.
   1. Minimum concrete strength shall be 3000 psi after 28 days.

2.02 JOINT RESTRAINTS

A. Mechanical joint restraint shall be Megalug 1100 Series as manufactured by EBAA Iron Sales Inc., Eastland, Texas, or an approved equal
   1. Glands shall be manufactured of ductile iron conforming to ASTM A536.
   2. The wedges shall be ductile iron, heat treated to a minimum hardness of 370 BHN
   3. Shall have a minimum working pressure of 350 psi for pipe diameters up to 16 inches with a minimum safety factor of 2:1.
   4. Twist-off nuts.

2.03 OTHER MATERIALS

A Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Engineer.

PART 3 EXECUTION

3.01 THRUST BLOCKS

A. Concrete thrust blocks shall be provided at all tees, plugs, and bends as directed or as detailed on drawings with 3,000 psi concrete.
   1. The backs of thrust blocks shall be placed against undisturbed earth and the sides shall be so placed that pipe joints will be accessible for any possible future repairs.
   2. Yokes and tie-rods shall be installed in addition to or in lieu of thrust blocks.
   3. Felt roofing paper shall be placed to protect pipe joints.
   4. Concrete shall not be placed over bolts or nuts.
   5. Pipe anchors shall be used when and as directed.

3.02 JOINT RESTRAINTS

A. Mechanical joint restraint devices shall be installed at all fittings in accordance with the manufacturer's written instructions.

END OF SECTION

SECTION 02667

TEMPORARY POTABLE WATER PIPING AND SERVICE CONNECTIONS

PART 1 GENERAL

1.01 DESCRIPTION

A. Provide temporary potable water piping and service connections as required by the Contract Documents before the new Gravel Access Road is completed.

1. The temporary piping replaces a critical transmission main that supplies a substantial portion of the Norwich Public Utilities' customers. Every effort shall be made to protect and maintain this line while in operation.

2. In general the Contractor shall provide temporary distribution piping, piping disinfection, connections to supply sources (hydrants or pipe lines), service connections to properties presently being supplied, access ramps where temporary pipe line crosses driveways, trenching across roadways for temporary main or services and all other work necessary to provide temporary potable water service to properties affected by water main relocations.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.03 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

1. Materials list of items proposed to be provided under this Section.
2. Manufacturer's specifications and other data needed, to insure compliance with the specified requirements.
3. Contractors plan for the installation of Temporary Piping including connection details.

1.04 STANDARDS

A. The following Standards form a part of these specifications as referenced:

1. ASTM D-1784 (PVC, Type 1, Grade 1, Class 12454/B.
2. ASTM D-2241 (PVC Plastic Pipe) pressure rated.
3. ASTM D-3130 (Joints and Couplings).
4. ASTM F-477 O-Rings.
5. AWWA C651 Water Main Chlorination.

1.05 QUALITY ASSURANCE

A. Codes and Standards

1. Plumbing Code Compliance: Comply with applicable portions of National Standard Plumbing Code pertaining to selection and installation of potable water system materials and products.
2. Water Purveyor Compliance: Comply with requirements of purveyor supplying water to project, obtain required permits and inspections.

PART 2 PRODUCTS

2.01 TEMPORARY DISTRIBUTION PIPING

Transmission Main

A. Fusible HDPE Piping:
   1. Size: Two, sixteen (16) inch
   2. DR 32.5
   3. Wall thickness 0.535 inches.

B. Contractor may submit an alternate material or plan for temporary distribution piping.

C. Couplings:
   1. O-Ring type
   2. Locking splines to insure coupling remains under pressure.

D. Connection Fittings:
   1. Provide all the necessary fittings, adapters, clamps, couplings and etc. to complete the service piping/tubing connections from the temporary potable water piping to the property being served.

PART 3 EXECUTION

3.01 GENERAL

A. The Contractor must design and submit a bypass plan for approval to the Engineer showing the layout, the location of valves, fittings, hydrants and all necessary appurtenances and show the support method(s) being used.

A. The temporary distribution pipe shall be installed as required to provide potable water service where potable water service presently exists.
   1. When necessary, the Contractor shall provide below ground taps to provide potable water service where fire hydrants cannot be used.
   2. All temporary distribution piping connections to fire hydrants shall be made in such a manner that if it becomes necessary, they can be easily removed so that the fire hydrant can be used for fire fighting purposes, with a minimum of effort.
   3. At driveways and roadway crossings the temporary distribution pipe shall be installed in a shallow trench with 2 feet of cover, to be overlayed with temporary bituminous surfacing.
   4. The Contractor shall adequately protect the bypass piping from construction traffic.
   5. The Contractor shall furnish and maintain cones, barricades, flashing lights, signage and etc during the time period in which the temporary potable water piping system is installed.

3.02 INSTALLATION

A. Prior to installing any section of temporary distribution piping, the Contractor shall consult with the local Fire Department and Owner and shall make any modifications to the piping that may be required by these agencies.
   1. The temporary distribution piping and service pipe shall be chlorinated in accordance with AWWA C651.

2. The operation of all valves utilized in connection with this Contract shall be performed by a representative of the Owner.
3. Temporary valving shall be provided to isolate sections of the temporary potable water piping.
4. Service connections shall be provided at required locations or as requested by the Owner.
5. A valved blow-off line shall be provided.

B. Prior to use of temporary bypass piping, the Contractor shall provide appropriate facilities for disinfecting and sampling of the temporary water mains.
   1. Before testing the Contractor shall submit, in writing, to Norwich Public Utilities their proposed method of testing the pipeline.
   2. Disinfection shall be carried by the Contractor, under the direction of Norwich Public Utilities using the continuous feed method, and type of chlorine to be used must meet the approval of Norwich Public Utilities.
   3. The Contractor shall arrange for the City of Norwich Department of Public Utilities Testing Laboratory to take samples for testing.

3.03 MAINTENANCE AND REMOVAL

A. The Contractor shall maintain the temporary potable water piping in a safe and operative condition at all times.
   1. No temporary potable water piping shall be installed in freezing weather and such piping already in use shall be removed and drained.
   2. Upon inspection, no leaking shall be visible.

C. The Contractor shall remove the temporary potable water piping after the water main slip lining has been completed, tested, chlorinated and accepted by the Owner, the new service connections installed, and all surfaces restored.

D. The Contractor shall leave the street and adjacent properties in a neat and orderly condition and in every respect equal to or better than their original condition.

END OF SECTION

SECTION 02675

DISINFECTING WATER MAINS

PART 1 GENERAL

1.01 DESCRIPTION

A. Work Included: Disinfecting water mains and their appurtenances, as required by the Contract Documents.

B. The procedure for disinfecting water mains, as described in this section, generally consists of the following steps:

1. Flushing the new water mains.
2. Filling the new water mains with chlorinated water.
3. Disinfecting the new water mains with chlorine solution.
4. Flushing the chlorinated water from the new water mains.
5. Taking samples for bacteriological analysis.
6. Testing the samples at a state certified laboratory.
7. Placing the new water mains into service.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications.

1. Section 02611 Ductile Iron Pipe and Fittings
2. Section 02621 Fusible Poly Vinyl Chloride (PVC) Slip Lining
3. Section 02667 Temporary Water Piping and Service Connections

1.03 SUBMITTALS

A. The Contractor shall prepare a plan for disinfecting water mains and their appurtenances that describes the proposed schedule, the location of all sampling and flushing points, and the overall procedure for disinfecting. The plan shall also present the proposed chemicals to be employed, the strength of the chemicals and the equipment employed to apply them. The plan shall be presented to the Engineer for review not less than two weeks prior to the proposed time for disinfecting the water mains.

B. Copies of all test results, as specified herein, shall be submitted directly to the Engineer from the laboratory that conducted the tests.

1.04 STANDARDS

A. The following standards are referenced, in part, in this specification:

1. Specific sections, or portions thereof, of AWWA C651 (latest revision) Disinfecting Water Mains, as further described herein.

1.05 COST OF DISINFECTING WATER MAINS

A. All costs associated with disinfecting water mains, including water, chemicals and bacteriological analysis of samples, as further described in this Section, shall be paid for by the Contractor.

PART 2 MATERIALS

2.01 WATER

A. Water for flushing of water mains, preparation of chlorine solutions and filling of water mains for disinfection shall be potable drinking water.

2.02 CHEMICALS

A. Chlorine for preparation of chlorine solutions for disinfection shall be sodium hypochlorite or calcium hypochlorite and shall conform to the requirements of ANSI/AWWA B300.

B. Chlorine solutions shall be neutralized prior to disposal using sodium bisulfite, sodium sulfite or sodium thiosulfate.

2.03 WATER SAMPLE BOTTLES

A. Sterile water sample bottles shall be obtained from a state certified laboratory.

1. Sterile bottles for bacteriological analyses shall be treated with sodium thiosulfate to neutralize any residual chlorine.
2. Two samples are required at each specified sampling point. One sample shall be analyzed for the presence of coliform bacteria and one sample shall be analyzed for the presence of heterotrophic plate count (HPC) bacteria.

PART 3 EXECUTION

3.01 WATER MAIN DISINFECTING

A. After completion of all water main related construction, except water service connection installation, all water mains, valves, hydrants, hydrant connections and other appurtenances installed under this Contract shall, be disinfected in accordance with AWWA Standard C651, Section 4.4.3 (Continuous Feed Method), as modified herein.

1. Taps for flushing, chlorination and sampling shall be installed by the Contractor at no additional expense to the Owner.
2. Flush the new water mains with potable water to remove any contaminants and debris that may have entered the water mains during construction.

3. The flushing velocity in the new water mains shall not be less than 2.5 feet per second. In the absence of a flow meter, flow rate shall be determined either by placing a pitot gage at the discharge or by measuring the time to fill a container of a known volume
4. Prepare a chlorine solution that will be continuously fed into the potable water that is used to fill the new water mains.
5. The chlorine solution shall be applied to the new water mains with a chemical feed pump designed to feed chlorine solutions
6. Completely fill the new water mains with the chlorinated, potable water to remove any air pockets. The point of application shall be no more than 10 feet downstream from the beginning of the new water mains.
7. The chlorine solution shall be of sufficient strength to provide a minimum residual chlorine concentration of 25 milligrams per liter (mg/l) in the filled water mains.
8. New valves and hydrants shall be operated to insure their proper disinfection.
9. Isolation valves shall be maintained in a closed position to prevent chlorinated water from entering the existing water distribution system.
10. Chlorinated water shall remain in the main for a minimum of 48 hours.
11. The minimum residual chlorine concentration at the end of the 48 hour holding period shall be 10 mg/l.
12. After the 48-hour retention period, chlorinated water shall be flushed from every hydrant branch on the main until the chlorine concentration leaving the main is no higher than that generally in the system or less than 1.0 mg/l.
13. Chlorinated water shall be discharged in a manner that will not adversely effect flora and fauna or drainage courses and shall conform to applicable State regulations for waste discharge.
14. Chlorinated water that is flushed from the mains shall be neutralized by the addition of a dechlorinating agent so that the residual chlorine concentration is zero.
15. The location of the discharge for the dechlorinated water shall be approved by the Engineer and the Owner.

3.02 BACTERIOLOGICAL TESTS

A. A minimum of 24 hours after flushing and before the new water mains are placed in service, the Contractor shall collect water samples for testing of the bacteriological quality of the water.
   1. No hose or fire hydrant shall be used in the collection of samples.
   2. A sampling tap shall consist of a standard corporation stop installed in the main with a PVC gooseneck assembly.
   3. Samples for bacteriological testing shall be collected in sterile bottles treated with sodium thiosulfate and furnished by the state certified laboratory that will perform the tests.
   4. Unless otherwise directed by the Engineer or the Owner, the minimum number of samples for bacteriological analysis shall be as follows:
      a. One sample every 1,200 linear feet of newly installed water mains.
      b. One sample at the end of the newly installed water mains.
      c. One sample at each branch.
   5. One round of sampling shall be conducted on water distribution systems that continuously maintain a chlorine residual.
   6. Two rounds of sampling shall be conducted on water distribution systems that do not continuously maintain a chlorine residual. The second round of sampling shall be conducted a minimum of 24 hours after the first round of samples is taken.

B. All bacteriological tests shall be performed by the City of Norwich Department of Public Utilities Testing Laboratory.
   1. three bacteriological tests shall be performed on all samples:
      a. one coliform bacteria, and
      b. one heterotrophic plate count (HPC) bacteria.
      c. one volatile organics (EPA 501-502).
   2. Test results on all samples and a copy of the chain of custody shall be mailed directly to the Engineer and Owner from the laboratory.
   3. The disinfection procedure shall be considered satisfactory only if the results of all tests confirm the following:
      a. the absence of coliform bacteria in all samples taken and
      b. the HPC bacteria are less than 500 colony forming units per milliliter (cfu/ml) in all samples taken (unless the water supplier has established a stricter HPC limit from baseline data for their water distribution system, in which case the results of the HPC bacteria tests shall meet the stricter limit).
   4. The new water mains may be placed in service if the results of the disinfection procedure are satisfactory and the Engineer and Owner have granted their permission.
   5. If the initial disinfection procedure fails to produce satisfactory results, the new water mains shall be flushed and resampled as described above. If the test results from the resampling also fail to produce satisfactory results, the entire disinfection procedure shall be repeated.

END OF SECTION

SECTION 02676

TESTING PIPING SYSTEMS

PART 1 GENERAL

1.01 DESCRIPTION

A. Work Included: Provide pressure/leakage tests as required by the Contract Documents.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications.
   1. Section 02611 Ductile Iron Pipe and Fittings
   2. Section 02640 Buried Valves and Appurtenances
   3. Section 02675 Disinfection of Water Mains
   4. Section 02621 Fusible Poly Vinyl Chloride (PVC) Slip Lining

1.03 STANDARDS

A. The following American Water Works Association Standard shall form a part of this specification as referenced:
   1. AWWA C600 Installation of Ductile Iron Water Mains and Their Appurtenances.

PART 2 PRODUCTS

2.01 WATER

A. The Owner shall furnish water free, for flushing and testing the water main, if hydrants or other connection points are convenient to the work. Otherwise, the Contractor shall be responsible for securing an acceptable potable water supply at no additional cost to the Owner.

PART 3 EXECUTION

3.01 TESTING

A. A formal pressure/leakage test shall be required of the water mains, valves and appurtenances in the system constructed.
   1. The pressure/leakage test shall be conducted in accordance with these specifications and the applicable requirements of the most current version of AWWA C600, Section 4.
   2. Where any section of a water main is provided with concrete thrust blocks, the test shall not be made until at least 5 days have elapsed since the concrete was placed.

3. If high-early-strength cement is used in the concrete thrust blocks, the test shall not be made until at least 2 days have elapsed since the concrete was placed.
4. Prior to testing, the pipe line or section thereof, the section to be tested shall be thoroughly flushed, and all air expelled. All air shall be expelled by appropriate methods including the use of corporation stops installed by the Contractor, at no additional cost to the Owner, at high points along the water main.
5. After all the air has been expelled, and the corporation stops closed, the test pressure shall be applied by means of a pump connected to the pipe.
6. The pump, pipe connections, and all necessary apparatus including the gages, shall be furnished by the Contractor.
7. Unless otherwise specified, the test pressure shall be 150 psi or 150 percent of the working pressure, which ever is greater, but in no case shall the pressure exceed 250 psi.
8. This pressure shall be maintained for 2 hours.
9. Any excessive indicated leakage, as determined by the pressure test, shall be located and repairs made. The total leakage from the pipeline or sections thereof shall not exceed the amount deemed acceptable by AWWA C600, Section 4.
10. Should the pipe line or sections thereof not come within the permissible leakage limits, the Contractor (at his own expense) shall be required to excavate and locate the source of leakage and make repairs.
11. After the Contractor has notified the Engineer that repairs have been made, the test shall be repeated until the pipeline or sections thereof are within the allowable leakage.

END OF SECTION

SECTION 02900

LANDSCAPING

PART 1 GENERAL

1.01 DESCRIPTION

A. Work included: Provide landscaping as required by the Contract Documents.
   1. Generally the Work consists of topsoiling, seeding and fertilizing all areas not covered by pavement or gravel, and where the property is disturbed by the construction work.
   2. Provide the specified quantity and size of plantings as shown of the Drawings.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to Sections in Division 1 of these Specifications.
   1. Section 02222 Earthwork for Water Distribution Systems
   2. Section 02210 Site Grading

1.03 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

B. Product data: Within 35 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
   1. Materials list of items proposed to be provided under this Section.
   2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.

PART 2 PRODUCTS

2.01 TOPSOIL

A. Topsoil stripped from the site and stored, shall be approved before reuse.
   1. Topsoil from the site shall be treated to conform to the requirements for topsoil furnished from offsite sources.
   2. If the required quantity of suitable topsoil is not available from stripping of the site, or if it is not approved, topsoil from outside sources shall be furnished.
   3. Stockpiled topsoil used for this work shall be screened before being spread.
   4. Surplus topsoil not required to fulfill the requirements of the Contract shall be legally disposed of unless otherwise directed by the Owner.

2.02 TOPSOIL FURNISHED FROM OFFSITE SOURCES

A. Topsoil shall be fertile, friable, typical of the locality, and obtained from a well-drained site.

1. It shall be without admixture of subsoil or slag.
2. Shall be screened.
3. Topsoil as delivered to the site shall have an acidity range of pH 5.0 to 6.5 and shall contain not less than 5% organic matter as determined by loss on ignition of moisture-free samples dried at 100 degrees Centigrade.
4. If required, limestone shall be added to the topsoil to adjust the pH, so that it complies with the required limits.

B. Mechanical Analysis: Topsoil shall meet the following mechanical analysis

	% Passing	% Retained
1-1/4" screen	100	0
1/2" screen	97-100	0-3
No. 100 mesh sleeve	60-40	40-60

2.03 TREATING TOPSOIL WITH LIMESTONE OR ALUMINUM SULFATE

A. When the hydrogen-ion value is below the specified level, add ground limestone at the rate of 2-1/2 lbs. per cubic yard of topsoil to raise pH one full point.

B. The following table shows the amount of limestone needed for various soil reactions on the basis of 1,000 sq. ft. and on the basis of one (1) acre:

pH	pH Desired	Lbs. per 1000 sq. ft.	Tons per Acre
6.0	6.5	0-46	0-1
5.5	6.5	46-92	1-2
5.0	6.5	92-138	2-3

1. Limestone shall be raw, ground agricultural limestone containing not less than 90% calcium carbonate and shall be ground to such fineness that 50% will pass through a 100-mesh sieve and 90% will pass through a 20-mesh sieve.
2. When hydrogen-ion value is above specified level, add aluminum sulfate at the rate of 2-1/2 lbs. per cubic yard of topsoil to lower the pH one full point. Aluminum sulfate shall be unadulterated and delivered in containers with the name of the material, name of the manufacturer, and net weight of contents.

2.04 FERTILIZER

A. Fertilizer shall be furnished in containers plainly marked with the chemical analysis of the product and showing one of the following compositions by weight.

	10-6-4	8-6-4	7-7-7
Nitrogen	10% min.	8% min.	7% min.
Available Phosphoric Acid	6% min.	6% min.	7% min.
Water Soluble Potash	4% min.	4% min.	7% min.

1. Fertilizer shall be stored so that when used it will be dry and free flowing.

2.05 SEED

A. Seed shall be the commercial product of an approved reputable manufacturer and shall be certified to be not more than one (1) year old and of the general proportions by weight of the following seed types:

For Lawns and Other Undisturbed Areas Except as Defined Below:

Botanical Name	Common Name	Proportion by Weight	Minimum % Purity	Minimum % Germination
Poa Pratensis	Kentucky Blue Grass	35%	85%	85%
Festuca rubra var. creeping	Red Fescue	35%	98%	90%
Lolium Perene perennial	Rye Grass	15%	95%	90%
Agrostis Alba	Red Top	10%	92%	90%
Trifolium repens	White Clover	5%	90%	90%

For Cross Country Areas

Botanical Name	Common Name	Proportion by Weight	Minimum % Purity	Minimum % Germination
Colium Perene-perennial	Rye Grass	100%	95%	90%

1. Seed shall be furnished and delivered premixed in the proportions specified above.
2. All seed shall comply with State and Federal seed laws.
3. A certificate of compliance with the specifications shall be submitted by the manufacturer with the shipment of the seed. The certificate shall include the guaranteed percentage of purity, weed content and germination of the seed, net weight and date of shipment.
4. No seed shall be sown until the Contractor has submitted the above-mentioned certificate to the Engineer.

2.06 PLANTINGS

A. Refer to Drawings C-1 and C-7 for planting schedule.

PART 3 EXECUTION

3.01 APPLICATION

A. Application of Topsoil
   1. Topsoil shall be applied to the prepared subgrade specified in Section 02210, Site Grading.
   2. Topsoil shall be spread to a compacted depth of:
      a. Four (4) inches for cross country areas.
      b. Six (6) inches for lawn areas.
      c. Areas to have topsoil applied to them shall be scarified or otherwise roughened, just prior to the application.

B. Seedbed Preparation
   1. Grade areas to be seeded to a smooth uniform grade.
   2. Roll, scarify, rake and level as necessary to obtain true, even lawn surfaces
   3. Meet existing grades.
   4. All lawn areas shall slope to drain.
   5. All finish grades shall meet approval before grass seed is sown.

C. Application Rates of Limestone, Aluminum Sulfate, Fertilizer and Seed
   1. Limestone or Aluminum Sulfate shall be applied and thoroughly incorporated in the layer of loam or topsoil to adjust the acidity of the material.
   2. The rate of application of the limestone will be determined by the pH value.
   3. Fertilizer shall be applied at the rate of 20 pounds per 1000 square feet.
   4. The seed mixture shall be sown at the rate of 5 pounds per 1000 square feet.

D. Fertilizing and Liming
   1. Fertilizing and liming shall be done when the soil is in a moist condition and at least 24 hours before the sowing of the seed.
   2. The fertilizer and lime shall be applied to the soil by means of a mechanical spreader or other approved method capable of maintaining a uniform rate of application.
   3. Thoroughly harrowed, raked or otherwise mixed with the soil to a depth of not less than 2 inches.
   4. The fertilizer and lime shall not be applied together.

E. Time of Seeding
   1. The recommended seeding periods are from April 1 to June 1, and from August 15 to October 1.
   2. The Contractor may choose to seed at other times but regardless of the time of seeding he shall be responsible for a full growth of grass.
   3. When directed he shall re-fertilize and reseed areas on the project which do not develop a satisfactory growth of grass.
   4. Re-fertilizing and reseeding shall be incidental to the original seeding item requirements.

3.02 SEEDING METHODS

A. Fertilizer, limestone, and mulch material, if required, and seed of the type specified may be placed by one of the following methods, provided an even distribution is obtained.

B. Dry Method

1. Power Equipment: Mechanical seeders, seed drills, landscape seeders, cultipacker seeders, fertilizer spreaders, or other approved mechanical seeding equipment or attachments may be used when seed, limestone, and fertilizer are to be applied in dry form.
2. Manual Equipment - On areas that are inaccessible to power equipment, permission may be given to use hand-operated mechanical equipment when the materials applied are in dry form. The use of hand shovels to spread the materials shall not be allowed.
3. When the dry method is used, limestone and fertilizer shall not be mixed together prior to their application, but shall be worked into the soil together to a depth of at least 2 inches.
4. At least 24 hours shall elapse between the time fertilizer is incorporated into the topsoil and seed is spread.
5. Areas covered with park seed shall be raked, and, rolled with a roller weighing not more than 100 pounds per foot of roller width to firm the soil but not to pack it. The rolling shall be done the same day as the seeding unless otherwise permitted.
6. Lawn areas constructed in the spring after April 15 shall be covered with a 1 inch loose layer of clean wheat or oat straw. The straw shall be kept wet until a catch of grass is established. Loose straw shall be removed from the site.
7. Grass on slopes or banks may be established by another method subject to approval. Special care shall be exercised to prevent erosion or washouts.

C. Hydraulic Method

1. The application of grass seed, fertilizer, limestone, and a suitable mulch, if approved, may be accomplished through the use of an approved spraying machine.
2. The materials shall be mixed with water in the machine and kept in an agitated state in order for the materials to be uniformly suspended in the water.
3. The spraying equipment shall be so designed that when the solution is sprayed over an area, the resulting deposits of limestone, fertilizer, and grass seed shall be equal to the required rates.
4. Prior to the start of work, the Engineer shall be furnished with a certified statement for approval as to the number of pounds of materials to be used per 100 gallons of water. This statement shall also specify the number of square feet of seeding that can be covered with the quantity of solution in the hydroseeder.
5. The hydraulic seeding and fertilizing machine shall be completely flushed and cleaned each day before seeding is started.
6. If the results of the spray operations are unsatisfactory, the Contractor shall be required to abandon this method and apply the materials in accordance with the dry method.

7. When the hydraulic method is used, compaction or rolling shall be required.

3.03 MAINTENANCE

A. The Contractor shall be responsible for the proper care of the seeded areas during the period when the grass is becoming established.
   1. This period shall extend for two months after a successful uniform stand of grass is produced.
   2. The Contractor shall reseed all areas as necessary to obtain a uniform stand of grass, free from bare spots.
   3. Any seeded areas which fail to show a uniform stand of grass shall be reseeded until all areas are covered
   4. Any and all additional seeding shall be at the Contractor's expense.
   5. If necessary, barricades of brush or other materials and suitable signs shall be placed to protect the seeded areas.
   6. The seeded areas shall be carefully and suitably watered as necessary to produce a satisfactory growth.
   7. Areas seeded shall be mowed whenever necessary to keep the growth between 3 inches and 4 inches.
   8. Any washout that occurs shall be regraded and reseeded at the Contractor's expense until a good sod is established.

3.04 PLANTINGS

A. Planting installation shall be as follows:
   1. Season for planting shall be as recommended by the nursery supplying the plantings.
   2. Do not plant in muddy or frozen ground.
   3. Field stake/layout plantings as shown on the DRAWINGS. CONTRACTOR shall notify the OWNER prior to installation for approval.
   4. Horizontal limit of topsoil shall extend 4 feet from the center of the plantings.
   5. Minimum depth of topsoil shall extend from the crown of the root ball to 6 inches below the root ball.
   6. Plant pits shall be two feet greater in diameter than the root ball and excavated with vertical sides. Plant pits shall not be backfilled until the ENGINEER has approved the installation.
   7. Plantings shall be set plumb and straight in the center of the pits. Crown of the plant shall be set at finished grades indicated on the DRAWINGS.
   8. The pits shall be backfilled to within eight inches of finished grade and then soaked in water and allowed to settle. Backfill shall consist of planting soil thoroughly mixed with fertilizer. Backfill to finished grade after settlement.
   9. Mulch material shall be placed over entire planting to a depth of four inches after settlement, not later than one week after planting. No mulch shall be applied prior to the first watering of plant materials.

END OF SECTION

SECTION 02950

TREE PROTECTION AND RESTORATION

PART 1 GENERAL

1.01 DESCRIPTION

A. The work under this Section consists of protecting, restoring and replacing trees and shrubs affected by the work to be performed under this Contract.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   1. Section 02210 Site Grading
   2. Section 02930 Loam and Seed

1.03 WARRANTY

A. All plants, shrubs, trees and related work required under this Contract must be planted during the recommended time planting period and must satisfactorily grow and survive for a period of one year after acceptance.

B. All plants shall be free of dead or dying branches and branch tips and have foliage of normal density, size and color.

C. Replace all dead trees and shrubs and all these not in vigorous, thriving condition during the entire guarantee period:
   1. Without cost to Owner.
   2. As soon as weather conditions permit.
   3. Within a specified planting period.

D. Replacement plants under this guarantee shall be guaranteed for one full growing season from date of installation.

E. Replacements shall closely match adjacent specimens of the species.
   1. All replacements shall be of the same kind and size.
   2. Replacements shall be furnished and planted and specified herein.

1.04 DELIVERY, STORAGE AND HANDLING

A. Do not deliver more plant materials than can be planted in one day.

B. Deliver plants with legible identification labels.
   1. Label trees, evergreens, bundles or containers of like shrubs, or ground cover plants.
   2. State correct plant name and size.
   3. Use durable waterproof labels with water resistant ink which will remain legible for at least 60 days.

C. Protect during delivery to prevent damage to root ball or desiccation of leaves and wind burn.
   1. Plant balls shall be firmly bound, unbroken, reasonably moist to indicate watering prior to delivery and during storage.
   2. Tree trunks shall be free from fresh scars and damage in handling.
   3. No plant material from cold storage will be accepted.

D. Do not drop plants.

E. Do not pick up container plants by stems or trunks.

F. All plants and materials are subject to inspection for approval on delivery to site.
   1. Any approval shall not impair the right of the Engineer to reject plant or material damaged due to Contractor's handling, storage or planting methods.
   2. Notify Engineer of plant and material delivery schedule at least 48 hours in advance so that it may be inspected upon arrival at the job site.
   3. Remove unacceptable plants and materials immediately from the job site at no cost to the Owner.

G. Protect roots of plant material from drying or other possible injury.

H. Store plants in shade and protect from weather.
   1. Maintain and protect plant material not to be planted within four hours.

J. On delivery, set all balled and burlapped plants which cannot be planted immediately on ground and protect with soil, wet peat moss or other acceptable material.
   1. Water as required by weather conditions.

1.05 MAINTENANCE

A. Planting maintenance shall begin immediately after planting and continue until the end of the guarantee period.

B. Reset settled plants to proper grade and position, restore planting saucers and remove dead material.

C. Replace impaired, dead or missing plants promptly during specified planting season.

D. Keep planting saucers and beds free of weeds, grass and other undesired vegetation growth.

E. Tighten and adjust guys as necessary.

F. Water, weed, fertilize, cultivate, remulch, prune, spray, maintain and protect all plants to maintain a vigorous growing condition.

G. Remove soil ridges from around watering basins prior to end of maintenance period.

H. Following the completion of the maintenance period, the Contractor shall remove all wire, hoses, cables, guys and stakes from all trees which have been judged acceptable under guarantee provision.
   1. Unless designated otherwise by the Owner, all such materials used for temporary support of trees shall become the property of the Contractor and shall be removed from the site.

PART 2 PRODUCTS

2.01 TREES AND SHRUBS

A. Well-formed and shaped, true to type, and free from disease, injurious pests and defects such as knots, sun-scald, windburn, injuries, abrasion or disfigurement.
   1. Plants shall be in accordance with the ASNS Standards of the American Association of Nurserymen.

B. True to botanical and common name and variety:
   1. American Joint Committee on Horticultural Nomenclature, Standardized Plant Names.

C. Nursery grown except native pine, and approved collected stock:
   1. ANSI Z60.1 (latest edition).
   2. Grown within hardiness Zones 1 through 5, as established by the Arnold Arboretum, Jamaica Plain, Massachusetts, will be accepted.
      a. The Contractor's supplier must certify in writing that the stock has actually been grown under Zone 5 or hardier conditions.
      b. Plants not so certified will not be accepted.
   3. Root balled and burlapped plants:
      a. The root system of each plant shall be well provided with fibrous roots.
      b. All parts shall be moist and show active green cambium when cut.
      c. They shall be sound, healthy, and vigorous, well-branched and densely foliated when in leaf.
      d. The plants shall be free of disease, insect pests, eggs or larvae.
      e. Not root-bound or with root system hardened-off.
      f. Burlap shall be untreated eight ounce burlap. Plastic or other not-biodegradable wrappings will not be accepted.
      g. No plant will be accepted when the ball of earth its roots has been badly cracked or broken preparatory to or during the process of planting.
      h. The plants and balls shall remain intact during all operations.
      i. All plants that cannot be planted at once must be heeled in by setting in the ground and covering the balls with soil and watering.
   4. Use only ground cover plants well-established in removable containers, integral containers, or formed homogeneous soil sections.
   5. Do not prune prior to delivery.
   6. Size and form of trees:
      a. Height of trees shall be not less than the minimum size designated.
      b. Caliper measurement for deciduous trees six inches above ground level up to and including four and twelve inches above ground level for larger sizes.
      c. Evergreen trees shall be to the specified height with spread in proportion to height as designated by the ASNS Standards.
      d. Evergreen trees shall be well branched to the ground.
      e. Each tree shall have a single trunk growing from a single un-mutilated crown of roots.
      f. No part of the trunk of any tree shall be conspicuously crooked as compared with normal trees of the same variety.
      g. The trunks of all trees shall be free from sun scald, frost cracks, or wounds resulting from abrasions, fire or other causes.
   7. Size and form of shrubbery:
      a. Shrubbery shall meet the requirements for spread or height stated in the plant list.

b. Measurement for height shall be taken from the ground level to the average height of the shrub and not to the longest branch.
c. Single stemmed or thin plants will not be accepted.
d. The shrubs shall be well branched to the ground.
e. The shrubs shall be in a moist, vigorous condition, free from dead wood, bruises or other root or branch injuries.

2.02 PLANTING SOIL MIX

A. Planting soil mix shall be approved loam which has been pH adjusted according to particular planting applications and improved through the addition of organic matter as directed below. Planting loam shall conform to the following pH levels:
1. For ericaceous plants and broad-leaved evergreens requiring an acid soil, planting loam shall have a true pH of 4.5 to 5.5. If it has not, it shall be amended by the Contractor at his own expense to the proper pH range by mixing with sulfur as specified herein.
2. Planting loam for general planting of nonacid-loving plants shall have a true pH value of 6.0 to 6.5. If it has not, it shall be amended by the Contractor at his own expense to the proper pH range by mixing with dolomitic limestone as specified herein.
3. The amount of either sulfur or limestone required to adjust the planting loam to the proper pH range (above) shall be approved by the Landscape Architect on the basis of soil tests as specified herein.

B. Planting soil mix shall consist of pH adjusted loam which has been thoroughly premixed with organic material in the proportions of one (1) part peat moss with five (5) parts of approved loam.

2.03 FERTILIZER

A. Non-acid loving:
1. N: 10%
2. P_2O_5: 6%
3. K_2O: 4%

B. Acid Loving:
1. N: 7%
2. P_2O_5: 7%
3. K_2O: 7%

2.04 MULCH

A. Bark Mulch:
1. Shredded or ground, fir, hemlock or pine, average 1 inch to 2 inches.
2. Uniform color, aged a minimum of 6 months and a maximum of two years.
3. Free from weed seeds, saw dust, splinters, stringy material and chunks of wood.

B. Wood Cellulose Fiber Mulch:
1. Mulch to cover hydroseeded areas shall be fiber processed from whole wood chips manufactured specifically for standard hydraulic mulching equipment.
a. Fiber shall not be produced from recycled material such as sawdust, paper, or cardboard.
2. Moisture content shall not exceed 10%, plus or minus 3% as defined by the pulp and paper industry standards.

a. Fiber shall have a water holding capacity of not less than 900 grams water per 100 grams fiber.

3. The mulch shall be of such character that the fiber will be dispersed into a uniform slurry when mixed with water.
   a. It shall be nontoxic to plant life or animal life.
4. The mulch shall contain a non-petroleum based organic tackifier and a green dye to allow for easy visual metering during application but shall be non-injurious to plant growth.

2.05 GUYS AND STAKES

A. Stakes for tree support:
   1. Construction grade lumber
   2. Minimum nominal size: 2" x 2" or 2-1/2" in diameter x 9' long and pointed at 1 end, stained dark brown.

B. Guying wire shall be minimum two strands of twisted new pliable annealed galvanized soft steel wire of No. ten gauge size.
   1. Hose for guying wire: New two ply reinforced rubber garden hose not less than one-half inch inside diameter. Color shall be black.
   2. Turnbuckles and eyebolts; Galvanized steel of size and gauge to provide tensile strength equal to that of the cable. Turnbuckle opening shall be a minimum of three inches.

C. Drive anchors and guy wire assembly shall be as manufactured by Laconia Malleable Iron Works, Laconia, New Hampshire, or 'Duckbill' tree anchoring system manufactured by Foresight Industries, Inc., Cheyenne, Wyoming, or 'Ground Gripper' anchors as manufactured by A.B. Chance Co., Centralia, MO, or equal. Sizes used shall be in accordance with the manufacturer's specifications and recommendations.

D. Safety flagging for diagonal guy wires shall consist of twelve inch (12") lengths of wooden one by threes, (1x3) nominal dimension, painted with two coats of white enamel paint and fastened to guy wires with screw eyes, galvanized staples or other suitable hardware.

2.06 ANTI-DESICCANT

A. Acceptable emulsion shall be permeable to transpiration and shall be tested in accordance with ASTM E96.
   1. Anti-desiccant shall be "Wilt-Pruf" or approved equal.

PART 3 EXECUTION

3.01 TREE PROTECTION

A. Priority shall be given to protect the trees 12 inches in diameter and larger.
   1. The removal of trees shall be allowed only when they impede construction.

B. Tie back branches or trees designated for protection.
   1. Do not scar bark or break branches.
   2. Remove twine immediately upon completion of operations in the vicinity.

C. Snow fencing shall be provided, without nails, around designated trees to prevent scarring of the trees from construction equipment.
   1. Snow fencing shall be wire-bound wood roll 4 feet high.
   2. It shall be staked into the ground at 10 feet o.c. maximum, with 7-foot steel posts driven into the ground, or other approved fencing, placed at or beyond the drip-line of the branches and shall indicate the limit of all construction activity.

D Edge of excavation shall be a minimum of eight feet from the trunk of a tree that is to be protected.
   1. Trees in proximity to excavation shall be pruned prior to construction to compensate for anticipated root loss and stress.
   2. Pruning shall be done in accordance with Paragraph 3.02 of this specification.

E. The Contractor shall use a saw to cut roots greater than one inch, but less than three inches in diameter.
   1. Roots larger than three inches in diameter shall not be cut and may require hand digging to prevent damage.

F. No equipment or stockpiles shall be permitted within the drip-line of trees to be protected to avoid compaction of feeder roots (concentrated within the top six to eight inches of soil).
   1. Flag limits of vehicle traffic and stockpiles to minimize excess disturbance.

G. Traffic over roots by heavy construction vehicles shall be minimized.

H. Engineer shall observe protective measures prior to Contractor commencing any other construction operations in the vicinity.

I. Whenever tree roots will be exposed during construction for longer than three days, they shall be covered with a three-inch layer of mulch and kept moist.

3.02 TREE RESTORATION

A. Pruning: The Engineer shall determine, with the assistance of a certified arborist as necessary, whether sufficient structural root mass remains after construction root cutting to assure the survival of the tree.
   1. If not, the tree shall be removed at no additional cost to the Owner.
   2. Trees whose roots were pruned during construction, but shall remain, shall have their tree crowns pruned to balance root loss.

B. Wound Repair: When wounds are inflicted on any tree within or outside of construction or permanent easements, the loose bark shall be removed by cutting the bark back to healthy tissue with a sharp knife, tracing the outline of the wound.
   1. Wound tracing shall be supervised by a certified arborist, as determined by the Engineer.

C. Watering: Additional watering during periods of subnormal rainfall shall be applied at a rate equivalent to one inch per week.
   1. Water shall be non-toxic and free of harmful substances.

D. Replacement: In the event that trees to be protected cannot be saved as intended by the measures outlined in Part 3 of this specification, the tree shall be cleared.
   1. One tree shall be replaced for every 2-inch caliper of damaged or destroyed tree, at no additional cost to the Owner.

2. A tree of similar species, 2-1/2 to 3-inch caliper shall be provided and planted as specified below.

3.03 TREE REPLACEMENT

A. In the event that trees to be protected cannot be saved as intended by the measures outlined in this specification, the tree shall be cleared.
   1. One tree for every 2 inches of caliper of damaged tree shall be replaced at no additional cost to the Owner.
   2. The tree shall be of similar species and planted at a location determined by the Engineer.

B. Planting Periods
   1. Deciduous Trees and Shrubs:
      a. March 21 through May 1
      b. October 1 through December 1
   2. Evergreen Trees and Shrubs:
      a. April 15 through June 1
      b. August 15 through October 15

C. Plant Pits
   1. Tree pits shall be at least two feet greater in diameter than the spread of the root ball and at least six inches deeper.
   2. All pits shall be sharp and circular in outline and shall have vertical sides.
      a. Excavated materials of a subsoil classification or containing extraneous matter shall be removed from the site by the Contractor on a daily basis.
   3. Test drainage of plant pits shall by filling with water.
      a. If water does not drain out within six hours, dig trough impervious layers to a depth where drainage is adequate and backfill with sandy gravel material to proper pit depth.

D. Plants shall be placed at the proper depth, plumb and turned as directed in the pits.
   a. The pits shall be backfilled to within eight inches of finished grade and then soaked in water and allowed to settle.
   b. Backfilling shall consist of planting soil thoroughly mixed with fertilizer.

E. Plant when weather and soil conditions are suitable and in accordance with local practice.

F. The depth of planting pits shall be adjusted to provide a minimum of six (6) inches of compacted planting soil backfill under the balls or roots of all plants.

G. Remove top one-third of burlap, rope, wires, etc. from sides and tops of balls; do not pull burlap out from under.
   a. Synthetic man-made wrapping material, such as polypropylene or other similar materials, shall be completely removed.

H. Backfill remainder of plant pits with planting soil and firmly tamp around plant ball.

I. Place weed control barrier over planting pits and beds.

J. Mulch material shall be placed over entire saucer areas of trees to a depth of two inches after settlement, not later than one week after planting.
   a. No mulch shall be applied prior to the first watering of plant materials.

b. Provide temporary raised earthen saucers surrounding tree.

K. Watering shall be done by flooding plants twice within the first twenty-four hours of the time of planting.

L. Wrapping shall be completed promptly after planting.
1. The trunks of trees shall be spirally wrapped to the height of the second branches or as directed.
2. Wrapping shall be taped securely in place.

M. Guys shall be placed around the trunk at a point higher than the lowest branches of the trees in such a manner that branches will not be subject to undue strain.
1. Wires shall not come into direct contact with the bark of the tree in any place, but shall be covered with pieces of black rubber garden hose at points of contact.
2. Guys shall be kept tight at all times.
3. Bright orange flagging tape shall be tied to guys at chest height in areas subject to pedestrian traffic.

N. Pruning shall be done as specified in Paragraph 3.02 (A), but only under the direction of the Engineer.
1. Any pruning done without his direction shall be cause for replacement of the plant.
2. All newly planted trees and shrubs shall be pruned in accordance with National Park Service "Shade Tree Pruning", Tree Preservation Bulletin No. 4 and American Association of Nurserymen Standards to preserve the natural character of the plant.

O. Apply anti-desiccant to all plants in accordance with manufacturer's recommendations.

P. The Contractor shall make good to the satisfaction of the Owner any damage to lawn areas, plants, walks, walls or any other property.

Q. After completion of the work, the Contractor shall remove all debris materials, rubbish, etc. from the site and legally dispose of them.
1. The premises shall be left clean, presentable and satisfactory.

END OF SECTION

INDEX

DIVISION 3 CONCRETE

SECTION	SUBJECT	PAGES
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SECTION 03601

ANNULAR SPACE GROUT

PART 1 GENERAL

1.01 SCOPE OF WORK

The annular space between the existing pipeline and the sliplining pipe shall be completely filled with grout.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   1. Section 02621 Fusible PVC Sliplining

1.03 SUBMITTALS

A. Shop drawings and product data in accordance with Section 01300 showing materials of construction and details of mixing and installation for:
   1. grout: The submittal shall include the type and brand of the cement, the gradation of the fine aggregate, product data on any proposed admixtures and the proposed mix of the grout

B. Samples:
   1. Submit samples of commercially manufactured grout products when requested by the Engineer.
   2. Submit aggregates proposed for use in mixes when requested by the Engineer.

C. Laboratory Test Reports:
   1. Submit laboratory test data on all tests and design mixes for the contemplated application to the Engineer for approval within 45 days after Notice to Proceed, or at least 14 days before initial placement of concrete, whichever date is earlier.

D. Qualifications:
   1. Grout manufacturers shall submit documentation that they have at least five years experience in the completion of similar volume and length projects and production and use of the grouts which they propose to supply.

1.04 REFERENCE STANDARDS

A. American Society for Testing and Materials (ASTM):
   1. ASTM C33 – Standard Specifications for Concrete Aggregates,
   2. ASTM C150 – Standard Specifications for Portland Cement

1.05 QUALITY ASSURANCE

A. Qualifications:
   1. Grout manufactures shall have a minimum of five years experience in the production and use of grout proposed for the work.

B. Pre-installation Conference:
   1. Well in advance of grouting, hold a pre-installation meeting to review the requirements for surface preparation, mixing, placing, and curing procedures for each product proposed for use. Parties concerned with grouting, including the Engineer, shall be notified of the meeting at least ten days prior to its scheduled date.

C. Services of Manufacturer's Representative:
   1. A qualified field technician, specifically trained in the installation of the products, shall attend the pre-installation conference and shall be present for the initial installation of each type grout. Additional services shall also be provided, as required, to correct installation problems.

D. Field Testing:
   1. All field testing and inspection services required shall be provided by the Owner. The Contractor shall assist in the sampling of materials and shall provide any ladders, platforms, etc. for access to the work. The methods of testing shall comply in detail with the applicable ASTM Standards.

1.06 TESTING AND INSPECTION

A. General:
   1. Concrete materials and operations shall be tested and inspected as the work progresses with at least one test during the beginning of work, middle and end. Failure to detect any defective work or material shall not in any way preclude later rejection when such defect is discovered nor shall it obligate the Engineer for final acceptance.
   2. The grout contractor shall furnish compressive strength results samples after grout samples have properly cured
   3. The use of testing services shall in no way relieve the Contractor of the responsibility to furnish materials and construction in full compliance with the contract documents.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the jobsite in original, unopened packages, clearly labeled with the manufacturer's name, product identification, batch numbers and printed instructions.

B. Store materials in full compliance with the manufacturer's recommendations. Total storage time from date of manufacture to date of installation shall be limited to six months or the manufacturer's recommended storage time, whichever is less.

C. Material which becomes damp or otherwise unacceptable shall be immediately removed from the site and replaced with acceptable material at no additional expense to the Owner.

PART 2 PRODUCTS

2.01 GENERAL

A. The use of a manufacturer's name and product or catalog number is for the purpose of establishing the standard of quality desired.

B. Like materials shall be the products of one manufacturer or supplier in order to provide standardization of appearance.

2.02 MATERIAL

1. The grout should be a cement/fly ash/water mix or equal.
2. The additives to the mix should include a high level of air entrainment and plasticizers or other additives to promote flowability of the material.
3. The grout should be a low density material in the 40 to 60 PCF range
4. The compressive strength of the grout should be in the 100 psi range after curing.

PART 3 EXECUTION

3.01 GROUT INSTALLATION

1. Bulkheads shall be built at each end of the section to be grouted consisting of waterplug material and, if the annular space is sufficiently large enough, standard building bricks to fill the void space. The bulkhead should be about 16"(two brick lengths) wide.
2. One bulkhead shall incorporate a vent to release air as the grout is introduced and to provide a visual inspection point to show that grout has filled the annular space.
3. The other bulkhead shall provide an inlet for the grout. On the downstream side of the grout line inlet valve, a pressure gage shall be installed to monitor pressure in the annular space.
4. Alternatively, tap saddles or other devices can be installed on the host pipe just inside the bulkheads to provide the inlet and vent.
5. The new sliplined pipe shall be maintained full of water during the grout installation and initial curing.
6. The installation contractor shall set the length of pipeline to be grouted at one time.
7. The installation contractor shall recommend and supply any additional vent points along the annular space to be grouted. These shall be installed prior to the sliplining of the new pipe.

END OF SECTION

APPENDIX A

TATA & HOWARD

CONNECTICUT STATE LIBRARY

State Of Connecticut
By His Excellency
Thomas J. Meskill
Governor

Executive Order No. Three

WHEREAS, sections 4-61d(b) and 4-114a of the 1969 supplement to the general statutes require nondiscrimination clauses in state contracts and subcontracts for construction on public buildings, other public works and goods and services, and

WHEREAS, section 4-61e(c) of the 1969 supplement to the general statutes requires the labor department to encourage and enforce compliance with this policy by both employers and labor unions, and to promote equal employment opportunities, and

WHEREAS, the government of this state recognizes the duty and desirability of its leadership in providing equal employment opportunity, by implementing these laws,

NOW, THEREFORE, I, THOMAS J. MESKILL, Governor of the State of Connecticut, acting by virtue of the authority vested in me under section twelve of article fourth of the constitution of the state, as supplemented by section 3-1 of the general statutes, do hereby ORDER and DIRECT, as follows, by this Executive Order:

I. The labor commissioner shall be responsible for the administration of this Order and shall adopt such regulations as he deems necessary and appropriate to achieve the purposes of this Order. Upon the promulgation of this Order, the commissioner of finance and control shall issue a directive forthwith to all state agencies, that henceforth all state contracts and subcontracts for construction on public buildings, other public works and goods and services shall contain a provision rendering such contract or subcontract subject to this Order, and that such contract or subcontract may be cancelled, terminated or suspended by the labor commissioner for violation of or noncompliance with this Order or state or federal laws concerning nondiscrimination, notwithstanding that the labor commissioner is not a party to such contract or subcontract.

II. Each contractor having a contract containing the provisions prescribed in section 4-114a of the 1969 supplement to the general statutes, shall file, and shall cause each of his subcontractors to file, compliance reports with the contracting agency or the labor commissioner, as may be directed. Such reports shall be filed within such times and shall contain such information as to employment policies and statistics of the contractor and each subcontractor, and shall be in such form as the labor commissioner may prescribe. Bidders or prospective contractors or subcontractors may be required to state whether they have participated in any previous contract subject to the provisions of this Order or any preceding similar Order, and in that event to submit on behalf of themselves and their proposed subcontractors compliance reports prior to or as an initial part of their bid or negotiation of a contract.

III. Whenever the contractor or subcontractor has a collective bargaining agreement or other contract or understanding with a labor organization or employment agency as defined in section 31-122 of the general statutes, the compliance report shall identify the said organization or agency and the contracting agency or the labor commissioner may require a compliance report to be filed with the contracting agency or the labor commissioner, as may be directed, by such organization or agency, signed by an authorized officer or agent of such organization or agency, with supporting information, to the

effect that the signer's practices and policies, including but not limited to matters concerning personnel, training, apprenticeship, membership, grievance and representation, and upgrading, do not discriminate on grounds of race, color, religious creed, age, sex or national origin, or ancestry of any individual, and that the signer will either affirmatively cooperate in the implementation of the policy and provisions of this Order, or that it consents and agrees that recruitment, employment and the terms and conditions of employment under the proposed contract shall be in accordance with the purposes and provisions of the Order.

IV. The labor commissioner may by regulation exempt certain classes of contracts, subcontracts or purchase orders from the implementation of this Order, for standard commercial supplies or raw materials, for less than specified amounts of money or numbers of workers or for subcontractors below a specified tier. The labor commissioner may also provide by regulation for the exemption of facilities of a contractor which are in all respects separate and distinct from activities of the contractor related to the performance of the state contract, provided only that such exemption will not interfere with or impede the implementation of this Order, and provided further, that in the absence of such an exemption, all facilities shall be covered by the provisions of this Order.

V. Each contracting agency shall be primarily responsible for obtaining compliance with the regulations of the labor commissioner with respect to contracts entered into by such agency or its contractors. All contracting agencies shall comply with the regulations of the labor commissioner in discharging their primary responsibility for securing compliance with the provisions of contracts and otherwise with the terms of this Order and of the regulations of the labor commissioner issued pursuant to this Order. They are directed to cooperate with the labor commissioner and to furnish the labor commissioner such information and assistance as he may require in the performance of his functions under this Order. They are further directed to appoint or designate from among the personnel of each agency, compliance officers, whose duty shall be to seek compliance with the objectives of this Order by conference, conciliation, mediation, or persuasion.

VI. The labor commissioner may investigate the employment practices and procedures of any state contractor or subcontractor and the practices and policies of any labor organization or employment agency hereinabove described, relating to employment under the state contract, as concerns nondiscrimination by such organization or agency as hereinabove described, or the labor commissioner may initiate such investigation by the appropriate contract agency, to determine whether or not the contractual provisions hereinabove specified or statutes of the state respecting them have been violated. Such investigation shall be conducted in accordance with the procedures established by the labor commissioner and the investigating agency shall report to the labor commissioner any action taken or recommended.

VII. The labor commissioner shall receive and investigate or cause to be investigated complaints by employees or prospective employees of a state contractor or subcontractor or members or applicants for membership or apprenticeship or training in a labor organization or employment agency hereinabove described, which allege discrimination contrary to the contractual provisions specified hereinabove or state statutes requiring nondiscrimination in employment opportunity. If this investigation is conducted for the labor commissioner by a contracting agency, that agency shall report to the labor commissioner what action has been taken or is recommended with regard to such complaints.

VIII. The labor commissioner shall use his best efforts, directly and through contracting agencies, other interested federal, state and local agencies, contractors and all other available instrumentalities, including the commission on human rights and opportunities, the executive committee on human rights and opportunities, ad the apprenticeship council under its mandate to provide advice and counsel to the labor commissioner in providing equal employment opportunities to all apprentices and to provide training, employment and upgrading opportunities for disadvantages workers, in accordance with section 31-51(d) of the 1969 supplement to the general statutes, to cause any labor organization or any employment agency whose members are engaged in work under government contracts or referring workers or providing supervising apprenticeship or training for or in the course of work under a state contract or subcontract to cooperate in the

implementation of the purposes of this Order. The labor commissioner shall in appropriate cases notify the commission on human rights and opportunities or other appropriate state or federal agencies whenever it has reason to believe that the practices of any such organization or agency violate equal employment opportunity requirements of state or federal law.

IX. The labor commissioner or any agency officer or employee in the executive branch designated by regulation of the labor commissioner may hold such hearings, public or private, as the labor commissioner may deem advisable for compliance, enforcement or educational purposes under this Order.

X. (a) The labor commissioner may hold or cause to be held hearings, prior to imposing ordering or recommending the imposition of penalties and sanctions under this Order. No order for disbarment of any contractor from further state contracts shall be made without affording the contractor an opportunity for a hearing. In accordance with such regulations as the labor commissioner may adopt, the commissioner or the appropriate contracting agency may

1. Publish or cause to be published the names of contractors or labor organizations or employment agencies as hereinabove described which it has concluded have complied or failed to comply with the provisions of this Order or the regulations of the labor commissioner in implementing this Order.

2. Recommend to the commission on human rights and opportunities that in cases in which there is substantial or material violation or threat thereof of the contractual provision or related state statutes concerned herein, appropriate proceedings be brought to enforce them, including proceedings by the commission on its own motion under chapter 563 of the general statutes and the enjoining, within the limitations of applicable law, of organizations, individuals or groups who prevent directly or indirectly compliance with the provisions of this Order.

3. Recommend that criminal proceedings be brought under chapter 939 of the general statutes.

4. Cancel, terminate, suspend or cause to be cancelled, terminated, or suspended in accordance with law any contract or any portion or portions thereof for failure of the contractor or subcontractor to comply with the nondiscrimination provisions of the contract. Contracts may be cancelled, terminated, suspended absolutely or their continuance conditioned upon a program for future compliance approved by the contracting agency.

5. Provide that any contracting agency shall refrain from entering into any further contracts or extensions or modifications of existing contracts with any contractor until he has satisfied the labor commissioner that he has established and will carry out personnel and employment policies compliant with this Order.

6. Under regulations prescribed by the labor commissioner each contracting agency shall make reasonable efforts with a reasonable period of time to secure compliance with the contract provisions of this Order by methods of conference, conciliation, mediation or persuasion, before other proceedings shall be instituted under this Order or before a state contract shall be cancelled or terminated in whole or in part for failure of the contractor or subcontractor to comply with the contract provisions of state statute and this Order.

(b) Any contracting agency taking any action authorized by this Order, whether on its own motion or as directed by the labor commissioner or pursuant to his regulations shall promptly notify him of such action. Whenever the labor commissioner makes a determination under this Order, he shall promptly notify the appropriate contracting agency and other interested federal, state and local agencies of the action recommended. The state and local agency or agencies shall take such action and shall report the results thereof to the labor commissioner within such time as he shall specify.

XI. If the labor commissioner shall so direct, contracting agencies shall not enter into contracts with any bidder or prospective contractor unless he has satisfactorily complied with the provisions of this Order, or submits a program for compliance acceptable to the labor commissioner, or if the labor commissioner so authorizes, to the contracting agency.

XII. Whenever a contracting agency cancels or terminates a contract, or a contractor has been disbarred from further government contracts because of noncompliance with the contract provisions with regard to nondiscrimination, the labor commissioner or the contracting agency shall rescind such disbarment, upon the satisfaction of the labor commissioner that the contractor has purged himself of such noncompliance and will thenceforth carry out personnel and employment policies of nondiscrimination in compliance with the provision of this Order.

XIII. The labor commissioner may delegate to any officer; agency or employee in the executive branch any function or duty of the labor commissioner under this Order except authority to promulgate regulations of a general nature.

XIV. This Executive Order supplements the Executive Order issued on September 28, 1967. All regulations, orders, instructions, designations and other directives issued heretofore in these premises, including those issued by the heads of various departments or agencies under or pursuant to prior order or statute, shall remain in full force and effect, unless and until revoked or superceded by appropriate authority, to the extent that they are not inconsistent with this Order.

This Order shall become effective thirty days after the date of this Order.

Dated at Hartford, Connecticut, this 16th day of June, 1971

Thomas J. Meskill
Governor

Filed this 16th day of
June, 1971.

Harry Hammer
Secretary Of The State

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APPENDIX B

TATA & HOWARD

CONNECTICUT STATE LIBRARY

State Of Connecticut
By His Excellency
Thomas J. Meskill
Governor

Executive Order No. Seventeen

WHEREAS, Section 31-237 of the General Statutes of Connecticut as amended requires the maintaining of the established free services of the Connecticut State Employment Service to both employers and prospective employees and

WHEREAS, Section 31-5 of the General Statutes of Connecticut requires that no compensation or fee shall be charged or received directly or indirectly for the services of the Connecticut State Employment Service and

WHEREAS, large numbers of our citizens who have served in the Armed Forces of our nation are returning to civilian life in our state and seeking employment in civilian occupations and

WHEREAS, we owe a duty as well as gratitude to these returning veterans including the duty to find suitable employment for them and

WHEREAS, many of our handicapped citizens are fully capable of employment and are entitled to be placed in suitable employment and

WHEREAS, many of the citizens of our state who are unemployed are unaware of the job openings and employment opportunities which do in fact exist in our state and

WHEREAS, notwithstanding the free services of the Connecticut State Employment Service, many of our Connecticut employers do not use its free services or do not avail themselves fully of all the services offered,

NOW, THEREFORE, I, THOMAS J. MESKILL, Governor of the State of Connecticut, acting by virtue of the authority vested in me under the fourth article of the Constitution of the State and in accordance with Section 3-1 of the General Statutes, do hereby ORDER and direct, as follows, by this Executive Order:

I. The Labor Commissioner shall be responsible for the administration of this Order and shall do all acts necessary and appropriate to achieve its purpose. Upon promulgation of this Order, the Commissioner of Finance and Control shall issue a directive forthwith to all state agencies, that henceforth all state contracts and subcontracts for construction on public buildings, other public works and goods and services shall contain a provision rendering such contract or subcontract subject to this Order, and that such contract or subcontract may be cancelled, terminated or suspended by the Labor Commissioner for violation of or noncompliance with this Order, notwithstanding that the Labor Commissioner is not a party to such contract or subcontract.

II. Every contractor and subcontractor having a contract with the state or any of its agencies, boards, commissions, or departments, every individual partnership, corporation, or business entity having business with the state or who or which seeks to do business with the state, and every bidder or prospective bidder who submits a bid or replies to an invitation to

bid on any state contract shall list all employment openings with the office of the Connecticut State Employment Service in the area where the work is to be performed or where the services are to be rendered.

III. All state contracts shall contain a clause which shall be a condition of the contract that the contractor and any subcontractor holding a contract directly under the contractor shall list al employment openings with the Connecticut State Employment Service. The Labor Commissioner may allow exceptions to listings of employment openings which the contractor proposes to fill from within its organization from employees on the rolls of the contractor on the date of publication of the invitation to bid or the date on which the public announcement was published or promulgated advising of the program concerned.

IV. Each contracting agency of the state shall be primarily responsible for obtaining compliance with this Executive Order. Each contracting agency shall appoint or designate from among its personnel one or more persons who shall be responsible for compliance with the objectives of this Order.

V. The Labor Commissioner shall be and is hereby empowered to inspect the books, records, payroll and personnel data of each individual or business entity subject to this Executive Order and may hold hearings or conferences, formal or informal, in pursuance of the duties and responsibilities hereunto delegated to the Labor Commissioner.

VI. The Labor Commissioner or any agency officer or employee in the executive branch designated by regulation of the Labor Commissioner may hold such hearings, public or private, as the Labor Commissioner may deem advisable for compliance, enforcement or educational purposes under this Order.

VII. (a) The Labor Commissioner may hold or cause to be held hearings, prior to imposing, ordering, or recommending the imposition of penalties and sanctions under this Order. In accordance herewith, the Commissioner or the appropriate contracting agency may suspend, cancel, terminate, or cause to be suspended, cancelled, or terminated in accordance with law any contract or portion or portions thereof for failure of the contractor or subcontractor to comply with the listing provisions of the contract. Contracts may be cancelled, terminated, suspended absolutely or their continuance conditioned upon a program for future compliance approved by the contracting agency.

(b) Any contracting agency taking any action authorized by this Order, whether on its own motion or as directed by the Labor Commissioner, shall promptly notify him of such action. Whenever the Labor Commissioner makes a determination under this Order, he shall promptly notify the appropriate contracting agency of the action recommended. The agency shall report the results to the Labor Commissioner promptly.

VIII. If the Labor Commissioner shall so direct, contracting agencies shall not enter into contracts with any bidder or prospective contractor unless he has satisfactorily complied with the provisions of this Order.

This Order shall become effective sixty days after the date of this Order.

Dated at Hartford, Connecticut, this 15th day of February 1973.

Thomas J. Meskill
Governor

Filed this 15th day of February 1973.

Harry Hammer
Secretary Of The State (Deputy)

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APPENDIX C

TATA & HOWARD

The Executive Office of Governor John G. Rowland

State of Connecticut

By His Excellency

John G. Rowland

Governor

Executive Order No. Sixteen

WHEREAS, the State of Connecticut recognizes that workplace violence is a growing problem that must be addressed; and

WHEREAS, the State is committed to providing its employees a reasonably safe and healthy working environment, free from intimidation, harassment, threats, and /or violent acts; and

WHEREAS, violence or the threat of violence by or against any employee of the State of Connecticut or member of the public in the workplace is unacceptable and will subject the perpetrator to serious disciplinary action up to and including discharge and criminal penalties.

NOW, THEREFORE, I, John G. Rowland, Governor of the State of Connecticut, acting by virtue of the authority vested in me by the Constitution and by the statutes of this state, do hereby ORDER and DIRECT:

1. That all state agency personnel, contractors, subcontractors, and vendors comply with the following **Violence in the Workplace Prevention Policy**:

   The State of Connecticut adopts a statewide zero tolerance policy for workplace violence.

   Therefore, except as may be required as a condition of employment¾

   - No employee shall bring into any state worksite any weapon or dangerous instrument as defined herein.
   - No employee shall use, attempt to use, or threaten to use any such weapon or dangerous instrument in a state worksite.
   - No employee shall cause or threaten to cause death or physical injury to any individual in a state worksite.

   Weapon means any firearm, including a BB gun, whether loaded or unloaded, any knife (excluding a small pen or pocket knife), including a switchblade or other knife having an automatic spring release device, a stiletto, any police baton or nightstick or any martial arts weapon or electronic defense weapon.

   Dangerous instrument means any instrument, article, or substance that, under the circumstances, is capable of causing death or serious physical injury.

   Violation of the above reasonable work rules shall subject the employee to disciplinary action up to and including discharge.

2. That each agency must prominently post this policy and that all managers and supervisors

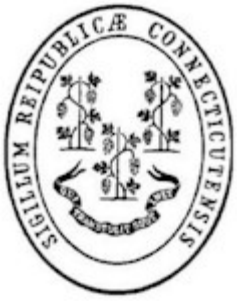
must clearly communicate this policy to all state employees

3. That all managers and supervisors are expected to enforce this policy fairly and uniformly.
4. That any employee who feels subjected to or witnesses violent, threatening, harassing, or intimidating behavior in the workplace immediately report the incident or statement to their supervisor, manager, or human resources office.
5. That any employee who believes that there is a serious threat to their safety or the safety of others that requires immediate attention notify proper law enforcement authorities and his or her manager or supervisor
6. That any manager or supervisor receiving such a report shall immediately contact their human resources office to evaluate, investigate and take appropriate action.
7. That all parties must cooperate fully when questioned regarding violations of this policy.
8. That all parties be advised that any weapon or dangerous instrument at the worksite will be confiscated and that there is no reasonable expectation of privacy with respect to such items in the workplace.
9. That this order applies to all state employees in the executive branch.
10. That each agency will monitor the effective implementation of this policy.
11. That this order shall take effect immediately.

Dated in Hartford, Connecticut, this fourth day of August, 1999.

JOHN G. ROWLAND, Governor

Filed this 4th day of August, 1999.



SUSAN BYSIEWICZ, Secretary of the State

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APPENDIX D

TATA & HOWARD

State of Connecticut
Department of Public Health
Drinking Water State Revolving Fund (DWSRF)

Project Sign Requirements

Project Sign

The contractor shall erect a sign at the project identifying the project and indicating that the Connecticut Department of Public Health, which is providing funding for the construction of the project. The project sign shall be erected **prior to the start of any construction work**, and shall be in accordance with the specifications noted below and the enclosed project sign detail. The sign shall be furnished, erected, and maintained by the Contractor at a location designated by the engineer. The names of the Commissioner of Public Health and the Governor of the State of Connecticut as shown on the sign shall be kept current, and shall be revised with 30 days of such notice to the Contractor that a change has occurred, at no cost to the Owner. No additional information shall be placed on the project sign beyond that shown in the project sign detail. If the owner desires to erect a supplemental sign with additional detail regarding the project or its sponsors, that sign shall be placed in a manner that the project sign is not obscured from public view.

The sign shall be constructed of ¾" minimum thickness exterior plywood (A-B) or APA high density overlay plywood (HDO). All fasteners shall be of a rustproof nature. The sign face background shall consist of at least three (3) coats of white outdoor enamel paint. The sign shall be fastened securely in an upright position and maintained in a location on the construction site clearly visible to the public and to visitors to the site.

Logo stickers

The Department of Public Health will provide the appropriate logo stickers for use on the project sign. The logos may be placed anywhere in the blank areas on either side of the text in the center (see template). They should be placed so as to allow sufficient clearance between logos, as may be required.

CONNECTICUT DRINKING WATER FUND PROJECT SIGN

(Provide adequate support for sign as site conditions may require. Keep sign a proper distance above prevailing grade to permit public viewing.)

8' - 0"

4' – 0"

STATE OF CONNECTICUT

DANNEL PATRICK MALLOY, GOVERNOR

DEPARTMENT OF PUBLIC HEALTH

JEWEL MULLEN, M.D., M.P.H., M.P.A., COMMISSIONER

DPH Logo

State Emblem

SAFE DRINKING WATER ACT PROJECT

PWS NAME
PROJECT DESCRIPTION
$X,XXX,XXX STATE LOAN
from the

DRINKING WATER STATE REVOLVING FUND (DWSRF) PROGRAM

Color Scheme:
Lettering in Black
Background in White

Optional: PWS Authorized Representative, Local Official, Contractor, Engineer, Other Sources of Funding

Rev. 6/24/11

APPENDIX E

TATA & HOWARD

Sec. 22a-482-4 (g) Required Provisions for Construction Contracts

Municipalities must include, when appropriate, the following clauses or their equivalent in each subagreement and may substitute other terms for "grantee" and "contractor" in their subagreements.

(1) Supersession. The municipality and the contractor agree that the following general provisions or their equivalent apply to eligible work to be performed under this contract and that these provisions supersede any conflicting provisions of this contract;

(2) Privity of contract. This contract is expected to be funded in part by the State of Connecticut. Neither the State, nor any of its departments, agencies, or employees is or will be a party to this contract or any lower tier subcontract. This contract is to be subject to regulations adopted in accordance with Section 22a-482 of the Connecticut General Statutes.

(3) Changes for contracts for construction.

(A) The municipality may, at any time, without notice to any surety, by written order designated or indicated to be a change order, make any change in the work within the general scope of the subagreement, including but not limited to changes:

(i) In the specifications (including drawings and designs);

(ii) In the time, method, or manner of performance of the work;

(iii) In the municipality-furnished facilities, equipment, materials, services, or site; or

(iv) Directing acceleration in the performance of the work.

(B) A change order shall also be any other written or oral order (including direction, instruction, interpretation or determination) from the municipality which causes any change, provided the contractor gives the municipality written notice stating the date, circumstances, and source of the order and that the contractor regards the order as a change order.

(C) Except as provided in this clause, no order, statement, or conduct of the municipality shall be treated as a change under this clause or entitle the contractor to an equitable adjustment.

(D) If any change under this clause causes an increase or decrease in the contractor's cost or the time required to perform any part of the work under this contract, whether or not changed by any order, an equitable adjustment shall be made and the subagreement modified in writing. However, for claims based on defective specifications, no claim for any change under (B) above shall be allowed for any costs incurred more than 20 days before the contractor gives written notice as required in paragraph (B). In the case of defective specifications for which the municipality is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the contractor in attempting to comply with those defective specifications.

(E) If the contractor intends to assert a claim for an equitable adjustment under this

clause, he must, within thirty (30) days after receipt of a written change order under(A) of this change clause or the furnishing of a written notice under (B) of this clause, submit to the grantee a written statement setting forth the general nature and monetary extent of such claim. The municipality may extend the 30-day period. The statement of claim may be included in the notice under (B) of this clause.

(F) No claim by the contractor for an equitable adjustment shall be allowed if made after final payment under this contract.

(4) Changes for contracts for supplies.

(A) The municipality may at any time, by a written order and without notice to the sureties, make changes within the general scope of this subagreement in any one or more of the following:

(i) Drawings, designs, or specifications, where the supplies to be furnished are to be specially manufactured for the municipality;

(ii) Method of shipment or packing; and

(iii) Place of delivery.

(B) If any change causes an increase or decrease in the cost or the time required to perform any part of the work under this subagreement, whether or not changed by any such order, an equitable adjustment shall be made in the subagreement price or delivery schedule, or both, and the subagreement shall be modified in writing. Any claim by the contractor for adjustment under this clause must be asserted within 30 days from the date of receipt by the contractor of the notification of change. If the municipality decides that the facts justify such action, the municipality may receive and act upon any such claim asserted at any time before final payment under this subagreement. Where the cost of property made obsolete or excess as a result of a change is included in the contractor's claim for adjustment, the grantee shall have the right to prescribe the manner of disposition of such property. Nothing in this clause shall excuse the contractor from proceeding with the subagreement as changed.

(5) Differing site conditions.

(A) The contractor shall promptly, and before such conditions are disturbed, notify the municipality in writing of:

(i) Subsurface or latent physical conditions at the site differing materially from those indicated in this subagreement; or

(ii) Unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this subagreement. The municipality shall promptly investigate the conditions and, if it finds that conditions are materially different and will cause an increase or decrease in the contractor's cost or the time required to perform any part of the work under this subagreement, whether or not changed as a result of such conditions, an equitable adjustment shall be made and the subagreement modified in writing.

(B) No claim of the contractor under this clause shall be allowed unless the contractor has given notice required in (A) of this clause. However, the municipality may extend the prescribed time.

(C) No claim by the contractor for an equitable adjustment shall be allowed if asserted after final payment under this subagreement.

(6) Suspension of work.

(A) The municipality may order the Contractor, in writing, to suspend, delay, or interrupt all or any part of the work for such period of time as the municipality may determine to be appropriate for the convenience of the municipality.

(B) If the performance of all or any part of the work is suspended, delayed, or interrupted for an unreasonable period of time by an act of the municipality in administration of the contract, (or if no time is specified, within a reasonable time), an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) necessarily caused by such unreasonable suspension, delay, or interruption and the contract modified in writing. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the contractor, or for which an equitable adjustment is provided for or excluded under any other provision of the contract.

(C) No claim under this clause shall be allowed for any costs incurred more than 20 days before the contractor notified the municipality in writing of the act or failure to act involved (this requirement does not apply to a claim resulting from a suspension order), and unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of such suspension, delay, or interruption, but not later than the date of final payment under the contract.

(7) Termination.

(A) This contract may be terminated in whole or in part in writing by either party in the event of substantial failure by the party to fulfill its obligations under this subagreement through no fault of the terminating party, provided that no termination may be effected unless the other party is given not less than ten (10) calendar days written notice (delivered by certified mail, return receipt requested) of intent to terminate and an opportunity for consultation with the terminating party prior to termination.

(B) This contract may be terminated in whole or in part in writing by the municipality for its convenience, provided that the contractor is given not less than ten (10) calendar days written notice (delivered by certified mail, return receipt requested) of intent to terminate and an opportunity for consultation with the terminating party prior to termination.

(C) If termination for default is effected by the municipality, an equitable adjustment in the price provided for in this contract shall be made but no amount shall be allowed for anticipated profit on unperformed services or other work, and any payment due to the contractor at the time of

termination may be adjusted to cover any additional costs to the municipality because of the contractor's default. If termination for default is effected by the contractor, or if termination for convenience is effected by the municipality, the equitable adjustment shall include a reasonable profit for services or other work performed. The equitable adjustment for any termination shall provide for payment to the contractor for services rendered and expenses incurred prior to the termination in addition to termination settlement costs reasonably incurred by the contractor relating to commitments which had become firm prior to the termination.

(D) Upon receipt of a termination action pursuant to (A) or (B) above, the contractor shall promptly discontinue all services affected (unless the notice directs otherwise), and deliver or otherwise make available to the recipient all data, drawings, specifications, reports, estimates, summaries and such other information and materials as may have been accumulated by the contractor in performing this contract whether completed or in process.

(E) Upon termination under (A) or (B) of this clause the municipality may take over the work and may award another party a contract to complete the work under this contract.

(F) If, after termination for failure of the contractor to fulfill contractual obligations, it is determined that the contractor had not failed to fulfill contractual obligations, the termination shall be deemed to have been for the convenience of the municipality. In such event, adjustment of the price provided for in this contract shall be made as provided in (C) of this clause.

(8) Remedies. Except as may be otherwise provided in this contract, all claims, counterclaims, disputes, and other matters in question between the municipality and the contractor arising out of or relating to this contract or the breach thereof will be decided by arbitration if the parties mutually agree or in a court of competent jurisdiction within the district in which the municipality is located.

(9) Price reduction for defective cost or pricing data.

NOTE - This clause is applicable to any contract negotiated between the municipality and its contractor in excess of $500,000; negotiated change orders in excess of $500,000 or 10 percent of the contract, whichever is less, affecting the price of a formally advertised, competitively awarded, fixed price contract; or any lower tier subcontract or purchase order in excess of $500,000 or 10 percent of the assistance agreement, whichever is less, under a contract other than a formally advertised, competitively awarded, fixed price subagreement. This clause is not applicable for contracts to the extent that they are awarded on the basis of effective price competition. The contractor and subcontractor, where appropriate, warrant that cost and pricing data submitted for evaluation with respect to negotiation of prices for negotiated contracts, lower tier subcontracts and change orders is based on current, accurate, and complete data supported by their books and records. If the municipality or the Commissioner determines that any price (including profit) negotiated in connection with this contract, any lower tier subcontract, or any amendment thereunder was increased by any significant sums because the data provided was incomplete, inaccurate, or not current at the time of submission, then such price, cost or profit shall be reduced accordingly, and the contract shall be modified in writing to reflect such reduction. Failure to agree on a reduction shall be subject to the remedies clause of this agreement.

NOTE - Since the contract is subject to reduction under this clause by reason of defective cost or pricing data submitted in connection with lower tier subcontracts, the contractor may wish to include a clause in each lower tier subcontract requiring the lower tier subcontractor to appropriately indemnify the contractor. It is also expected that any lower tier subcontractor subject to such indemnification will generally require substantially similar indemnification for defective cost or pricing data required to be submitted by lower tier contractors.

(10) Audit; Access to records.

(A) The contractor shall maintain books, records, documents, and other evidence directly pertinent to performance on grant work under this contract in accordance with generally accepted accounting principles and practices consistently applied. The contractor shall also maintain the financial information and data used by the contractor in the preparation or support of the cost submission required under Section 22a-482-4(g)(8) for any negotiated contract or change order and a copy of the cost summary submitted to the municipality. The municipality and the Commissioner or any of his authorized representatives shall have access to all such books, records, documents, and other evidence for the purpose of inspection, audit and copying during normal business hours. The contractor will provide proper facilities for such access and inspection.

(B) If this is a formally advertised, competitively awarded, fixed price contract, the contractor agrees to make (A) through (F) of this clause applicable to all negotiated change orders and contract amendments affecting the contract price. In the case of all other types of prime contracts, the contractor agrees to include (A) through (F) of this clause in all his subcontracts in excess of $10,000 and to make paragraphs (A) through (F) of this clause applicable to all change orders directly related to project performance.

(C) Audits conducted under this provision shall be in accordance with generally accepted auditing standards and established procedures and guidelines of the reviewing or audit departments and meeting the requirements of Section 20-282 of the Connecticut General Statutes.

(D) The contractor agrees to disclose all information and reports resulting from access to records under (A) and (B) of this clause. (E) Records under (A) and (B) above shall be maintained and made available during performance on assisted work under this contract and until three years from the date of final State payment for the project. In addition, those records which relate to any dispute appeal arising under a grant assistance agreement, to litigation, to the settlement of claims arising out of such performance, or to costs or items to which an audit exception has been taken, shall be maintained and made available until three years after the date of resolution of such appeal, litigation, claim, or exception.

(F) This right of access clause (with respect to financial records) applies to:

(i) Negotiated prime subagreements;

(ii) Negotiated change orders or contract amendments in excess of $10,000 affecting the price of any formally advertised, competitively awarded, fixed price contract; and

(iii) Subcontracts or purchase orders under any contract other than a formally advertised, competitively awarded, fixed price contract. However, this right of access does not apply to a prime contract, lower tier subcontract, or purchase order awarded after effective price competition, except with respect to records pertaining directly to contract performance, (excluding any financial records of the contractor); if there is any indication that fraud, gross abuse, or corrupt practices may be involved or if the contract is terminated for default or for convenience.

(11) Covenant against contingent fees. The contractor warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the contractor for the purpose of securing business. For breach or violation of this warranty the grantee shall have the right to annul this agreement without liability or, at its discretion, to deduct from the contract price or consideration, or otherwise recover the full amount of such commission, percentage, brokerage, or contingent fee.

(12) Gratuities.

(A) If the municipality finds, after a notice and hearing, that the contractor, or any of the contractor's agents or representatives, offered or gave gratuities (in the form of entertainment, gifts, or otherwise), to any official, employee, or agent of the municipality or the State, in an attempt to secure a contract or favorable treatment in awarding, amending, or making any determinations related to the performance of this agreement, the municipality may, by written notice to the contractor, terminate this agreement. The municipality may also pursue other rights and remedies that the law or this agreement provides. However, the existence of the facts on which the municipality bases such findings shall be in issue and may be reviewed in proceedings under the Remedies clause of this agreement.

(B) In the event this contract is terminated, as provided in (A) in this clause, the recipient may pursue the same remedies against the contractor as it could pursue in the event of a breach of the contract by the contractor and, as a penalty, in addition to any other damages to which it may be entitled by law, to exemplary damages in an amount (as determined by the grantee) which shall be not less than three nor more than ten times the costs the contractor incurs in providing any such gratuities to any such officer or employee.

(13) Responsibility of the contractor.

(A) The contractor agrees to perform all work under this agreement in accordance with this agreement's designs, drawings, and specifications.

(B) The contractor warrants and guarantees for a period of one (1) year from the date of substantial completion of the system that the completed system is free from all defects due to faulty materials, equipment or workmanship; and the contractor shall promptly make whatever adjustments or corrections necessary to cure such defects, including repairs of any damage to other parts of the system resulting from such defects. The municipality shall give notice to the contractor of observed defects with reasonable promptness. In the event that the contractor fails

to make adjustments, repairs, corrections or other work that may be made necessary by such defect, the municipality may do so and charge the contractor the cost incurred. The performance bond shall remain in full force and effect through the guarantee period.

(C) The contractor's obligations under this clause are in addition to the contractor's other express or applied warranties under this agreement or State law and in no way diminish any other rights that the municipality may have against the contractor for faulty material, equipment, or work.

(14) Final payment. Upon satisfactory completion of the work performed under this agreement, as a condition before final payment under this agreement, or as a termination settlement under this agreement, the contractor shall execute and deliver to the municipality a release of all claims against the municipality arising under or by virtue of this agreement, except claims which are specifically exempted by the contractor to be set forth therein. Unless otherwise provided in this agreement or by State law or otherwise expressly agreed to by the parties to this agreement, final payment under this agreement or settlement upon termination of this agreement shall not constitute a waiver of the municipality's claims against the contractor or his sureties under this agreement or applicable performance and payment bonds.

APPENDIX F

TATA & HOWARD

Sec. 22a-482-4 (h) Procurement Requirements-General

(1) Applicability. This defines the responsibilities of the State and the municipality and the minimum procurement standards for each municipality's procurement system.

(2) Municipality responsibility.

(A) The municipality is responsible for the settlement and satisfactory completion in accordance with sound business judgement and good administrative practice of all contractual and administrative issues arising out of subagreements entered into under the assistance agreement. This includes issuance of invitations for bids or requests for proposals, selection of contractors, award of subagreements, settlement of protests, claims, disputes and other related procurement matters.

(B) The municipality shall maintain a subagreement administration system to assure that contractors perform in accordance with the terms, conditions and specifications of their subagreements.

(C) The municipality shall review its proposed procurement actions to avoid purchasing unnecessary or duplicative items.

(D) The municipality shall consider consolidating its procurement or dividing it into parts to obtain a more economical purchase.

(E) Where appropriate, the municipality shall make an analysis of lease versus purchase alternatives in its procurement actions.

(F) A municipality may request technical assistance from the Commissioner for the administration and enforcement of any subagreement awarded under this section. However, such assistance does not relieve the municipality of its responsibilities under this section.

(G) A municipality may use innovative procurement methods or procedures only if it receives the Commissioner's prior written approval.

(3) Municipality reporting requirements. The municipality shall request, in writing, the Commissioner's authorization to award each construction subagreement which has an aggregate value over $10,000. The request shall include:

(A) Name, address, telephone number and employee identification number of the construction contractor;

(B) Amount of the award;

(C) Estimated starting and completion dates;

(D) Project number, name and site location of the project; and

(E) Copy of the tabulations of bids or offers and the name of each bidder or offeror.

(4) Copies of contract documents. The municipality must promptly submit to the Commissioner copies of any prime contract or modification thereof, and revisions to plans and specifications.

(5) Limitations on subagreement award.

(A) The municipality shall award subagreements only to responsible contractors that possess the potential ability to perform successfully under the terms and conditions of a proposed procurement. A responsible contractor is one that has:

(i) Financial resources, technical qualifications, experience, an organization and facilities adequate to carry out the project, or a demonstrated ability to obtain these;

(ii) Resources to meet the completion schedule contained in the subagreement;

(iii) A satisfactory performance record for completion of subagreements;

(iv) Accounting and auditing procedures adequate to control property, funds and assets; and

(v) Demonstrated compliance or willingness to comply with the civil rights, equal employment opportunity, labor laws and other statutory requirements.

(B) The municipality shall not make awards to contractors who have been suspended or debarred by Connecticut State Agencies.

(6) Violations. The municipality shall refer violations of law to the local or State officials having the proper jurisdiction.

(7) Competition.

(A) The municipality shall conduct all procurement transactions in a manner that provides maximum open and free competition.

(B) Procurement practices shall not unduly restrict or eliminate competition. Examples of practices considered to be unduly restrictive include:

(i) Noncompetitive practices between firms;

(ii) Organizational conflicts of interest;

(iii) Unnecessary, experience and bonding requirements;

(iv) Local laws, ordinances, regulations or procedures which give local bidders or proposers preference over other bidders or proposers in evaluating bids or proposals; and

(v) Placing unreasonable requirements on firms in order for them to qualify to do business.

(C) The municipality may use a prequalification list(s) of persons, firms or products if it:

(i) Updates its prequalified list(s) at least every six months;

(ii) Reviews and acts on each request for prequalification made more than thirty (30) days before the closing date for receipt of proposals or bid opening; and

(iii) Gives adequate public notice of its prequalification procedures in accordance with the public notice procedures.

(D) A municipality may not use a prequalified list(s) of persons or firms if the procedure unnecessarily restricts competition.

(8) Profit.

(A) Municipalities must assure that only fair and reasonable profits are paid to contractors awarded subagreements under State assistance agreements.

(B) The municipality shall negotiate profit as a separate element of price for each subagreement in which there is no price competition, or where price is based on cost analysis.

(C) Where the municipality receives two or more bids, profit included in a formally advertised, competitively bid, fixed price subagreement shall be considered reasonable.

(D) Off-the-shelf or catalog supplies are exempt from this section.

(9) Use of small, minority, and women's businesses. The municipality must take affirmative steps to assure that small, minority, and women's businesses are used to the maximum extent practicable. The Commissioner may impose goals as conditions of financial assistances.

(10) Privity of subagreement. The State shall not be a party to any subagreement nor to any solicitation or request for proposals.

(11) Documentation.

(A) Procurement records and files for procurements in excess of $10,000 shall include the following:

(i) Basis for contractor selection;

(ii) Written justification for selection of the procurement method;

(iii) Written justification for use of any specification which does not provide for maximum free and open competition;

(iv) Written justification for the type of subagreement;

(v) Basis for award cost or price, including a copy of the cost or price analysis made and documentation of negotiations; and

(vi) A municipality must state the reasons in writing for rejecting any or all bids and the justification for procurements on a noncompetitively negotiated basis and make them available for public inspection.

(12) Specifications.

(A) Nonrestrictive specifications.

(i) No specification for bids or statement of work in connection with such works shall be written in such a manner as to contain proprietary, exclusionary or discriminatory requirements other than those based upon performance, unless such requirements are necessary to test or demonstrate a specific thing or to provide for necessary interchangeability of parts and equipment, or at least two brand names or trade names of comparable quality or utility are listed and are followed by the words "or equal". If brand or trade names are specified, the municipality must be prepared to identity to the Commissioner, or in any protest action, the salient requirements (relating to the minimum needs of the project) which must be met by any offeror. The single base bid method of solicitation for equipment and parts for determination of a low, responsive bidder may not be utilized. With regard to materials, if a single material is specified, the municipality must be prepared to substantiate the basis for the selection of the material.

(ii) Project specifications shall, to the extent practicable, provide for maximum use of structures, machines, products, materials, construction methods, and equipment which are readily available through competitive procurement, or through standard or proven production techniques, methods, and processes.

(B) Sole source restriction. A specification shall not require the use of structures, materials, equipment, or processes which are known to be available only from a sole source, unless the Commissioner determines in advance that the municipality's engineer has adequately justified in writing that the proposed use meets the particular project's minimum needs or the Commissioner determines that use of a single source is necessary to promote innovation.

(C) Experience clause restriction. The general use of experience clauses requiring equipment manufacturers to have a record of satisfactory operation for a specified period of time or of bonds or deposits to guarantee replacement in the event of failure is restricted to special cases where the municipality's engineer adequately justifies any such requirement in writing. Where such justification has been made, submission of a bond or deposit shall be permitted instead of a specified experience period. The period of time for which the bond or deposit is required should not exceed the experience period specified.

(13) Force account work.

(A) The municipality must receive the Commissioner's prior written approval for use of the force account method for any planning, design work or construction work.

(B) The Commissioner may approve the force account method upon the municipality's demonstration that it possesses the necessary competence required to accomplish such work and that the work can be accomplished more economically by use of the force account method, or emergency circumstances dictate its use.

(C) Use of the force account method for construction work shall generally be limited to minor portions of a project.

(14) Code of conduct.

(A) The municipality shall maintain a written code or standards of conduct which shall govern the performance of its officers, employees, or agents engaged in the award and administration of subagreements supported by State funds. No employee, officer or agent of the municipality shall participate in the selection, award or administration of a subagreement supported by State funds if a conflict of interest, real or apparent, would be involved.

(B) Such a conflict would arise when:

(i) Any employee, officer or agent of the municipality, any member of the immediate families, or their partners, have a financial or other interest in the firm selected for award; or

(ii) An organization which may receive or has been awarded a subagreement employs, or is about to employ, any person under (B)(i) of this Section.

(C) The municipality's officers, employees or agents shall neither solicit nor accept gratuities, favors or anything of monetary value from contractors, potential contractors or other parties to subagreements.

(D) Municipalities may set minimum rules where the financial interest is not substantial or the gift is an unsolicited item of nominal value.

(E) To the extent permitted by State or local law or regulations, the municipality's code of conduct shall provide for penalties, sanctions or other disciplinary actions for violations of the code by the municipality's officers, employees or agents or by contractors or their agents.

(15) Payment to consultants.

(A) For all State assistance agreements, the State will limit its participation in the salary rate (excluding overhead) paid to individual consultants retained by a municipality or by a municipality's contractors or subcontractors to the maximum daily rate for a GS-18 federal employee. (Municipality's may, however, pay contractors and subcontractors more than this amount.) This limitation applies to consultation services of designated individuals with specialized skills who are paid at a daily or hourly rate. The rate does not include transportation and subsistence costs for travel performed; municipalities will pay these in accordance with their normal travel reimbursement practices.

(B) Subagreements with firms for services which are awarded using these procurement requirements are not affected by this limitation.

(16) Cost and price considerations.

(A) The municipality shall conduct a cost analysis of all negotiated change orders and all negotiated subagreements estimated to exceed $10,000.

(B) The municipality shall conduct a price analysis of all formally advertised procurements estimated to exceed $10,000 if there are fewer than three bidders.

(C) For negotiated procurement, contractors and subcontractors shall submit cost or pricing data in support of their proposals to the municipality.

(17) Small purchases.

(A) Small Purchase Procurement. If the aggregate amount involved in any one procurement transaction does not exceed $10,000, including estimated handling and freight charges, overhead and profit, the municipality may use small purchase procedures.

(B) Small Purchase Procedures. Small purchase procedures are relatively simple procurement methods that are sound and appropriate for procurement of services, supplies or other property costing in the aggregate not more than $10,000.

(C) Requirements for Competition.

(i) Municipalities shall not divide a procurement into smaller parts to avoid the dollar limitation for competitive procurement.

(ii) Municipalities shall obtain price or rate quotations from an adequate number of qualified sources.

(18) Negotiation and award of subagreements.

(A) Unless the request for proposals states that award may be based on initial offers alone, the municipality must conduct meaningful negotiations with the best qualified offerors with acceptable proposals within the competitive range, and permit revisions to obtain best and final offers. The best qualified offerors must have equal opportunities to negotiate or revise their proposals. During negotiations, the municipality must not disclose the identity of competing offerors or any information from competing proposals.

(B) The municipality must award the subagreement to the responsible offeror whose proposal is determined in writing to be the most advantageous to the municipality, taking into consideration price and other evaluation criteria set forth in the request for proposals.

(C) The municipality must promptly notify unsuccessful offerors that their proposals were rejected.

(D) The municipality must document its procurement file to indicate how proposals were evaluated, what factors were used to determine the best qualified offerors within the competitive range, and what factors were used to determine the subagreement award.

(19) Optional selection procedure for negotiation and award of subagreement for architectural and engineering services.

(A) The municipality may evaluate and select an architect or engineer using the procedures in this subdivision in place of the procedures in "Negotiation and award of subagreements" in subdivision (18).

(B) The municipality may use responses from requests for statement of qualifications to determine the most technically qualified architects or engineers.

(C) After selecting and ranking the most qualified architects or engineers, the municipality will request technical proposals from those architects or engineers and inform them of the evaluation criteria the municipality will use to rank the proposals.

(D) The municipality shall then select and determine, in writing, the best technical proposal.

(E) After selecting the best proposal, the municipality shall attempt to negotiate fair and reasonable compensation with that offeror.

(F) If the municipality and the offeror of the best proposal cannot agree on the amount of compensation, the municipality shall formally terminate negotiations with that offeror. The municipality shall then negotiate with the offeror with the next best proposal. This process will continue until the municipality reaches agreement on compensation with an offeror with an acceptable proposal. Once the municipality terminates negotiations with an offeror, the municipality cannot go back and renegotiate with that offeror.

(20) Noncompetitive negotiation procurement method. Noncompetitive negotiation may be used only when the award of a subagreement is not feasible under small purchase, formal advertising, or competitive negotiation procedures. The municipality may award a noncompetitively negotiated subagreement only under the following circumstances:

(A) The item is available only from a single source;

(B) A public exigency or emergency exists and the urgency for the requirement will not permit a delay incident to competitive procurement; or

(C) After solicitation from a number of sources, competition is determined to be inadequate.

(21) Use of the same architect or engineer during construction

(A) If the municipality is satisfied with the qualifications and performance of the architect or engineer who provided any or all of the planning or design services for the project, it may wish to retain that firm or individual during construction of the project. The municipality may do so without further public notice and evaluation of qualifications provided that it received financial

assistance for the planning and/or design services and selected the architect or engineer in accordance with these procurement regulations.

(B) However, if the municipality uses the procedures in (A) to retain an architect or engineer, any construction subagreements between the architect or engineer and the municipality must meet the procurement provisions of Section 22a-482-4(i)(5).

(22) Negotiation of subagreements.

(A) Formal advertising, with adequate purchase descriptions, sealed bids, and public openings shall be the required method of procurement unless negotiation under (B) of this section is necessary to accomplish sound procurement.

(B) All negotiated procurement shall be conducted in a manner to provide to the maximum practicable extent open and free competition appropriate to the type of project work to be performed. The municipality is authorized to negotiate subagreements if any of the following conditions exist:

(i) Public exigency will not permit the delay incident to formally advertised procurement (e.g. an emergency procurement);

(ii) The aggregate amount involved does not exceed $10,000;

(iii) The material or service to be procured is available from only one person or entity. If the procurement is expected to aggregate more than $10,000, the municipality must document its file with a justification of the need for noncompetitive procurement, and provide such documentation to the Commissioner on request;

(iv) The procurement is for personal or professional services (including architectural or engineering services) or for any service that a university or other educational institution may render;

(v) No responsive, responsible bids at acceptable price levels have been received after formal advertising, and the Commissioner's prior written approval has been obtained;

(vi) The procurement is for materials or services where the price is established by law;

(vii) The procurement is for technical items or equipment requiring standardization and interchangeability of parts with existing equipment; or

(viii) The procurement is for experimental, developmental or research services.

(23) Enforcement. If the Commissioner determines that the municipality has failed to comply with any of these procurement provisions, he or she may impose any of the following sanctions:

(A) The grant may be terminated or annulled under Section 22a-482-4(t).

(B) Project costs directly related to the noncompliance may be disallowed.

(C) Payment otherwise due to the municipality of up to 10 percent may be withheld.

(D) Project work may be suspended under Sec. 22a-482-4(g) (5).

(E) A noncomplying municipality may be found nonresponsible or ineligible for future state funding assistance or a noncomplying contractor may be found nonresponsible or ineligible for approval for future contract award under state grants.

(F) An injunction may be entered or other equitable relief afforded by a court of appropriate jurisdiction.

(G) Such other administrative or judicial action may be instituted if it is legally available and appropriate.

(24) Contract Enforcement. Commissioner authority. At the request of a municipality, the Commissioner is authorized to provide technical and legal assistance in the administration and enforcement of any contract related to pollution abatement facilities for which a State grant was made and to intervene in any civil action involving the enforcement of such contracts, including contract disputes which are the subject of either arbitration or court action in accordance with the requirements of Section 22a-482-4(f)(1).

Sec. 22a-482-4 (j) Construction Contract Procurement Requirements

(This section applies to construction contracts in excess of $10,000 awarded by municipalities for any construction projects.)

(1) Type of Contract. Each contract shall be a fixed price (lump sum or unit price or a combination of the two) contract, unless the Commissioner gives advance written approval for the municipality to use some other acceptable type of contract. The cost-pluspercentage-of-cost contract shall not be used in any event.

(2) Formal Advertising. Each contract shall be awarded after formal advertising, unless negotitations are permitted in accordance with Sec. 22a-482-4(h)(18). Formal advertising shall be in accordance with the following:

(A) Adequate public notice. The municipality will cause adequate notice to be given of the solicitation by publication in newspapers or journals of general circulation beyond the municipality's locality (statewide, generally), inviting bids on the project work and stating the method by which bidding documents may be obtained or examined. Where the estimated cost of construction is $10 million or more, the municipality should publish the notice in trade journals of nationwide distribution. The municipality may solicit bids directly from bidders if it maintains a bidders list;

(B) Adequate time for preparing bids. Adequate time, generally not less than 30 days, must be allowed between the date when public notice is first published and the date by which bids must be submitted. Bidding documents (including specifications and drawings) shall be available to prospective bidders from the date when such notice is first published;

(C) Adequate bidding documents. The municipality shall prepare a reasonable number of bidding documents (invitations for bids) and shall furnish them upon request on a first-come, first-served basis. The municipality shall maintain a complete set of bidding documents and shall make them available for inspection and copying by any party. The bidding documents shall include:

(i) A complete statement of the work to be performed, including necessary drawings and specifications, and the required completion schedule;

(ii) The terms and conditions of the contract to be awarded;

(iii) A clear explanation of the method of bidding and the method of evaluation of bid prices, and the basis and method for award of the contract;

(iv) Responsibility requirements or criteria which will be employed in evaluating bidders;

(v) The following statement:

Any contract or contracts awarded under this invitation for bids are expected to be funded in part by the State of Connecticut (Department of Environmental Protection). Neither the State of

Connecticut nor any of its departments, agencies or employees is or will be a party to this invitation for bids or any resulting contract. This procurement will be subject to the requirements contained in Section 22a-482-4, (h), (j) and (o) of the regulations of Connecticut State Agencies;

(vi) A copy of Sec. 22a-482-4, (h), (j) and (o); and

(vii) The prevailing State Wage Determination as applicable.

(D) Sealed bids. The municipality shall provide for bidding by sealed bid and for the safeguarding of bids received until public opening.

(E) Addenda to bidding documents. If a municipality desires to amend any part of the bidding documents (including drawings and specifications) during the period when bids are being prepared, the addenda shall be communicated in writing to all firms which have obtained bidding documents at least five (5) working days prior to the bid opening.

(F) Bid modifications. A firm which has submitted a bid shall be allowed to modify or withdraw its bid before the time of bid opening.

(G) Public opening of bids. The municipality shall provide for a public opening of bids at the place, date and time announced in the bidding documents.

(H) Award to the low, responsive, responsible bidder.

(i) After bids are opened, the municipality shall evaluate them in accordance with the methods and criteria set forth in the bidding documents.

(ii) The municipality may reserve the right to reject all bids. Unless all bids are rejected for good cause, award shall be made to the low, responsive, responsible bidder.

(iii) If the municipality intends to make the award to a firm which did not submit the lowest bid, it shall prepare a written statement before any award, explaining why each lower bidder was deemed nonresponsible or nonresponsive. The Municipality shall retain such statement in its files and forward a copy to the Commissioner for review.

(iv) Local laws, ordinances, regulations or procedures which are designed or which operate to give local bidders preference over other bidders shall not be employed in evaluating bids.

(v) If an unresolved procurement review issue or a protest relates only to award of a subcontract or procurement of an item under the prime contract, and resolution of that issue or protest is unduly delaying performance of the prime contract, the Commissioner may authorize award and performance of the prime contract before resolution of the issue or protest, if the Commissioner determines that resolution of the protest will not affect the placement of the prime contract bidders and will not materially affect initial performance of the prime contract; and that award of the prime contract is in the State's best interest, will not materially affect resolution of the protest, and is not barred by State or local law.

(vi) The municipality shall not reject a bid as nonresponsive for failure to list or otherwise indicate the selection of a subcontractor(s) or equipment, unless the municipality has unambiguously stated in the solicitation documents that such failure to list shall render a bid nonresponsive and shall cause rejection of a bid.

Sec. 22a-482-4 (o) Protests

(1) General. A protest based upon an alleged violation of the procurement requirements may be filed against a municipality's procurement action by a party with an adversely affected direct financial interest. Any such protest must be received by the municipality within the time period in (2)(A) of this section. The municipality is responsible for resolution of the protest before taking the protested action, in accordance with (4) of this section, except as otherwise provided by (9) of this section or 22a-482-4(j)(2)(H)(v).

(2) Time limitations.

(A) A protest under (4) of this section should be made as early as possible during the procurement process to avoid disruption of or unnecessary delay to the procurement process. A protest authorized by (4) of this section must be received by the municipality within one week after the basis for the protest is known or should have been known, whichever is earlier.

(i) In the case of an alleged violation of the specification requirements of Section 22a-482-4(h)(12), relating to specifications (e.g., that a product fails to qualify as an "or equal") a protest need not be filed prior to the opening of bids. The municipality may resolve the issue before receipt of bids or proposals through a written or other formal determination, after notice and opportunity to comment is afforded to any party with a direct financial interest.

(ii) When an alleged violation of the specification requirements of Section 22a482-4(h)(12) first arises subsequent to the receipt of bids or proposals, the municipality must decide the protest if the protest was received by the municipality within one week of the time that the municipality's written or other formal notice is first received.

(B) A protest appeal authorized by this section must be filed in a court of competent jurisdiction within the locality of the municipality within one week after the complainant has received the municipality's determination.

(C) If a protest is mailed, the complaining party bears the risk of nondelivery within the required time period. All documents transmitted in accordance with this section shall be mailed by certified mail (return receipt requested) or otherwise delivered in a manner which will objectively establish the date of receipt. Initiation of protest actions under (4) or (5) of this section may be made by brief telegraphic notice accompanied by prompt mailing or other delivery of a more detailed statement of the basis for the protest. Telephone protests will not be considered.

(3) Other initial requirements.

(A) The initial protest document must briefly state the basis for the protest and should:

(i) Refer to the specific portions of these regulations which allegedly prohibit the procurement action;

(ii) Specifically request a determination pursuant to this section;

(iii) Identify the specific procurement document(s) or portion(s) of them in issue; and

(iv) Include the name, telephone number, and address of the person representing the protesting party.

(B) The party filing the protest must concurrently transmit a copy of the initial protest document and any attached documentation to all other parties with a direct financial interest which may be adversely affected by the determination of the protest (all bidders or proposers who appear to have a substantial and reasonable prospect of receiving an award if the protest is denied or sustained) and to the Commissioner.

(4) Municipality determination.

(A) The municipality is responsible for the initial resolution of protests based upon alleged violations of the procurement requirements.

(B) When the municipality receives a timely written protest, it must defer the protested procurement action in accordance with (7) of this section and:

(i) Afford the complaining party and interested parties an opportunity to present arguments in support of their views in writing or at a conference or other suitable meeting (such as a city council meeting);

(ii) Inform the complainant and other interested parties of the procedures which the municipality will observe for resolution of the protest;

(iii) Obtain an appropriate extension of the period for acceptance of the bid and bid bond(s) of each interested party, where applicable (failure to agree to a suitable extension of such bid and bid bond(s) by the party which initiated the protest shall be cause for summary dismissal of the protest by the municipality or the Commissioner); and

(iv) Promptly deliver (by certified mail, return receipt requested, or by personal delivery) its written determination of the protest to the complaining party and to each other participating party.

(C) The municipality's determination must be accompanied by a legal opinion addressing issues arising under State, or local law, if any and, when construction is involved, by an engineering report, if appropriate.

(D) The municipality should decide the protest as promptly as possible - generally within 3 weeks after receipt of a protest, unless extenuating circumstances require a longer period of time for proper resolution of the protest.

(5) Procedures.

(A) Where resolution of an issue properly raised with respect to a procurement requirement necessitates prior or collateral resolution of a legal issue arising under State or local law, and such law is not clearly established in published legal decisions of the State or other relevant jurisdiction, the municipality may rely upon:

(i) An opinion of the municipality's legal counsel adequately addressing the issue;

(ii) The established or consistent practice of the municipality, to the extent appropriate;

(iii) The law of other local jurisdictions as established in published legal decisions; or

(iv) If none of the foregoing adequately resolve the issue, published decisions of the Comptroller General of the United States (U.S. General Accounting Office) or of the Federal or State courts addressing Federal or State requirements comparable to procurement requirements of this section.

(B) A party who submits a document subsequent to initiation of a protest proceeding must simultaneously furnish each of the other parties with a copy of such document.

(C) The procedures established herein are not intended to preclude informal resolution or voluntary withdrawal of protests. A complainant may withdraw its appeal at any time, and the protest proceedings shall thereupon be terminated.

(D) A protest may be dismissed for failure to comply with procedural requirements set forth in this section.

(6) Burden of proof.

(A) In protest proceedings, if the municipality proposes to award a formally advertised, competitively bid, fixed price contract to a party who has submitted the apparent lowest price, the party initiating the protest will bear the burden of proof.

(B) In protest proceedings:

(i) If the municipality proposes to award a formally advertised, competitively bid, fixed price contract to a bidder other than the bidder which submitted the apparent lowest price, the municipality will bear the burden of proving that its determination concerning responsiveness is in accordance with these regulations; and

(ii) If the basis for the municipality's determination is a finding of nonresponsibility, the municipality must establish and substantiate the basis for its determination and must adequately establish that such determination has been made in good faith.

(7) Deferral of procurement action. Upon receipt of a protest, the municipality must defer the protested procurement action (for example, defer the issuance of solicitations, contract award, or issuance of notice to proceed under a contract) until ten days after delivery of its determination to the participating parties. The municipality may receive or open bids at its own risk, if it considers this to be in its best interest. When the Commissioner has received a written protest, he or she must notify the municipality promptly to defer its protested procurement action until notified of the formal or informal resolution of the protest.

(8) Enforcement. Noncompliance with the procurement provisions by the municipality shall be cause for enforcement action in accordance with one or more of the provisions of Section 22a-482-4(f)(23).

(9) Limitation. A protest may not be filed with respect to the following:

(A) Issues not arising under the procurement provisions;

(B) Issues relating to the selection of a consulting engineer, provided that a protest may be filed only with respect to the mandatory procedural requirements of Section 22a482-4(i);

(C) Issues primarily determined by local law or ordinance and as to which the Commissioner, upon review, determines that there is no contravening state requirement and that the municipality's action has a rational basis;

(D) Provisions of State regulations applicable to direct State contracts unless such provisions are explicitly referred to or incorporated in these regulations;

(E) Basic project design determinations; or

(F) Award of subcontracts or issuance of purchase orders under formally advertised, competitively bid, lump sum construction contracts. However, protest may be made to alleged violations of the following:

(i) Specification requirements of Section 22a-482-4(h)(12); or

(ii) Provisions applicable to the procurement procedures, negotiation or award of subcontracts or issuance of purchase orders under Section 22a-482-4(l).