

Borough of Naugatuck

**Project Manual
and
Bid Documents
for**

**Nettleton Avenue Neighborhood
Storm Drain Improvements Phase I**

**Prepared by CHA, Inc.
for the Borough of Naugatuck, CT**

August 25, 2011



BOROUGH OF NAUGATUCK

Affirmative Action /Equal Opportunity Employer

MBE's, WBE's, SBE's and Section 3 designated enterprises are encouraged to apply

Funded by a grant from the U.S. Department of Housing and Urban Development
through the State Department of Economic and Community Development
Catherine Smith, Commissioner

Naugatuck Project #11-17

INVITATION TO BID

Borough of Naugatuck

The bids will be publicly opened and read aloud by the Purchasing Agent, Town Hall, 229 Church Street, Naugatuck, CT 06770 on or before **September 26, 2011 at 11:00 a.m.** for supplying the Borough of Naugatuck with the following project:

Nettleton Avenue Neighborhood Storm Drain Improvements Phase I

The Information for Bidders, Form of Bid, Form of Contract, Plans, Specifications, and other Contract Documents may be examined at the Office of the Purchasing Agent, Town Hall, 229 Church Street, Naugatuck, CT 06770.

Copies of the plans and specifications may be obtained at the Office of the Purchasing Agent upon submission of a non-refundable plan deposit in the form of a check or money order payable to the Borough of Naugatuck in the amount of **\$250.00** per set.

The bid document may also be examined and obtained at no cost from the Borough of Naugatuck web site, <http://www.naugatuck-ct.gov/content/77/1629/default.aspx>. All firms thus obtaining bid documents must submit contact information by email to whozer@naugatuck-ct.gov. Contact information must be submitted three days in advance of the bid opening to be considered.

A satisfactory Bid Bond or Certified Check, in an amount equal to five percent (5%) of the base bid, shall be submitted with each bid. The Bid Bond shall be made payable to the Borough of Naugatuck and shall be properly executed by the Bidder. A 100% Performance, Labor and Material Bond is also required. All sureties must be listed on the most recent IRS circular 570.

Attention of bidders is directed to certain requirements of this contract which require payment of Davis-Bacon wages, and compliance with certain local, state and federal requirements. This is a Federally funded project.

A mandatory Pre-Bid Meeting will be held on **September 14, 2011**. The meeting will be held at **10:00 a.m.** at the project site.

The Borough of Naugatuck reserves the right to waive any informalities or to reject any or all bids.

No Bidder may withdraw his bid within (90) days after the actual date of the opening thereof.

**AN AFFIRMATIVE ACTION/EQUAL OPPORTUNITY EMPLOYER
MBE'S, WBE'S, SBE'S AND SECTION 3 DESIGNATED ENTERPRISES
ARE ENCOURAGED TO APPLY**

SPECIFICATIONS

The work shall conform to the attached Division 1 and Division 2 specifications.

STANDARD SPECIFICATIONS

The material and construction methods for the work specified in this contract shall conform with the applicable provisions of the State of Connecticut, Department of Transportation specifications entitled "*STANDARD SPECIFICATIONS FOR ROADS, BRIDGES AND INCIDENTAL CONSTRUCTION*", Form 816, 2004, as revised by the Supplemental Specifications dated January, 2007 (otherwise referred to collectively as "ConnDOT form 816") unless modified by the Special Provisions contained herein. "ConnDOT form 816" is hereby made part of this contract. Form 816 may be purchased from:

Connecticut Department of Transportation
Manager of Contracts
2800 Berlin Turnpike, Newington, Connecticut 06111

All references to Commissioner, Department, Engineer, and State anywhere within the Form 816 shall be interpreted to mean the Borough of Naugatuck or a duly authorized agent of the Borough. Any questions or ambiguity regarding any definitions shall be brought to the immediate attention of the Borough.

Contract Time and Liquidated Damages

Work shall commence within ten (10) days after the date of the Notice Proceed. Ninety (90) consecutive calendar days from the start date, plus a single authorized winter shut-down, will be allowed for the substantial completion of the project, and the liquidated damages charge to apply will be Five Hundred Dollars (\$500.00) per calendar day. An additional fourteen (14) consecutive calendar days will be allowed for completion of all work.

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SECTION A

INFORMATION FOR BIDDERS
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SECTION A

INFORMATION FOR BIDDERS

Borough of Naugatuck

Nettleton Avenue Neighborhood Storm Sewer Improvements Phase I

1. Proposals Received

Sealed proposals for the Nettleton Avenue Neighborhood Storm Sewer Improvements will be received by the Purchasing Office, Borough of Naugatuck, 229 Church Street, Naugatuck, CT 06770 until **September 26, 2011 at 11:00 a.m.** local time. The bids will be publicly opened and read aloud on **September 26, 2011 at 11:00 a.m.** local time at the Naugatuck Town Hall.

2. Location and Description of Work

This project is for the installation of a new storm drainage system in the Nettleton Avenue neighborhood. Refer to Section "Summary of Work".

3. Schedule of Construction and Time of Completion

The attention of the Bidder is called to the provisions of the General Requirements, Section K.6, requiring submittal of a schedule of operations.

The attention of the Bidder is called to the requirements of Article XXXII of the Contract that the work be started within ten (10) calendar days of the date of the Notice to Proceed. Ninety (90) consecutive calendar days, plus a single authorized winter shut-down, will be allowed for the substantial completion of the project. An additional fourteen (14) consecutive calendar days will be allowed for completion of all work including cleanup and removal of all tools and equipment.

The Bidder's attention is especially directed to Article XXXIV of the Contract "Damages for Failure to Complete on Time".

4. Plans and Specifications

The bid document may be examined and obtained at no cost from the Borough of Naugatuck web site <http://www.naugatuck-ct.gov/content/77/1629/default.aspx>. All firms obtaining bid documents must submit contact information by email to whozer@naugatuck-ct.gov. Contact information must be submitted three days in advance of the bid opening to be considered.

Bid documents may also be obtained at the Office of the Purchasing Agent upon submission of a non-refundable fee in the form of a check or money order payable to the

Borough of Naugatuck in the amount of **\$250.00** per set.

Copies of the Plans and Specifications may be seen and obtained at the Purchasing Office, Borough of Naugatuck, 229 Church Street, Naugatuck, CT 06770

The construction contract for the Nettleton Avenue Neighborhood Storm Drain Improvements Phase I, will be entered into by the successful bidder and the Borough of Naugatuck. The State of Connecticut Department of Transportation Standard Specifications for Roads, Bridges and Incidental Construction, Form 816, 2004 along with the contract drawings and supplemental specifications contained herein will detail the general requirements for materials, methods of installation, measurement and basis of payment to be required in this project. Where conflicts exist, these project specifications shall prevail. Any references to the State of Connecticut, the Department, the commissioner, Engineer, or other terms indicating the State of Connecticut and her agents as party to the contract shall for this project mean the Borough of Naugatuck and her designated agents or employees.

Where insurance is required to be carried in the name of the State of Connecticut and the State of Connecticut is to be held harmless, this shall be done in the name of the Borough of Naugatuck and the Borough of Naugatuck shall be held harmless.

All requirements for material testing, certificates of the compliance, or material certifications shall be done as if this were a contract being entered into with the State of Connecticut.

It is the intent of this contract to maintain all standard requirements of Form 816 without attempting to redefine every term within the 816 to the "Borough of Naugatuck".

The bidder shall, therefore, be aware that the Borough of Naugatuck and her agents shall inspect and administrate this contract, make contract interpretations, determine the acceptability of the work and approve requests for payments. The Contractor shall be responsible for the requirements stated in Form 816 and in the construction drawings.

5. Addenda and Interpretations

No interpretations of the meaning of the Plans, Specifications, or other pre-bid documents will be made to any Bidder orally.

Every request for such interpretation shall be in writing, addressed to Mr. James Stewart, P.E., Borough of Naugatuck, Engineering Office, Town Hall, 229 Church Street, Naugatuck, CT 06770. To be given consideration, such requests must be received at least six (6) days prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications, which, if issued, will be mailed by certified mail with return receipt requested to all prospective Bidders, at the respective address furnished for such purposes, not later than four (4) days prior to the date fixed for the opening of bids. Failure of any Bidder to receive any such addendum or interpretations shall not relieve such Bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the Contract Documents.

6. Familiarity of the Work

Each Bidder shall fully inform himself prior to bidding as to existing conditions and limitations under which the work is to be performed, and shall include in his bid a sum to cover the cost of items necessary to perform the work as set forth in the Contract Documents. No allowance will be made to a Bidder because of lack of such examination

or knowledge. The submission of a bid will be considered as conclusive evidence that the Bidder has made such examination.

Where borings or other exploration data are shown on the Plans or made available to the Bidder, it is understood that such data were obtained in the usual manner, and with reasonable care, and are to be interpreted and used as the Bidder sees fit. There is no expressed or implied agreement that the depths or the character of the material and water levels have been correctly indicated, and the Bidder is cautioned to take into account that condition affecting the work may differ from those indicated.

The Owner assumes no responsibility whatsoever with respect to ascertaining for the Contractor such facts concerning physical characteristics at the site of the project.

The Contractor agrees that he shall make no claim for and has no right to additional payment or extension of time for completion of the work, or any other concessions, because of any interpretations or misunderstanding on his part of this Contract, or because of any failure on his part to fully acquaint himself with all conditions relating to the work. Permission for making borings, test pits, or other investigations of subsurface conditions will be arranged for by the Owner upon receipt of a written request thereof.

7. Soil and Groundwater Conditions

Soil borings have been made for the work of this Contract and are available upon request to the Borough of Naugatuck. Some soil/material in the project area is known to consist of urban fill and/or impacted soil.

In bidding on this Contract, each Bidder acknowledges that he has made whatever investigation of subsurface conditions he has deemed necessary for the purpose of bidding. Permission for making borings, test pits, or other investigations of subsurface conditions will be arranged for by the Owner upon receipt of a written request thereof.

8. Estimate of Work

For bidding purposes, the work has been subdivided into unit price items. The quantities shown below are to be considered as approximate only. The Borough of Naugatuck does not expressly or by implication agree that the actual quantity(ies) will correspond therewith, but reserves the right to increase or decrease the amount of any Item or portion of the work as may be deemed necessary.

9. Qualification of Bidders

A Bidder shall be a contractor who is experienced in the construction of the projects of this type. The Proposal shall contain adequate proof of the qualifications of the Bidder to perform, in a satisfactory manner and within the time specified, all the work covered by the Plans and Specifications. This proof shall be fully recorded on the pages titled "References", which shall become part of the Proposal.

10. Disqualification of Bidders

More than one proposal from an individual, firm, partnership, corporation, or an association under the same, or different, names will not be considered. Reasonable grounds for believing that any Bidder is interested in more than one proposal for the work contemplated will cause the rejection of all proposals in which such Bidder is interested. Any or all proposals in which such Bidder is interested will be rejected if there is reason for believing that collusion exists among the Bidders; and all participants in such collusion will not be considered in future proposals for the same work. Proposals in

which the prices are obviously unbalanced may be rejected. No Contract will be awarded except to competent Bidders capable of performing the class of work contemplated.

11. Preparation of Proposals

The Proposal must be made upon the forms contained herein. The blank spaces in the Proposals must be filled in correctly where indicated. The Bidder must state, both in words and in numerals, written or printed in ink, the prices for which he proposes to do each Item of the work contemplated. In case of discrepancy between the words and the numerals, the words shall govern. Ditto marks are not considered writing, or printing, and shall not be used. The Bidder shall sign his Proposal correctly. If an individual makes the Proposal, his name and post office address must be shown. If made by a firm, partnership, or corporation, the Proposal must be signed by an official of the firm, partnership, or corporation authorized to sign contracts, and must show the post office address of the firm, partnership, or corporation.

Each bid must be submitted in a sealed envelope bearing on the outside the name of the Bidder, this address, and name of the project for which the bid is submitted. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed to: Purchasing Office, Borough of Naugatuck, Town Hall, 229 Church Street, Naugatuck, CT 06770.

12. Irregular Proposals

The Borough of Naugatuck reserves the right to reject any proposals if they show any omission, alteration of form, additions not called for, conditional bids, or irregularities of any kind.

13. Proposal Guarantee

No proposal will be considered unless accompanied by a certified check in U.S. dollars, or bid bond using an insurance company licensed to do business in the State of Connecticut in an amount equal to at least 5% of the amount of the bid and payable to the order of the Borough of Naugatuck, said check or bid bond to be returned to the Bidder unless forfeited as hereinafter stipulated. Such checks or bid bonds will be returned to all bidders within five (5) days after the execution of the Contract and the furnishing of the required security by the successful Bidder.

14. Withdrawal of Proposals

If a Bidder wishes to withdraw his Proposal, he may do so before the time fixed for the opening of bids by communicating his purpose to the office of the Mayor. Upon such notice, the Proposal will be handed to him unopened. A Bidder may also withdraw his Proposal if the Owner has not awarded a contract within 90 days after the date of the bid opening.

15. Execution of Contract

The party to whom the Contract is awarded, or his authorized representative, will be required to attend at the office of the Mayor, Borough of Naugatuck, with the sureties offered by him, or them, and a current certificate of Corporate good standing issued by the Office of the Secretary of State in which the corporation is incorporated, and execute the Contract within ten (10) days from the date of the award. If the party entering into this contract is a corporation, a Corporate Resolution duly executed by the president and Secretary of the Corporation authorizing the Corporation to enter into this Contract shall be provided. In case of his failure or neglect to do so, the Owner may, at its opinion,

determine that the Bidder has abandoned the Contract and thereupon the Proposal and acceptance shall be null and void, and bid security accompanying the Proposal shall be forfeited as liquidated damages to the Owner. If the party entering into this contract is a partnership, a partnership resolution duly executed by a majority of the general partners authorizing the partnership to enter into this contract shall be provided.

16. Bonds

The successful Bidder, at the time of the execution of the Contract, shall furnish a Performance Bond in an amount at least equal to one hundred percent (100%) of the Contract prices as security for the faithful performance of this Contract and also a Payment bond in an amount not less than one hundred percent (100%) for the Contract prices as security for the payment of all persons performing labor on the project under this Contract and furnishing materials in connection with this Contract. All Bonds shall be in the forms prescribed by Law or Regulation and be acceptable to the Owner. 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. Bidder shall provide evidence that Surety Company is licensed to conduct business in the State of Connecticut. All sureties shall be in full force throughout the guarantee period and until the retainage is released.

17. Repairs for One (1) Year

The Bidder's attention is especially directed to Article XXXI of the Contract whereby two percent (2%) of the Contract amount will be retained for making repairs on the work, as may be required, during the guarantee period of one (1) year after the date of the final estimate.

18. Responsibility of the Contractor

Attention is hereby particularly directed to the provisions of the Contract and Specifications whereby the Contractor shall be responsible for any loss or damage that may happen in the work, or any part thereof, during its progress and also whereby the Contractor shall make good any defects for faults that may occur within one (1) year after date of final estimate. He shall indemnify and save harmless the Owner and Engineer from any damages or costs to which they may be put by reason of injury to the person or property of another resulting from negligence or carelessness in the performance of the work under this Contract.

19. Insurance

Before execution of the Contract, the Bidder will be required to file with the Borough of Naugatuck a certificate of insurance. The certificate, executed by an insurance company satisfactory to the Borough of Naugatuck shall name the Borough of Naugatuck and the State as additional insured parties on the form furnished with these specifications. The form #CON-32 furnished by the "State of Connecticut Department of Transportation", entitled "Certificate of Insurance" is the only acceptable evidence of insurance and shall state that at a minimum, with respect to the contract, the bidder carries insurance in accordance with the requirements and stipulations listed below.

Unless requested otherwise by the Borough of Naugatuck, the Bidder and its insurer shall not assert the defense of governmental immunity in the adjustment of claims or in the defense of any claim or suit brought against the Borough of Naugatuck and the State. The Bidder shall assume and pay all cost and billing for premiums and audit charges earned and payable under the required insurance.

A. Workmen's Compensation Insurance: With respect to all operations the Bidder performs and all those performed for it by subcontractors, the Bidder shall carry workmen's compensation insurance in accordance with the requirements and the laws of the State.

B. Contractor's Public Liability and Property Damage Insurance: With respect to the Project operations the Bidder performs and also those performed for it by subcontractors, the Bidder shall carry regular Contractor's Public Liability Insurance. The insurance shall provide coverage for each accident or occurrence in the amount of \$1,000,000 for all damages resulting from (1) bodily injury to, or death of, persons and/or (2) injury to or destruction of property. Subject to that limit per accident or occurrence, the policy shall provide a total or aggregate coverage of \$2,000,000 for all damages during the policy period.

C. Automobile Liability Insurance: The operation of all motor vehicles, including those hired or borrowed, used in connection with the project, shall be covered by Automobile Liability Insurance. The insurance shall provide coverage for each accident or occurrence in the amount of \$1,000,000 for all damages resulting from (1) bodily injury to, or death of, persons and/or (2) injury to or destruction of property. If an insurance policy shows an aggregate limit as part of the automobile liability coverage, the aggregate limit must be at least \$2,000,000.

D. With respect to the project operations the Bidder performs and also those performed for it by subcontractors, the Bidder shall carry for and on behalf of the Borough of Naugatuck, and State, insurance which shall provide coverage for each accident or occurrence in the amount of \$1,000,000 for all damages resulting from (1) bodily injury to or death of person and/or (2) injury to or destruction of property. Subject to that limit per accident or occurrence, the policy shall provide a total or aggregate coverage of \$2,000,000 for all damages during the policy period.

E. Railroad's Protective Liability Insurance: When the contract involves work on, over or under the right of way of any railroad company, the Bidder shall, with respect to the project operations it performs and also those performed for it by subcontractors, carry Railroad Protective Liability Insurance for and on behalf of the railroad company. The insurance shall provide coverage for each accident and occurrence in the amount of \$2,000,000 for all damages resulting from (1) bodily injury to or death of persons and/or (2) injury to or destruction of property. Subject to that limit per accident or occurrence, the policy shall provide a total or aggregate coverage of \$6,000,000 for all damages during the policy period.

F. Blasting: When explosives are to be used in the prosecution of the work, the insurance required under paragraphs b, d and e above shall also contain provisions for protection, in the amounts state, against damage claims due to such use of explosives.

G. Termination or change of Insurance: Each insurance policy shall be endorsed to provide that the insurance company shall notify the Borough of Naugatuck by certified mail at least thirty (30) days in advance of termination, or any change in the policy. No such change shall be made without prior written approval of the appropriate Official.

H. Claims: Each insurance policy shall state that the insurance company shall agree to investigate and defend the Borough of Naugatuck and State against all damages, even if groundless.

I. Compensation: There shall be no direct compensation allowed the Bidder on account of any premium or other charge necessary to take out and keep in effect all insurance or bonds, but the cost thereof shall be considered included in the general cost of

the work.

20. Care and Protection of Property

The Contractor shall take particular care to avoid damages to all private property and to private improvements within the Borough's right of way. He shall make good any damages to the satisfaction of the Borough of Naugatuck. There shall be no additional compensation for the repair or restoration of private property, or private improvements within the Borough's right of way.

21. Sales Tax

Certain materials and supplies incorporated in the work of this project are exempt from Connecticut Sales Tax. The Bidder shall familiarize himself with current regulations of the State Tax Department. The tax on materials or supplies exempted by such regulations shall not be included as part of the bid. The Owner will furnish the successful Bidder a sales tax exemption number.

22. Compliance with Federal Regulations

The Contractor shall be responsible for full compliance with any Federal laws, regulations and standards, as applicable to any project fully or partially funded by a Federal funding agency. This project is funded, in part, by the Federal government.

23. Permits

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.

24. Sedimentation and Erosion Control Plan

The Contractor shall prepare and adhere to a sedimentation and erosion control plan for the work.

25. Contractor's Right to Terminate Work

If the work should be stopped under an order of any court or other public authority, for a consecutive period of not less than thirty (30) days, through no act or fault of the Contractor or of anyone employed by him, then the Contractor may terminate this Contract and recover from the Owner payment for all work executed.

26. Wage Rates

The Bidder's attention is directed to Section N of the General Requirements in connection with wage rates.

27. Power of Attorney

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

28. Right to Reject

The Owner reserves the right to reject any or all proposals or to accept any bid, should it deem it to be in the best interest of the Owner.

Section A
SUPPLEMENTAL INFORMATION FOR
BIDDERS
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Nettleton Avenue Neighborhood
Storm Drain Improvements Phase I

Naugatuck, CT

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SUPPLEMENTAL INFORMATION FOR BIDDERS

Nettleton Avenue Neighborhood Storm Drain Improvements Phase I

Naugatuck, CT

1. PREPARATION OF BID:

Each bid must be submitted in duplicate on the prescribed form. All blank spaces for bid prices must be filled in, in ink or typewritten, in both words and figures.

Each bid must be submitted in a sealed envelope bearing on the outside, the name of the bidder, his address, and the name of the project and bid number for which the bid is submitted. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed as specified in the paragraph above.

Only complete bids will be accepted. In order for a bid to be complete, it must include all of the following;

- A. Form of Bid
- B. Bid security (*bid bond or Certified check*)
- C. Certification of Bidder Regarding EEO form. (*subcontractors' form not required at time of bid*).
- D. Non-Collusion Affidavit of Prime Bidder form. (*subcontractors' form not required as part of bid*)
- E. Contractor Certification Regarding OSHA in accordance with 29 CFR 1910.268.

2. SUBCONTRACTS:

The bidder is specifically advised that any person, firm, or other party to whom it is proposed to award a subcontract under this contract must:

- A. Be acceptable to the Owner, and;
- B. Submit form entitled "Certification of Proposed Subcontractor Regarding Equal Employment Opportunity"
- C. Submit form entitled "Non-Collusion Affidavit of Subcontractor"
- D. Submit form entitled "Subcontractor's Certification Concerning Labor Standards and Prevailing Wage Requirements"
- E. Subcontractor Certification Regarding OSHA in accordance with 29 CFR 1910.268

Approval of the proposed subcontract award cannot be given the Town unless and until the proposed contractor has submitted the certification forms and/or other evidence showing that it has fully complied with any reporting and compliance requirements to which it is or was subject.

Although the bidder is not required to attach such Certifications by proposed subcontractors to his bid, the bidder is hereby advised of this requirement so that appropriate action can be taken to prevent subsequent delay in contract and subcontract awards and notices to proceed.

3. LIQUIDATED DAMAGES FOR FAILURE TO ENTER INTO CONTRACT:

The successful bidder, upon his failure or refusal to execute and deliver the contract, bonds and certificates of insurance required within 10 days after he has received notice of the acceptance of his bid, shall forfeit to the Municipality, as liquidated damages for such failure or refusal, the security deposited with his bid.

4. TIME OF COMPLETION AND LIQUIDATED DAMAGES:

The bidder must agree to commence within ten (10) days of the date of the "Notice To Proceed" from the Municipality. Ninety (90) consecutive calendar days from the start date, plus a single authorized winter shut-down, will be allowed for the substantial completion of the project, and the bidder must agree also to pay as liquidated damages, the sum of **\$500** for each consecutive calendar day thereafter. An additional fourteen (14) consecutive calendar days will be allowed for completion of all work.

5. NOTICE OF SPECIAL CONDITIONS:

Although each and every part of the General Conditions is important, particular attention is called to those sections pertaining to the following, when applicable;

- A. Inspection and testing of materials
- B. Insurance requirements
- C. Prevailing Wage Rate Requirements
- D. Contract Compliance Reporting Requirements
- E. Stated allowances
- F. OSHA Compliance

6. LAWS AND REGULATIONS:

The bidders' attention is directed to the fact that all applicable State laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over the construction of the project shall apply to the contract throughout, and they are considered included in the contract the same as though they were written out in full.

7. HIRING OF LOCAL LABOR:

This section emphasizes that every contractor and subcontractor undertaking to do work on any DECD assisted project shall employ to the maximum extent practical, in carrying out the work under this contract, qualified persons who regularly reside in the designated area where such project is located. For the purposes of this contract, the designated area is **Waterbury** MSA.

The contractor will be responsible for assuring that his subcontractors comply with this goal.

8. AFFIRMATIVE ACTION REQUIREMENTS:

This contract is subject to all Federal and State Affirmative Action regulations. The contractor will be required to comply with those regulations. This includes the documentation attached and included within the contract.

9. SECTION 3

Section 3 of the Housing and Urban Development Act of 1968 applies to this contract if the amount of HUD assistance exceeds \$200,000 or the contract or subcontract exceeds \$100,000. The Contractor shall, to the maximum extent feasible, make a good faith effort to fill any job vacancies, provide opportunities for training and employment in connection with this contract to low income persons residing in the PMSA relevant to the project location. Where the preceding applies, contractors must comply with the following Section 3 Clause:

- A. The work to be performed under this contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1791u (Section 3). The purpose of Section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by Section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing. Section 3 eligible employees are those residents from the area who are at or below 80% of median based on household size.
- B. The parties to this contract agree to comply with HUD's regulations in 24 CFR Part 135, which implement Section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the Part 135 regulations.
- C. The Contractor agrees to send to each labor organization or representative of workers with which the Contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the Contractor's commitments under this Section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the Section 3 preference shall set for the minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking application for each of the positions; and the anticipated date the work shall begin.
- D. The Contractor agrees to include this Section 3 clause in every subcontract subject to compliance with regulations in 24 CFR Part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this Section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR Part 135. The Contractor will not subcontract with any subcontractor where the Contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR Part 135.
- E. The Contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the Contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR Part 135 require employment opportunities to be directed, were not filled to circumvent the Contractor's obligations under 24 CFR Part 135.
- F. To meet your Section 3 goals, you will be asked to provide an explanation of the process you use to hire employees as well as the number of new employees hired by you or your major subcontractors during this project. The goal is that 30% of the aggregate number of new hires be Section 3 eligible residents.
- G. Award of contracts to Section 3 eligible businesses also needs to be documented. The goal for Section 3 eligible businesses is 10% of the total contract cost. You will be asked to provide the number of contracts made to Section 3 eligible subcontractors, suppliers, or vendors during the course of this project, as well if any of these companies are minority/women/disadvantaged enterprises.

Noncompliance with HUD's regulations in 24 CFR Part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

10. SPECIAL REQUIREMENTS

a. OSHA

Any contract awarded on or after July 1, 2009 requires any mechanic, laborer, or worker who performs work in a classification listed on the prevailing wage rate schedule on any public works project is required to complete a ten (10) hour federal OSHA safety and health course and provide proof of completion.

**FEDERAL OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
(OSHA)**

Sec. 31-53b. Construction safety and health course. Proof of completion required for employees on public building projects. Enforcement. Regulations. (a) Each contract entered into on or after July 1, 2007, for the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public building project by the state or any of its agents, or by an political subdivision of the state or any of its agents, where the total cost of all work to be performed by all contractors and subcontractors in connection with the contract is at least one hundred thousand dollars, shall contain a provision requiring that, not later than thirty days after the date of such contract is awarded, each contractor furnish proof to the Labor Commissioner that all employees performing manual labor on or in such public building, pursuant to such contract, have completed a course of at least ten hours in duration in construction safety and health approved by the federal Occupational Safety and Health Administrator or, in the case of telecommunications employees, have completed at least ten hours of training in accordance with 29 CFR 1910.268.

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

(c) Not later than January 1, 2007, 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 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) For the purposes of this section, "public building" means a structure, paid for in whole or in part with state funds, within a roof and within exterior walls or fire walls, designed for the housing, shelter, enclosure and support or employment of people, animals or property of any kind, including, but not limited to, sewage treatment plants and water treatment plants, "Public building" does not include site work, roads or bridges, rail lines, parking lots or underground water, sewer or drainage systems including pump houses or other utility systems.

Informational Bulletin

The 10-Hour OSHA Construction Safety and Health Course

(Applicable to public works projects entered into *on or after July 1, 2009*, where the total cost of all work to be performed is at least \$100,000.)

1. This requirement was created by Public Act No.08-83, 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 works construction projects (projects funded in whole or in part by the state or any political subdivision of the state) entered into on or after July 1, 2009;
3. It is required of mechanic, laborer, or worker (not state or municipal employees) and apprentices who perform manual labor for a general contractor or subcontractor on a public works project where the total cost of all work to be performed is at least \$100,000;
4. The ten-hour OSHA safety 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/dte/oti/index.html>;

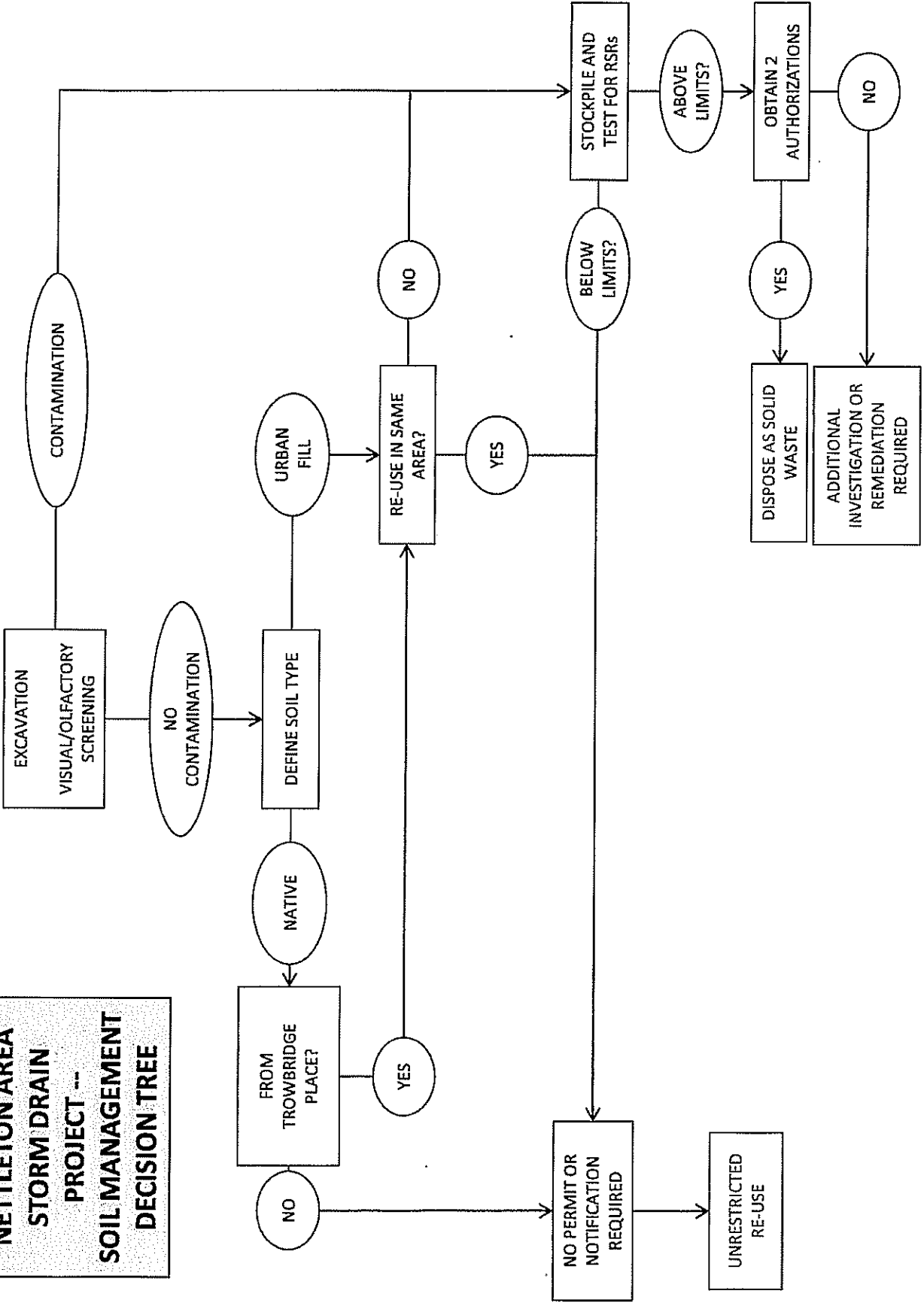
The statutory language leaves it to the contractor and its employees to determine who pays for the cost of the ten-hour Outreach Course;

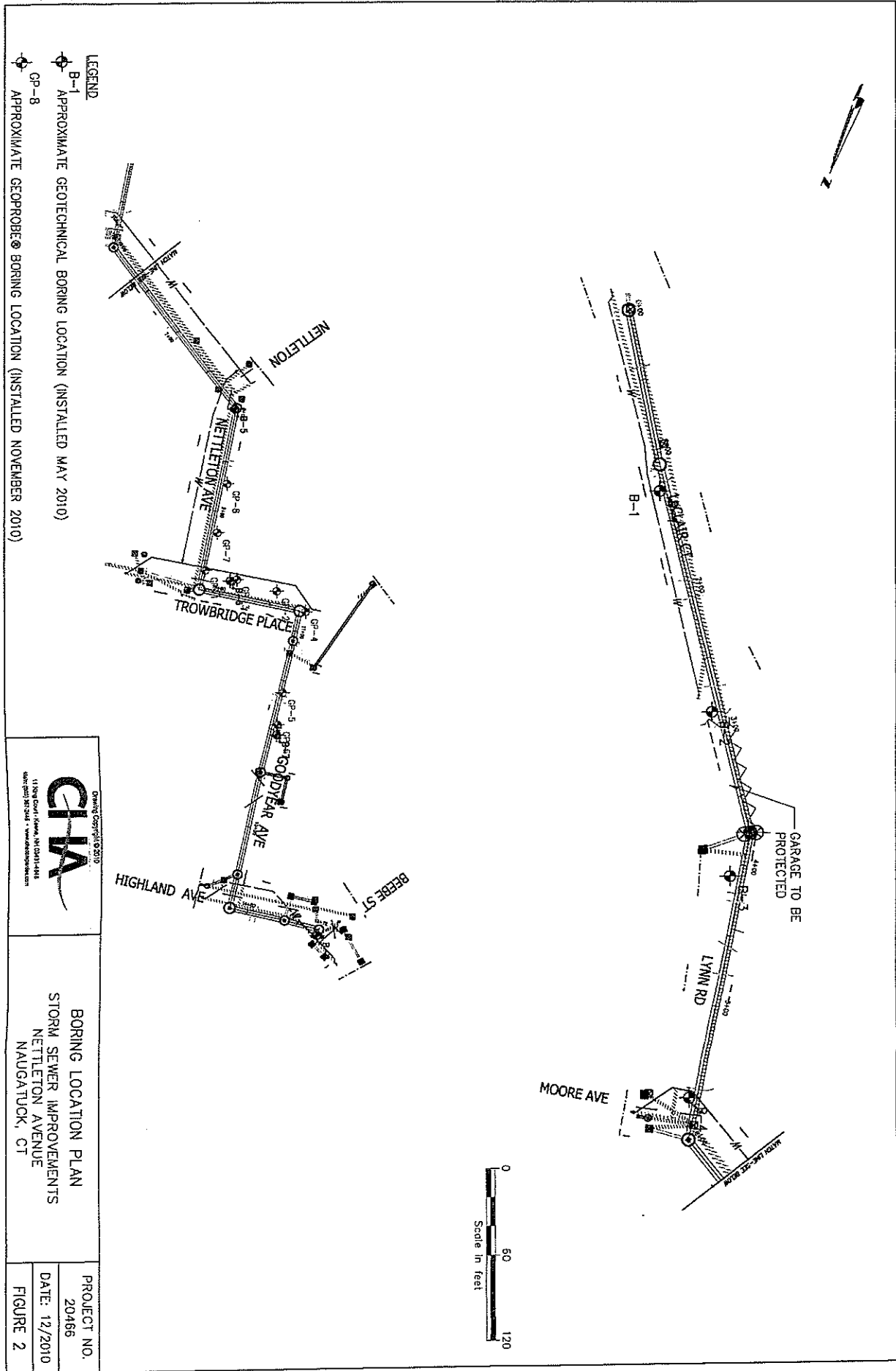
6. Proof of completion may be demonstrated through either: (a) the presentation of a bona fide student course completion card issued by the federal OSHA Training Institute; or (2) the presentation of documentation provided to an employee by a trainer certified by the Institute pending the actual issuance of the completion card;
7. 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;

8. 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;
9. Any mechanic, laborer, or worker who is found to be in non-compliance shall be subject to removal from the worksite if such mechanic, laborer, or worker does not provide satisfactory proof of course completion to the Labor Commissioner by the fifteenth day after the date the mechanic, laborer, or worker is determined to be in noncompliance;
10. Any such mechanic, laborer, or worker who is determined to be in noncompliance may continue to work on a public construction project for a maximum of fourteen consecutive calendar days while bringing his or her status into compliance;
11. The Labor Commissioner may make complaint to the prosecuting authorities regarding any contractor or agent of the contractor, or officer or agent of the corporation who files a false certified payroll with respect to the status of a mechanic, laborer, or worker who is performing manual labor on a public works construction project;
12. The statute provides the minimum standards required for the completion of a safety course by manual laborers on public works projects;, any contractor can exceed these minimum requirements; and
13. Regulations clarifying the statute are currently posted on the CTDOL website at: <http://www.ctdol.state.ct.us/wgwkstnd/prevailwage.htm>
<http://www.ctdol.state.ct.us/wgwkstnd/ConstSafetyFinalRegs.pdf>
14. Any questions regarding this statute may be directed to the Wage and Workplace Standards Division of the Connecticut Labor Department by telephone at (860) 263-6543 or via the internet website of <http://www.ctdol.state.ct.us/wgwkstnd/wgmenu.htm>

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

**NETTLETON AREA
STORM DRAIN
PROJECT --
SOIL MANAGEMENT
DECISION TREE**







**Borough of Naugatuck
Nettleton Ave Storm Sewer
SUBSURFACE LOG
HOLE NUMBER B-1**

Page 1 of 1

PROJECT NUMBER: 201663.2040.1510	LOCATION: Naugatuck, Connecticut	DRILL FLUID: None	DRILLING METHOD: 3" SSA3.25" HSA
CLIENT: Borough of Naugatuck	CONTRACTOR: New England Boring Contractors	DATE: 4-26-10	TIME: 9:45 AM
DRILLER: J. Leavitt	INSPECTOR: K. Adramis	READING TYPE: During Drilling	WATER LEVEL OBSERVATIONS: 8
START DATE and TIME: 4/26/2010 9:30:00 AM	FINISH DATE and TIME: 4/26/2010 10:15:00 AM	WATER LEVEL OBSERVATIONS: 8	WATER LEVEL OBSERVATIONS: 9
SURFACE ELEVATION: 274.00 (ft. Estimated) CHECKED BY: C. Symmes			

WELL NUMBER	SAMP. ADV. LEN. CORRECTION	RECOVERY	Blows Per Foot on Split Spoon Sampler	Value by % RODS	DEPTH (feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
S-1	2	0.7	6-11-15-18	26		ASPHALT	fine SAND Some f. Gravel, trace silt, brown, medium compact, moist (FILL)	260		
S-2	2	0.6	16-12-10-10	22		ASPHALT	fine SAND And f. Gravel, trace silt, brown, medium compact, moist (FILL)	270		
S-3	2	1	4-3-4-0	8		ASPHALT	fine SAND (moist) gravel, trace silt, brown, loose, wet (FILL)	265		
S-4	2	0.5	7-4-13-10	19		ASPHALT	fine SAND Some f. Gravel, trace silt, brown, loose, wet (FILL)	255	Drilling method changed to 3" SSA3.25" HSA at a depth of 7'. Color change in upper section of 1" section wash.	
S-5	1.5	0.7	4-3-7	10		ASPHALT	End of Boring at 10.5 ft	245	Spout boring at a depth of 10.5 being reworked. Description unknown description.	



Borough of Naugatuck
Nettleton Ave Storm Sewer
SUBSURFACE LOG
SOLE NUMBER B-2

PROJECT NUMBER: 200465-20040-15/10	DRILL FLUID: None
LOCATION: Naugatuck, Connecticut	DATE: 4-28-10
CLIENT: Borough of Naugatuck	TIME: 10:40 AM
CONTRACTOR: New England Boring Contractors	READING TYPE: During Drilling
DRILLER: J. LeVahl	INSPECTOR: K. Adams
START DATE and TIME: 4/29/2010 10:30:00 AM	WATER LEVEL OBSERVATIONS:
FINISH DATE and TIME: 4/29/2010 10:40:00 AM	
SURFACE ELEV.: 279.00 (ft. Estimated)	CHECKED BY: C. Symmes

SAMP. CORE NUMBER	SAMP. ADV. LEN. CORE RECOVERY	Blow Pkts. on Split Spoon Sampler	Value of RQD %	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVEL AND/OR WELL DATA
S-1	1.7	0.7	15	5		1.5 c. SAND Some Co. Gravel trace silt from 2.7 ft. down. (striped, metal fill.) DEBRIS (FILL) End of Boring at 2.7 ft.	275	Obtain sample S-1 from this location. Also send portion of sample at depth of 3' south to location B-2A.	
				10			270		
				15			265		
				20			260		
				25			255		
							250		

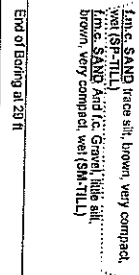


Borough of Naugatuck
Nettleton Ave Storm Sewer
SUBSURFACE LOG
SOLE NUMBER 8-2A

PROJECT NUMBER: 20465 2040, 1510
 LOCATION: Naugatuck, Connecticut
 CLIENT: Borough of Naugatuck
 CONTRACTOR: New England Being Contractors
 DRILLER: J. Legwill
 INSPECTOR: K. Adams
 START DATE and TIME: 4/29/2010 10:40:00 AM
 FINISH DATE and TIME: 4/29/2010 1:15:00 PM
 SURFACE ELEVATION: 279.00 (ft. Estimated) checked by: C. Symmes

DRILL FLUID: None		BRILLIANCE METHOD: 3.25" HSA	
DATE	TIME	READING TYPE	WATER DEPTH (ft)
4-29-10	12:00 PM	During Drilling	15
			15
			17

SAMP. CORE NUMBER	SAMP. ADV. LEN. (ft)	RECOVERY (%)	Blows Per ft on Split Spore Sampler	Value	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (feet)	Remarks on Coring, Drilling, Water Return, etc.	WATER LEVELS AND METEOROLOGICAL DATA
S-2	2	0.7	3+1-0-1	1	5		DEBRIS (FILL) f. SAND and silt, gray, very loose, moist (FILL)	275	Consists in sample S-2 consisted of cinders, glass, nails, etc.	
S-3	1.7	0.6	14.7-14.5463	21	5		f. SAND Some f.c. Gravel, brown, medium coarse, moist (FILL) silty, little f.c. gravel, black, medium compact, moist (FILL)	270	S-3 sampled for environmental testing.	
S-4	2	1.5	11-23-21-10	44	10		f. SAND and silty clay, gray, compact, moist (SC-TILL) f. SAND Some Silt, Some f.c. Gravel, brown, compact, moist (SC-TILL) f. SAND and, silty clay, gray, compact, moist (SC-TILL) No Recovery	270	Silt layers in sample S-4 are slightly molten.	
S-5	2	0	4-8-0-8	14	10		Similar Soil(SC-TILL) f. SAND and f.c. Gravel, little silt, brownish gray, compact, moist (SC-TILL)	285		
S-6	2	1.2	12-22-14-32	36	15		f. SAND and silty clay, little f.c. gravel, gray, compact, moist (SC-TILL)	285		
S-7	2	1.5	23-36-41-54	77	15		f. SAND Some Silt, Some f.c. Gravel, brown, very compact, wet (SM-TILL)	280	Auger grinding at a depth of 17"	
S-8	2	2	11-18-59-37	78	20		f. SAND Some f.c. Gravel, trace silt, brown, very compact, wet (SP-TILL) f. SAND Some Silt, Some f.c. Gravel, brown, very compact, wet (SM-TILL)	255		
S-9	0.5	0.5	908"	25	25		f. SAND trace silt, brown, very compact, wet (SP-TILL) f. SAND and f.c. Gravel, little silt, brown, very compact, wet (SM-TILL)	250	Very hard drilling at a depth of 25" Auger refusal at a depth of 25". Inferred as the top of bedrock.	



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Borough of Naugatuck
Nettleton Ave Storm Sewer
SUBSURFACE LOG
HOLE NUMBER B-3

PROJECT NUMBER: 20466 2040 1510	LOCATION: Naugatuck, Connecticut	DRILL FLUID: None	DRILLING METHOD: 3.25" HSA
CLIENT: Borough of Naugatuck	CONTRACTOR: New England Boring Contractors	DATE: 4-27-10	TIME: 9-15 AM
DRILLER: J. Leavitt	INSPECTOR: K. Adams	RECORDING TYPE: During Drilling	WATER CASING HOLE DEPTH (ft)
START DATE and TIME: 4/27/2010 8:15:00 AM	FINISH DATE and TIME: 4/27/2010 10:00:00 AM	WATER LEVEL OBSERVATIONS:	15
SURFACE ELEV: 204.00 (ft. Estimated)	CHECKED BY: C. Symmes		15
			17

SAMP. COR. NUMBER	RECOVERY	SPIN RATE on Spill Spoon or Sample	1" Value ROD %	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
S-1	2	14	6-13-78	20		1/2" c. SAND little silt, little f.c. gravel, trace black, brown, medium compact, moist (FILL)	200		
S-2	2	07	3-7-13-7	20		Similar Soil (FILL)	200	S-3-PID=0	
S-3	2	12	7-4-3-2	7		1/2" c. SAND Some Silt, little f.c. gravel, trace chert, brown, loose, moist (FILL)	200		
S-4	2	1	5-4-4-28	8		Similar Soil (FILL)	200		
S-5	2	12	13-8-13-14	21		1/2" c. SAND Some clayey Silt, little f.c. gravel, 1/8" medium compact, moist (SM-TILL)	200		
S-6	2	1.1	10-6-3-21-18	04		1/2" c. SAND Some Silt, Some f.c. Gravel, brownish grey, very compact, moist (SM-TILL)	200		
S-7	2	1.1	5-5-2-31-28	83		becomes wet (SM-TILL)	200		
S-8	1.2	0.7	17-8-10-10-27	R		Similar Soil (SM-TILL)	200		
						End of Boring at 23.5 ft	200	Auger refusal at a depth of 23.5'. Interfered as the top of bedrock.	
							255		

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Borough of Naugatuck
 Nettleton Ave Storm Sewer
 SUBSURFACE LOG
 HOLE NUMBER B-4

PROJECT NUMBER: 20465-2040-1510
 LOCATION: Naugatuck, Connecticut
 CLIENT: Borough of Naugatuck
 CONTRACTOR: New England Boring Contractors
 DRILLER: J. Lebowitz
 INSPECTOR: K. Adams
 START DATE and TIME: 4/28/2010 1:45:00 PM
 FINISH DATE and TIME: 4/28/2010 2:20:00 PM
 SURFACE ELEV: 289.00 (lt. Estimated)
 CHECKED BY: C. Symmes

DRILL FLUID: None		DRILLING METHOD: 3.25" HSA	
DATE	TIME	READING TYPE	WATER CASING DEPTH BOTTOM/HOLE
4-28-10	2:20 PM	Drilling Drilling	None 10 14
WATER LEVEL OBSERVATIONS			

SAMP. CORE NUMBER	(ft) SAMP. ADV. RECOVERY	Blow Per ft on Split Stem Sampler	NO. OF SAMPLES	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	NOTED IN LOG	Remarks on Drilling, Return, etc.	WATER LEVELS AND WELL DATA
S-1	2 1.3	8-10-9-3	19			late SAND silt, gravel, trace silt, brown, medium compact, moist (SM-TLL)			
S-2	2 0.2	8-10-8-7	18			Similar Soil (FILL)			
S-3	2 0.7	0-5-5-6	10			late SAND Some (c. Gravel, little silt, brown, loose, moist (SM-TLL)			
S-4	2 1.3	4-6-9-11	12			late SAND Some clayey Silt, gray, medium compact, moist (SM-TLL)			
S-5	2 0.9	5-5-18-25	24			late SAND Some Silt, Some (c. Gravel, brownish gray, medium compact, moist (SM-TLL)			
S-6	2 2	21-22-19-30	41			late SAND Some (c. Gravel, trace silt, brown, loose, moist (SM-TLL) late SAND Some Silt, Some (c. Gravel, brownish gray, medium compact, moist (SM-TLL) End of Boring at 14 ft			



PROJECT NUMBER: 20468.2040.1510

Borough of Naugatuck
 Nettleton Ave Storm Sewer
 SUBSURFACE LOG
 HOLE NUMBER B-5

Page 1 of 1

CLIENT: Borough of Naugatuck	DRILL FLUID: None
CONTRACTOR: New England Boring Contractors	DATE: 4-28-10
DRILLER: J. Leavitt	TIME: 3:00 PM
INSPECTOR: K. Adams	DRILLING METHOD: 3.25" HSA
START DATE and TIME: 4/28/2010 2:40:00 PM	READING TYPE: WATER DEPTH (ft)
END DATE and TIME: 4/28/2010 3:00:00 PM	DEPTH (ft): 5
DRINK: 297.00 (ft. Estimated)	WATER LEVEL OBSERVATIONS: none
CHECKED BY: C. Symmes	HOLE DEPTH (ft): 6.3

SAMP. CORE NUMBER	SAMP. ADV. LEN. (ft)	RECOVERY (%)	Blows Per 6" on Soil Spoon Sampler	N _v Value or R _o VALUE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Location of Drilling, etc.	WATER LEVELS AT WELL DATA
S-1	2	2	7-8-8-8	16	5	[Hatched Box]	ASPHALT CINDERS (FILL)	-295	S-1 sampled for environmental testing.	
S-2	2	0.5	0-10-14-14	32	5	[Hatched Box]	T. SAND Some Silty, trace c. sand, tan, compact, moist (SM-TILL)	-295		
S-3	1	1.2	12-15-50-5	R	5	[Hatched Box]	LIME SAND Some Silty, Some l.c. Gravel, brown, very compact, moist (SM-TILL) End of Boring at 6.3 ft.	-290	Auger released at a depth of 6.3'. Inferred as top of bedrock.	
					10			-285		
					15			-280		
					20			-275		
					25			-270		



**Borough of Naugatuck
Nettleton Ave Storm Sewer
SUBSURFACE LOG
HOLE NUMBER B-7**

PROJECT NUMBER: 20166.2010.1510
 LOCATION: Naugatuck, Connecticut
 CLIENT: Borough of Naugatuck
 CONTRACTOR: New England Boring Contractors
 DRILLER: J. Leavitt
 INSPECTOR: K. Adams
 START DATE and TIME: 4/28/2010 3:20:00 PM
 FINISH DATE and TIME: 4/28/2010 4:00:00 PM
 SURFACE ELEVATION: 314.00 (ft. Estimated) CHECKED BY: C. Symmes
 DRILL FLUID: None
 DRILLING METHOD: 3.25" HSA
 WATER LEVEL OBSERVATIONS:
 DATE TIME READING WATER CASING HOLE DEPTH BOTTO/BOTTOM (ft) (ft) (ft)

SAMP. CORE NUMBER	SAMP. ADV. LEN. CORE	RECOVERY	Blow Rate on Split Spore Sampler	N ₆₀ Value	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Soil, Water, etc.	WATER LEVELS AND/OR WELLS DATA
S-1	1.5	0.7	4+0	13	4.4		ASPHALT	298.5		
S-2	2	0.7	32-21-4-24	67	6.4		1m. G. SAND Some Silt, Some f.c. Gravel, brown, medium compact, moist (FILL) becomes very compact (FILL)	299.5	S-1 P/D=0 Sample S-1 has a slight petroleum odor	
S-3	2	0.7	6-12-27-28	39	8.4		becomes compact (FILL)	300.5	S-2/S-3 sampled for environmental testing	
S-4	2	1.5	18-12-20-21	32	10.4		1m. G. SAND Some Silt, f.c. gravel, brown, compact, moist (SM-TILL) becomes very compact (SM-TILL)	301.5		
S-5	2	1	28-3-51-58	85	12.4		Similar Soil (SM-TILL)	302.5		
S-6	2	1.2	47-52-75-78	R	14.4		End of Boring at 14 ft	303.5		



Borough of Naugatuck
Nettleton Ave Storm Sewer
SUBSURFACE LOG
SOLE NUMBER B-8

PROJECT NUMBER: 20166 2040 1510	DRILL FLUID: None
LOCATION: Naugatuck, Connecticut	
CLIENT: Borough of Naugatuck	
CONTRACTOR: New England Boring Contractors	
DRILLER: J. Leavitt	INSPECTOR: K. Adams
START DATE and TIME: 4/27/2010 11:30:00 AM	WATER LEVEL OBSERVATIONS
FINISH DATE and TIME: 4/27/2010 12:30:00 PM	
SURFACE ELEV: 322.00 (ft. Estimated)	CHECKED BY: C. Symmes

SAMP. CORE NUMBER	SAMP. ADV. LEN. CORE (ft)	RECOVERY (%)	Blogs Per ft. on Soil Spoon Sampler	Value of ROD LOG	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks for Change of Drilling Method, Return, etc.	WATER LEVELS AND/OR WELL DATA
S-1	2	1	5-8-4-6	12	5	[Hatched Pattern]	FA. GRAVEL and c. SAND like fill, dark brown, medium compact, moist (FILL)	320		
S-2	2	0.1	17-13-13-14	26	5	[Hatched Pattern]	Similar Soil (FILL)			
S-3	2	1.5	7-9-8-10	17	5	[Hatched Pattern]	Limc. SAND. Some clayey sil. fine f.c. gravel brown, medium compact, wet (SM-TILL)		Coarsest s. sand seems in gravel fill.	
S-4	2	1.4	10-5-9-30	14	5	[Hatched Pattern]	Similar Soil (SM-TILL)	315		
S-5	2	1.6	5-15-4-3-27	50	10	[Hatched Pattern]	becomes very compact (SM-TILL)	310		
S-6	2	1.2	15-4-1-3-5-9-8	70	15	[Hatched Pattern]	Similar Soil (SM-TILL)	305		
					15	[Hatched Pattern]	End of Boring at 14 ft	300		
					20			295		
					25					



CONYER-HARRISON & ASSOCIATES, L.P.

12/15/2010

Nettleton Area Storm Drain Improvement Project
SUBSURFACE LOG
HOLE NUMBER GP-1

Page 1 of 1

PROJECT NUMBER: 20466
 LOCATION: Borough of Naugatuck, Connecticut
 CLIENT: Borough of Naugatuck
 CONTRACTOR: Aquifer Drilling and Tasting
 DRILLER: R. Bulley
 INSPECTOR: S. Rosecrans
 START DATE and TIME: 11/18/2010
 FINISH DATE and TIME: 11/18/2010
 SURFACE ELEV.:
 CHECKED BY: S. Nowell

DRILL FLUID		DRILLING METHOD: Geoprobe	
DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)

WATER LEVEL OBSERVATIONS DURING DRILLING

SAMP./CORE NUMBER	SAMP. ADV. (ft)	RECOVERY (%)	PIV Readings (ppm)	N Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVEL ANCHOR WELL DATA
S-1	4	2.8	0.0	2				ASPHALT (FILL)			
			0.0	4				fine SAND, little f.c. gravel, trace silt, brown, moist (FILL)		Soil sample collected from 4' to 4.6' at 09:50	
			0.0	6				fine SAND, some silt, trace organics, blackbrown, moist (SM)			
			0.0	6				fine SAND, some silt, little f.c. gravel, tan/brown, moist (SM)			
S-2	4	3.2	0.0	6				grades to brown			
S-3	2.3	2.3	0.0	8				grades to brown			
				10				End of Boring at 10.3 ft			
										Refusal at 10.29'	



GEOTECHNICAL & ASSOCIATES, LLC

Nettleton Area Storm Drain Improvement Project
SUBSURFACE LOG
HOLE NUMBER GP-2

Page 1 of 1

SECPROBE LOG 20466 NAUGATUCK BORING LOGS.GPJ UPDATED:CHA.GDT 12/16/10

PROJECT NUMBER: 20466		LOCATION: Borough of Naugatuck, Connecticut		DRILL FLUID:		DRILLING METHOD: Geoprobe		HOLE			
CLIENT: Borough of Naugatuck		CONTRACTOR: Aquifer Drilling and Testing		DRILLER: R. Buloy		INSPECTOR: S. Rosegrans		WATER LEVEL OBSERVATIONS DURING DRILLING			
START DATE and TIME: 11/18/2010		FINISH DATE and TIME: 11/18/2010		DATE		TIME		WATER DEPTH (ft)			
SURFACE ELEV:		CHECKER BY: S. Newell		DEPTH (Feet)		ELEVATION (Feet)		REMARKS ON Drilling, Water Return, etc.			
SAMP./CORE NUMBER	SAMP. ADV. LEN. (ft)	CORE LEN. (ft)	RECOVERY (%)	PID Readings (ppm)	"N" Value or ROD%	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	REMARKS ON Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
S-1	4	2.5	0.0	0.0	0.0	2		fine SAND, some silt, trace organics			
				0.0	0.0	4		fine SAND, some silt, trace organics			
				0.0	0.0	6		fine SAND, some silt, trace organics			
S-2	4	2.6	0.0	0.0	0.0	6		fine SAND, some silt, trace organics			
				0.0	0.0	8		fine SAND, some silt, trace organics			
				0.0	0.0	10		fine SAND, some silt, trace organics			
				0.0	0.0	12		fine SAND, some silt, trace organics			
S-4	1.6	1.6	0.0	0.0	0.0	13.6		fine SAND, some silt, trace organics			
End of Boring at 13.6 ft											
*Temporary PVC groundwater probe installed to 13.6'. Groundwater sample collected at 15.45'. Refusal at 13.6'.											
Soil sample collected from 4' to 4.6' at 10:35											



CONCEPT HANDBOOK & ASSISTANCE LLP

PROJECT NUMBER: 20456

12/18/2010

Naticketon Area Storm Drain Improvement Project
SUBSURFACE LOG
HOLE NUMBER GP-3

Page 1 of 1

LOCATION: Borough of Naticketon, Connecticut	DRILL RIG ID:	DATE:	TIME:	DRILLING METHOD: Geoprobe	WATER LEVELS:
CLIENT: Borough of Naticketon					WELL DATA:
CONTRACTOR: Aquifer Drilling and Testing					
DRILLER: R. Bulley					
INSPECTOR: S. Rosecrans					
START DATE and TIME: 11/18/2010					
FINISH DATE and TIME: 11/18/2010					
SURFACE ELEV:					
CHECKED BY: S. Newell					

SAMP. CORE NUMBER	SAMP. ADV. LEN. (ft)	RECOVERY (%)	PH Readings (pH)	"N" Value of ROD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Rods, Rpt. 1/18/10	WATER LEVELS
S-1	4	3	0.0			-2		ASPHALT (FILL)			
			0.0			-4		LIM. SAND, thin f.c. gravel, brownback, moist (FILL)		Soil sample collected from 2' to 2.8' at 11:30	
			0.0			-4		CLAYEY SAND, thin silt, trace f.c. gravel, brown, moist (FILL)		Soil sample collected from 2' to 3' at 11:40 for TCLP analysis from a second soil sample just after being installed adjacent to GP-3 in order to obtain additional sample volume.	
			0.0			-4		LIM. SAND, some silt, trace organics, blackbrown, moist (SM)			
			0.0			-6		LIM. SAND, some silt, little f.c. gravel, brown, moist (SM)			
Ss-2	4	3.3				-6					
			0.0			-8					
Ss-3	2.5	2.5				-10				Refusal at 10.5'	
						-10		End of Boring at 10.5 ft			



CONSTRUCTION ASSOCIATES, LLC
12/16/2010

Naticket Area Storm Drain Improvement Project
SUBSURFACE LOG
HOLE NUMBER GP-4
Page 1 of 1

PROJECT NUMBER: 20468	LOCATION: Borough of Naticket, Connecticut	DRILL FLUID:	DRILLING METHOD: Geoprobe
CLIENT: Borough of Naticket	CONTRACTOR: Aquifer Drilling and Testing	DATE:	WATER DEPTH (ft)
DRILLER: R. Biley	INSPECTOR: S. Roscicams	TAKE	CASING BOTTOM (ft)
START DATE and TIME: 11/18/2010	FINISH DATE and TIME: 11/18/2010		LOG BOTTOM (ft)
SURFACE ELEV:		WATER LEVEL OBSERVATIONS DURING DRILLING	
CHECKED BY: S. Newell			

SAMP/CORE NUMBER	SAMP. ADV. (ft)	LEN. CORE (ft)	RECOVERY (%)	PID Readings	N Value	ROCK %	SAMPLE DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
S-1	4	2.5	0.0				2		ASPHALT (FILL)			
			0.0				4		LIM. SAND, little f.c. gravel, brown/black, moist (FILL)			
			0.0				4		LIM. SAND, some silt, trace organics, brown, moist (FILL)			
			0.0				4		LIM. SAND, little silt, trace f.c. gravel, brown, moist (FILL)			
			0.0				4		LIM. SAND, trace f.c. gravel, white, moist (FILL)			
			0.0				4		LIM. SAND, some silt, little f.c. gravel, brown, moist (SM)			
S-2	4	2.9	0.0				6		gradas to little silt, trace f.c. gravel, brown			
			2.1				8		slight asphalt/polystyrene odor			
			0.0				8		LIM. SAND, some silt, little f.c. gravel, brown, moist (SM)			
S-3	2.5	2.5	0.0				10		End of Boring at 10.5 ft			
									Soil sample collected from 8' to 9.2' at 12.35'			
									Refusal at 10.5'			



CONUCH HANCOCK & ASSOCIATES, L.P.
 PROJECT NUMBER: 20468
 LOCATION: Borough of Naugatuck, Connecticut
 12/19/2010

Natletton Area Storm Drain Improvement Project
SUBSURFACE LOG
HOLE NUMBER: GP-5
 Page 1 of 1

CLIENT: Borough of Naugatuck	DRILL FLUID:	DATE:	TIME:	DRILLING METHOD: Geoprobe	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
CONTRACTOR: Aquifer Drilling and Testing	WATER LEVEL OBSERVATIONS DURING DRILLING						
DRILLER: R. Bulley	INSPECTOR: S. Rosecrans						
START DATE and TIME: 11/18/2010							
FINISH DATE and TIME: 11/18/2010							
SURFACE ELEVATION:	CHECKED BY: S. Newell						

SAMP./CORE NUMBER	SAMP. ADV. (ft)	LEN. CORE (ft)	RECOVERY (%)	PID Readings (ppm)	7" Value of ROD%	SAMPLE DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Foot)	Remarks on Direction of Dip, Water Return, etc.	WATER LEVELS AND/OR WELLS DATA
S-1	3	1.7	0.0	0.0		2	[Hatched Pattern]	ASPHALT (FILL)			
						2	[Cross-hatched Pattern]	1c GRAVEL, trace fm. sand, gray, moist (FILL) 1d FILL (FILL) same as 1c. Sand, trace 1c. trace brown, moist (FILL) 1e SAND, trace 1c. gravel, trace silt, brown, moist (FILL)		Soil sample collected from 1' to 1.5' at 13-40. Sample depth based on less than 90% recovery. Actual sample depth may vary.	
						3		End of Boring at 3 ft.		Refused at 3'	



CLIENT: HARBOR & ASSOCIATES, LLP

12/16/2010

Nettleton Area Storm Drain Improvement Project
SUBSURFACE LOG
HOLE NUMBER GP-6

Page 1 of 1

PROJECT NUMBER: 20465	LOCATION: Borough of Naugatuck, Connecticut	DRILL FLUID:	DATE:	TIME:	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
CLIENT: Borough of Naugatuck	CONTRACTOR: Aquifer Drilling and Testing	DRILLER: R. Buley	INSPECTOR: S. Rosebrans	START DATE and TIME: 1/18/2010	FINISH DATE and TIME: 1/18/2010	SURFACE ELEV: _____	
CHECKED BY: S. Newell		WATER LEVEL OBSERVED DURING DRILLING					

SAMP. CORE NUMBER	SAMP. ADV. (ft)	RECOVERY (%)	PID Readings (ppm)	*N Value or RQD%	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
S-1	4	1.8	0.0		2		ASPHALT (FILL)			
			0.0		4		Fill, (cont), some fm. Sand, little f.c. gravel, black, moist (FILL)			
			0.0		6		fine SAND, little f.c. gravel, trace silt, brown, moist (FILL)			
			0.0		8		No Recovery (5' to 7')			
S-2	3	1			8		fine SAND, little f.c. gravel, trace silt, brown, moist (FILL)			
					10		No Recovery (5' to 7')			
					10		End of Boring at 7'		Retreat at 7'	

Soil lithology from 0' to 4' based on less than 50% recovery. Actual lithology may vary.

Soil sample collected from 4' to 5' at 1353



CLONK WATSON & ASSOCIATES LP

Nettleton Area Storm Drain Improvement Project
SUBSURFACE LOG
HOLE NUMBER GP-7

Page 1 of 1

PROJECT NUMBER: 20466
 LOCATION: Borough of Naugatuck, Connecticut
 CLIENT: Borough of Naugatuck
 CONTRACTOR: Aquifer Drilling and Testing
 DRILLER: R. Buley
 INSPECTOR: S. Rosecrans
 START DATE and TIME: 11/18/2010
 FINISH DATE and TIME: 11/18/2010
 SURFACE ELEV.:
 CHECKED BY: S. Newell

DRILL FLUID:
 DATE: TIME: DRILLING METHOD: Gasprobe
 WATER LEVEL OBSERVATIONS: WATER DEPTH (ft) CASING BOTTOM (ft) HOLE BOTTOM (ft)
 DRILLING

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (%)	PID Readings (ppm)	N Value or RQD%	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Return, etc.	WATER LEVELS AND/OR WELL DATA
S-1	4	1.3	0.0		2		TOPSOIL (FILL) FINE SAND, silt f.c. gravel, brown, moist (FILL)			
			0.0		4		FINE SAND, silt f.c. gravel, brown, moist (FILL)			
			0.0		6		GRAVEL, trace fin sand, gray, moist (FILL)			
			0.0		8		FINE SAND, some silt, silt f.c. gravel, tan/brown, moist (SM)		Soil lithology from 0' to 4' based on less than 50% recovery. Actual lithology may vary.	
S-2	4	2.5	0.0		6		grades to little silt		Soil sample collected from 4' to 4.7' at 14:30	
			0.0		8		grades to some silt			
S-3	2	2	0.0		10		End of Boring at 10 ft		Refused at 10'	



Nettleton Area Storm Drain Improvement Project
SUBSURFACE LOG
HOLE NUMBER GP-8

PROJECT NUMBER: 20466
 CLIENT: Borough of Naugatuck, Connecticut
 CONTRACTOR: Aquifer Drilling and Testing
 DRILLER: R. Bulley
 INSPECTOR: S. Rosecrans
 START DATE and TIME: 11/18/2010
 FINISH DATE and TIME: 11/18/2010
 SURFACE ELEVATION:
 CHECKED BY: S. Newell

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (%)	PID Readings (ppm)	N Value or ROD%	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	DRILLING METHOD: GasProbe		WATER LEVELS BELOW WELL DRINA	
									WATER DEPTH (ft)	CASING BOTTOM (ft)		HOLE BOTTOM (ft)
S-1	4	1.3	0.0		2		grades to little silt, trace f.c. gravel					
			0.0		4		trace SAND, little f.c. gravel, trace silt, brown, moist (SP)					
			0.0		6		grades to little silt, trace f.c. gravel (SM)					
S-2	4	2.5	0.0		6							
			0.0		8							
			0.0		10							
S-3	2.5	2.5			10.5		End of Boring at 10.5'					
												Remarks on Character of Soil, etc. Retained at 10.5'

SECTION B

PROPOSAL

SECTION B

PROPOSAL

Borough of Naugatuck

Nettleton Avenue Neighborhood Storm Drain Improvements Phase I

The undersigned, as Bidder, declares that no person or persons, other than those named herein, are interested in this Proposal; that this Proposal is made without collusion with any person, firm or corporation; that he has carefully examined the location of the proposed work, the proposed Form of Contract, and the Contract Drawings therein referred to; that no person or persons acting in any official capacity for the Owner is directly or indirectly interested therein or in any portion of the profit thereof; and that he proposes and agrees, if this Proposal is accepted, to execute the Form of Contract with the Owner; to provide all necessary equipment, tools, and other means of construction, and to do all work and furnish all materials specified in the Contract, in the manner and time therein prescribed, and according to the requirements of the Borough of Naugatuck as therein set forth, and that he will take in full payment therefore, the following unit prices and lump sums, to wit:

The Bidder acknowledges receipt of the following addenda:

Addendum No. _____ Dated: _____

Addendum No. _____ Dated: _____

Addendum No. _____ Dated: _____

Addendum No. _____ Dated: _____

Addendum No. _____ Dated: _____

Addendum No. _____ Dated: _____

The undersigned agrees that he shall execute the Contract within ten (10) days after the date of award, and shall commence work within ten (10) days after the date of the Notice to Proceed and shall progress therewith to its entire completion within the time stipulated in the Contract.

The Bidder agrees that this bid shall be good and may not be withdrawn for a period of ninety (90) days after the scheduled closing time for receiving bids.

If this Proposal shall be accepted by the Owner and the undersigned shall fail to contract as aforesaid, and to give bonds in a sum equal to one hundred percent (100%) of the Contract

price, as determined by the canvass of bids, and with surety or sureties satisfactory to the Owner within ten (10) days from the date of the award, then the Owner may, at its option, determine that the Bidder has abandoned the Contract: thereupon, the Proposal and acceptance shall be null and void, and the bid security, for not less than five percent (5%) of the amount of the bid, accompanying this Proposal, shall become the property of the said Owner as liquidated damages for the delay and additional expense to the Owner caused thereby if said Proposal shall be rejected, or if said Proposal shall be accepted and the Bidder shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said Proposal) and shall furnish a Bond for his faithful performance of said Contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said Proposal, the accompanying bid security shall be returned to the undersigned making bid.

Seal
(if bid is by a Corporation)

Firm or Corporation_____

By:_____
(Duly Authorized)

Street Address_____

City_____ State_____ Zip_____

Telephone _____

Date

Fax _____

Small, Minority, Women-Owned Business Concern Representation

The bidder represents and certifies as part of its bid/ offer that it –

(a) is, is not a small business concern. "Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding, and qualified as a small business under the criteria and size standards in 13 CFR 121.

(b) is, is not a women-owned business. "Women-owned business enterprise," as used in this provision, means a business that is at least 51 percent owned by a woman or women who are U.S. citizens and who also control and operate the business.

(c) is, is not a minority business enterprise. "Minority business enterprise," as used in this provision, means a business which is at least 51 percent owned or controlled by one or more minority group members or, in the case of a publicly owned business, at least 51 percent of its voting stock is owned by one or more minority group members, and whose management and daily operations are controlled by one or more such individuals. For the purpose of this definition, minority group members are:

(Check the block applicable to you)

- Black Americans Asian Pacific Americans Hispanic Americans
- Asian Indian Americans Native Americans Hasidic Jewish Americans

RESPECTFULLY SUBMITTED:

BY: _____
(type or print name and title)

(authorized signature of bidder)

List below, the business location, the mailing address, the telephone number and the name of the person of whom any inquiries are to be made.

If bid is submitted by a corporation, its seal must appear.

PROPOSAL FORMS

Nettleton Avenue Neighborhood Storm Drain Improvements Phase I

PROPOSAL FORM

The undersigned hereby agrees to furnish the Borough of Naugatuck with the Nettleton Avenue Neighborhood Storm Drain Improvements Phase I, meeting the specifications and conditions of the Borough of Naugatuck, as stated in the bid documents.

The undersigned is aware that the Borough of Naugatuck may reject any and all bids in whole or in part; that the Borough may waive technical defects, irregularities and omissions; that the award will be based on the combination of items that will best serve the interest of the Borough; that the bid price does not include any taxes for which the Borough is not liable; and that acceptance of the bid will establish no exclusive contract by which the Borough of Naugatuck will be required to purchase from the undersigned.

The undersigned claims without reservation that his/her bid is made without collusion with any other person, individual or corporation.

Bid Item quantities for unit price bid items are not guaranteed. Final payment will be based on actual installed quantities. Items not specifically identified for payment in the Bid Form shall be assumed to be included in the work effort of other bid items and shall not be paid or requested for payment separately.

This bid was determined on the basis of the following unit prices:

Nettleton Avenue Neighborhood Storm Drain Improvements Phase I For Proposed Schedule						
ITEM No.	ITEM DESCRIPTION	UNIT	UNIT PRICE (FIG'S)	UNIT PRICE (WORDS)	EST Q'TY	TOTAL PRICE (FIG'S)
1	Mobilization	LS			1	
2	Test Pits	CY			50	
3.1	Pavement Subbase - Processed Aggregate	CY			230	

**Nettleton Avenue Neighborhood Storm Drain Improvements Phase I
For Proposed Schedule**

ITEM No.	ITEM DESCRIPTION	UNIT	UNIT PRICE (FIG'S)	UNIT PRICE (WORDS)	EST Q'TY	TOTAL PRICE (FIG'S)
3.2	Pavement Subbase - Gravel	CY			160	
4	Rock Excavation	CY			20	
5	Hot Mix Asphalt - Binder Course	Ton			125	
6	Concrete Sidewalk	SY			645	
7	Remove & Reset Granite Curb	LF			50	
8	Pavement Markings	LF			240	
9.1	Manhole - 4' Diameter	VF			21	
9.2	Not Used	-			-	
9.3	Manhole - 10' Diameter	VF			47	
10.1	Catch Basin - Single Grate	VF			73	
10.2	Type C Catch Basin - Type I	VF			32	
10.3	Type C Catch Basin - Type II	VF			27	
10.4	Type C Catch Basin - Type I Curb Top	EA			5	
10.5	Type C Catch Basin - Type II Curb Top	EA			2	

**Nettleton Avenue Neighborhood Storm Drain Improvements Phase I
For Proposed Schedule**

ITEM No.	ITEM DESCRIPTION	UNIT	UNIT PRICE (FIG'S)	UNIT PRICE (WORDS)	EST Q'TY	TOTAL PRICE (FIG'S)
11.1	HDPE Pipe – 12" Diameter	LF			18	
11.2	HDPE Pipe – 15" Diameter	LF			18	
11.3	HDPE Pipe – 18" Diameter	LF			114	
11.4	HDPE Pipe – 24" Diameter	LF			200	
11.5	CL IV Reinforced Concrete Pipe - 54" Diameter	LF			366	
12	Not Used	-			-	
13.1	Not Used	-			-	
13.2	Curb – Precast Concrete	LF			540	
13.3	Curb – Bituminous Concrete	LF			690	
14	Flow Fill	CY			10	
15	Concrete Collar	EA			4	
16	QA/QC Testing	Allow	N/A	Five thousand dollars	N/A	\$5,000.00
17	Police Detail	Allow	N/A	Ten thousand dollars	N/A	\$10,000.00
18	Removal of Non-Contaminated Stockpiled Soils	CY			450	

Nettleton Avenue Neighborhood Storm Drain Improvements Phase I For Proposed Schedule						
ITEM No.	ITEM DESCRIPTION	UNIT	UNIT PRICE (FIG'S)	UNIT PRICE (WORDS)	EST Q'TY	TOTAL PRICE (FIG'S)
19	Removal of Contaminated Stockpiled Soils	Tons			590	

TOTAL FOR NETTLETON AVENUE NEIGHBORHOOD STORM DRAIN IMPROVEMENTS PHASE I

IN FIGURES \$ _____

IN WORDS _____

BID ALTERNATES

Nettleton Avenue Neighborhood Storm Drain Improvements Phase I For Proposed Schedule						
	BID ALTERNATES	UNIT	UNIT PRICE (FIG'S)	UNIT PRICE (WORDS)	EST Q'TY	ADD (DEDUCT) (FIG'S)
A	Substitute 54" Diameter 14 Gauge Aluminized Steel Corrugated Metal for 54" Class IV RCP	LF			366	
B	Cold Milling Existing Pavement	SY			1080	
C	Hot Mix Asphalt – Top Course	Ton			180	

TOTAL FOR NETTLETON AVENUE NEIGHBORHOOD STORM DRAIN IMPROVEMENTS PHASE I, USING ALL ITEMS INCLUDING BID ALTERNATES.

IN FIGURES \$ _____

IN WORDS _____

SECTION C

REFERENCES

SECTION C

REFERENCES

The Bidder is required to fill out the following form to enable the Owner to make inquiries and judge as to the Bidder's experience, skill, available financial resources, credit, and business standing.

1. Number of years the bidder has been in business as a General Contractor: _____

2. List three (3) projects of similar nature to the project described herein that the Bidder has completed, with name, address, and telephone number of a reference for each project. Include approximate construction cost:

3. List projects presently under construction by the Bidder, dollar amount of the contract, and percent completed:

4. Has the Bidder ever failed complete work awarded; and if so, state where and why:

5. Does the Bidder plan to sublet any part of this work; and if so, give details:

6. List equipment Bidder owns that is available for this project:

7. List equipment the Bidder plans to rent or purchase for this project:

8. If the Bidder has worked under the direction of a Consulting Engineer, list recent projects with the name, address, and telephone number of the Consultant:

9. List name, address, and telephone number for the following:

Surety: _____

Bank: _____

Major Material Supplier: _____

Bidder

SECTION D

BID BOND /SURETY GUARANTY

BID BOND

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

as Principal, and _____ as Surety are held and firmly bound unto Borough of Naugatuck hereinafter called the "Owner", in the penal sum of _____ Dollars, (\$_____) lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION IS SUCH, that whereas the Principal has submitted the accompanying BID, dated _____, 20____, for _____

NOW THEREFORE, if the Principal shall not withdraw said Bid within the time period specified therein after the opening of the same, or within any extended time period agreed to by the Principal, Surety and Owner, or, if no period be specified, within ninety (90) days after the said opening, and shall within the period specified thereof, or if no period be specified, within twenty (20) days after the prescribed forms are presented to him for signature, enter into a written Contract with the Owner in accordance with the Bid as accepted, and give bond with good and sufficient surety or sureties, as may be required, for the faithful performance and proper fulfillment of such Contract; then the above obligation shall be null and void and of no effect, otherwise to remain in full force or virtue.

Failure to comply with the aforementioned condition shall result in the forfeiture of this BID BOND as liquidated damages.

IN WITNESS WHEREOF, the above-bounded parties have executed this Instrument under their several seals this _____ day of _____, 20____, the name and corporate seal of each corporate party being hereto affixed and these presents signed by its undersigned representative, pursuant to authority of its governing body.

No extension of time or other modification of the BID BOND shall be valid unless agreed to in writing by the parties to this Bond.

BID BOND
(Page 2 of 2)

In presence of:

(Individual Principal)

(Business Address)

(Individual Principal)

(Business Address)

Attest:

(Corporate Principal)

(Business Address)

By:

Affix
Corporate
Seal

Attest:

(Corporate Surety)

(Business Address)

By:

Affix
Corporate
Seal

Countersigned

By: _____

* Attorney-in Fact, State of _____

* Power-of Attorney for person signing for Surety Company must be attached to Bond.

SURETY GUARANTY FORM

(To accompany Proposal)

KNOW ALL MEN BY THESE PRESENTS, that for and in consideration of the sum of \$1.00, lawful money of the United States, the receipt whereof is hereby acknowledged, paid the undersigned corporation, and for other valuable consideration, the

(Name of Surety Company)

a corporation organized and existing under the laws of the State of _____ and licensed to do business in the State of Connecticut, certifies and agrees, that if the Contract for the Nettleton Avenue Neighborhood Storm Drain Improvements is awarded to

_____, the undersigned corporation will execute the
(Name of Bidder)

bond or bonds as required by the Contract Documents and will become Surety in the full amount of the Contract Price for the faithful performance of the Contract and for payment of all persons supplying labor or furnishing materials in connection therewith.

(Surety)

(To be accompanied by the usual proof of authority of officers of Surety Company to execute the same.)

SECTION E

**CONTRACT AGREEMENT AND
CERTIFICATE AS TO CORPORATE PRINCIPAL**

CONTRACT AND AGREEMENT

THIS AGREEMENT, made this _____ day of _____ in the year 20__ , between the Borough of Naugatuck, with its principal office and place of business at 229 Church Street, Connecticut 06770, acting herein through its Mayor and _____ , a _____, with an office and place of business at _____, hereinafter called the Contractor.

WITNESSETH: That the parties to this agreement in consideration of the undertakings, promises, and agreements on the part of the other herein contained, hereby undertake, promise, and agree as follows:

I Definitions

The word "Owner" as used herein shall mean the Borough of Naugatuck, acting through its properly authorized representatives.

The words "as directed", "as required", "as permitted", "as allowed", or phrases of like effect or import, used herein shall mean that the direction, requirement, permission, or allowance of the Borough of Naugatuck is intended and similarly the words "approved", "reasonable", "suitable", "proper", "satisfactory", or words of like effect or import, unless otherwise particular specified herein, shall mean approved, reasonable, suitable, proper, or satisfactory in the judgment of the Borough of Naugatuck.

The word "Contractor" shall mean _____ or its duly authorized agents.

II Contract Includes

The indices, headings and subheadings are for convenience only and do not form a part of the Contract Documents.

The Contractor shall, at his own sole cost and expense, furnish all labor, materials, and other services necessary for the completion of this Contract and shall complete and finish the same in the most thorough, workmanlike, and substantial manner, in every respect, to the satisfaction and approval of the Borough of Naugatuck, in the manner and within the time hereinafter limited, and in strict accordance with the Advertisement, Information for Bidders, Proposal, General Requirements, Detailed Specifications, and Addenda hereto attached, and the Contract Drawings herein referred to, (collectively the "contract documents"), which contract documents are hereby made a part of this Contract as fully as if the same were repeated at length herein.

Addendum No. ___ Dated: _____ Addendum No. ___ Dated: _____
Addendum No. ___ Dated: _____ Addendum No. ___ Dated: _____
Addendum No. ___ Dated: _____ Addendum No. ___ Dated: _____

III Specifications and Contract Drawings Supplementary

The said Specifications and Contract Drawings are intended to supplement each other, and together constitute one complete set of Specifications and Contract Drawings, so that any work exhibited in the one and not in the other shall be executed just as if it had been set forth in both, in order that the work shall be completed in every respect according to the complete design or designs as decided and determined by the Borough of Naugatuck. Should anything be omitted from the Specifications and Contract Drawings, the Contractor shall promptly notify the Borough of Naugatuck. From time to time during the progress of the work, the Borough of Naugatuck will furnish such supplementary or working drawings as are necessary to show changes or define the work in more detail, and these also shall be

considered as Contract Drawings. When discrepancies exist between the Contract Drawings and Specifications, the Specifications shall govern.

IV Modifications

The Contractor, in entering into this Contract, understands that the Owner reserves the right to modify, to the extent herein provided, the arrangement, character, grade, or size of the work or appurtenances whenever, in the Owner's opinion, it shall be deemed necessary or advisable to do so. Minor changes in the work, not involving extra cost and consistent with the purposes of the work, may be made by verbal order, but no modifications involving extra work or material changes shall be made unless ordered in writing by the Borough of Naugatuck; and if the modification requires additional cost, a purchase order must be issued prior to work commencing. The Contractor shall and will accept such modifications when ordered in writing by the Owner through the Borough of Naugatuck, and the same shall not vitiate or void this Contract.

Any such modifications so made shall not, however, subject the Contractor to increased expense without equitable compensation, which shall be determined by the Borough of Naugatuck. If such modifications result in a decrease in the cost of work involved, and equitable deduction from the Contract price, to be determined by the Borough of Naugatuck, shall be made. The Borough of Naugatuck's determination of such additional compensation, or of any such deduction, shall be based upon the unit prices in the Contractor's bid, unless the modification involves work not included in such bids and then in the event, the modification shall be as set forth in Section XXVIII prior to the commencement of additional work. In no event shall any modification in the work shown on the Plans and Specifications be made unless the nature and extent thereof has first been certified by the Borough of Naugatuck in writing and sent to the Contractor.

V Correction of Errors and Omissions

The Plans and Specifications forming part of this Contract are intended to be explanatory of each other, but should any discrepancy appear, or misunderstanding arise, as to the import of anything contained in either, the explanation and decision of the Borough of Naugatuck shall be final and binding on the Contractor; and all directions and explanations required, to complete and make effective any of the provisions of the Contract and Specifications, shall be given by the Borough of Naugatuck. Corrections of errors and omissions in the Drawings or Specifications may be made by the Borough of Naugatuck when such corrections are necessary for the proper fulfillment of the Contract Documents as construed by the Borough of Naugatuck. The effect of such corrections shall date from the time that the Borough of Naugatuck gives due notice thereof to the Contractor.

VI Borough of Naugatuck's Decision

All work under this Contract shall be done to the satisfaction of the Borough of Naugatuck, who shall determine the amount, quality, acceptability, and fitness of the several items of work and materials which are to be paid for hereunder. The Borough of Naugatuck also shall decide all questions which may arise as to the fulfillment of the terms of the Contract, Plans and Specifications. The determination of the Borough of Naugatuck in all such matters shall be final and binding upon the parties thereto.

VII Inspection of Work

It is agreed that the Owner may, at its pleasure, appoint and employ, at its own expense, such persons as may be necessary, who are to act as the Borough of Naugatuck agents, for the purpose of determining, in the Borough's interest, that the materials furnished and the work done, as the work progresses, conforms to the requirements of the Contract Documents. Such persons shall have unrestricted access to all parts of the work and to other places at and where the preparation of the materials and other parts of the work to be done under this Contract are carried on and conducted. They shall be given, by the Contractor, all facilities and assistance required to carry out their work of inspection.

It is not the function of the Borough of Naugatuck to supervise or direct the manner in which the work to be done under this Contract is carried on or conducted. The Borough of Naugatuck is not responsible for construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the work, and will not be responsible for the Contractor's failure to carry out the work in accordance with the Contract Documents.

The Borough of Naugatuck shall have authority to reject and shall reject any work or material, or any part thereof, which does not, in his opinion, conform to the Contract Drawings, working drawings, Specifications, and Contract, and it shall be permissible for the Borough of Naugatuck to do so at any time during the progress of the work.

No work shall be done except in the presence of the Borough of Naugatuck or its assistants. No material of any kind shall be used upon the work until it has been inspected and accepted by the Borough of Naugatuck. Any materials or workmanship found at any time to be defective, or not of the quality or character required by the Contract Drawings and Specifications, shall be remedied at once regardless of previous inspection.

Such inspection shall not relieve the Contractor from any obligation to perform said work strictly in accordance with the Contract Drawings and Specifications, and work not so constructed shall be removed and made good by the Contractor at this own expense and free of all expense to the Owner, whenever so ordered by the Owner, without reference to any previous oversight or error in inspection.

VIII Address of Contractor

The address in the Proposal, upon which this Contract is based, shall be the place. The delivering at the above-named place of any such notice, letter, or other communication where notices, letters or other communications to the Contractor may be mailed or delivered, from the Borough to the Contractor, the date of said service shall be the date of such delivery. Nothing herein contained shall be deemed to preclude or render inoperative the service of any notice, letter, or other communication upon the Contractor personally.

IX Obligation of the Contractor

The Contractor shall, at his own expense, provide any and all manner of supervisor, insurance, taxes, labor, materials, apparatus, scaffolding, appliances, tools, machinery, power, transportation, and whatever else may be required of every description necessary to do and complete the work and shall be solely answerable for the same and for the safe, proper, and lawful construction, maintenance, and use thereof. The Contractor shall cover and protect the work from damage and shall make good all injury to the same occurring before completion of this Contract. The Contractor shall employ only competent workmen and shall provide experienced superintendents and foremen on each part of the work.

The Contractor shall, at his own expense, wherever necessary or required, maintain fences, provide watchmen, maintain lights, place additional timber and braces, and take such other precautions as may be necessary to protect life, property, and structures, vehicles and pedestrians and shall be liable for all damages, occasioned in any way by the Contractor's act or neglect or that of its agent, employees, or workmen. The Contractor shall provide access at all times to private property.

X Occupational Safety and Health Act

The applicable sections of the Occupational Safety and Health Act of 1970 (Williams-Steiger Act) shall apply and be made a part of this Contract. The Contractor's attention is particularly directed to the record keeping requirements of this Act.

XI Nondiscrimination in Employment

The 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.

XII Personal Attention and Competent Workmen

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 instructions from the Borough of Naugatuck. The Contractor shall employ at the site, during the performance of the work, a competent superintendent or foreman who shall be satisfactory to the Borough of Naugatuck and who shall not be changed, except

with the consent of the Borough of Naugatuck , 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 as binding as if given to the Contractor.

The Contractor shall employ only competent, skillful people to do the work, and whenever the Borough of Naugatuck shall notify the Contract in writing that any person on the work is, in his opinion, incompetent, unfaithful, disorderly, or otherwise unsatisfactory, such person shall be discharged from the work and shall not again be employed on it, except with the consent of the Borough of Naugatuck.

XIII Public Safeguards

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.

XIV Materials and Workmanship

It is the intent of the Specifications to describe fully and definitely the character of materials and workmanship furnished regarding all ordinary features and to require first-class work and materials in all particulars. For any unexpected features arising during the progress of the work and not fully covered herein, the Specifications shall be interpreted by the Borough of Naugatuck to require first class work and materials in all respects, and such interpretation shall be accepted by the Contractor.

XV Materials and Manufactured Articles

All materials and workmanship shall be subject to the approval of the Borough of Naugatuck and shall be in conformity with approved modern practice.

Unless otherwise specifically provided for in the Specifications, all materials incorporated in the work shall be new, of standard and first-class quality, and of the best workmanship and design. No inferior, or low grade, material will be either approved or accepted, and all work of assembly and construction must be done in a neat, first-class, and workmanlike manner.

XVI Unnoticed Defects

The inspection of the work and materials by the Borough of Naugatuck shall not relieve the Contractor of any of his obligations to fulfill this Contract, as herein described, and defective work shall be made good and unsuitable materials shall be rejected, notwithstanding that such work and materials had been previously overlooked by the Borough of Naugatuck and accepted or estimated for payment. If the work, or any part thereof, shall be found defective at any time before final acceptance of the whole work, the Contractor shall forthwith make good such defects, in a manner satisfactory to the Borough of Naugatuck.

XVII Care and Protection of Work

From the commencement of the work until the completion of the same, the Contractor shall be solely responsible for the care of the work covered by the Contract and for the materials delivered at the site intended to be used in the work; and all injury, damage, or loss of the same, from whatever cause, shall be made good at his expense before the final estimate is made. He shall provide suitable means of protection for all materials intended to be used in the work and for all work in progress as well as for completed work. He shall take all necessary precautions to prevent injury or damage to the work under construction by flood, freezing or inclement weather at any and all times. The methods used for this purpose shall be subject to the approval of the Borough of Naugatuck, but shall not relieve the Contractor from liability for inadequate protection of the work or materials.

XVIII Assignment of Contract

The Contractor shall have no right or power to assign this Contract, in whole or in part, nor to assign any right arising, or moneys due or to grow due thereunder, without prior written approval of the Owner.

XIX Subcontracting

The Contractor may utilize the services of specialty subcontractors on those parts of the work which, under normal contracting practices, are performed by specialty subcontractors. The Contractor shall not award the work to a subcontractor(s) without prior written approval of the Owner. The Contractor shall be fully responsible to the Owner for the acts and omissions of his subcontractors, and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by the terms of these Contract Documents, insofar as applicable to the work of subcontractors, and to give the Contractor the same power as regards terminating any subcontract that the Owner may exercise over the Contractor under any provisions of these Contract Documents.

Nothing contained in this contract shall create any contractual relation between any subcontractor and the Owner.

XX Liability of Contractor for Employees

Each and every employee of the Contractor and each and every of his subcontractors engaged in the said work shall, for all purposes, be deemed and taken to be the exclusive servants of the Contractor and not for any purpose or in any manner in the employment of the Owner. The Contractor shall, in no manner, be relieved from responsibility or liability on account of any fault or delay in the execution of the said work, or any part thereof, by any such employee, or any such subcontractor, or any material men, whatsoever.

XXI Coordination With Other Contractors and Utilities

During the progress of the work, existing utilities may be found to be in close proximity to or in conflict with the work being installed. The Contractor shall make every effort to identify and locate these utilities before working in the area. If it is known or found that these utilities exist the Contractor shall contact the appropriate utility and alert them to the situation. Should an existing utility be found to be in close proximity to the work the Contractor shall take all the necessary precautions to protect the utilities and his work. Should existing utilities be found to conflict with the work the Contractor shall arrange with the utility company for their adjustment. No additional compensation will be made for delays, inconvenience or damage sustained by the Contractor due to interference from the above-noted utility appurtenances or the operation of locating, installing or moving them or the inability of others to perform their work in a timely manner.

XXII Permits, Laws, Codes, Ordinances and Insurance

The Contractor shall keep himself fully informed of all existing and current codes, ordinances, and regulations and Municipal, County, State or National laws in any way limiting or controlling the actions or operations of those engaged upon the work or affecting the materials supplied to or by them. He shall, at all times, observe and comply with all such valid and legally binding ordinances, laws, and regulations and shall protect and indemnify the Owner and its representatives and agents against any claim or liability arising from, or based on, any violation of the same. He shall obtain and pay for all necessary permits and pay all fees required in connection with the Contract. Contractor shall provide the types and amounts of insurance as set forth in Section 19, Information of Bidders and maintain in effect. He shall take out and carry appropriate employer's liability insurance and public liability insurance.

XXIII Patent Rights

The Contractor shall indemnify and save harmless the Owner and its officers, agents, and representatives from all claims for damages arising from the infringements, or alleged infringements, of any Letters Patent or patent rights covering any material, appliance, or device used in or upon the work or any part thereof.

All royalties for patents or patent infringement claims, that might be involved in the construction or use of the work, shall be included in the Contract amount; and the Contractor shall satisfy all demands that may be made at any time for such and shall be liable for any damage or claims for patent

infringements; and the Contractor shall, at his own expense, defend any and all suits or proceedings that may be instituted against the Owner for infringement, or alleged infringement, of any patent or patents involved, or alleged to be involved, in the work; and in case of any award for damages, the said Contractor shall pay such award.

XXIV Defense of Suits

The Contractor shall indemnify and hold harmless the Owner and its consultants, agents and employees from and against all claims, damages, losses, and expenses, including, but not limited to, attorney fees, ("indemnification expense") arising out of or resulting from the performance of the work or arising out of or resulting from the Contract Documents, including, without limitation, all indemnification expense regarding personal injury or death and/or damage to real or personal property or motor vehicles.

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

XXV Claims for Labor and Materials

The Contractor shall indemnify and save harmless the Owner from all claims expenses and for judgments regarding labor done or materials furnished under this Contract, or any alterations or modifications thereof, including without limitation, reasonable Attorney's fees. Contractor shall furnish the Owner with a Mechanic's Lien Waiver from all persons who have done work, or furnished materials under this Contract. In case such waiver is not furnished, an amount necessary or sufficient, within the discretion of the Owner, to meet the claims of the persons aforesaid, shall be retained, as herein specified, from the money due the Contractor under this Contract until the liabilities aforesaid shall be fully discharged or satisfactorily secured.

XXVI Completion of Work by Owner

If the work to be done under this Contract shall be abandoned by the Contractor; or if this Contract shall be assigned, or the work sublet by him, otherwise than as herein specified; or if at any time the Owner shall be of the opinion that the performance of the Contract is unnecessarily or unreasonably delayed; or if the Contractor is willfully violating any of the conditions or covenants of this Contract, or of the Specifications, or is executing the same in bad faith or not in accordance with the terms thereof; or if the work be not fully completed within the time named in this Contract for its completion, or within the time to which the completion of the Contract may be extended by the Owner, the Owner may notify the Contractor to discontinue all work, or any part thereof under his Contract, by a written notice to be served upon the Contractor as herein provided.

The Contractor shall, within five (5) days of the service of said written notice, discontinue the work, or such part thereof, and the Owner shall thereupon have the power to contract for the completion of the Contract, in the manner prescribed by law; or to place such and so many persons as it may be deemed advisable, by contract or otherwise, to work, and complete the work herein described, or such part thereof; or to take possession of and use any of the materials, plant, tools, equipment, supplies, and property of every kind provided by the Contractor for the purpose of his work; and to procure other materials and equipment for the completion of the same; and to charge the expense of said labor, materials and equipment to the Contractor.

The expense so charged shall be deducted and paid by the Owner out of such moneys as may be due, or may at any time thereafter grow due to the Contractor under and by virtue of this Contract, or any part thereof; and in case such expense shall exceed the amount which would have been payable under the Contract, if the same had been completed by the Contractor, the Contractor or his surety shall pay the amount of such excess to the Owner within five (5) days of written demand therefore; and in case such expense shall be less than the amount which would have been payable under this Contract, if the same had been completed by the Contractor, the owner shall pay such difference to the Contractor within five (5) days of written demand.

XXVII Partial and Final Estimates

On, or about, the last day of the month, the Borough of Naugatuck shall make an approximate estimate of the value of the work done and of the materials incorporated into the work.

The Owner will pay the Contractor, within 30 days of receipt of an estimate, ninety-five percent (95%) of the total estimated value of the work done, as estimated by the Borough of Naugatuck less previous payments. Partial payments will not be made whenever the amounts of the estimate or estimates of work done since the last previous estimate are less than \$2,000.00.

The Borough of Naugatuck shall, as soon as practicable after the completion of work, make a final certificate of the entire amount of the work done under this Contract, and the value thereof, and the Owner shall, within thirty (30) days after such final estimate is approved, pay the entire sum so found to be due hereunder, after deducting there from all previous payments and also all percentages and deductions to be retained under any of the provisions of this Contract.

Before payment of each estimate, the Contractor shall provide the Owner with a mechanic's lien waiver from the Contractor and all persons who have done work or furnished materials under this Contract.

XXVIII Extra Work

The Contractor shall and will do any and all work and furnish any and all materials not herein provided for which, in the opinion of the Borough of Naugatuck, may be found necessary or advisable for the proper completion of the work or the purposes thereof, or any modifications or alternations thereto.

All extra work and materials shall be ordered in writing by the Borough of Naugatuck, and in no case will any work or materials in excess of the amount shown in the Plans and Specifications be paid for unless so ordered. Additionally, if the extra work requires additional cost, a purchase order must be issued prior to work commencing. No claim for delay shall be made as a result of this process. No voucher, claim or charge against the Borough shall be paid, nor is the Borough liable for any voucher, claim or charge unless a purchase order is issued. The Contractor further agrees that he shall accept, as full compensation for such extra work and materials, the unit price bid, in the case of Items covered by unit prices in the Proposal, and no more; and for such Items as are not covered by a unit price, he shall accept as full compensation:

1. an agreed on lump sum price, or
2. the reasonable cost, as determined by the Borough of Naugatuck, of all necessary labor, including insurance and payroll taxes, equipment rental, and materials, plus fifteen percent (15%) which covers supervision, the use of tools and plant, and other overhead expenses and profit.

The equipment rental charge shall be at prevailing rates usually paid locally but shall in no case exceed the amount prorated on the basis of the monthly equipment rental rates compiled by the Associated Equipment Distributors.

When extra work is performed by an approved subcontractor, the Contractor shall be entitled to five percent (5%) of the direct cost of the subcontractor's work to cover his overhead expenses and profit.

The Contractor agrees to prosecute such extra work with all reasonable diligence and to employ thereon competent men. The Contractor shall give the Borough of Naugatuck access to all accounts, bills, payrolls, and vouchers relating to extra work not covered by unit prices, and he agrees that he shall have no claim for compensation for such extra work in the case of items not covered by unit prices, unless a statement in writing of the actual cost of the same, fully itemized as to labor and materials, is presented to the Borough of Naugatuck before the fifteenth (15th) day of the month following that during which each specific order was complied with by him.

XXIX Payment

The Owner, in consideration of the faithful performance by the Contractor of all and singular his

covenants, promises, and agreements contained herein, agrees to pay the Contractor for the full completion by him of the work embraced in this Contract, in the manner and within the time herein specified and limited, and to the satisfaction and approval of the Borough of Naugatuck, the prices stipulated in the said Proposal hereto attached, such payment to be made at the times and in the manner and upon the conditions herein expressly provided. The Owner also agrees to pay in addition such amounts as may be agreed upon for modifications and for extra work.

XXX Guarantee

The Contractor guarantees that the work done under this Contract and the materials furnished by him and used in the construction of the same are free from defects or flaws. The guarantee is for a term of one (1) year from, and after, the date upon which the final estimate of the Borough of Naugatuck is formally approved. It is hereby agreed and understood that this guarantee shall not include making any repairs made necessary by any cause or causes other than defective materials furnished by, or defective work done by, the Contractor.

XXXI Repairs for One (1) Year

The said party of the second part further agrees that the said Owner shall be and is hereby authorized to retain, out of the monies payable to the said Contractor under this Agreement, the sum of two percent (2%) of the amount of the Contract and to expend the same, in the manner hereinafter provided for, in making said repairs on the work as may be required by the Contractor's guarantee under Article XXX.

And it is further agree that if, at any time during the period of one (1) year from the date of the final estimate of the work herein contracted for, any part of the work done under this Contract shall be deemed by the Borough of Naugatuck to require repairing under the aforesaid Contractor's guarantee, then the said Owner shall notify the said Contractor to make the repairs so required at no expense to the Owner.

Such replacements, or repairs, shall be undertaken by the Contractor within twenty-four (24) hours after service of notice. If the Contractor unnecessarily delays or fails to make the ordered replacements or repairs within the time specified, or if any replacements or repairs are of such nature as not to allow for the time delay incident to the service of a notice, then the Owner will have the right to make such replacements or repairs, and the expenses thereof shall be paid by the Contractor.

And the Borough hereby agrees that upon the expiration of the said period of one (1) year, provided that the work at the time shall be in good order, the Contractor shall be entitled to receive the whole or such part of the sum last aforesaid as may remain after the expense of making said repairs, in the manner aforesaid, shall have been paid therefrom, but if the said expense is in excess of the sum of two percent (2%) retained, the Contractor shall pay to the Owner the amount of the excess.

It is, however, agreed that the Borough may apply or keep the sum so retained for payment of other claims arising under the provisions of the contract document.

XXXII Rate of Progress and Time of Completion

The Contractor shall commence work within ten (10) calendar days of the date of the Notice to Proceed. The rate of progress shall be such that substantial completion of the project shall be performed within ninety (90) consecutive calendar days, plus a single authorized winter shut-down, and an additional fourteen (14) consecutive calendar days will be allowed for completion of all work, unless extensions of time shall be made for the reasons, and in the manner, stated under Article XXXIII, "Extension of Time".

The above rate of progress in calendar days includes time for the Contractor to obtain approval of an Erosion and Sediment Control Plan, as applicable.

XXXIII Extension of Time

The Contractor expressly covenants and agrees that, in undertaking to complete the work within the time mentioned, he has taken into consideration, and made allowance for, all of the ordinary delays and hindrances incidental to such work, whether growing out of delays in securing materials or workmen

or otherwise. Should the Contractor, however, be substantially delayed in the prosecution and completion of the work by any changes, additions, or omissions therein ordered in writing by the Borough of Naugatuck, or by fire, lightning, earthquake, tornado, cyclone, riot, insurrection, or war, or by the abandonment of the work by the workman engaged therein through no fault of the Contractor, or by the discharge of all or any material number of workmen in consequence of difficulties arising between the Contractor and such workmen, or by the neglect, delay, or default of any other contractor of the Owner, then the Contractor may, within five (5) days after the occurrence of the delay for which he claims allowance, notify the Borough of Naugatuck thereof in writing, and thereupon, and not otherwise, the Contractor shall be allowed such additional time for the completion of the work as the Borough of Naugatuck, in its discretion, shall award in writing, and its decision shall be final and conclusive upon the parties.

XXXIV Damages for Failure to Complete on Time

The Contractor shall pay to the Owner for each and every calendar day (including Saturdays, Sundays, and holidays) that he shall be in default in completing the entire work in the time stipulated in Article XXXII, or within the extension of time he may be granted as provided in Article XXXIII, the sum of Five Hundred Dollars (\$500.00) per day. This sum is hereby agreed upon not as a penalty but as liquidated damages which Owner will suffer by reason of such default, time being of the essence of the Contract and a material consideration thereof. The Owner shall have the right to deduct the amount of any such damages from any monies due the Contractor under this Contract.

XXXV No Waiver of Rights

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 any agent 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 or thereof, either wholly or in part; but such acceptance shall be evidenced only by the final certificate of the Borough of Naugatuck.

Before any final certification 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.

XXXVI Mandatory Negotiation

Contractor and the Owner agree that they will attempt to negotiate in good faith any dispute of any nature arising under this contract. The parties shall negotiate in good faith at not less than two negotiation sessions prior to seeking any resolution of any dispute under the provisions of arbitration paragraph of this contract. Each party shall have the right to legal representation at any such negotiation session.

XXXVII Arbitration

Any dispute or question arising under the provisions of this contract which has not been resolved under the mandatory negotiation paragraph of this contract shall be determined by arbitration. Arbitration proceedings shall occur at a neutral location in Waterbury, Connecticut, and shall be conducted in accordance with the rules then applicable of the American Arbitration Association. Arbitration shall proceed before a panel of one arbitrator to be selected by American Arbitration Association. The decision of the Arbitrator shall be final and may be entered in any court having jurisdiction thereof. Each party shall pay one-half of all costs and expenses of such arbitration.

XXXVIII Owner's Right to Use

The Owner reserves the right to use or occupy any portion of the work considered by the Borough of Naugatuck 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.

XXXIX Verification of Data

The quantities of work to be done and the materials to be furnished under this Contract, as given in the accompanying "Information for Bidders" and on the Proposal form, are approximate estimates for the purpose of comparing bids on a uniform basis. Neither the Borough of Naugatuck nor its agents are to be held responsible for the data or information given relative to said quantities or that given on the Plans relative to existing conditions. The Contractor has judged for himself as to such quantities and as to other circumstances affecting the cost of the performance of this Contract, and he shall not at any time assert that there was any misunderstanding in regard to the character or amount of work to be done and materials and labor to be furnished.

XXXX Contractor's Wage Certification Form

If applicable the Contractor or his authorized agent will be required to sign the Contractor's Wage Certification Form at the time of Contract execution.

XXXXI Verbal Statements Not Binding

It is understood and agreed that the written terms and provisions of this Agreement shall supersede all prior verbal statements of the Borough of Naugatuck or representatives of the Owner, and such statements shall not be effective or be construed as entering into or forming a part of, or altering in anyway whatsoever, the written Agreement.

XXXXII Final Estimate Constitutes Release

It is agreed that acceptance by the Contractor of the last payment made, under the provisions of Article XXVII, shall operate as and shall be a release to the Owner, and every agent thereof, from all claims and liability to Contractor for anything done or furnished for, or relating to, the work or for any act or neglect of the Owner or of any agent thereof, except any claim against the Owner for the remainder, if any, of the amounts kept or retained by the Owner as percentages or deductions.

No payment, however, final or otherwise, shall operate to release the Contractor or his sureties from any obligations under this Contract.

XXXXIII Delays or Termination by Governmental Authorities

Notwithstanding any other provision(s) of this contract, the parties agree that in the event of a stop work order from the State Department of Transportation, Department of Environmental Protection, or any other State or Federal agency, no additional compensation will be made by Owner to Contractor for delays, inconvenience or damage sustained by Contractor due to such order, including, without limitation, damages for loss of use of equipment or idle equipment. Similarly, in the event of a termination of the project by the State DOT, DEP or any other State or Federal agency, no additional compensation will be made by Owner to Contractor for the termination, or for any delay, inconvenience or damage sustained by Contractor due to such termination, including, without limitation, damages for loss of use of equipment or idle equipment. In the event of such termination, the Borough of Naugatuck shall prepare a final certificate for the entire amount of work done up to the effective date of termination. The provisions of Sections XXX (Guarantee) and XXXI (Repair) shall apply to all work completed as of the effective date of any Stop Work Order, as if the effective date was the date upon which the final estimate is formally approved by the Borough of Naugatuck.

XXXXIV Validity of Agreement

The provision of this Agreement shall be binding upon the Parties and their respective successor or assigns.

IN WITNESS WHEREOF, the said parties hereto have caused this instrument to be signed by their respective duly constituted officers, attested, and sealed pursuant to proper resolutions.

Signed and sealed
in the presence of

Borough of Naugatuck
Mayor, Robert Mezzo

(Duly Authorized)
Contractor

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____ certify that I am the _____ of the Corporation named as Contractor in the within bond; that _____, who signed the said bond on behalf of the Contractor was then _____ of said corporation; that I know his signature, and his signature thereto is genuine; and that said bond was duly signed, sealed, and attested to for and in behalf of said corporation by authority of this governing body.

(Corporate
Seal)

Title

SECTION F
PERFORMANCE BOND

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called Principal and
(Corporation, Partnership, or Individual)

(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

(Name of Owner)

(Address of Owner)

hereinafter called OWNER, in the penal sum of _____ Dollars,
\$(_____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the ____ day of _____, 20____, a copy of which is hereto attached and made a part hereof for the construction of **Nettleton Avenue Neighborhood Storm Drain Improvements Phase I.**

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, an any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in anyway affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts each one of
Which shall be deemed an original, this the _____ day of _____, 20__.

ATTEST:

(Principal) Secretary

By _____ Principal _____(s)

(SEAL)

(Witness as to Principal)

(Address)

(Address)

Surety

ATTEST:

(Surety) Secretary

(SEAL)

Witness as to Surety

By _____ Attorney-in-Fact

(Address)

(Address)

NOTES: Date of BOND must not be prior to date of Contract.
 If CONTRACTOR is Partnership, all partners should execute BOND.

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

SECTION G
PAYMENT BOND

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called Principal
(Corporation, Partnership, or Individual)

and

(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

(Name of Owner)

(Address of Owner)

hereinafter called OWNER, in the penal sum of

_____ Dollars, \$(_____)

in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the _____ day of _____, 20____, a copy of which is hereto attached and made a part hereof for the construction of **Nettleton Avenue Neighborhood Storm Drain Improvements Phase I.**

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, an any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said surety, for value received hereby stipulates and agrees

that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in anyway affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts each one of which shall be deemed an original, this the _____ day of _____, 20____.

ATTEST:

(Principal) Secretary

By _____ Principal _____ (s)

(SEAL)

(Witness as to Principal)

(Address)

(Address)

Surety

ATTEST:

(Surety) Secretary

(SEAL)

Witness as to Surety

By _____ Attorney-in-Fact

(Address)

(Address)

NOTES: Date of BOND must not be prior to date of Contract.
If CONTRACTOR is Partnership, all partners should execute BOND.

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

SECTION H
CONTRACTOR'S WAGE CERTIFICATION FORM

STATE OF CONNECTICUT
LABOR DEPARTMENT

REGULATION OF WAGES

CONTRACTOR'S WAGE CERTIFICATION FORM

I, _____ of _____

do hereby certify that the

Company Name

Street

City, State, Zip Code

and all of its subcontractors will pay all workers on the

**Nettleton Avenue Neighborhood Storm Drain Improvements Phase I,
Borough of Naugatuck Project #11-17**

Street and City

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

Signed

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

Notary Public

Return to: Labor Department
Regulation of Wages
200 Folly Brook Blvd.
Wethersfield, CT 06209

SECTION I

Town Attorney Certification

CERTIFICATE OF OWNER'S ATTORNEY

I, the undersigned, _____
the duly authorized and acting legal representative of _____
do hereby certify as follows:

I have examined the attached Contract (s) and surety bonds and the manner of execution thereof, and I am of the opinion that each of the aforesaid Agreements have been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said Agreements on behalf of the respective parties named thereon; and that the foregoing Agreements constitute valid and legally binding obligations upon the parties executing the same in accordance with terms, conditions, and provisions thereof.

Town Attorney _____ Date: _____

SECTION J
GENERAL REQUIREMENTS

DIVISION 1 - GENERAL REQUIREMENTS

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SECTION 01100 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. Project Identification:
 - 1. Project Name: Nettleton Avenue Neighborhood Storm Drain Improvements Phase I
 - 2. Project Location: Borough of Naugatuck, Connecticut
 - 3. Project Owner: Borough of Naugatuck Engineering Office, City Hall, 229 Church Street, Naugatuck, CT 06770
- B. The Contractor shall provide all labor, superintendence, materials, plant, tools and equipment necessary for properly implementing within the time stipulated, the Nettleton Avenue Neighborhood Storm Drain Improvements Phase I and all other work necessary for the proper completion of the project as shown on the Contract Drawings and specified herein.
- C. This project is the first phase of the Borough of Naugatuck's reconstruction of a major storm sewer collector in the Nettleton Avenue neighborhood. The project consists of installation of a new 54-inch storm sewer to replace the existing storm sewer. The installation will require replacement of the catch basin system and reconnection of sanitary sewer and water services. A section of Trowbridge Pl. will require full depth reconstruction of the street, the remaining restoration will consist of full width mill and overlay and sidewalk replacement along the entire run of storm sewer installation.
- C. The Work of this Project generally includes:
 - 1. Demolition and removal of existing pavements, sidewalks, and other surface features
 - 2. Abandonment of sanitary sewers and storm sewer
 - 3. Installation and maintenance of sedimentation and erosion control systems
 - 4. Full depth reconstruction and regrading at Trowbridge Place
 - 5. Management of soils and demolition material in accordance with Connecticut regulations
 - 6. Coordination with private utilities for relocation of water mains, relocation of gas mains and relocation/support of utility poles
 - 7. Construction of new storm sewers
 - 8. Removal and reconnection of sanitary sewers, sanitary sewer services and water services.

9. Full width mill and overlay of impacted streets
10. Selective sidewalk replacement along impacted streets
11. Site Restoration

D. The selected Contractor will coordinate his/her activities with the local gas company for installation and relocation of gas mains and services, the local water main company for installation and relocation of services and the local telecommunications and electric companies for support and relocation of utility poles. The General Contractor will be responsible for excavation, support of excavation, bedding, backfilling and compaction of the utility main and service trenches in accordance with local utility requirements.

1.3 CONTRACT

- A. Project will be constructed under a general construction contract.
- B. The work is shown on the accompanying Contract Drawings.

1.4 WORK SEQUENCE

- A. The Work shall be substantially complete and ready for occupancy within **90 days** of the start date, plus a single authorized winter shut-down. An additional **14 days** shall be allowed for completion of all work.

1.5 USE OF PREMISES

- A. General: The Contractor shall have full use of premises for construction operations, including use of Project site, during construction period. The Contractor's use of premises is limited only by Owner's right to perform work or to retain other contractors on portions of Project and by the need to maintain access to abutting privately-owned properties. See Section 01140.

1.6 WORK UNDER OTHER CONTRACTS

- A. Separate Contract: Owner may award a separate contract for performance of certain construction operations at Project site. Those operations may be conducted simultaneously with work under this Contract. The Contractor shall cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract.

1.7 WORKING CONDITIONS

- A. In prosecuting the work of this Contract, the Contractor shall provide working conditions on each operation that shall be as safe and healthful as the nature of the operation permits. He shall comply with all safety and sanitary rules, laws and regulations.

1.8 STANDARDS

- A. Wherever reference is made in this Contract to the Standard of any technical society or other recognized organization, these shall be construed to mean the latest standard adopted and published at the date of advertisement for bids.

B. Abbreviations are defined as follows:

ASTM	American Society of Testing and Materials.
ANSI	American National Standards Institute
ASA	American Standards Association
ACI	American Concrete Institute
AASHTO	American Association of State Highway and Transportation Officials
ASME	American Society of Mechanical Town of Deep River Inspectors
IEEE	Institute of Electrical and Electronics Engineers
AWWA	American Water Works Association
ACPA	American Concrete Pipe Association

1.9 SPECIFICATION FORMATS AND CONVENTIONS

A. Specification Format: The Specifications are organized into Divisions and Sections using the 16-division format and CSI/CSC's "Master Format" numbering system.

1. Section Identification: The Specifications use section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of sections in the Contract Documents.

B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.

2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.

a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01100

SECTION 01140 - WORK RESTRICTIONS

PART 1 - GENERAL

1.1 USE OF PREMISES

- A. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of site beyond areas in which the Work is indicated.
 - 1. Limits: Confine constructions operations to areas within the contract limits defined in 1.3 of this Section.
 - 2. Owner Occupancy: Allow for Owner occupancy of site and use by the public.
 - 3. Driveways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

1.2 OCCUPANCY REQUIREMENTS

- A. Full Public Occupancy: The Public will occupy site during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate public usage. Perform the Work so as not to interfere with public access to property.

1.3 CONTRACT LIMITS

- A. The Contractor shall confine his activities to within street lines, easements, and established construction right-of-way.
- B. The Contractor shall not enter upon or make use of any private property along the line of work, outside the limits of the rights-of -way, except when written permission is secured from the owner of said property and a copy delivered to the Owner's Representative. The Contractor shall be held responsible for all damages or injury, done by himself or those in his employ, to any private or public property of any character during the prosecution of the work. The Contractor shall restore or repair at his own expense, in a manner satisfactory to the Owner's Representative, such property as may be damaged by his operations during the prosecution of the work.
 - 1. In case of failure on the part of the Contractor to restore or repair such property in a manner satisfactory to the Owner, the Owner may, upon 48 hour notice to the Contractor, proceed with such restoration or repair. The expense of such restoration or repair shall be deducted from any monies which are due or may become due the Contractor under this Contract.

1.4 INCLEMENT WEATHER

- A. During freezing, storm or inclement weather, no work shall be performed except such as can be done satisfactorily and in such manner as to secure first-class construction throughout.

1.5 WORKING HOURS

- A. The Contractor's working schedule shall be confined to a five (5) day week, Monday through Friday, and the working day shall be confined between the hours of 7:00am – 5:00pm.
- B. Unless otherwise especially permitted, no work shall be done between during off-hours except as necessary for the proper care and protection the work already performed. If it shall become absolutely necessary to perform work at night, the Contractor shall obtain approval from the Owner's Representative. The Contractor shall inform the Owner's Representative, at least 24 hours in advance, of the beginning of the performance of such work. Only such work shall be done at night as can be done satisfactorily and in a first-class manner. Good lighting and all other necessary facilities for carrying out and inspecting the work shall be provided and maintained at all points where such work is being done.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01140

SECTION 01210 - ALLOWANCES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements governing allowances.
 - 1. Certain materials and equipment are specified in the Contract Documents by allowances. In some cases, these allowances include installation. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.
- B. Types of allowances include the following:
 - 1. Testing and inspecting allowances.
 - 2. Police detail allowances.

1.2 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, advise Owner of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.
- B. At Owner's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by Owner from the designated supplier.

1.3 SUBMITTALS

- A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

1.4 TESTING AND INSPECTING ALLOWANCES

- A. Testing and inspecting allowances include the cost of actual tests and inspections, and reporting results.
- B. The allowance does not include incidental labor required to assist the testing agency or costs for retesting if previous tests and inspections result in failure.
- C. Costs of services not required by the Contract Documents are not included in the allowance.
- D. At Project closeout, credit unused amounts remaining in the testing and inspecting allowance to Owner by Change Order.

1.5 POLICE DETAIL ALLOWANCE

- A. Police detail allowance includes the cost of police details for oversight of traffic management. Coordination of these details is included in Contractor's general overhead and will not be separately compensated.
- B. At Project closeout, credit unused amounts remaining in the police detail allowance to Owner by Change Order.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

- A. Allowance No. 1: Include a lump sum of \$5,000.00 for the testing and inspection.
- B. Allowance No. 2: Include a lump sum of \$10,000.00 for police details.

END OF SECTION 01210

SECTION 01250 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.

1.3 MINOR CHANGES IN THE WORK

- A. Owner's Representative or Owner will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time.

1.4 ALTERATIONS

- A. The Owner's Representative may make alterations to the line, grade, plan, form, dimensions, or materials of the work, or any part thereof, either before or after the commencement of the work. If such alterations increase the quantity of work, such increase will be paid for according to the quantity of such extra work actually done and at the prices stipulated for such work under unit price Items of the Contract. In case no unit price is applicable, the alterations will be paid for as extra work defined in Article XXVIII of the Contract.

1.5 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Owner's Representative or Owner will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Proposal Requests issued by Owner's Representative or Owner are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
 - 2. Within 7 days after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and

finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

- B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to Owner.
1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 4. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

1.6 ALLOWANCES

- A. Allowance Adjustment: To adjust allowance amounts, base each Change Order proposal on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
1. Include installation costs in purchase amount only where indicated as part of the allowance.
 2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.
- B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the Purchase Order amount or Contractor's handling, labor, installation, overhead, and profit. Submit claims within 21 days of receipt of the Change Order or Construction Change Directive authorizing work to proceed. Owner will reject claims submitted later than 21 days after such authorization.
1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.
 2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

1.7 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Proposal Request, the Owner will issue a Change Order for signatures of Owner and Contractor.

1.8 WORK CHANGE DIRECTIVE

- A. Work Change Directive: The Owner may issue a Work Change Directive. Work Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 - 1. Work Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

- B. Documentation: Maintain detailed records on a time and material basis of work required by the Work Change Directive.
 - 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01250

SECTION 01270 MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1 SUMMARY

- A. Payment for the items specified in the Bid Schedule shall include compensation for furnishing all labor, tools, equipment, supplies, and manufactured articles, and for all operations, and incidentals appurtenant to the items of work described, to complete the various items of the Work, all in accordance with the requirements of the Contract Documents, Drawings, Specifications, Addendum, and other modifications issued and approved by the Owner and Owner's Representative.
1. No direct payment will be made to the Contractor for furnishing and providing miscellaneous temporary works, plants, and services, including Contractor's office, sanitary requirements, water supply, power, tools, equipment, lighting, telephone systems, store houses, store yards, safety devices, permits, insurances, bonds, watchmen, cleanup and the like, or other items specified under the General Requirements, unless payment therefore has been specifically provided. Compensation for the same is understood to be included in the scheduled prices hereinbefore given for the various kinds of work contemplated.
- B. Payment for the items specified in the Bid Schedule shall include all costs for permits and compliance with the regulations of public agencies having jurisdiction including Safety and Health Requirements of the Occupational Safety and Health Administration of the U.S. Department of Labor.
- C. The prices named in the Bid Schedule shall include all Work items described or implied in the Contract Documents, Drawings, Specifications, Addendum, and other modifications issued and approved by the Owner and Owner's Representative, and all other Work items necessary to manufacture, furnish, and install a complete working project.
- D. Work items to be included in the Bid Schedule prices, not included for separate payment elsewhere include, but are not limited to:
1. Utility Coordination including but not limited to: Coordination with utility companies and the Borough of Naugatuck for required utility locations, relocations, installations, shut-downs and removals. Coordination shall include but is not limited to; maintain continuity of storm drains, sanitary sewers, gas, telephone, electric, telecommunications, cable TV, and privately owned utilities impacted by the work; temporarily support all utilities exposed during the excavation for the installation of the work; submission of all utility coordination and support work plans and shop drawings; coordinate the protection, support and relocation of all overhead utilities and poles; perform all coordination with the utility companies for the relocation, protection, support, and other work required to facilitate the completion of the project; utility location (Dig Safe); providing access for utility owners and operators to their respective utilities; and communicating with any affected homeowners and residents
2. Quality Control Testing: Securing, providing for and coordinating with an independent testing laboratory as required for material testing; performing and submitting all pre-qualification material testing
3. Temporary Facilities and Controls including but not limited to:

- a. Rodent control;
 - b. Sweeping and removing snow, dust, dirt and debris from streets and sidewalks where work is ongoing;
 - c. Furnishing, installing, maintaining and removing site security fencing;
 - d. Collection, handling, removal and disposal of all waste generated during construction;
 - e. Bypassing and maintaining all existing stormwater and sanitary sewer flows;
 - f. Maintaining water service for domestic use and fire protection;
 - g. Protection of existing utilities, structures, landscaping and materials to remain, including protection of private garage (approx Station 3+50);
 - h. Protection of existing trees to remain, including pruning; protection of roots during excavation; woodvull and chain link fence; and disposal of removed material
4. Dewatering: The work includes but is not limited to furnishing, installing and removing all dewatering systems including pumps, hoses, power and well points; furnishing and installing crushed stone and filter fabric; discharge to treatment system or infiltration trench; excavation and backfill of infiltration trenches as necessary; furnishing, installing and removal of field controls and observation wells; operation, monitoring and maintenance of systems; and all work incidental thereto
 5. Maintenance and Protection of Traffic: Provide, maintain and remove Traffic Regulations and Control to areas directly or indirectly influenced by construction within the limits of work or outside the limits of work; along truck routes inside or outside the limits of work; as delineated in the Contractor's Traffic Management Plan, prepared in accordance with the requirements of MUTCD, ADA, and CDOT standards; and as further directed by the Owner and Owner's Representative. The work includes, but is not limited to; obtaining permits; coordination with the Borough Department of Public Works, Borough and State Police Department, Traffic and Parking Department; coordination with private property owners within the limits of work; preparing, submitting, reviewing, implementing, and revising traffic management and control plans; furnishing, installing, and maintaining traffic management devices based on Borough requirements and approved traffic management and control plans including construction signs, traffic signs, precast concrete barriers, fencing and plywood panels for concrete barriers, reflectorized drums, lane delineators, portable barricades, temporary crosswalks, and cones; temporary pavement markings; furnishing, installing, pinning, maintaining, and removing steel road plates; furnishing, installing, removing and disposing cold patch pavement as necessary or as directed by the Owner's Representative; furnishing, installing, removing and disposing temporary hot mix asphalt as required by the Borough as directed by the Owner's Representative; coordinating police details; furnishing and installing temporary construction fencing; maintaining roadways and sidewalks inside or outside the limits of work; establishing and dismantling detours; covering existing traffic signs; and all incidental work, whether listed here or not, required to provide maintenance and protection of traffic.
 6. Project Management including but not limited to:

- a. Attending all Construction Meetings including weekly progress meetings;
 - b. Submitting work plans, shop drawings, samples and other documentation;
 - c. Layout and stakeout of lines, grades, property lines and locations of proposed improvements
7. Construction Progress Documentation including but not limited to:
- a. Submitting schedules and narratives and submitting weekly and bi-weekly construction schedule projections and updates;
 - b. Maintaining daily field records;
 - c. Pre and Post construction photographs, videos, and building inspections;
 - d. Preparation and submission of monthly and final record drawing information
8. Surface Restoration: Clean-up and restoration of all surface features not included for payment elsewhere including but not limited to:
- a. Topsoil and seeding disturbed landscape areas
 - b. Removal, resetting, relocating, stockpiling and salvaging all materials not included for payment elsewhere;
 - c. Removal and resetting all property bounds, monuments, signs, bollards, benches, fences, posts, poles, and all other surface features on public and private property which may need to be removed for construction
 - d. Restoration of all disturbed hardscape not include for payment elsewhere which includes but is not limited to private walks and drives
 - e. Replacement of existing shrubs and landscaping removed as a result of regrading within private property
9. Permits: Obtain all necessary permits including fees
10. Soil Management and Waste Management:
- a. Removal and disposal of all urban fill, hazardous materials, solid waste or any other undesirable materials not included for payment elsewhere including but not limited to: waste characterization, analytical testing, removal of materials, hauling, stockpiling, loading and separation of all materials for disposal in accordance with all state and federal regulations and maintaining all required documentation for transportation and disposal
 - b. Removal, Loading, Hauling and Stockpiling displaced trench soil from utility excavations to staging area and subsequent disposal sites.
 - c. Provide a Material Handling Plan to be approved by the Owner: At least 7 days prior to commencing work, prepare and submit a Material Handling Plan (the Plan) to the Owner for review. The Plan must be reviewed by the Owner prior to the commencement of work within the defined areas as specified on the Plans

and/or in the Information for Bidders. Include, as a minimum, written procedures detailing the operations to be used to field test, excavate, move, stockpile, store, sample, analyze, transport and dispose of contaminated soil/sediment/groundwater. Procedures must include personnel safety and health as well as environmental protection considerations. Also include in the Plan the following specific information:

1. All staging/stockpiling areas, including all applicable permits for contaminated soil management.
 2. Name, address, certification status and telephone number of the proposed laboratory for analysis of representative soil/sediment samples. The laboratory must be approved by the Connecticut Dept. of Public Health Environmental Laboratory Certification Program for the intended analyses. Include training and experience of the personnel who will collect samples.
 3. The method(s) of treatment/disposal that will be used.
 4. For off-site treatment/disposal, identification of and information on the proposed permitted treatment/disposal facilities to include: Facility name; address; contact person; signed letter of agreement from the facility of intent to accept the waste; listing of all permits, licenses, letters of approval authorizing the disposal of wastes of this description at the designated facility as they pertain to this Contract;
 5. For off-site treatment/disposal or movement through an active lane, identification of and information on the proposed waste transporter to include: Name; address; telephone number; contact person; EPA and CT Transporter ID number; and any and all necessary permit authorizations for waste to be transported from the site to treatment/storage/disposal facilities;
 6. Notifications: At least 10 days prior to beginning the work, provide the Owner with the anticipated scheduled dates and work locations for removal/treatment of all contaminated materials. Also, at least 10 days prior to beginning the work, contact any and all the applicable regulatory agencies in writing and provide them with the scheduled dates for removal, treatment, and disposal of all contaminated materials and excavation and stockpile locations.
-
11. Excavation Support Systems including but not limited to: furnishing and installing trench boxes; sheeting; soldier piles; timber lagging; bracing; pre-construction surveys; excavation support of gas main trench for utility relocations and service connections and all monitoring requirements. Work shall include sheeting and support at private garage (approx Station 3+30). No direct payment will be made for sheeting, shoring, and bracing and compensation for such work and all expenses incidental thereto shall be considered as included in the unit prices bid for the various Items of this Contract. The Contractor shall not be compensated for sheeting, shoring and bracing left in-place.
 12. Excavation including but not limited excavation for: utilities, pipe and structures (trenching); private utility service relocations and reconnections when required; site amenities (including but not limited to signage, curb, traffic management, and fencing); demolition and removals; landscaping; pavements; sidewalks; full depth pavement reconstruction (unclassified excavation) and erosion control features.
 13. Compaction and coordination of compaction testing
 14. Raising and Adjusting Castings including but not limited to: protecting manhole structure from damage and debris; sawcutting; excavation; removal and disposal of hot mix asphalt

and pavement subbase; raising and adjusting casting to final grade; furnishing and installing additional pavement subbase as necessary; furnishing and installing concrete sections; furnishing and installing addition binder course and tack coat; and all work not specifically included for payment under other items.

15. Backfilling including but not limited to backfill for: utilities, pipe and structures; private utility service relocations and reconnections when required; site amenities (including but not limited to signage, curb, traffic management, and fencing); demolition and removals; landscaping; pavements; and sidewalks. Backfill shall also include complying with geotechnical and environmental re-use restrictions, and backfilling with material generated on-site and with imported materials.
16. Sawcutting unless indicated for payment elsewhere.
17. Erosion & Sediment Control Management. The work includes but is not limited to: maintenance and repair of all features and installations; fulfilling all reporting requirements, logs and documentation; temporary stabilization of the site, including seeding; dust control; inlet protection of all existing and new catch basins; removal and disposal of all erosion control features and collected sediment; compliance with all local permitting and all work incidental thereto.
18. Utility Collectors and Laterals Services: The work includes, but is not limited to the following; protection of existing utilities; support of utilities; removal, and replacement and reconnection of all service laterals required for installation of the storm drain including water service laterals and sanitary sewer collectors and service laterals. Utility replacement shall include but is not limited to: preparation of subgrade; furnishing and installing bedding; furnishing and installing filter fabric; furnishing and installing Type K Copper and PVC pipe, couplings, fittings and gaskets; loading, hauling, disposal and handling restricted and unrestricted use trench soils as required; testing and all work not specifically included for payment under other items.
19. Miscellaneous Demolition Work not included for payment elsewhere including but not limited to:
 - a. Abandonment of Pipework in Place less than 12" in diameter, including bulkheading and sawcutting of pipe as necessary for abandonment.
 - b. Abandonment of structures in place including removal and disposal of reinforced concrete; masonry; castings; hoods; and appurtenances up to one foot below bottom grade of proposed improvements, including any above grade portions of the catch basin, manhole or structure; disconnection of pipe and services; dewatering; sawcutting; coring; bulkheads; furnish crushed stone or control density fill; abandonment of catch basin, manhole or structure with crushed stone or control density fill; disposal of all removed materials.
 - c. Valve Boxes: The work includes but is not limited to: removal, staging, stockpiling and disposal of valve boxes.
 - d. Removal and disposal of all utility pipe work (concrete, metal, vitrified clay, plastic, ducts, etc.) of any diameter. The work shall include but it is not limited to: removal of pipe; disconnection of pipe and services; sawcutting; masonry bulkheads; removal of sediment and debris within pipe; separation of materials for disposal; staging; stockpiling and disposal of concrete, metal, vitrified clay and plastic material as required.

- e. Clear & Grub: The work includes, but is not limited to the following; clearing and grubbing of all trees, shrubs, roots, stumps, brush and bushes of any size; stripping, loading, hauling, stockpiling and disposal of turf and grass; filling depressions; protection of existing trees and vegetation to remain; staging, stockpiling and disposal of stripped turf and grass; chipping, staging, stockpiling and disposing tree, shrub, stump and root material.
- 20. Demobilization including but not limited to: final clean-up; cleaning of all catch basin sumps; removal of all temporary controls including signage, utilities and security fencing; submittal of closeout documentation and removal of all personnel and equipment from the site.
- E. No separate payment shall be made for any item that is not specifically specified in the Bid Schedule, and the Contractor shall furnish all labor, materials, tools, equipment, and incidentals required to complete these items and they shall be included in the prices named in the Bid Schedule for the various appurtenant items of work.
- F. Anywhere in these Contract Documents, the term furnish shall mean the manufacture; supply; delivery to the Project site including the actual unloading and unpacking; assembly; erection; placing; installation; anchoring; applying; working to dimension; joining; finishing; curing; protecting; cleaning; testing; start-up; and similar operations unless stated otherwise.
- G. Anywhere in this section, the term disposal shall mean dispose of legally off-site in accordance with local, state and federal requirements.

1.2 LUMP SUM ITEMS

- A. Payment for the lump sums shall be full compensation for all labor, materials and equipment required to furnish, install, construct, startup and test the work covered under that lump sum item, whether listed in the related Compensation subsection for each item or not. All supervision; overhead items including but not limited to bonds, insurance, and labor burden; and profit are also included.
- B. Payment shall fully compensate the Contractor for any other work which is not specified or shown, but which is necessary to complete the Work.

1.3 UNIT PRICE ITEMS

- A. Unit prices shall be full compensation for all labor, materials and equipment required to furnish, install, construct, startup and test the work covered under that unit price item, whether listed in the related Compensation subsection for each item or not. All supervision; overhead items including but not limited to bonds, insurance, and labor burden; and profit are also included.
- B. Payment shall fully compensate the Contractor for any other work which is not specified or shown, but which is necessary to complete the Work.

1.4 MEASUREMENT FOR PAYMENT

- A. To aid the Owner's Representative in determining quantities to be paid for, the Contractor shall, whenever requested, give the Owner's Representative access to the proper invoices, bills of lading, or other pertinent documents and shall provide methods and assistance necessary for weighing or measuring materials.

- B. The Owner and Owner's Representative will review the submittal for completeness and verification. Failure to submit any of the below requirements will be grounds for a rejection of the submitted pay request until such time as the submittals are complete, accurate, up to date, and have been approved by the Owner and Owner's Representative.
1. Include a checklist of completed items. Only items signed-off by the Owner's Representative will be considered for payment.
 2. Include red-lined "As-built" drawings indicating degree of completion.
 3. Include a revised CPM schedule and narrative as required in the Specifications and showing actual record information.
 4. Include a copy of all required test results including, but not limited to geotechnical and settlement monitoring results, compaction test results, concrete strength test results, grain size analysis and analytical test results.
- C. The use of the planimeter shall be considered satisfactory for estimating quantities where geometric and analytic methods would be comparatively laborious.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

PART 4 - COMPENSATION

4.A BASE BID ITEMS

ITEM 1 (01500) MOBILIZATION

Method of Measurement

Payment for Mobilization will be at lump sum price bid for this item in the proposal. One-hundred percent (100%) of the total lump sum bid price shall be payable when the Contractor is operational on the site. Operational is defined as the substantial commencement of work on site as described in the following basis of payment.

The Lump Sum price bid for mobilization shall not exceed 5 percent of the Total Amount of Bid.

Basis of Payment

Under the Lump Sum price bid for Mobilization, the Contractor shall move his equipment to and from the site for construction. Mobilization shall include all costs of initiating the Contract, exclusive of the cost of materials, including all provisions for bonds and general conditions. Mobilization includes but is not limited to; manufacturing and constructing the site construction sign described in Section "M" of the Project Manual and Bid Documents, securing and constructing a staging area(s) for materials; furnishing and installing pre-construction traffic management signage; furnishing and installing project signs; submission and approval of initial shop drawings; submission and approval of schedule; obtaining all necessary permits; installing temporary power, lighting and water for construction purposes; furnishing, installing and implementing site security features; furnishing and installing temporary sanitary facilities; transporting all necessary personnel and equipment to and from the site; and all other work necessary to start construction.

ITEM 2 (02011) **TEST PITS**

Method of Measurement

Measurement for payment for Test Pits shall be based on the actual cubic yards of soil excavated as directed and measured by the Owner's Representative.

Basis of Payment

Payment for Test Pits authorized by the Owner's Representative shall be based on the unit price bid for this item in the proposal. Under the unit price for this item, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals required to excavate, record information, report information and backfill, complete as indicated on the Contract Drawings or at the direction of the Owner's Representative. The work includes, but is not limited to the following; excavate and backfill such materials as necessary to locate pipe, utilities and other possible obstructions and also as directed by the Owner's Representative; providing additional suitable material for backfill of test pits as necessary; coordination with utility companies/owners; temporary pavement within the Borough right-of way; survey of existing conditions including horizontal and vertical utility alignments and reflecting the actual conditions on the Project's As-built Drawings; and all work incidental thereto and all work not specifically included for payment under other items.

ITEM 3.1 (02230) **PAVEMENT SUBBASE – PROCESSED AGGREGATE**
ITEM 3.2 (02230) **PAVEMENT SUBBASE – GRAVEL**

Method of Measurement

Measurement for payment for Pavement Subbase shall be based upon the actual cubic yards of pavement subbase installed in place within the limits indicated in the Contract Drawings and as directed and measured by the Owner's Representative. Volume of subbase placed will be verified through calculation based on the thickness and trench or pavement widths and lengths shown on the Contract Drawings. Calculated volume will be compared to the actual volume placed as submitted on subbase delivery slips. The lesser volume shall be paid to the Contractor. Placement of subbase to excess thicknesses and outside the limits defined in the Contract Documents shall be at no additional cost to the Owner.

Basis of Payment

Payment for Pavement Subbase shall be based on the unit price bid for this item in the proposal. Under the unit price for this item, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals required to furnish and install pavement subbase, complete as indicated on the Contract Drawings or at the direction of the Owner's Representative. The work includes, but is not limited to the following; proof rolling subgrade; furnishing, installing, grading and compacting pavement subbase; fine grading and compacting, including removal and disposal of surplus material required to achieve the designed grades; protection and maintenance of the area prior to paving; providing temporary transitions and aprons at all joints, driveways and castings; furnishing and installing stabilization fabric; material testing; and all work not specifically included for payment under other items.

ITEM 4 (02315) **ROCK EXCAVATION**

Method of Measurement

Measurement for payment for Rock Excavation shall be based upon the actual cubic yards of rock excavated within the payment limits indicated in the Contract Drawings and as directed and measured by the Owner's Representative.

Basis of Payment

Payment for Rock Excavation shall be based on the unit price bid for this item in the proposal. Under the unit price for this item, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals required to excavate rock, complete as indicated on the Contract Drawings or at the direction of the Owner's Representative. The work includes, but is not limited to the following; pre-construction and post surveys; coordination with Borough emergency services; survey measurement at top of ledge; protection of all structures, wells and other features; blast monitoring and reporting; blasting; rock excavation; disposal of all rock material and all work not specifically included for payment under other items.

ITEM 5 (02511) HOT MIX ASPHALT – BINDER COURSE

Method of Measurement

Measurement for Payment for Hot Mix Asphalt shall be based on the tons of hot mix asphalt placed complete, within the payment limits shown on the Contract Drawings or as directed by the Owner's Representative and as measured by the Owner's Representative. Tonnage of pavement placed will be verified through calculation based on the thickness and trench or pavement widths and lengths defined in the Contract. Calculated tonnage will be compared to the actual tonnage placed as submitted on pavement tonnage slips. The lesser tonnage shall be paid to the Contractor. Placement of pavement to excess thicknesses and outside the limits defined in the Contract Documents shall be at no additional cost to the Owner.

Basis of Payment

Payment for Hot Mix Asphalt shall be based on the unit price bid for this item in the proposal. Under the unit price for this item, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals required to furnish and install hot mix asphalt for trenches, roadways and sidewalks complete as indicated on the Contract Drawings or at the direction of the Owner's Representative. The work includes, but is not limited to the following; proof rolling subbase; furnishing, spreading, and finishing hot-mix asphalt; keyways and other jointing between new and existing asphalt; hand placement and compaction of bituminous concrete for sidewalks and ramps, around structures, aprons, and as directed; furnishing and installing tack coats; furnishing and installing hot rubberized sealer; power sweeping; raising and adjusting gate boxes and manholes; protection from traffic and all work not specifically included for payment under other items.

Exclusions

Hot Mix Asphalt as temporary pavement for traffic management purposes shall be incidental to the project and shall not be considered for payment under this item.

ITEM 6 (02513) CONCRETE SIDEWALK

Method of Measurement

Measurement for Payment for Concrete Sidewalk shall be based on the actual square yards of cement concrete sidewalk placed to thicknesses specified in the Contract Documents, complete, within the payment limits shown on the Contract Drawings or as directed by the Owner's Representative and as measured by the Owner's Representative.

Basis of Payment

Payment for Concrete Sidewalk shall be based on the unit price bid for this item in the proposal. Under the unit price for this item, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals required to

install concrete sidewalks, including concrete driveways and concrete wheelchair ramps to depth and width as indicated on the Contract Drawings or at the direction of the Owner's Representative. The work includes, but is not limited to; grading and preparation of subgrade; furnishing, installing and grading gravel subbase; furnishing and installing concrete including brooming, finishing, sealing, protecting, expansion joints, construction joints, score joints, transition sections, reinforcement and formwork; furnish and install detectable warning panels for wheelchair ramps; furnishing and install suitable material to backfill formwork and back-up walk and all work not specifically included for payment under other items.

ITEM 7 (02529) **REMOVE & RESET GRANITE CURB**

Method of Measurement

Measurement for payment for Remove & Reset Granite Curb shall be based on the actual linear feet of granite curb removed and reset, regardless of size and type as shown on the Contract Drawings or as directed by the Owner's Representative and as measured by the Owner's Representative. Measurement shall be along the centerline of curb removed and reset.

Basis of Payment

Payment for Remove & Reset Granite Curb shall be based on the unit price bid for this item in the proposal. Under the unit price for this item, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals required to remove, protect, store, and reset sections of granite curb at the same grade or proposed grade, including transitions for wheelchair ramps and transitions to meet grade, complete as indicated on the Contract Drawings or at the direction of the Owner's Representative. The work includes, but is not limited to the following; excavation; furnishing, cleaning, installing, grading, and compacting gravel subbase; furnishing and installing concrete; removing; protecting, modifying, and setting granite curb; pointing; and all work not specifically included for payment under other items.

Exclusions

The Contractor will not be compensated for providing and installing granite curb to replace curb damaged by the Contractor during construction.

ITEM 8 (02580) **PAVEMENT MARKINGS**

Method of Measurement

Measurement for Payment for Pavement Markings shall be based on the actual linear feet of painted traffic lines of any width and any color installed complete, within the payment limits shown on the Contract Drawings or as directed by the Owner's Representative and as measured by the Owner's Representative.

Basis of Payment

Payment for Pavement Markings shall be based on the unit price bid for this item in the proposal. Under the unit price for this item, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals required to paint traffic lines of any color and any width as indicated within the payment limits, complete, as shown on the Contract Drawings or at the direction of the Owner's Representative. The work includes, but is not limited to; layout; furnishing and installing traffic paint; protection of traffic paint and all work not specifically included for payment under other items.

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|--------------------------------|------------------------------------|
| <u>ITEM 9.1 (02605)</u> | <u>4' DIAMETER MANHOLE</u> |
| <u>ITEM 9.2 (02605)</u> | <u>NOT USED</u> |
| <u>ITEM 9.3 (02605)</u> | <u>10' DIAMETER MANHOLE</u> |

Method of Measurement

Measurement for payment for Manhole shall be based on the actual vertical feet manhole installed as shown on the Contract Drawings or as directed by the Owner’s Representative and as measured by the Owner’s Representative. Measurement shall be made from rim of manhole to invert of lowest pipe for sanitary sewer manholes and from rim of manhole to bottom of sump for storm drain manholes.

Basis of Payment

Payment for Manhole shall be based on the unit price bid for this item in the proposal. Under the unit price for this item, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals required to furnish and install precast manholes of any depth and any loading, complete as indicated on the Contract Drawings or at the direction of the Owner’s Representative. The work includes, but is not limited to the following; excavation, backfill, removal and disposal of unsuitable materials; preparation of subgrade; furnishing and installing bedding; furnishing and installing filter fabric; furnishing and installing backfill; furnishing and installing precast concrete manhole base, risers, flat tops and cones including gaskets, bituminous dampproofing and flexible pipe sleeves; connections to new and existing pipework; grouting; furnishing and installing brick, concrete, and mortar for invert and table; furnishing and installing brick, grade rings, mortar to bring frame and cover to grade; furnishing and installing frame and cover; loading, hauling, disposal and handling restricted and unrestricted use trench soils as required; testing and all work not specifically included for payment under other items.

<u>ITEM 10.1 (02605)</u>	<u>CATCH BASIN - SINGLE GRATE</u>
<u>ITEM 10.2 (02605)</u>	<u>TYPE “C” CATCH BASIN – TYPE I</u>
<u>ITEM 10.3 (02605)</u>	<u>TYPE “C” CATCH BASIN – TYPE II</u>

Method of Measurement

Measurement for payment for Catch Basin shall be based on the actual vertical feet of catch basin installed as shown on the Contract Drawings or as directed by the Owner’s Representative and as measured by the Owner’s Representative. Measurement shall be made from the rim to bottom of the sump for single grate catch basins and from the top of the flat top slab to the sump for Type I & II catch basins.

Basis of Payment

Payment for Catch Basin shall be based on the unit price bid for this item in the proposal. Under the unit price for this item, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals required to furnish and install precast single grate catch basin of any depth, complete as indicated on the Contract Drawings or at the direction of the Owner’s Representative. The work includes, but is not limited to the following; excavation, backfill, removal and disposal of unsuitable materials, preparation of subgrade; furnishing and installing bedding; furnishing and installing filter fabric; furnishing and installing precast concrete base, sumps, risers, flat tops and cones including gaskets, bituminous dampproofing and flexible pipe sleeves; connections to new and existing pipework; grouting; furnishing and installing brick and mortar for frame and grate; furnishing and installing frame and grate (**for single grate catch basins only**); furnishing and installing hood; loading, hauling, disposal and handling restricted and unrestricted use trench soils as required; testing and all work not specifically included for payment under other items.

ITEM 10.4 (02605)
ITEM 10.5 (02605)

TYPE "C" CATCH BASIN – TYPE I CURB TOP
TYPE "C" CATCH BASIN – TYPE II CURB TOP

Method of Measurement

Measurement for payment for Catch Basin Type I & II Curb Top shall be based on the actual number of Type I & II Curb Tops installed as shown on the Contract Drawings or as directed by the Owner's Representative and as measured by the Owner's Representative.

Basis of Payment

Payment for Catch Basin Type I & II Curb Tops shall be based on the unit price bid for this item in the proposal. Under the unit price for this item, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals required to furnish and install a Type I & II Catch Basin Curb Top, complete as indicated on the Contract Drawings or at the direction of the Owner's Representative. The work includes, but is not limited to the following; excavation, backfill, removal and disposal of unsuitable materials, preparation of catch basin; furnishing and installing brick and mortar for frame and grate; adjustment at grade; furnishing and installing Type I & II Curb Top including grate; and all work not specifically included for payment under other items.

ITEM 11.1 (02619)
ITEM 11.2 (02619)
ITEM 11.3 (02619)
ITEM 11.4 (02619)
ITEM 11.5 (02611)

12" DIAMETER HIGH DENSITY POLYETHYLENE PIPE
15" DIAMETER HIGH DENSITY POLYETHYLENE PIPE
18" DIAMETER HIGH DENSITY POLYETHYLENE PIPE
24" DIAMETER HIGH DENSITY POLYETHYLENE PIPE
54" DIAMETER CL IV REINFORCED CONCRETE PIPE

Method of Measurement

Measurement for payment for High Density Polyethylene (HDPE) and Reinforced Concrete Pipe (RCP) shall be based on the actual linear foot of pipe installed as shown on the Contract Drawings or as directed by the Owner's Representative and as measured by the Owner's Representative. Measurement shall be from the inside face of manhole to the inside face of manhole.

Basis of Payment

Payment for HDPE Pipe and RCP shall be based on the unit price bid for this item in the proposal. Under the unit price for this item, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals required to furnish and install Pipe of the specified material, complete as indicated on the Contract Drawings or at the direction of the Owner's Representative. The work includes, but is not limited to the following; excavation, backfill, removal and disposal of unsuitable materials; preparation of subgrade; furnishing and installing bedding; furnishing and installing filter fabric; furnishing and installing backfill; furnishing and installing pipe, couplings, fittings and gaskets; furnishing and installing trench dams; loading, hauling, disposal and handling restricted and unrestricted use trench soils as required; testing and all work not specifically included for payment under other items.

ITEM 12

NOT USED

ITEM 13.1 (02770)
ITEM 13.2 (02770)

NOT USED
CURB – PRECAST CONCRETE

Method of Measurement

Measurement for payment for Curb shall be based on the actual linear feet of straight and curved curb provided and installed, regardless of size and type as shown on the Contract Drawings or as directed by the Owner's Representative and as measured by the Owner's Representative. Measurement shall be along the centerline of curb installed.

Basis of Payment

Payment for Curb shall be based on the unit price bid for this item in the proposal. Under the unit price for this item, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals required to provide, protect, store, and install straight and curved sections of curb at the proposed grade, including transitions for wheelchair ramps, driveways and transitions to meet grade, complete as indicated on the Contract Drawings or at the direction of the Owner's Representative. The work includes, but is not limited to the following; furnishing, installing, grading, and compacting gravel subbase; furnishing and installing concrete; furnishing; protecting, modifying, and setting pre-cast concrete and granite curb; pointing; and all work not specifically included for payment under other items.

Exclusions

The Contractor will not be compensated for providing and installing curb to replace curb damaged by the Contractor during construction.

ITEM 13.3 (02770)

CURB – BITUMINOUS CONCRETE

Method of Measurement

Measurement for payment for Curb- Bituminous Concrete shall be based on the actual linear feet of curb installed as shown on the Contract Drawings or as directed by the Owner's Representative and as measured by the Owner's Representative. Measurement shall be along the centerline of curb installed.

Basis of Payment

Payment for Curb shall be based on the unit price bid for this item in the proposal. Under the unit price for this item, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals required to install curb at the proposed grade, including transitions for wheelchair ramps, driveways and transitions to meet grade, complete as indicated on the Contract Drawings or at the direction of the Owner's Representative. The work includes, but is not limited to the following; preparation of subgrade; furnishing and installing tack coat; furnishing and installing bituminous concrete curb (machined formed); protecting curb; and all work not specifically included for payment under other items.

ITEM 14 (03300)

FLOWABLE FILL

Method of Measurement

Measurement for payment for Flowable Fill shall be based on the actual cubic yards of flowfill installed for abandonment as indicated on the drawings and as directed and measured by the Owner's Representative.

Basis of Payment

Payment for Flowable Fill shall be based on the unit price bid for this item in the proposal. Under the unit price for this item, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals required to furnish and install flowable fill complete as indicated on the Contract Drawings or at the direction of the Owner's Representative. The work includes, but is not limited to the following; bulkheads; furnishing and installing control density fill (flowable fill), including ensuring the entirety of the pipe, tunnel or structure has been filled; and all work incidental thereto and all work not specifically included for payment under other items.

ITEM 15 (03300) CONCRETE COLLAR

Method of Measurement

Measurement for payment for Collar shall be based on the actual number of concrete collars of any size installed as shown on the Contract Drawings or as directed by the Owner's Representative and as measured by the Owner's Representative.

Basis of Payment

Payment for Concrete Collar shall be based on the unit price bid for this item in the proposal. Under the unit price for this item, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals required to furnish and install a Concrete Collar, complete as indicated on the Contract Drawings or at the direction of the Owner's Representative. The work includes, but is not limited to the following; sawcutting, modifying, protecting and preparation of existing and new pipe; furnish, installation and removing formwork; furnishing and installing reinforcement; furnishing and installing concrete and all work not specifically included for payment under other items.

ITEM 16 QA/QC TESTING ALLOWANCE

Method of Measurement

Measurement for payment for QA/QC Testing Allowance shall be based the allowance indicated in the Bid Proposal. Measurement shall be based upon the actual field QA/QC testing costs billed to the project as measured by the independent testing company invoices.

Cost of in-situ tests and material analyses made by the testing laboratory will be borne by the Owner when they indicate compliance with the specifications and by the Contractor when they indicate non-compliance.

Basis of Payment

Payment for QA/QC Testing Allowance shall be made to the Contractor based on the actual field QA/QC testing costs billed to the project as indicated on invoice submittals. QA/QC testing shall include only in-situ testing of installed soils, asphalt, flowfill and concrete.

Exclusions

Testing required for material shop drawing approval; prequalification testing; testing of pipe and manholes shall not be included for payment under this item and shall be considered incidental to the work.

ITEM 17

POLICE DETAIL ALLOWANCE

Method of Measurement

Measurement for payment for Police Detail Allowance shall be based upon the actual Police Detail costs billed to the project as measured by the Police Detail invoices.

Basis of Payment

Payment for Police Allowance shall be made to the Contractor based on the actual Police Detail costs billed to the project as indicated on invoice submittals.

ITEM 18 (02222)

REMOVAL OF NON-CONTAMINATED STOCKPILED SOILS

Method of Measurement

Measurement for payment for Removal of Non-Contaminated Stockpiled Soils shall be based on the actual cubic yards of non-contaminated soil stockpiled as measured by the Owner's Representative in the stockpile prior to removal.

Basis of Payment

Payment for Removal of Non-contaminated Stockpiled Soil shall be based on the unit price bid for this item in the proposal. Under the unit price for this item, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals required to load, transport and legally dispose of the soils off-site and all work incidental thereto and all work not specifically included for payment under other items.

ITEM 19 (02222)

REMOVAL OF CONTAMINATED STOCKPILED SOILS

Method of Measurement

Measurement for payment for Removal of Contaminated Stockpiled Soils shall be based on the actual tons of contaminated soil stockpiled disposed of at a disposal facility or landfill ("special waste") as documented on invoices from the disposal facility or landfill and as confirmed by measurements by the Owner's Representative of the stockpile prior to removal.

Basis of Payment

Payment for Removal of Contaminated Stockpiled Soil shall be based on the unit price bid for this item in the proposal. Under the unit price for this item, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals required to test, secure permits, load, transport and legally dispose of the soils off-site and all work incidental thereto and all work not specifically included for payment under other items.

4.B BID ALTERNATE ITEMS

Bids shall be evaluated based on the combination of base bid and alternates that is in the best interest of the Borough of Naugatuck.

ITEM A (02620) 14 GAUGE ALUMINIZED STEEL CORRUGATED METAL PIPE – 54” DIAMETER

Substituted for Reinforced Concrete Pipe shown on the Contract Drawings.

Method of Measurement

Measurement for payment for Corrugated Metal Pipe (CMP) shall be based on the actual linear foot of pipe installed as shown on the Contract Drawings or as directed by the Owner’s Representative and as measured by the Owner’s Representative. Measurement shall be from the inside face of manhole to the inside face of manhole.

Basis of Payment

Payment for CMP shall be based on the unit price bid for this item in the proposal. Under the unit price for this item, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals required to furnish and install Pipe of the specified material, complete as indicated on the Contract Drawings or at the direction of the Owner’s Representative. The work includes, but is not limited to the following; excavation, backfill, removal and disposal of unsuitable materials; preparation of subgrade; furnishing and installing bedding; furnishing and installing filter fabric; furnishing and installing backfill; furnishing and installing pipe, couplings, fittings and gaskets; furnishing and installing trench dams; loading, hauling, disposal and handling restricted and unrestricted use trench soils as required; testing and all work not specifically included for payment under other items.

ITEM B (02676) COLD MILLING EXISTING PAVEMENT

Method of Measurement

Measurement for Payment for Cold Milling Existing Pavement shall be based on the square yards of bituminous concrete pavement cold milled (cold planed) to the depth indicated, within the payment limits shown on the Contract Drawings or as directed by the Owner’s Representative and as measured by the Owner’s Representative.

Basis of Payment

Payment for Cold Milling Existing Pavement shall be based on the unit price bid for this item in the proposal. Under the unit price for this item, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals required to cold mill existing pavement, complete as indicated on the Contract Drawings or at the direction of the Owner’s Representative. The work includes, but is not limited to the following; cold milling; removing and disposal of cold planed bituminous concrete material; sweeping after the cold milling operation; removal of bituminous concrete from around existing structures and castings; providing transitions at the limits of the cold milling as directed by the Owner’s Representative; providing, maintaining, removing and disposing of temporary bituminous concrete aprons at transitions and castings until final paving; maintaining the cold milled surface until final paving; disposal of milled material; material testing and all work not specifically included for payment under other items.

ITEM C (02511) HOT MIX ASPHALT – TOP COURSE

Method of Measurement

Measurement for Payment for Hot Mix Asphalt shall be based on the tons of hot mix asphalt placed complete, within the payment limits shown on the Contract Drawings or as directed by the Owner’s Representative and as measured by the Owner’s Representative. Tonnage of pavement placed will be verified through calculation based on the thickness and trench or pavement widths and lengths defined in the Contract. Calculated tonnage will be compared to the actual tonnage placed as submitted on pavement tonnage slips. The lesser tonnage shall be paid to

the Contractor. Placement of pavement to excess thicknesses and outside the limits defined in the Contract Documents shall be at no additional cost to the Owner.

Basis of Payment

Payment for Hot Mix Asphalt shall be based on the unit price bid for this item in the proposal. Under the unit price for this item, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals required to furnish and install hot mix asphalt for trenches, roadways and sidewalks complete as indicated on the Contract Drawings or at the direction of the Owner's Representative. The work includes, but is not limited to the following; proof rolling subbase; furnishing, spreading, and finishing hot-mix asphalt; keyways and other jointing between new and existing asphalt; hand placement and compaction of bituminous concrete for sidewalks and ramps, around structures, aprons, and as directed; furnishing and installing tack coats; furnishing and installing hot rubberized sealer; power sweeping; raising and adjusting gate boxes and manholes; protection from traffic and all work not specifically included for payment under other items.

Exclusions

Hot Mix Asphalt as temporary pavement for traffic management purposes shall be incidental to the project and shall not be considered for payment under this item.

END OF SECTION 01270

SECTION 01290 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.2 DEFINITIONS

- A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.3 SCHEDULE OF VALUES

- A. Prior to the first estimate for payment to the Contractor, the Contractor shall submit to the Owner's Representative for approval a detailed cost breakdown of the various amounts to be paid for within each Lump Sum Item, as applicable. It shall also include, but not necessarily be limited to, proportional amounts for bonds, insurance and miscellaneous works which are to be paid for throughout the life of the Contract, and which are not specifically included for payment under other Items and/or Division of the Contract.
- B. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.
 - 1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:
 - a. Contractor's progress schedule.
 - b. Application for Payment form.
 - c. List of subcontractors.
 - d. Schedule of allowances.
 - e. Schedule of alternates.
 - f. List of products.
 - g. List of principal suppliers and fabricators.
 - h. Schedule of submittals.
 - 2. Submit the Schedule of Values to Owner prior to first payment estimate.
- C. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.
 - 1. Identification: Include the following Project identification on the Schedule of Values:
 - a. Project name and location.
 - b. Name of Owner's Representative.
 - c. Project number.
 - d. Contractor's name and address.
 - e. Date of submittal.

2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
 - a. Generic Name
 - b. Related Specification Section or Division.
 - c. Description of the Work.
 - d. Name of subcontractor.
 - e. Name of manufacturer or fabricator.
 - f. Name of supplier.
 - g. Change Orders (numbers) that affect value.
 - h. Dollar value.
 - 1) Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate.
4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
5. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site. Include evidence of insurance or bonded warehousing if required.
6. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
7. Allowances: Provide a separate line item in the Schedule of Values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
8. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.
9. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.4 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by and paid for by Owner.

1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.
- C. Payment Application Forms: Use forms approved by the Owner for Applications for Payment.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Owner will return incomplete applications without action.
1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
 2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- E. Transmittal: Submit 3 signed and notarized original copies of each Application for Payment to Owner by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- F. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors.
 2. Schedule of Values.
 3. Contractor's Construction Schedule (preliminary if not final).
 4. Products list.
 5. Schedule of unit prices.
 6. Submittals Schedule (preliminary if not final).
 7. List of Contractor's staff assignments.
 8. List of Contractor's principal consultants.
 9. Copies of building permits.
 10. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 11. Initial progress report.
 12. Report of preconstruction conference.
 13. Certificates of insurance and insurance policies.
 14. Performance and payment bonds.
 15. Data needed to acquire Owner's insurance.
 16. Initial settlement survey and damage report if required.
- G. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.

2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- H. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 3. Updated final statement, accounting for final changes to the Contract Sum.
 4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
 5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
 6. AIA Document G707, "Consent of Surety to Final Payment."
 7. Evidence that claims have been settled.
 8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
 9. Final, liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01290

SECTION 01310 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. Coordination.
 - 2. Submittals.
 - 3. Administrative and supervisory personnel.
 - 4. Project meetings.
 - 5. General installation provisions.
 - 6. Cleaning and protection.
- B. The Contractor shall file, with the Borough of Naugatuck Engineer, the name and telephone number of a person authorized by him who may be contacted regarding emergency works at the job site that may be required during non-working hours for reasons of public safety. This person shall be readily available and full Authority to deal with any emergency that may occur.

1.2 COORDINATION

- A. Requirements in this Article expand requirements in the General Conditions. Delete if the General Conditions suit Project requirements and specific actions required.
- B. Coordination: Coordinate construction activities included under various Sections of these Specifications to assure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections of these Specifications that are dependent upon each other for proper installation, connection, and operation.
 - 1. Where installation of one part of the Work is dependent on installation of other components, either before or after its own installation, cooperate with scheduled construction activities in the sequence required to obtain the best results.
 - 2. Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.
 - 4. Coordinate construction activities with public and private utilities.
 - a. During the progress of the work, other contractors and/or utilities may be engaged in performing work in the area. The Contractor shall coordinate the work to be done under this Contract with the work of others.
 - b. Notify "Underground Facilities Protective Organizations" (UFPO) a minimum of 72 hours prior to excavation or blasting, or as required by law, whichever is longer.
 - c. Notify the Owner and Owner's Representative of any utility locations encountered which conflict with the work. Coordinate with the Owner and Utility

Company in the protection, removal, relocation or replacement of conflicting utility locations.

- C. Where necessary, prepare memoranda for distribution to each party involved outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.
 - 1. Prepare similar memoranda for the Owner and separate Contractors where coordination of their Work is required.
- D. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of Contractor's Construction Schedule.
 - 2. Preparation of the Schedule of Values.
 - 3. Installation and removal of temporary facilities and controls.
 - 4. Delivery and processing of submittals.
 - 5. Progress meetings.
 - 6. Pre-installation conferences.
 - 7. Project closeout activities.

1.3 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
 - 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Owner's Representative of scheduled meeting dates and times.
 - 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 - 3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Owner's Representative, within 3 days of the meeting.
- B. Preconstruction Conference: Schedule a preconstruction conference and organizational meeting at the Project site or other convenient site prior to commencement of construction activities. Conduct the meeting to review responsibilities and personnel assignments.
 - 1. Attendees: Authorized representatives of Owner, the Owner's Representative, Engineer and their consultants; the Contractor and its superintendent; major subcontractors; manufacturers; suppliers and other concerned parties shall each be represented at the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing.
 - d. Designation of responsible personnel.

- e. Procedures for processing field decisions and Change Orders.
- f. Procedures for processing Applications for Payment.
- g. Distribution of the Contract Documents.
- h. Submittal procedures.
- i. Preparation of Record Documents.
- j. Use of the premises.
- k. Responsibility for temporary facilities and controls.
- l. Parking availability.
- m. Office, work, and storage areas.
- n. Equipment deliveries and priorities.
- o. Safety procedures.
- p. First aid.
- q. Security.
- r. Progress cleaning.
- s. Working hours.
- t. Housekeeping.
- u. Subcontractors.
- v. Preliminary Schedule of Shop Drawings and Samples.
- w. Minority Business Enterprise Goals.
- x. Co-ordination with other contractors.
- y. Insurance in Force.
- z. Contractor's Schedule of Values.

C. Progress Meetings: Conduct progress meetings at the Project Site at regularly scheduled intervals not exceeding two weeks. Coordinate dates of meetings with preparation of payment requests.

- 1. Attendees: In addition to representatives of the Owner and Owner's Representative, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
- 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the current status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Time.
 - 3) Sequence of operations.
 - 4) Status of submittals.
 - 5) Deliveries.
 - 6) Off-site fabrication.
 - 7) Access.
 - 8) Site utilization.
 - 9) Temporary facilities and controls.

- 10) Work hours.
 - 11) Hazards and risks.
 - 12) Progress cleaning.
 - 13) Quality and work standards.
 - 14) Change Orders.
 - 15) Documentation of information for payment requests.
3. Reporting: No later than 3 days after each progress meeting date, distribute copies of minutes of the meeting to each party present and to parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.
- a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule concurrently with the report of each meeting.
- D. Coordination Meetings: Conduct Project coordination meetings with private utility companies as required.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 GENERAL INSTALLATION PROVISIONS

- A. Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.
- B. Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Contract Documents.
- C. Inspect materials or equipment immediately upon delivery and again prior to installation. Reject damaged and defective items.
- D. Provide attachment and connection devices and methods necessary for securing Work. Secure Work true to line and level. Allow for expansion and building movement.
- E. Visual Effects: Provide uniform joint widths in exposed Work. Arrange joints in exposed Work to obtain the best visual effect. Refer questionable choices to the Engineer for final decision.
- F. Recheck measurements and dimensions, before starting each installation.
- G. Install each component during weather conditions and Project status that will ensure the best possible results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.
- H. Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.

- I. Mounting Heights: Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the Engineer for final decision.

3.2 CLEANING AND PROTECTION

- A. During the progress of the work, the Contractor shall keep the construction areas in a neat condition, free from accumulations of waste materials and rubbish. Lunch papers, bottles, lumber cut-offs, drinking cups and like rubbish shall be removed from the site daily. No alcoholic beverages will be permitted at the construction site(s).
- B. During handling and installation, clean and protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- C. Clean and maintain completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

END OF SECTION 01310

SECTION 01320 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
 - 1. Preliminary Construction Schedule.
 - 2. Contractor's Construction Schedule.
 - 3. Submittals Schedule.
 - 4. Daily construction reports.
 - 5. Material location reports.
 - 6. Field condition reports.
 - 7. Special reports.
 - 8. Construction photographs.

1.2 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
 - 1. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.
 - 2. Predecessor activity is an activity that must be completed before a given activity can be started.
- B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- C. Critical Path: The longest continuous chain of activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- D. Event: The starting or ending point of an activity.
- E. Float: The measure of leeway in starting and completing an activity.
 - 1. Float time belongs to Owner.
 - 2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the following activity.
 - 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.
- F. Fragnet: A partial or fragmentary network that breaks down activities into smaller activities for greater detail.
- G. Major Area: A story of construction, a separate building, or a similar significant construction element.

- H. Milestone: A key or critical point in time for reference or measurement.
- I. Network Diagram: A graphic diagram of a network schedule, showing activities and activity relationships.

1.3 SUBMITTALS

- A. Preliminary Schedule of Operations: Submit 2 printed copies; one a single sheet of reproducible media, and one a print.
- B. Contractor's Construction Schedule: Submit 2 printed copies of initial schedule, one a reproducible print and one a blue- or black-line print, large enough to show entire schedule for entire construction period.
 - 1. Submit an electronic copy of schedule on CD or DVD. Include type of schedule (Initial or Updated) and date on label.
- C. Construction Photographs: Submit a digital photo of each view within 7 days of taking photographs.
 - 1. Format: Digital JPG image with minimum resolution of 2584x1936 and image quality set to fine/high or better.
 - 2. Identification: A photo-log shall be provided containing a record for each submitted photo with the following information:
 - a. File Name of Photo.
 - b. Name of Project.
 - c. Name and address of photographer.
 - d. Name of Owner's Representative [and Construction Manager].
 - e. Name of Contractor.
 - f. Date photograph was taken.
 - g. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.

Photo-logs may be scanned hard-copy forms, though digital formats such as MS Word, MS Excel or MS Access are preferred. If the delivery method for the photos is via an online file management system, photo-log records should be entered into that system provided it supports entering the above information.

- D. Daily Construction Reports: Submit 2 copies at monthly intervals.

1.4 QUALITY ASSURANCE

- A. Scheduling Consultant Qualifications: An experienced specialist in CPM scheduling and reporting.
- B. Photographer Qualifications: An individual of established reputation who has been regularly engaged as a professional photographer for not less than three years.

1.5 COORDINATION

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.
- B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.
 - 1. Secure time commitments for performing critical elements of the Work from parties involved.
 - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.
- C. Auxiliary Services: Cooperate with photographer and provide auxiliary services requested, including access to Project site and use of temporary facilities including temporary lighting.

PART 2 - PRODUCTS

2.1 SUBMITTALS SCHEDULE

- A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
 - 1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Procedures: Comply with procedures contained in AGC's "Construction Planning & Scheduling."
- B. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Substantial Completion.
 - 1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- C. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
 - 1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Owner's Representative.
 - 2. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
 - 3. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Owner's Representative's administrative procedures necessary for certification of Substantial Completion.

- D. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
 - 1. Phasing: Arrange list of activities on schedule by phase.
 - 2. Work under More Than One Contract: Include a separate activity for each contract.
 - 3. Work Restrictions: Show the effect of the following items on the schedule:
 - a. Coordination with existing construction.
 - b. Limitations of continued occupancies.
 - c. Uninterruptible services.
 - d. Use of premises restrictions.
 - e. Provisions for future construction.
 - f. Seasonal variations.
 - g. Environmental control.
 - 4. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:
 - a. Subcontract awards.
 - b. Submittals.
 - c. Purchases.
 - d. Fabrication.
 - e. Deliveries.
 - f. Installation.
 - g. Tests and inspections.
 - h. Adjusting.
 - i. Startup and placement into final use and operation.
- E. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to the Notice to Proceed, Substantial Completion, and Final Completion.
- F. Computer Software: Prepare schedules using a program that has been developed specifically to manage construction schedules.

2.3 PRELIMINARY CONSTRUCTION SCHEDULE

- A. Bar-Chart Schedule: Submit preliminary horizontal bar-chart-type construction schedule within 10 days of date established for the Notice to Proceed.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first 60 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

2.4 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)

- A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal Gantt-chart-type, Contractor's Construction Schedule within 30 days of date established for the Notice to Proceed. Base schedule on the Preliminary Construction Schedule and whatever updating and feedback was received since the start of Project.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.

1. For construction activities that require 3 months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.

2.5 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
 1. List of subcontractors at Project site.
 2. List of separate contractors at Project site.
 3. Approximate count of personnel at Project site.
 4. High and low temperatures and general weather conditions.
 5. Accidents.
 6. Meetings and significant decisions.
 7. Unusual events (refer to special reports).
 8. Stoppages, delays, shortages, and losses.
 9. Meter readings and similar recording.
 10. Emergency procedures.
 11. Orders and requests of authorities having jurisdiction.
 12. Change Orders received and implemented.
 13. Work Change Directives received.
 14. Service connected and disconnected.
 15. Equipment or system tests and startups.
 16. Partial Completions and occupancies.
 17. Substantial Completions authorized.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule 1 week before each regularly scheduled progress meeting.
 1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
 2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
 3. As the Work progresses, indicate Actual Completion percentage for each activity.
- B. Distribution: Distribute copies of approved schedule to Owner and Owner's Representative, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
 1. Post copies in Project meeting rooms and temporary field offices.
 2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

3.2 CONSTRUCTION PHOTOGRAPHS

- A. Photographer: Engage a qualified commercial photographer to take construction photographs.

- B. Date Stamp: Unless otherwise indicated, date and time stamp each photograph as it is being taken so stamp is integral to photograph.
- C. Preconstruction Photographs: Before starting construction, take photographs of Project site and surrounding properties from different vantage points. Show existing conditions adjacent to property.
- D. Periodic Construction Photographs: Take color photographs monthly, coinciding with cutoff date associated with each Application for Payment. Photographer shall select vantage points to best show status of construction and progress since last photographs were taken.

END OF SECTION 01320

SECTION 01330 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.

1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information that requires Owner's Representative's responsive action.
- B. Informational Submittals: Written information that does not require Owner's Representative's approval. Submittals may be rejected for not complying with requirements.

1.3 SUBMITTAL PROCEDURES

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Owner's Representative reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- B. Submittals Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.
- C. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Owner's Representative's receipt of submittal.
 - 1. Initial Review: Allow 21 days for initial review of each submittal. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. Owner's Representative will advise Contractor when a submittal being processed must be delayed for coordination.
 - 2. Concurrent Review: Where concurrent review of submittals by Owner's Representative's consultants, Owner, or other parties is required, allow 28 days for initial review of each submittal.
 - 3. Direct Transmittal to Consultant: Where the Contract Documents indicate that submittals may be transmitted directly to Owner's Representative's consultants, provide duplicate copy of transmittal to Owner's Representative. Submittal will be returned to Owner's Representative before being returned to Contractor.

4. If intermediate submittal is necessary, process it in same manner as initial submittal.
 5. Allow 15 days for processing each resubmittal.
 6. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing.
- D. Identification: Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately 4 by 5 inches on label or beside title block to record Contractor's review and approval markings and action taken by Owner's Representative.
 3. Include the following information on label for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name and address of Owner's Representative
 - d. Name and address of Contractor.
 - e. Name and address of subcontractor.
 - f. Name and address of supplier.
 - g. Name of manufacturer.
 - h. Unique identifier, including revision number.
 - i. Number and title of appropriate Specification Section.
 - j. Drawing number and detail references, as appropriate.
 - k. Other necessary identification.
- E. Deviations: Highlight, encircle, or otherwise identify deviations from the Contract Documents on submittals.
- F. Additional Copies: Unless additional copies are required for final submittal, and unless Owner's Representative observes noncompliance with provisions of the Contract Documents, initial submittal may serve as final submittal.
1. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Owner's Representative.
 2. Additional copies submitted for maintenance manuals will not be marked with action taken and will be returned.
- G. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Owner's Representative will disregard submittals received from sources other than Contractor.
1. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Owner's Representative on previous submittals, and deviations from requirements of the Contract Documents, including minor variations and limitations. Include the same label information as the related submittal.
 2. Include Contractor's certification stating that information submitted complies with requirements of the Contract Documents.

3. Transmittal Form: Provide locations on form for the following information:
 - a. Project name.
 - b. Date.
 - c. Destination (To:).
 - d. Source (From:).
 - e. Names of subcontractor, manufacturer, and supplier.
 - f. Category and type of submittal.
 - g. Submittal purpose and description.
 - h. Submittal and transmittal distribution record.
 - i. Remarks.
 - j. Signature of transmitter.
- H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- I. Use for Construction: Use only final submittals with mark indicating action taken by Owner's Representative in connection with construction.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
 1. Number of Copies: Submit 3 copies of each submittal, unless otherwise indicated. Mark up and retain one returned copy as a Project Record Document.
 2. Number of Copies: Submit copies of each submittal, as follows, unless otherwise indicated:
 - a. Initial Submittal: Submit a preliminary single copy of each submittal where selection of options, color, pattern, texture, or similar characteristics is required. Owner's Representative will return submittal with options selected.
 - b. Final Submittal: Submit 3 copies, unless copies are required for operation and maintenance manuals. Submit 6 copies where copies are required for operation and maintenance manuals. Mark up and retain one returned copy as a Project Record Document.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
 2. Mark each copy of each submittal to show which products and options are applicable.
 3. Include the following information, as applicable:
 - a. Manufacturer's written recommendations.
 - b. Manufacturer's product specifications.

- c. Manufacturer's installation instructions.
- d. Standard color charts.
- e. Manufacturer's catalog cuts.
- f. Wiring diagrams showing factory-installed wiring.
- g. Printed performance curves.
- h. Operational range diagrams.
- i. Mill reports.
- j. Standard product operating and maintenance manuals.
- k. Compliance with recognized trade association standards.
- l. Compliance with recognized testing agency standards.
- m. Application of testing agency labels and seals.
- n. Notation of coordination requirements.

C. Shop Drawings:

1. For materials and equipment not supplied by the Owner, the Contractor shall promptly furnish to the Owner's Representative, for his information, three (3) copies of drawings in detail of the materials, equipment, piping, and structural details for any part of the work for which Drawings are not to be issued by the Owner's Representative. Before placing orders for any manufactured item or part of structure, he shall also submit three (3) copies, for approval, of detailed lists and descriptions of the various materials, fixtures, fittings and supplies which he proposes to use in the work, and also the names of individuals or companies who propose to furnish or manufacture the same. Copies of the results of all tests of materials and equipment shall be furnished by the Contractor immediately following the performance of required tests.
2. Prior to the submittal of shop drawings, the Contractor shall check, approve, initial and date the drawings and shall also indicate by reference the Specification and/or Plan which covers the item. Submittals will be returned to the Contractor if they have not been properly processed by him.
3. Approval by the Owner's Representative of shop drawings for any material, apparatus, device and layout shall not relieve the Contractor from the responsibility of furnishing same of proper dimension, size, quality, quantity and all performance characteristics to efficiently perform the requirements and intent of the Contract Documents. Approval shall not relieve the Contractor from the responsibility for errors of any sort on the shop drawings. If the shop drawings deviate from the Contract Documents, the Contractor shall advise the Owner's Representative of the deviations in writing, including the reasons for the deviation.
4. In the event the Contractor obtains the Owner's Representative's approval for the material, manufactured items, or equipment, other than that which is shown on the Plans or specified herein, the Contractor shall, at his own expense, make any changes as required in the structures, buildings, piping, or any other portion of the work necessary to accommodate the approved material, manufactured item, or equipment.

2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by other Specification Sections.

1. Number of Copies: Submit 3 copies of each submittal, unless otherwise indicated. Owner's Representative will not return copies.

2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
- B. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- C. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements.
- D. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.
- E. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements and, where required, is authorized for this specific Project.
- F. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements. Include evidence of manufacturing experience where required.
- G. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements.
- H. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.
- I. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements.
- J. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- K. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements.
- L. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- M. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements in Division 1 Section "Closeout Procedures".

- N. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
- O. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
1. Preparation of substrates.
 2. Required substrate tolerances.
 3. Sequence of installation or erection.
 4. Required installation tolerances.
 5. Required adjustments.
 6. Recommendations for cleaning and protection.
- P. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
1. Name, address, and telephone number of factory-authorized service representative making report.
 2. Statement on condition of substrates and their acceptability for installation of product.
 3. Statement that products at Project site comply with requirements.
 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 6. Statement whether conditions, products, and installation will affect warranty.
 7. Other required items indicated in individual Specification Sections.
- Q. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.
- R. Construction Photographs: Comply with requirements in Division 1 Section "Construction Progress Documentation".
- S. Material Safety Data Sheets: Submit information directly to Owner. If submitted to Owner's Representative, Owner's Representative will not review this information but will return it with no action taken.

2.3 SUBSTITUTION CLAUSE

- A. Whenever in the Plans and Specifications any item of equipment or material is designated by reference to a particular brand, manufacturer or trade name, it is understood that an approved equal product, acceptable to the Inspector, may be substituted by the Contractor, except where expressly noted as “no substitutions.”

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Owner's Representative.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 OWNER'S REPRESENTATIVE'S ACTION

- A. General: Owner's Representative will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Owner's Representative will review each submittal, make marks to indicate corrections or modifications required, and return it. Owner's Representative will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
 - 1. Final Unrestricted Release: Where submittals are marked “No Exceptions Taken,” that part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.
 - 2. Final-But-Restricted Release: When submittals are marked “Make Corrections Noted,” that part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.
 - 3. Returned for Resubmittal: When submittal is marked “Revise and Resubmit,” “Rejected,” or “Submit Specified Item,” do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.
 - a. Do not permit submittals marked “Revise and Resubmit,” “Rejected,” or “Submit Specified Item” to be used at the Project site, or elsewhere where Work is in progress.
 - 4. Other Action: Where a submittal is primarily for information or record purposes, special processing or other activity, the submittal will be returned, marked “Action Not Required.”

- C. Informational Submittals: Owner's Representative will review each submittal and will not return it, or will reject and return it if it does not comply with requirements. Owner's Representative will forward each submittal to appropriate party.
- D. Submittals not required by the Contract Documents will not be reviewed and may be discarded.

END OF SECTION 01330

SECTION 01500 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes requirements for temporary services, facilities and controls, including temporary utilities, support facilities, and security and protection facilities.
- B. Temporary utilities include, but are not limited to, the following:
1. Sewers and drainage.
 2. Water service and distribution.
 3. Sanitary facilities, including toilets, wash facilities, and drinking-water facilities.
 4. Heating and cooling facilities.
 5. Ventilation.
 6. Electric power.
 7. Lighting.
 8. Telephone.
- C. Temporary construction and support facilities include, but are not limited to, the following:
1. Temporary roads and paving.
 2. Dewatering facilities and drains.
 3. Project identification and temporary signs.
 4. Waste disposal facilities.
 5. Field offices.
 6. Storage and fabrication sheds.
 7. Lifts and hoists.
 8. Construction aids and miscellaneous services and facilities.
 9. Rodent and pest control.
 10. Temporary enclosures.
 11. Temporary heat.
- D. Security and protection facilities include, but are not limited to, the following:
1. Environmental protection.
 2. Stormwater control.
 3. Tree and plant protection.
 4. Pest control.
 5. Sidewalk bridge and/or site enclosure fence.
 6. Security enclosure and lockup.
 7. Barricades, warning signs, and lights.
 8. Covered walkways.
 9. Temporary enclosures.
 10. Temporary partitions.
 11. Fire protection.

1.2 USE CHARGES

- A. General: The cost of all use charges for temporary facilities are not chargeable to Owner or Owner's Representative and shall be included in the Contract Sum. The contractor shall be responsible for paying all use charges until the project is substantially complete. Allow other entities to use temporary services and facilities without cost, including, but not limited to, the following:

1. Owner's construction forces.
 2. Occupants of Project.
 3. Owner's Representative.
 4. Testing agencies.
 5. Personnel of authorities having jurisdiction.
- B. Sewer Service: Pay sewer service use charges for sewer usage, by all parties engaged in construction, at Project site.
- C. Water Service: Pay water service use charges, whether metered or otherwise, for water used by all entities engaged in construction activities at Project site.
- D. Telecommunication and Electric Power Service: Pay service use charges, whether metered or otherwise, for electricity and telecommunications used by all entities engaged in construction activities at Project site.

1.3 QUALITY ASSURANCE

- A. Standards: Comply with ANSI A10.6, NECA's "Temporary Electrical Facilities," and NFPA 241.
1. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with trade regulations and union jurisdictions.
 2. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
 3. Refer to Guidelines for Bid Conditions for Temporary Job Utilities and Services, prepared jointly by AGC and ASC, for industry recommendations.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
- C. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction, including but not limited to:
1. Building Code requirements.
 2. Health and safety regulations.
 3. Utility company regulations.
 4. Police, Fire Department and Rescue Squad rules.

1.4 PROJECT CONDITIONS

- A. Temporary Utilities: At earliest feasible time, when acceptable to Owner, change over from use of temporary service to use of permanent service. Prepare a schedule indicating date for implementation and terminations of each temporary facility.
1. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.
- B. Conditions of Use: The following conditions apply to use of temporary services and facilities by all parties engaged in the Work:

1. Keep temporary services and facilities clean and neat.
2. Relocate temporary services and facilities as required by progress of the Work.
3. Operate in a safe and efficient manner.
4. Take necessary fire prevention measures.
5. Do not overload facilities or permit them to interfere with progress.
6. Do not allow hazardous, dangerous or unsanitary conditions or public nuisances to develop or persist on the site.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Provide new materials. Undamaged, previously used materials in serviceable condition may be used if approved by Owner's Representative. Provide materials suitable for use intended.
- B. Pavement: Comply with Division 2.
- C. Chain-Link Fencing: Minimum 2-inch, 0.148-inch thick, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch-OD line posts and 2-7/8-inch-OD corner and pull posts, with 1-5/8-inch-OD top rails.
- D. Portable Chain-Link Fencing: Minimum 2-inch 9-gage, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch-OD line posts and 2-7/8-inch-OD corner and pull posts, with 1-5/8-inch-OD top and bottom rails. Provide concrete bases for supporting posts.
- E. Water: Provide potable water approved by local health authorities

2.2 EQUIPMENT

- A. General: Provide new equipment; if acceptable to the Owner's Representative, undamaged, previously used equipment in serviceable condition may be used. Provide equipment suitable for use intended.
- B. Fire Extinguishers: Provide hand-carried, portable UL-rated, class "A fire extinguishers for temporary offices and similar spaces. In other locations provide hand-carried, portable, UL-rated, class "ABC dry chemical extinguishers, or a combination of extinguishers of NFPA recommended classes for the exposures.
 1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.
- C. Self-Contained Toilet Units: Single-occupant units of chemical, aerated recirculation, or combustion type; vented; fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.
- D. Drinking-Water Fixtures: Containerized, tap-dispenser, bottled-water drinking-water units, including paper cup supply.

1. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg F.
- E. Heating Equipment: Unless Owner authorizes use of permanent heating system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
 1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
 2. Heating Units: Listed and labeled, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use for type of fuel being consumed.
- F. Electrical Outlets: Properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher-voltage outlets; equipped with ground-fault circuit interrupters, reset button, and pilot light.
- G. Power Distribution System Circuits: Where permitted and overhead and exposed for surveillance, wiring circuits, not exceeding 125-V ac, 20-A rating, and lighting circuits may be nonmetallic sheathed cable.
- H. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered glass enclosures, where exposed to breakage. Provide exterior fixtures where exposed to moisture.
- I. Water Hoses: Provide 3/4" heavy-duty, abrasion-resistant, flexible rubber hoses 100 ft. long, with pressure rating greater than the maximum pressure of the water distribution system; provide adjustable shut-off nozzles at hose discharge.
- J. First Aid Supplies: Comply with governing regulations.
- K. Storage and Fabrication Sheds: Install storage and fabrication sheds, sized, furnished and equipped to accommodate materials and equipment involved, including temporary utility service. Sheds may be open shelters or fully enclosed spaces within the building or elsewhere on the site.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Engage appropriate local utility company to install temporary service or connect to existing service. Where utility company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with utility company recommendations.

1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
 2. Provide adequate capacity at each stage of construction. Before temporary utility is available, provide trucked-in services.
 3. Obtain easements to bring temporary utilities to Project site where Owner's easements cannot be used for that purpose.
- B. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction until permanent water service is in use. Sterilize temporary water piping before use.
- C. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for type, number, location, operation, and maintenance of fixtures and facilities.
1. Disposable Supplies: Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Maintain adequate supply. Provide covered waste containers for disposal of used material.
 2. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy.
 3. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel who handle materials that require wash up. Dispose of drainage properly. Supply cleaning compounds appropriate for each type of material handled.
 - a. Provide safety showers, eyewash fountains, and similar facilities for convenience, safety, and sanitation of personnel.
 4. Drinking-Water Facilities: Provide bottled-water, drinking-water units.
 - a. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg F.
- D. Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment from that specified that will not have a harmful effect on completed installations or elements being installed.
- E. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment from that specified that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
- F. Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload-protected disconnecting means, automatic ground-fault interrupters, and main distribution switchgear.
1. Install electric power service underground, unless overhead service must be used.
 2. Install power distribution wiring overhead and rise vertically where least exposed to damage.

3. Connect temporary service to Owner's existing power source, as directed by electric company officials.
- G. Electric Distribution: Provide receptacle outlets adequate for connection of power tools and equipment.
1. Provide waterproof connectors to connect separate lengths of electrical power cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
 2. Provide warning signs at power outlets other than 110 to 120 V.
 3. Provide metal conduit, tubing, or metallic cable for wiring exposed to possible damage. Provide rigid steel conduits for wiring exposed on grades, floors, decks, or other traffic areas.
 4. Provide metal conduit enclosures or boxes for wiring devices.
- H. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations and traffic conditions.
1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
 2. Install exterior-yard site lighting that will provide adequate illumination for construction operations, traffic conditions, and signage visibility when the Work is being performed.
- I. Telephone Service:
1. Provide a portable cellular telephone for superintendent's use in making and receiving telephone calls when away from field office.

3.3 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
1. Locate storage sheds, sanitary facilities, and other temporary construction and support facilities for easy access.
 2. Provide incombustible construction for offices, shops, and sheds located within construction area or within 30 feet of building lines. Comply with NFPA 241.
 3. Maintain support facilities until Substantial Completion.
- B. Dewatering Facilities and Drains: Comply with requirements in applicable Division 2 Sections for temporary drainage and dewatering facilities and operations not directly associated with construction activities included in individual Sections. Where feasible, use same facilities. Maintain Project site, excavations, and construction free of water.
1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining property nor endanger permanent Work or temporary facilities.
 2. Remove snow and ice as required to minimize accumulations.

- C. **Project Identification and Temporary Signs:** Prepare Project identification and other signs in sizes indicated. Install signs where indicated to inform public and persons seeking entrance to Project. Do not permit installation of unauthorized signs.
1. Engage an experienced sign painter to apply graphics for Project identification signs. Comply with details indicated.
 2. Prepare temporary signs to provide directional information to construction personnel and visitors.
 3. Construct signs of exterior-type Grade B-B high-density concrete form overlay plywood in sizes and thicknesses indicated. Support on posts or framing of preservative-treated wood or steel.
 4. Paint sign panel and applied graphics with exterior-grade alkyd gloss enamel over exterior primer.
- D. **Waste Disposal Facilities:** Collect waste from construction areas and elsewhere daily. Provide waste-collection containers in sizes adequate to handle waste from construction operations. Containerize and clearly label hazardous, dangerous, or unsanitary waste materials separately from other waste. Comply with Division 1 Section "Execution Requirements" for progress cleaning requirements.
1. If required by authorities having jurisdiction, provide separate containers, clearly labeled, for each type of waste material to be deposited.
 2. Develop a waste management plan for Work performed on Project. Indicate types of waste materials Project will produce and estimate quantities of each type. Provide detailed information for on-site waste storage and separation of recyclable materials. Provide information on destination of each type of waste material and means to be used to dispose of all waste materials.
- E. **Janitorial Services:** Provide janitorial services for temporary offices, first-aid stations, toilets, wash facilities, lunchrooms, and similar areas.
- F. **Lifts and Hoists:** Provide facilities for hoisting materials and personnel. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. **Environmental Protection:** Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects. Avoid using tools and equipment that produce harmful noise. Restrict use of noisemaking tools and equipment to hours that will minimize complaints from persons or firms near Project site.
- B. **Stormwater Control:** Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by runoff of stormwater from heavy rains.
- C. **Tree and Plant Protection:** Comply with requirements in Division 2 Section "Tree Protection and Trimming."

- D. **Pest Control:** Before storm drain work begins, retain a local exterminator or pest-control company to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests. Engage this pest-control service to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Obtain extended warranty for Owner. Perform control operations lawfully, using environmentally safe materials.
- E. **Security Enclosure and Lockup:** Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.
1. **Storage:** Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.
- F. **Barricades, Warning Signs, and Lights:** Comply with standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and public of possible hazard. Where appropriate and needed, provide lighting, including flashing red or amber lights.
- G. **Temporary Enclosures:** Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. [Provide temporary weathertight enclosure for building exterior].
1. Where heating or cooling is needed and permanent enclosure is not complete, provide insulated temporary enclosures. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
 2. **Vertical Openings:** Close openings of 25 sq. ft. or less with plywood or similar materials.
 3. **Horizontal Openings:** Close openings in floor or roof decks and horizontal surfaces with load-bearing, wood-framed construction.
 4. Install tarpaulins securely using fire-retardant-treated wood framing and other materials.
 5. Where temporary wood or plywood enclosure exceeds 100 sq. ft. in area, use fire-retardant-treated material for framing and main sheathing.
- H. **Temporary Fire Protection:** Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
1. Provide fire watch when required.
 2. Store combustible materials in containers in fire-safe locations.
 3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for fire fighting. Prohibit smoking in hazardous fire-exposure areas.
 4. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition.

5. Permanent Fire Protection: At earliest feasible date in each area of Project, complete installation of permanent fire-protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.
6. Develop and supervise an overall fire-prevention and first-aid fire-protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
7. Provide hoses for fire protection of sufficient length to reach construction areas. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.5 STORAGE OF MATERIALS

- A. Materials shall be stored so as to insure the preservation of their quality and fitness for the work. When considered necessary, they shall be placed on wooden platforms and covered or stored in a suitable building, as directed by the Owner's Representative. Stored materials shall be located so as to facilitate prompt inspections.
- B. Materials and equipment supplied by the Owner shall be jointly inspected by the Owner and the Contractor and shall, upon acceptance by the Contractor, become the Contractor's responsibility to make good any damage to the materials and equipment until they have been incorporated and accepted in the work.

3.6 OPERATION, TERMINATION AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage caused by freezing temperatures and similar elements.
 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
 2. Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.
- C. Temporary Facility Changeover: Except for using permanent fire protection as soon as available, do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- D. Termination and Removal: Unless the Owner's Representative requests that it be maintained longer, remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 1. Materials and facilities that constitute temporary facilities are the property of Contractor. Owner reserves right to take possession of Project identification signs.

2. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements in Division 1 Section "Closeout Procedures."

END OF SECTION 01500

SECTION 01570 MAINTENANCE AND PROTECTION OF TRAFFIC

PART 1 - GENERAL

1.1 SUMMARY

- A. This section specifies the requirements for maintenance and protection of Traffic during construction of the Project.
- B. Maintenance and protection of traffic shall be provided in accordance with the Manual on Uniform Traffic Control Devices (MUTCD), the Borough of Naugatuck and any provisions contained in the plans or the contract documents.
 - 1. The traffic maintenance schemes shown in the MUTCD describe the minimum methods and control devices necessary. The Owner may order additional devices and/or methods to meet field conditions. No additional payment will be made for additional devices ordered.

1.2 REFERENCE STANDARDS

- A. The latest edition of the following standards, as referenced herein, shall be applicable.
 - 1. "Manual on Uniform Traffic Control Devices" (MUTCD)
 - 2. "Occupational Safety and Health Administration" (OSHA)

1.3 SUBMITTALS

- A. Traffic Control Plan: Submit Traffic Control Work Plan at least two (2) weeks prior to start of any trenching or land disturbance activities. The review will be only for the information of the Owner and third parties for an overall understanding of the project relating to access, maintenance of existing facilities and proper utilization of the site. The Contractor shall remain responsible for the adequacy and safety of the means, methods and sequencing of construction. The plan shall include, but not be limited to the following items:
 - 1. Required street closures including estimated length of closures; proposed detour routes and signage; and proposed closure methods.
 - 2. Sidewalk closures required and pedestrian management routes and signage
 - 3. Work zone protection measures
 - 4. Advance warning signage details and locations
 - 5. Required haul routes for material deliveries noting any weight restrictions and limitations
 - 6. Required coordination procedures for notifications to emergency services
 - 7. Any other controls or measures necessary to comply with regulations as required
- B. Detour & Road Closure Plan: The Contractor shall submit a detour and road closure plan for review and approval by the Borough Police Department, Fire Department and Board of Education.

1.4 NOTIFICATION REQUIREMENTS

- A. The Contractor shall notify the Owner and Emergency Services a minimum one week in advance of any change in required traffic detours or required duration of detours. The Contractor shall give the required advance notice of his proposed operations to affected police, fire, and other emergency response departments.
- B. The Contractor shall notify each abutter at least 24-hours in advance of the start of any work that will require the temporary closure of access, such as existing pavement excavations; driveway reconstruction and excavations.

PART 2 - PRODUCTS

2.1 DEVICES AND EQUIPMENT

- A. All signing, operations, safety, and directive devices shall conform to the Manual on Uniform Traffic Control Devices and the Authority having jurisdiction.
 - 1. Delineators: Delineators shall be of the reflectorized plastic drum type with Type "C" Steady Burn Warning Lights.
 - 2. Warning Signs: Advance warning signs shall be diamond shaped and have black lettering on an orange background.
- B. Street Plates: Grade 50 steel meeting AISC Steel Construction Standards, H-20 loading and OSHA requirements.
- C. Cold Patch: ConnDOT Class 5A

PART 3 - EXECUTION

3.1 GENERAL

- A. During the progress of the work, all streets shall be kept open for the passage of traffic and pedestrians and shall not be obstructed unless authorized by the authority having jurisdiction over same. Driveways, sidewalks, and areas of roadway shall be closed as short a time as possible while work is in progress and passage shall be restored by the close of work every day, by properly placed backfill or approved bridging. The Contractor shall take such measures at his own expense as may be necessary to keep the street open for traffic and shall give advance notice to the Fire and Police Departments, and the Board of Education of his proposed street operations. He further agrees to be responsible for all legal notices to the public concerning the state of the roads while the work is in progress.
- B. Warning signs shall be provided along all streets while work is in progress and, where traffic direction is required, flag men or police details shall be designated by the Contractor to direct traffic past the equipment, machinery or construction operations. Barricades and lights shall be provided as required to protect life and property. Where trenches have been cut in streets on which traffic may pass at times, warning signs shall be placed at frequent intervals and maintained until the street is safe for travel. All such work and operations shall be in accordance with requirements of the Owner and the Specification herein. The use of unauthorized or unapproved signs, barricades, or traffic delineators will not be permitted.
- C. The Contractor shall construct, maintain, without extra compensation, such adequate and proper bridges over excavations as may be necessary or directed for the purpose of accommodating pedestrians and vehicles. Ingress and egress to private property, satisfactory to the Owner's Representative, shall be continuously provided.

- D. Should the Contractor or his employees neglect to set out and maintain barricades or lights, as required in the Specifications, the Owner's Representative may immediately and without notice arrange for furnishing, installing and maintaining barricades or lights and any other precaution deemed necessary. 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.
- E. The Contractor shall be held responsible for any damages that may have to be paid as a consequence of the Contractor's failure to protect the public.
- F. All traffic lanes shall be open at the end of each working day.
- G. The Contractor shall provide signs, signals, barricades, flares, lights, and all other equipment, service, and personnel necessary to regulate and protect traffic and warn of hazards. The Contractor shall remove temporary equipment and facilities when no longer required, and restore area to original or specified conditions upon removal.
- H. All public streets and travel ways shall remain open to the passage of local vehicular and pedestrian traffic during the construction period, unless prior written consent is obtained from the Owner's Representative and the governing body having jurisdiction over the street or travel way.
 - 1. A minimum of one lane of traffic in each direction shall be maintained at all times except that during working hours traffic may be reduced to one lane under flagged or policed control.
 - 2. Traffic lane widths a minimum of 11-feet shall be maintained.
 - 3. Alternative pedestrian crossings locations shall be approved by the Owner and properly constructed to allow accessible access and safe crossings in accordance with regulations.
- I. The Contractor shall allow access to the Borough and private utilities at all times for any required repairs or maintenance of public facilities.
- J. Safe and adequate ingress and egress to and from intersecting highways, homes and commercial establishments shall be provided and maintained at all times to the satisfaction of the Owner.
- K. Non-essential traffic control devices shall be covered or removed during non work hours
- L. If the Owner notifies the Contractor or his superintendent of any hazardous construction practices, all operations in that area shall be discontinued and immediate remedial action shall be taken to the satisfaction of the Owner before work is resumed.

3.2 TEMPORARY ROADS

- A. The Contractor shall be responsible for providing and maintaining such temporary access roads, to and along right-of-way, as are necessary for transportation of materials and equipment. Where such roads are on private property he shall obtain permission for their construction and use and pay all costs pertaining thereto.

3.3 WORK ZONES

- A. Work zones on opposite sides of the road shall not overlap. A work zone is defined as that area in which traffic is restricted because of construction activities, or that area which involves a drop-off within 10 feet of the edge of pavement.

1. Work zone length shall be a maximum of 200 linear feet unless otherwise approved by the Owner. The Contractor shall compact the work zone and minimize length of roadway utilized to the maximum extent practical at the end of each working day.
- B. The Contractor shall delineate areas where there is a drop-off near the edge of the traveled way and areas on which it is unsafe to travel. The provisions for delineation shall be as approved by the Owner's Representative, and the governing body having jurisdiction over the street, travelway, or site.
- C. Excavations that produce drop-offs on both sides of the traveled way at the same time shall not be permitted.
- D. The work zone shall be protected at all times with cones, reflectorized drums with lights, concrete barriers, or other devices approved by the Owner.
- E. No material is to be stored on the shoulder unless within the protected work zone
- F. Construction equipment shall stored within the protected work zone at the end of each working day
- G. The Contractor shall be responsible for the maintenance of all signs, cones, flashers, barrels, and other devices the Contractor shall ensure that they are in place and in good condition.

3.4 PROTECTIVE MEASURES

- A. Reflectorized plastic drum delineators shall be used along embankments, work zones and at other hazardous locations determined by the Owner's Representative. Delineators shall remain in place until satisfactory protection is provided. Delineators shall be spaced at a distance not to exceed 20 feet, or as directed by the Owner's Representative.
- B. Excavations:
 1. The Contractor shall provide 1-inch steel plates to provide for traffic movement over narrow, open excavations.
 - a. Steel plates will not be allowed during winter months
 2. All excavations shall be plated or temporarily paved at the end of each working day, unless approved by the Owner's Representative.
- C. Traffic Signals and Signs:
 1. The Contractor shall provide and operate traffic control and directional signals required to direct and maintain an orderly flow of traffic in areas affected by the Contractor's operations.
 2. The Contractor shall provide traffic control and direction signs, mounted on barricades or standard posts at each change of direction of a roadway, at each crossroad, at detours, at hazardous areas, and at parking areas.
 3. The correct sequence and spacing of signs, either permanent or temporary must be maintained at all times in accordance with MUTCD unless shown otherwise on the plans. All signs, including guide signs, shall indicate actual conditions at all times and shall be covered, moved, removed, or changed immediately when the work requires or as required by the Owner.
- D. Flares and Lights:

1. During periods of low visibility the Contractor shall provide flares and lights to guide traffic, to clearly delineate traffic lanes, and to warn of hazardous areas. Flag personnel shall use lights in directing traffic during periods of low visibility. Illumination of critical traffic and parking areas shall be provided by the Contractor during periods of low visibility.

3.5 POLICE DETAILS

- A. The Contractor shall provide the Owner's Representative and Owner with sufficient notice to schedule Police Details. The Contractor shall be responsible for coordination of Police Details on-site.

3.6 PARKING CONTROL

- A. The Contractor shall control all Contractor related vehicular parking such that it does not interfere with public traffic and parking, access to emergency vehicles, Owner's operations, or construction operations. The Contractor shall provide temporary parking facilities for the public as construction operations dictate.
- B. The Contractor shall provide parking areas for workman's private vehicles that comply with applicable laws, regulations, codes, and ordinances. The Contractor shall ensure free vehicular access to and through the parking areas. The Contractor shall not permit parking on or adjacent to access roads or in non-designated areas.
- C. The Contractor shall provide advance notice for areas where work zone will restrict public on-street parking through the use of signage a minimum one-week in advance of construction. Towing of vehicles shall be coordinated through the Owner and Police Dept. No vehicles shall be towed if proper notifications have not been implemented.

3.7 HAUL ROUTES

- A. Before starting any work, the Contractor shall arrange, with the Municipal or State officials having jurisdiction, for the use of routes of travel for hauling materials, including surplus earth and rock, that will result in minimum inconvenience to the traveling public. Routes of travel so scheduled shall be adhered to throughout the course of the work, unless otherwise approved.
- B. The Contractor shall confine construction traffic to designated haul routes. The Contractor will be required to provide traffic control at critical points of haul routes to expedite traffic flow and minimize interference with normal public traffic. Where required by governing authorities, the Contractor shall prepare and submit traffic control plans for approval by both the Owner's Representative and the governing Authority prior to commencement of work.

END OF SECTION 01570

SECTION 01700 - EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and surveying.
 - 3. General installation of products.
 - 4. Coordination of Owner-installed products.
 - 5. Progress cleaning.
 - 6. Starting and adjusting.
 - 7. Protection of installed construction.
 - 8. Correction of the Work.

1.3 SUBMITTALS

- A. Qualification Data: For land surveyor and professional engineer to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- B. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

1.4 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.
- B. Engineer's Qualifications: A professional Engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and

verify the existence and location of mechanical and electrical systems and other construction affecting the Work.

1. Before construction, verify the location and points of connection of utility services.
- B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction affecting the Work.
1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to local utility and Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
1. Notify Owner not less than 48 hours in advance of proposed utility interruptions.
 2. Do not proceed with utility interruptions without Owner's written permission.
- C. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- D. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- E. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Owner's Representative. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Owner promptly.

- B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
 - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 - 2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 3. Inform installers of lines and levels to which they must comply.
 - 4. Check the location, level and plumb, of every major element as the Work progresses.
 - 5. Notify Owner when deviations from required lines and levels exceed allowable tolerances.
 - 6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Owner's Representative and Owner.

3.4 FIELD ENGINEERING

- A. Identification: Contractor will search out, find and identify all existing benchmarks, control points, and property corners.
- B. Reference Points: Locate existing permanent benchmarks, control points, property corners and similar reference points before beginning the Work. Preserve and protect permanent benchmarks, control points and property corners during construction operations.
 - 1. Do not change or relocate existing benchmarks, control points or property corners without prior written approval of Owner. Report lost or destroyed permanent benchmarks, control points and property corners promptly. Report the need to relocate permanent benchmarks, control points and property corners to Owner's Representative and Owner before proceeding.
 - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- C. Benchmarks: Establish and maintain a minimum of 2 permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
 - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.

2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
 3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.
- D. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.

3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
1. Make vertical work plumb and make horizontal work level.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- F. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
- G. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- H. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.
 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris.

- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 - 1. Remove liquid spills promptly.
 - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Cutting and Patching: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.
 - 1. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.
- H. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- I. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- J. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- K. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.7 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.8 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 1 Section "Cutting and Patching."
 - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

END OF SECTION 01700

SECTION 01731 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes procedural requirements for cutting and patching.
- B. Refer to other sections for specific requirements and limitations applicable to cutting and patching individual parts of the work.

1.2 DEFINITIONS

- A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.3 SUBMITTALS

- A. Cutting and Patching Proposal: Where approval of procedures for cutting and patching is required before proceeding, submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
 - 1. Utilities: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out of service. Indicate how long service will be disrupted.
 - 2. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
 - 3. Describe means for the protection of adjacent areas to where cutting and patching shall take place.

1.4 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
 - 1. Elements Requiring Submittal Prior to Cutting and Patching:
 - a. Foundation construction
 - b. Bearing and retaining walls
 - c. Structural concrete
 - d. Structural steel
 - e. Miscellaneous structural metals
 - f. Shoring, bracing, and sheeting

- B. Operational Elements: Do not cut and patch the following operating elements or safety related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
 - 1. Fire-protection systems.
 - 2. Communication systems.
 - 3. Conveying systems.
 - 4. Electrical wiring systems.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections of these Specifications.
- B. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Prior to cutting existing services, examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed. Take corrective action before proceeding. If unsafe or unsatisfactory conditions are encountered, investigate both sides of the surface involved. Determine exact location of structural members.
 - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Temporary Support: Provide temporary shoring and support of Work to be cut to prevent settlement or other damage to existing construction to remain.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Services: Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to avoid interruption of services to occupied areas.

- E. Take all precautions necessary to avoid cutting existing pipe, conduit or ductwork serving the project area until provisions have been made to relocate and bypass them.

3.3 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, where cutting is required, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Existing Finished Surfaces: To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.
 - 5. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Comply with specified tolerances. Provide materials and comply with installation requirements specified in other Sections of these Specifications. Perform patching around items penetrating existing construction in a manner that will maintain the water and fire resistive capability of the existing construction.
 - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

END OF SECTION 01731

SECTION 01770 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
1. Inspection procedures.
 2. Project Record Documents.
 3. Operation and maintenance manuals.
 4. Warranties.
 5. Instruction of Owner's personnel.
 6. Final cleaning.

1.2 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
 2. Advise Owner of pending insurance changeover requirements.
 3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities.
 5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs, damage or settlement surveys, and similar final record information.
 6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
 7. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 8. Complete final cleaning requirements, including touchup painting.
 9. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Owner will either proceed with inspection or notify Contractor of unfulfilled requirements. Owner's Representative will prepare the Certificate of Substantial Completion after inspection or

will notify Contractor of items, either on Contractor's list or additional items identified by Owner's Representative, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for Final Completion.

1.3 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:

1. Submit a final Application for Payment according to Division 1 Section "Payment Procedures."
2. Submit certified copy of Owner's Representative's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Owner's Representative. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Submit pest-control final inspection report and warranty.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Owner will either proceed with inspection or notify Contractor of unfulfilled requirements. Owner's Representative will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.4 PROJECT RECORD DOCUMENTS

A. General: Do not use Project Record Documents for construction purposes. Protect Project Record Documents from deterioration and loss. Provide access to Project Record Documents for Owner's reference during normal working hours.

B. Record Drawings: Maintain and submit one set of blue- or black-line white prints of Contract Drawings and Shop Drawings.

1. Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
 - a. Give particular attention to information on concealed elements that cannot be readily identified and recorded later.
 - b. Accurately record information in an understandable drawing technique.

- c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
 - d. Mark Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. Where Shop Drawings are marked, show cross-reference on Contract Drawings.
 2. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
 3. Mark important additional information that was either shown schematically or omitted from original Drawings.
 4. Note Construction Change Directive numbers, Change Order numbers, alternate numbers, and similar identification where applicable.
 5. Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location. Organize into manageable sets; bind each set with durable paper cover sheets. Include identification on cover sheets.
- C. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications. Mark copy to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 3. Note related Change Orders, Record Drawings, where applicable.
- D. Record Product Data: Submit one copy of each Product Data submittal. Mark one set to indicate the actual product installation where installation varies substantially from that indicated in Product Data.
 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 3. Note related Change Orders, Record Drawings, where applicable.
- E. Miscellaneous Record Submittals: Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

1.5 WARRANTIES

- A. Submittal Time: Submit written warranties on request of Owner's Representative for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. On, or before the completion of the work, and before acceptance and final payment shall be made, the Contractor shall clean and remove, from the site and adjacent property all surplus and discarded materials, rubbish, and temporary structures and restore, in an acceptable manner, all property and leave the whole area in a neat and presentable condition.
- B. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- C. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Clean all manhole and catch basin sumps.
 - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.

- g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - h. Remove labels that are not permanent.
 - i. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
 - 1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
 - j. Leave Project clean and ready for occupancy.
- D. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid Project of rodents, insects, and other pests. Prepare a report.
- E. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 01770

SECTION K

Notice to the Contractor - State Required Forms

The Apparent Low Bidder will be required to submit the following State Required forms to the Borough of Naugatuck:

- 1 - DBE Participation Approval Request **if applicable**
- 2 - Contractor's Proposed Progress Chart
- 3 - Certificate of Compliance with Connecticut General Statute Section 31-57-b
- 4 - CON 83 - Anticipated Source of Material
- 5 - CON 32 - Certification of Insurance

The Borough of Naugatuck will provide a copy of the above applicable forms to the Apparent Low Bidder.

SECTION L

SUPPLEMENTAL SPECIFICATIONS
(NOT USED)

SECTION M

FEDERAL AND STATE REQUIRED CONTRACT PROVISIONS

- Supplemental General Conditions (1-12)
- Supplemental General Conditions (1-8)
- Federal Labor Standards Provisions
- Forms – Contractor and Subcontractor
- Project Sign Specifications

SECTION M

SUPPLEMENTAL GENERAL CONDITIONS

1. DEFINITIONS:

The following terms as used in this document are specifically defined as follows:

- A. **Contractor** means a person, firm or corporation with whom this contract is made.
- B. **Subcontractor** means a person, firm or corporation supplying labor and materials or labor only for work at the project under separate contract or agreement with the contractor.
- C. **Owner** means either Borough of Naugatuck or their authorized representative.
- D. **Municipality** means the Borough of Naugatuck or the person employed by the Borough of Naugatuck.
- E. **Project Manager** means the person employed by the Borough of Naugatuck on behalf of the owner. All major decisions and determinations required during the work will be made jointly by the owner, and the project manager; and if applicable, the architect/engineer, however, instructions to the contractor are to be from the Project Manager. If the contractor performs work beyond the scope of the project at the direction or request of any person other than the Project Manager, it will be at his own risk and expense. If this work must be removed or revised, that also will be at the expense of the contractor.
- F. **Work on or at the project** means all work to be performed at the location of the project, including the transportation of materials and supplies to or from the location of the project by employees of the contractor and any subcontractor.
- G. **Apprentice** means: 1) a person employed and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau or 2) a person in his first 90 days of probationary employment as an apprentice in such an apprenticeship program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Council (where appropriate) to be eligible for probationary employment as an apprentice.
- H. **Trainee** means a person receiving on-the-job training in a construction occupation under a program which is approved (but not necessarily sponsored) by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training, and which is reviewed from time to time by the Manpower Administration to ensure that the training meets adequate standards.
- I. **Covered Area** means the geographical area described in the solicitation from which this contract resulted.
- J. **Director** means Director of the Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority.
- K. **Employer Identification Number** means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.
- L. **Minority** includes:
 - 1. **Black** (all persons having origins in any of the Black African racial groups not of Hispanic origin).
 - 2. **Hispanic** (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race).

3. **Asian and Pacific Islander** (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands).
4. **American Indian or Alaskan Native** (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
5. **Portuguese** (all persons having origins in the Iberian Peninsula, including Portugal, regardless of race).

2. REQUIRED PROVISIONS DEEMED INSERTED:

Each and every provision of law required to be inserted in this contract shall be deemed to be inserted herein and the contract shall be read and enforced as though it were included herein. If through mistake or otherwise any provision is not inserted, or is inserted incorrectly then upon the application of either party the contract shall be amended to make such insertion or correction.

3. EMPLOYMENT OF CERTAIN PERSONS PROHIBITED:

No person under the age of sixteen and no person who at the present time is serving sentence in a penal or correctional institute shall be employed on the work covered by this contract.

4. REPORTS, RECORDS AND DATA:

It is imperative that the contractor keep records and submit reports in strict accordance with all sections of these General Conditions. Several different sections require specific information which may be addressed individually or in aggregate with other sections at the contractor's option. Provided all information is available, the Municipality will not mandate a specific format to be followed. If information submitted by the contractor is unclear or incomplete, the Municipality may request that the records/reports be re-submitted.

The contractor shall submit to the owner such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data as the owner may request concerning work performed or to be performed under this contract.

Payrolls and basic records relating thereto will be maintained during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work, or under the United States Housing Act of 1937 or under the Housing Act of 1949, in the construction or development of the project. Such records will contain for each employee, their name, address, correct classification, rate(s) of pay (including rates of contributions or costs anticipated of the types described in section 1(b)(2) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers and mechanics affected, and which show the costs anticipated or the actual cost incurred in providing such benefits.

The contractor will submit original weekly certified payrolls to L. Wagner & Associates until project completion. The payroll shall be accompanied by a statement signed by the employer or authorized representative indicating that the payrolls are correct and complete, that the wage rates contained therein are not less than those determined by the Secretary of Labor and that the classifications set forth for each laborer or mechanic conform with the actual work performed. The submission of a "Weekly Statement of Compliance" which is required under this contract and the Copeland regulations of the Secretary of Labor (29CFR Part 3) and the filing with the initial payroll or any subsequent payroll of a copy of any findings by the Secretary of Labor under 29 CFR 5.5(a)(1)(iv) shall satisfy this requirement. The prime contractor shall be responsible for the submission of copies

of payrolls of all subcontractors. The contractor will make the required records available for inspection by authorized representatives of the Municipality, its agents, State DECD and the Department of Labor, and will permit such representatives to interview employees during working hours on the job.

A. **PAYROLLS AND BASIC RECORDS.** Payrolls and basic records relating to such payrolls shall be maintained by each employer with respect to his/her own workforce employed on the site of the work. The principal contractor shall maintain such records relative to all laborers and mechanics working on the site of the work. Payrolls and related records shall be maintained during the course of the construction work and preserved by the contractor and all employers for at least 3 years following the completion of the work. Such records shall contain:

1. The name, address and social security number of each person/worker and applicable section (A/B);
2. His or her correct work classification(s); Trade license type and number, and OSHA 10 Certification Number;
3. Hourly rates of pay including rates of contributions or costs anticipated for fringe benefits;
4. Daily and weekly number of hours worked, including any overtime hours;
5. Deductions made and actual net wages paid;
6. Evidence pertaining to any costs listed in the "other" deduction column;
7. Evidence of the approval of any apprenticeship or trainee program, the registration of each apprentice or trainee and the ratios and wage rates contained in the program.
8. Evidence that each worker has completed the required 10 hour federal OSHA safety & health course.

B. **CERTIFIED PAYROLL REPORTS.** Certified weekly payroll reports (CPR's) shall be submitted with respect to each week any contract work is performed. Each contractor and subcontractor (employer) shall prepare and certify such payroll reports to demonstrate compliance with the labor standards requirements. The principal contractor is responsible for full compliance with regard to its own workforce and with regard to the compliance of every subcontractor. For this reason, all CPR's and any related records are submitted to the LCA – local contracting agency (L. Wagner & Associates) through the principal contractor.

1. **CPR Format.** CPR information may be submitted in any form provided that the LCA can reasonable interpret the information to monitor employer compliance with the labor standards. Employers are encouraged to utilize DOL Payroll Form WH-347. L. Wagner & Associates shall make available to each principal contractor a limited number of copies of the WH-347 for the contractor's reproduction and use.
2. **Filing of Certified Payroll/Failure to File Certified Payroll.** An employer subject to the prevailing wage law must file the weekly certified payroll weekly with the contracting agency by mail, first class prepaid. CPRs shall be submitted for each contractor/subcontractor (employer) beginning with the first week such employer performs work on the site of the work. CPRs shall be submitted promptly following the close of each such pay week. Failure to file a certified payroll pursuant to subdivision (2) of section 31-53(f) 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.
3. **CPR Preparation.** CPRs for each employer shall be numbered sequentially beginning with "1." The CPR for the last week of work to be performed on the project by each employer shall be clearly marked Final.

- a. Employee Information. The first payroll on which each employee appears shall contain the employee's name, address, Social Security Number, and Section. Thereafter, the address, Social Security Number, and Section only need to be reported if there is a change in such information.
 - b. Apprentices or Trainees. The first payroll on which any apprentice or trainee appears shall be accompanied with a copy of that apprentices' or trainee's registration in an approved program. A copy of the approved program pertaining to the wage rates and rations shall also accompany the first CPR on which the first apprentice or trainee appears
 - c. OSHA Safety and Health Certification. Any contract awarded on or after July 1, 2009 requires any mechanic, laborer, or worker who performs work in a classification listed on the prevailing wage rate schedule on any public works project is required to complete a ten (10) hour federal OSHA safety and health course and provide proof of completion. Contractors must provide proof of completion by attaching a copy of each certification card with the first certified payroll in which such mechanic, laborer, or worker performed work.
 - d. Split Classifications. The division of hours worked in different classifications shall be accurately maintained and clearly reported. The employer may list the employee once for each classification, distributing the hours of work accordingly, and reflecting the rate of pay and gross earnings for each classification. Deductions and net pay may be based upon the total gross amount earned for all classifications.
 - e. Hours Worked at Other Job Sites. The CPR's should reflect ONLY hours worked at the site of work. If an employee performs work at job sites other than the project for which the CPR is prepared, those hours *should not* be reported on the CPR. In these cases the employer should list the employee's name, classification, hours this project only, and the rate of pay and gross earnings at this project. Deductions and net pay may be reflected based upon the employee's total earnings (for all projects) for the week.
4. "No Work" Payrolls. Employers are not required to submit CPR's for weeks during which no work was performed on the site of the work *provided* that the CPR's are number sequentially *or* that the employer has provided written notice that its work on the project has been suspended, or otherwise instructed by the LCA (L. Wagner & Associates).
 5. Weekly Payroll Certification. Each weekly payroll shall be accompanied by a Federal or State "*Statement of Compliance*" form, or both as determined by LCA. The Statement of Compliance shall be executed by the original signature of the principal executive of the contractor/subcontractor. The Statement shall contain the language prescribed on DOL Form WH-348 or the reverse side of Form WH-347 which shall certify to the following:
 - a. That the payroll for the payroll period contains the information required to be maintained (see &2-7) and that the information is correct and complete;
 - b. That each laborer or mechanic (including each helper, apprentice and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set for in Regulations, 29 CFR Part 3;

- c. That any mechanic, laborer, or worker employed during the contract period has completed the 10 OSHA course and has provided proof of completion.
 - d. That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
6. Falsification. The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

5. OTHER PROHIBITED INTERESTS:

No official of the owner who is authorized solely or jointly to negotiate, make, accept, or approve any architectural, engineering, inspection, construction or material supply contract or any subcontract in connection with the construction of the project, shall become directly or indirectly interested personally in this contract or in any part hereof. No officer, employee, architect, attorney, engineer or inspector of or for the owner who is authorized in a capacity to exercise any legislative, executive, supervisory or other similar functions in connection with the construction of the project, shall become directly or indirectly interested personally in this contract or any part thereof.

6. NO CONFLICT

No member or Delegate to Congress of the United States, and no Resident Commissioner, shall be admitted to any share or part of this contract or to any benefit to arise from the same.

7. NATIONAL HISTORIC PRESERVATION ACT OF 1966:

The contractor agrees to contribute to the preservation and enhancement of structures and objects of historical, architectural or archaeological significance when such items are found and/or unearthed during the course of project construction and to consult with the State Historic Preservation Officer for recovery of the items. [Reference: National Historic Preservation Act of 1966 (80 Stat 915.16 USC 470) and Executive Order No. 11593 of May 31, 1971.]

8. CLEAN AIR ACT and FEDERAL WATER POLLUTION CONTROL ACT:

The contractor agrees to comply with Federal clean air and water standards during the performance of this contract and specifically agrees to the following:

- A. The term "facility" means any building, plant, installation, structure, mine, vessel or other floating craft, location or site of operations owned, leased, or supervised by the contractor and the subcontractors for the construction, supply and service contracts entered into by the contractor;
- B. Any facility to be utilized in the accomplishment of this contract is not listed on the Environmental Protection Agency's List of Violating Facilities pursuant to 40 CFR, Part 15.20;
- C. In the event a facility utilized in the accomplishment of this contract becomes listed on the EPA list, this contract may be canceled, terminated or suspended in whole or in part;
- D. It will comply with all the requirements of Section 308 of the Water Act relating to inspection, monitoring, entry, reports, and information, as well as all other requirements specified in Section 114 and Section 308, respectively, and all regulations and guidelines issued thereunder;

- E. It will promptly notify the Municipality of the receipt of any notice from the Director of the Office of Federal Activities, Environmental Protection Agency, indicating that any facility utilized or to be utilized in the accomplishment of the contract is under consideration for listing on the EPA list of Violating Facilities;
- F. It will include the provisions of the foregoing paragraphs in every subcontract or purchase order entered into for the purpose of accomplishing this contract, unless otherwise exempted pursuant to the EPA regulations implementing the Air or Water Act (40 CFR, Part 15.5), so that such provisions will be binding upon each subcontractor or vendor;
- G. In the event that the contractor or the subcontractors for the construction, supply and service contracts entered into for the purpose of accomplishing this contract were exempted from complying with the above requirements under the provisions of 40 CFR, Part 15.5(a), the exemption shall be nullified should the facility give rise to a criminal conviction (see 40 CFR, 15.20) during the accomplishment of this contract. Furthermore, with the nullification of the exemption, the above requirements shall be effective. The contractor shall notify the Municipality, as soon as the contractor or the subcontractors' facility is listed for having given rise to a criminal conviction noted in 40 CFR, Part 15.20.

9. USE OF LEAD-BASED PAINTS:

If the work under this contract involves construction or rehabilitation of residential structures, or other structures in which children congregate, the contractor shall comply with the Lead-Based Poisoning Prevention Act (see 42 U.S.C. 4831). The contractor shall assure that paint used on the project on applicable surfaces does not contain lead in excess of the percentages set forth in "A" & "B" below. In determining compliance with these standards, the lead content of the paint shall be measured on the basis of the total non-volatile content of the paint or on the basis of an equivalent measure of lead in the dried film of paint already applied.

- A. For paint manufactured on or before June 22, 1977, paint may not contain lead in excess of five tenths of one percent (0.5%) lead by weight.
- B. For paint manufactured after June 22, 1977, paint may not contain lead in excess of six one-hundredths of one percent (0.06%) lead by weight.

As a condition of receiving assistance under the Act, recipients shall assure that the restriction against the use of lead-based paint is included in all contracts and subcontracts involving the use of Federal funds.

10. SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION:

In order to protect the life and health of his employees under the contract, the contractor shall comply with all pertinent provision of the Contract Work Hours and Safety Act commonly known as the Construction Safety Act as pertains to health and safety standards; and shall maintain an accurate record of all cases of death, occupational disease, and injury requiring medical attention or causing loss of time from work, arising out of and in the course of employment on work under this contract. The contractor alone shall be responsible for the safety, efficiency, and adequacy of his plant, appliances, and methods, and for any damage which may result from their failure or their improper construction, maintenance, or operation.

11. TIME FOR COMPLETION AND LIQUIDATED DAMAGES:

It is hereby understood and mutually agreed by and between the contractor and the owner that the date of beginning and the time for completion as specified in the contract of work to be done hereunder are essential conditions of the contract and it is further mutually understood and agreed that the work embraced in this contract shall be commenced on a date to be specified in the Notice to Proceed.

The contractor agrees that said work shall be prosecuted regularly, diligently, and uninterruptedly at such rate of progress as will ensure full completion thereof within the time specified. It is expressly understood and agreed, by and between the contractor and the owner, that the time for completion of the work described herein is a reasonable time for the completion of the same, taking into consideration the average climatic range and usual industrial conditions prevailing in this locality.

If the contractor neglects, fails or refuses to complete the work within the time herein specified, or any proper extension thereof granted by the owner, then the contractor agrees, as a part consideration for the awarding of this contract, to pay to the owner the amount specified in the contract, not as a penalty but as liquidated damages for breach of contract as hereinafter set forth, for each and every calendar day that the contractor shall be in default after the time stipulated in the contract for completing the work.

The liquidated damages amount is fixed and agreed upon by and between the contractor and the owner because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the owner would in such event sustain, and said amount is agreed to be the amount of damages which the owner would sustain and said amount shall be retained from time to time by the owner from current periodical estimates.

It is further agreed that time is of the essence of each and every portion of this contract and of the specification wherein a definite and certain length of time is fixed for the performance of any act whatsoever; and where under the contract an additional time is allowed for the completion of any of the work, the new time limit fixed by such extension shall be of the essence of this contract, provided that the contractor shall not be charged with liquidated damages or any excess cost when the owner determines that the contractor is without fault and the contractor's reasons for the time extension are acceptable to the owner, provided further that the contractor shall not be charged with liquidated damages or any excess cost when the delay of completion of the work is due:

- A. to any preference, priority or allocation order duly issued by the government;
- B. to unforeseeable cause beyond the control and without the fault or negligence of the contractor, including but not restricted to, acts of the owner, acts of another contractor in the performance of a contract with the owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and severe weather; and/or
- C. to any delays of subcontractors or suppliers occasioned by any of the causes specified in the preceding two paragraphs, provided further that the contractor shall, within ten (10) days from the beginning of such delay, unless the owner shall grant a further period of time prior to the date of final settlement of the contract, notify the owner, in writing, of the cause of delay, who shall ascertain the facts and extent of the delay and notify the contractor within a reasonable time of its decision in the matter.

12. PROJECT MANAGER'S AUTHORITY:

The project manager shall give all orders and directions contemplated under this contract and specifications relative to the execution of the work. The project manager shall determine the amount, quality, acceptability and fitness of the several kinds of work and materials which are to be paid for under this contract and shall decide all questions which may arise in relation to the work. The project manager's estimates and decisions shall be final and conclusive, except as otherwise provided. In case any question shall arise between the parties hereto relative to the contract or specifications, the determination or decision of the project manager shall be a condition precedent to the right of the contractor to receive any money or payment for work under this contract affected in any manner or to any extent by such question.

The project manager shall decide the meaning and intent of any portion of the specifications and of any plan or drawing where the same may be found obscure or be in dispute. Any differences or conflicts in regard to their work which may arise between the contractor and any other contractors performing work for the owner shall be adjusted and determined by the project manager.

13. ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS:

The contractor may be furnished additional instructions and detail drawings as necessary to carry out the work included in the contract.

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 project manager will prepare jointly (a) a schedule, fixing the dates at which specific detail drawings will be required, such drawings, if any, to be furnished by the project manager in accordance with said schedule and (b) a schedule fixing the respective dates for the submission of shop drawings, the beginning of manufacturer's testing, installation of materials, supplies and equipment, and the completion of the various parts of the work; each such schedule is subject to change in accordance with actual work progress.

14. SHOP OR SETTING DRAWINGS:

The contractor shall submit promptly to the project manager two copies of each shop or setting drawing prepared in accordance with the above, predetermined schedule. After examination of such drawings by the project manager, and the return thereof, the contractor shall make such corrections to the drawings as have been indicated and shall furnish the project manager with two corrected copies. Regardless of corrections made in, or approval given to, such drawings by the project manager, the contractor will nevertheless be responsible for the accuracy of such drawings and for their conformity to the plans and specifications, unless he notifies the project manager, in writing, of any deviations at the time he furnishes such drawings.

15. MATERIALS, SERVICES AND FACILITIES:

It is understood that, except as otherwise specifically stated in the contract documents, the contractor shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, superintendence, temporary construction of every nature, and all other services and facilities of every nature whatsoever necessary to execute, complete, and deliver the work within the specified time.

Any work necessary to be performed after regular hours, on Sundays or legal holidays, shall be performed without additional expense to the owner.

16. CONTRACTOR'S TITLE TO MATERIAL:

No materials or supplies for the work shall be purchased by the contractor or by any subcontractor subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller. The contractor warrants that he has good title to all materials and supplies used in the work, free from all liens, claims or encumbrances.

17. INSPECTION AND TESTING OF MATERIALS:

All materials and equipment used in the construction of the project shall be subject to adequate inspection and testing in accordance with accepted standards. The laboratory or inspection agency shall be retained by the contractor as part of his obligation. The owner reserves the right to approve/disapprove the firm(s) selected to perform any and all tests/inspections and to be given a copy of any reports thus generated.

Materials of construction, particularly those upon which the strength and durability of the structure may depend, shall be subject to inspection and testing to establish conformance with specifications and suitability for uses intended.

Any authorized agent of the Municipality shall be permitted to inspect the project in general or any of its phases.

18. "OR EQUAL" CLAUSE:

Whenever a material, article or piece of equipment is identified on the plans or in the specifications by reference to manufacturers' or vendors' names, trade names, catalogue numbers, etc., it is intended merely to establish a standard. Any material, article, or equipment of other manufacturers or vendors which will adequately perform the duties imposed by the general design will be considered equally acceptable provided the material, article or equipment so proposed is, in the opinion of the project manager, of equal substance and function. It shall not be installed by the contractor without the project manager's written approval.

19. ALLOWANCES:

In the event that there is a cash allowance requested in the proposal, the contractor shall purchase the "allowed materials" as directed by the project manager on the basis of the lowest and best of at least three competitive bids. If the actual price for purchasing the allowed materials is more or less than the cash allowance, the contract price shall be adjusted accordingly. The adjustment in the contract price shall be made on the basis of the purchase price without additional charges for overhead, profit, insurance or any other incidental expenses. The cost of installation of the allowed materials shall be included in the applicable sections of the contract specifications covering this work.

20. CONTRACTOR'S OBLIGATIONS:

The contractor will, in good workmanlike manner, perform all work and furnish all supplies and materials, machinery, equipment, facilities and means, except as herein otherwise expressly specified, necessary to complete all the work required by this contract, within the time herein specified, in accordance with the provisions of the plans and specifications (including any and all supplemental plans and drawings), and in accordance with the direction of the project manager as given during the progress of the work. He shall furnish, erect, maintain and remove such construction plant(s) and such temporary works 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 project manager.

All rehabilitation, alterations, repairs, or extensions shall be in compliance with all applicable codes of the Municipality. All electrical, heating, and plumbing work shall comply with the rules and regulations of the National, State and Local Codes. Before commencing work, contractors and/or subcontractors shall obtain all necessary permits.

The contractor certifies that he has familiarized himself with the requirements of the specifications and/or plans and understands the extent and character of the work to be done, and inspected the premises and given his full attention to any and all areas with which he might become specifically involved. He must familiarize himself with all conditions relating to and affecting his work and bid. It is the contractor's responsibility to obtain the annual prevailing wage rate increases directly from the State Department of Labor website. The owner will not allow additional costs for Labor rate increase during the course of the project.

21. SEPARATE CONTRACTS:

The contractor shall coordinate his operations with those of other contractors. Cooperation will be required in the arrangement for the storage of materials and in the detailed execution of the work. The contractor and his subcontractors shall keep informed of the progress and the detail work of other contractors and shall notify the project manager immediately of lack of progress or defective workmanship on the part of other contractors. Failure of a contractor to keep informed of the work

progressing on the site and failure to give notice of lack of progress or defective workmanship by others shall be construed as acceptance by him of the status of the work as being satisfactory for proper coordination with his own work.

22. SUBCONTRACTING:

The contractor may utilize the services of specialty subcontractors on those parts of the work which, under normal contracting practices, are performed by specialty subcontractors.

The contractor shall not award any work to any subcontractor without the approval of the owner. Approval will not be given until the contractor submits to the owner a written statement including appropriate certifications concerning the proposed award to the subcontractor, which statement will contain such information as the owner may require.

The contractor shall be as fully responsible to the owner for the acts and omissions of his subcontractors, and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons employed directly by him.

The contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the contractor by the terms of the general conditions and other contract documents insofar as applicable to the work of subcontractors and to give the contractor the same power as regards terminating any subcontract that the owner may exercise over the contractor under any provision of the contract documents.

Nothing contained in this contract shall create any contractual relation between any subcontractor and the owner.

The contractor shall insert these same general and supplemental conditions in any subcontract he awards.

23. CHANGES IN THE WORK:

No change in the work covered by the approved contract documents shall be made without having written approval of the project manager. All changes (increasing or decreasing the contract amount) shall be determined by one or more, or a combination of the following methods;

- A. Unit bid prices previously established and approved,
- B. An agreed lump sum with back-up data,

24. EXTRAS:

Without invalidating the contract, the project manager may order extra work of the kind bid upon or make changes by altering, adding to or deducting from the work. The contract sum will be adjusted accordingly, and the consent of the surety will be obtained as required. All of the work of the kind bid upon shall be paid for at the prices stipulated in the proposal, and no claims for any extra work or materials shall be allowed unless the work is ordered in writing by the project manager and the cost therefore is stated in the order.

25. ANTI-LOBBYING:

- A. No Federal appropriated funds have been paid or will be paid, by or on behalf of it, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the

extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement;

- B. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, it will complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions; and
- C. It will require that the language of paragraph (n) of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

26. PAYMENT TO THE CONTRACTOR:

The owner shall make periodic progress payments to the contractor on the basis of a duly certified and approved estimate of the work performed during the preceding work period under the contract. To ensure proper performance under the contract, the owner shall retain 5% of the amount of each estimate until final completion and acceptance of all work covered by the contract.

All material and work covered by partial payments made shall thereupon become the sole property of the owner, but this provision shall not be construed as relieving the contractor from his responsibility for the care and protection of materials and work upon which payments have been made or the restoration of any damaged work, or as a waiver of the right of the owner to require fulfillment of all the terms of the contract.

The contractor agrees that he will indemnify and hold the owner and its agents 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. The contractor shall, at the owner's request, furnish satisfactory evidence that all obligations of the nature hereinabove designated have been paid, discharged or waived. If the contractor fails to do so, then the owner may, after having served written notice on the contractor, either pay unpaid bills of which the 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 the 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 obligations upon the owner to either the contractor or his surety.

In paying any unpaid bills of the contractor, the owner shall be deemed the agent of the contractor, and any payment so made by the owner shall be considered as a payment made under the contract by the owner to the contractor, and the owner shall not be liable to the contractor for any such payment made in good faith.

27. WITHHOLDING OF PAYMENTS:

The Owner may withhold payments necessary to pay laborers, mechanics, apprentices and trainees employed by the contractor or subcontractor on the work, the full amount of wages required by the contract or for any other reasons having to do with failure to provide compliance documentation or other material to meet DBRA requirements or other non-construction requirements of this contract. In the event of failure to pay any laborer, mechanic, apprentice or trainee employed or working on the site of the project or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project, all or part of the wages required by the contract, the Owner may, after written notice to the contractor, sponsor, applicant or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

28. INDEMNIFICATION:

The contractor and all of his subcontractors agree to defend, indemnify and hold harmless the Municipality, its Departments, agents and employees from any and all claims, liabilities, obligations and causes of action of whatsoever kind and nature for injury to, or death, including contractor employees, of any person and for damages to or destruction of property, or loss of use, including property of the Municipality, resulting in connection with work services or activities under this agreement regardless of cause except that the contractor shall not be required to assume responsibility or indemnify the Municipality of such injuries, damages or claims deemed by law to be due to the sole negligence of the Municipality, its employees or agents.

The Contractor agrees that all services offered by the Municipality through L. Wagner & Associates, Inc. (hereinafter referred to as the "Consultant"), which may affect the Contractor, are offered by the Municipality and not to the contractor in order to assist in the project implementation and the necessary program compliance. The Contractor agrees to, upon review and acceptance of such services provided, indemnify, defend, save and hold harmless the Municipality and Consultant, their officers, agents and employees from and against any and all damage, liability, loss, expense, judgment or deficiency of any nature whatsoever (including, without limitation, reasonable attorney's fees and other costs and expenses incident to any suit, action or proceeding) incurred or sustained by Municipality or Consultant which shall arise out of or result from Consultant's performance in good faith of services pursuant to the Professional Services Contract. The Contractor agrees that the Consultant shall not be liable to the Contractor, its heirs, successors or assigns, for any act performed within the duties and scope of employment pursuant to Professional Services Contract.

29. INSURANCE REQUIREMENTS:

The contractor shall procure, and maintain in effect for the duration of this agreement, the following insurance coverages with insurers licensed or approved to conduct business in the State of Connecticut. All insurers must be satisfactory to the Municipality.

The selected Contractor must, prior to contract signing, supply the Municipality and the Owner with the original certificates of insurance for workers compensation insurance and general liability insurance with a broad form contractual endorsement with minimum limits of one million (\$1,000,000.00) dollars per occurrence for bodily injury and five hundred thousand (\$500,000.00) dollars per occurrence for property damage and Auto Liability insurance in accordance with State law. The Contractor shall indemnify and save harmless the Owner and the Municipality under these policies, which shall list the Department of Economic & Community Development, A.T.I.M.A., Borough of Naugatuck, its agents and the Owner as additional insureds.

A. Workers Compensation and Employer's Liability:

Insuring in accordance with statutory requirements in order to meet obligations to employees in the event of injury or death sustained in the course of employment. Employer's Liability for employee suits shall not be less than one million (\$1,000,000.00) for each claim.

Cancellation Notice - Insurers must give no less than 30 days written notice in the event of either cancellation or non-renewal to the Municipality. Notice is to be to the attention of Borough of Naugatuck.

All policies are to be evidenced by Certificates of Insurance properly authorized by the insurer or their representative and must reflect all coverages. Certificates must be delivered to the Town and L. Wagner & Associates prior to any work or activity under this agreement.

SUPPLEMENTAL GENERAL CONDITIONS

1. APPRENTICES AND TRAINEES:

Apprentices will be permitted to work as such only when they are registered, individually, under a bona fide program registered with a State Apprenticeship Agency which is recognized by the Bureau of Apprenticeship and Training, U.S. Department of Labor; or, if no such Agency exists in a State, under a program registered with the Bureau of Apprenticeship and Training, U.S. Department of Labor. The allowable ratio of apprentices to journeymen in any craft classification shall not be greater than the ratio permitted to the contractor as to his entire workforce under the registered program. Any employees listed on a payroll at an apprentice wage rate, who is not a trainee as defined in paragraph 2(G), or is not registered as above, shall be paid the wage rate determined by the Secretary of Labor for the classification of work he actually performs. The contractor or subcontractor will be required to furnish written evidence of the registration of his program and apprentices as well as of the appropriate ratios and wage rates, for the area of construction prior to using any apprentices on the contract work.

Trainees will be permitted to work as such when they are bona fide trainees employed in accordance with a program approved by the U.S. Department of Labor, Manpower Administration Bureau of Apprenticeship and Training, and where the subparagraph below is applicable, in accordance with the provisions of Part 5a, Subtitle A, Title 29, Code of Federal Regulations (CFR).

On contracts in excess of \$10,000, the employment of all laborers and mechanics, including apprentices and trainees shall also be subject to the provisions of Part 5a, Subtitle A, Title 29, CFR. Apprentices and trainees shall be hired in accordance with the requirements of Part 5a.

2. MINIMUM WAGES:

All mechanics and laborers employed or working upon the site of the work, or under the United States Housing Act of 1937, or under the Housing Act of 1949 in the construction or the development of this project, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions permitted by regulations issued by the Secretary of Labor under the Copeland Act (29CFR Part 3), the full amounts due at the time of payment computed at wage rates not less than those contained in the wage determination decision of the Secretary of Labor contained herein, regardless of any contractual relationship which may be alleged to exist between the contractor and subcontractor and such laborers and mechanics; and the wage determination decision shall be posted by the contractor at the site of the work in a prominent place where it can be easily seen by the workers. The posted wage determination shall contain a statement showing all deductions in accordance with the provisions of this contract, to be made from wages actually earned by persons employed in each classification. For the purpose of this clause, contributions made or costs reasonably anticipated under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5 (a)(1)(iv).

The transporting of materials and supplies to or from the work site, and the manufacturing or furnishing of materials, articles, supplies, or equipment on or to the site by employees of the contractor or any subcontractor, is work to which these Federal Labor Standards Provisions apply.

Also for the purpose of this clause, regular contributions made or costs incurred for more than a weekly period under plans, funds, or programs, but covering the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

The owner shall require that any class of laborers or mechanics, including apprentices and trainees, which is not listed in the wage determination and which is to be employed under this contract, shall be classified or reclassified conforming to the wage determination classification and a report of the action taken shall be sent by the local administering agency to the Secretary of Labor. In the event the interested parties cannot agree on the classification or reclassification of a particular class of laborers

or mechanics (including apprentices and trainees) to be used, the question accompanied by the recommendation of the contracting officer shall be referred to the Secretary for final determination.

The owner shall require that whenever the minimum wage rate prescribed in the contract for a particular class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly wage rate and the contractor is obligated to pay the cash equivalent of such fringe benefit, an hourly cash equivalent thereto will be established. In the event the interested parties cannot agree upon a cash equivalent for that fringe benefit, the question and accompanying recommendation of the owner shall be referred to the Secretary of Labor for determination.

If the contractor does not make payments to a trustee or other third person, he may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing benefits under a plan or program of a type expressly listed in the wage determination decision of the Secretary of Labor which is a part of this contract; provided however, that the Secretary of Labor has found, upon written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside, in a separate account, assets for the meeting of obligations under the plan or program.

The contractor agrees to comply with Executive Order 11588 issued March 29, 1971, and any other Executive Order, statute, or regulation regarding the stabilization of wages and prices in the construction industry.

A. Complaints, Proceedings, or Testimony by Employees:

No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this contract are applicable shall be discharged or, in any other manner, discriminated against by the contractor or any subcontractor because the employee has filed a complaint or instituted (or caused to be instituted) any proceeding or who has testified (or is about to testify) in any proceeding under or relating to the applicable labor standards of this contract with his employer.

B. Claims and Disputes Pertaining to Wage Rates:

Claims and disputes pertaining to wage rates or to classifications of laborers and mechanics employed upon the work covered by this contract shall be promptly reported by the contractor in writing to the Borough of Naugatuck.

C. Questions concerning certain Federal statutes and regulations:

All questions arising under this contract which relate to the application or interpretation of any of the five following requirements shall be directed to the Borough of Naugatuck.

1. Anti-kickback Act,
2. Contract work hours and Safety Standards Act,
3. Davis-Bacon Act,
4. Secretary of Labor's regulations pertaining to 1, 2 and 3 above,
5. The labor standards provisions of any other pertinent Federal statute.

3. OVERTIME REQUIREMENTS:

No contractor or subcontractor shall require or permit any laborer or mechanic to work in excess of eight hours in any calendar day or in excess of forty hours in any workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times his basic rate of pay for all hours in excess of eight hours/day or in excess of forty hours/week, as the case may be.

In the event of any violation of the above, the contractor and any subcontractor responsible therefore, shall be liable to any affected employee for his unpaid wages. In addition, such contractor and

subcontractor shall be liable to the United States for liquidated damages. Liquidated damages shall be computed at \$10.00 per calendar day for each laborer or mechanic required or permitted to work in excess of eight hours or in excess of the standard week of forty hours without payment of the overtime wages required.

The Municipality may withhold or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor, any sums necessary to satisfy any liabilities of the contractor or subcontractor for unpaid wages and liquidated damages.

The contractor shall insert the foregoing stipulation in all subcontracts. Furthermore, subcontractors are to include these same requirements in any lower-tier subcontracts into which they may enter.

4. EQUAL EMPLOYMENT OPPORTUNITY:

- A. The Contractor agrees and warrants that in the performance of the contract such contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, mental retardation or physical disability, including, but not limited to, blindness, unless it is shown by such contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the State of Connecticut. The contractor further agrees to take affirmative action to insure that applicants with job related qualifications are employed and that employees are treated when employed with out regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, mental retardation, or physical disability, including, but not limited to, blindness, unless it is shown by such contractor that such disability prevents performance of the work involved;
- B. The contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the commission;
- C. The contractor agrees to provide each labor union or representative of workers with such contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such contractor has a contract or understanding, a notice to be provided by the commission advising the labor union or workers' representative of the contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment;
- D. The contractor agrees to comply with each provision of Conn. Gen. Stat. §§ 4a-60, 46a-68e and 46a-68f and with each regulation or relevant order issued by said commission pursuant to Conn. Gen. Stat. §§ 46a-56, as amended by Section 5 of Public Act 89-253, 46a-68e;
- E. The contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the contractor as relate to the provisions of this section and section 46a-56. If the contract is a public work contract, the contractor agrees and warrants that he will make good faith efforts to employ minority and women business enterprises as subcontractors and suppliers of materials on such public works project.

Pursuant to the provisions of Conn. Stat. Sect. 4a-60a.

- A. The contractor agrees and warrants that in the performance of the contract such contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of sexual orientations, in any manner prohibited by the laws of the United States or of the State of Connecticut, and that employees are treated when employed without regard to their sexual orientation;

- B. The contractor agrees to provide each labor union or representative of workers with which such contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such contractor has a contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities advising the labor union or workers' representative of the contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment;
- C. The contractor agrees to comply with each provision of this section and sections 46a-68e and 46a-68f of the general statutes and with each regulation or relevant order issued by said Commission pursuant to section 46a-56, 46a-68e and 46a-68f of the general statutes;
- D. The contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the contractor as relate to the provisions of this section and section 46a-56 of the general statutes.

Executive Order 11246.30 Federal Regulations 12319 (1965) Equal Opportunity Clause.

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

- A. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertisement; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, and to make available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.
- B. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.
- C. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided by the Contract Compliance Officer advising the said labor union or workers' representatives of the contractor's commitment under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- D. The contractor will comply with all provisions of (Federal) Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the (United States) Secretary of Labor.
- E. The contractor will furnish all information and reports required by (Federal) Executive Order 11246 of September 24, 1965, and by the rules and regulations, and orders of the (United States) Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by HUD, by the State Department of Housing and by the (United States) Secretary of Labor, for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- F. In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any such rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further (United States) Government contracts or federally assisted construction contracts

procedures authorized in (Federal) Executive Order 11246 of September 24, 1965, or order of the (United States) Secretary of Labor, or as otherwise provided by law.

- G. The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the (United States) Secretary of Labor issued pursuant to Section 204 of (Federal) Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as HUD (or the Commissioner of the Connecticut Department of Economic and Community Development) shall direct as a means of enforcing such provisions, including sanctions for noncompliance: provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by HUD (or the Commissioner of the Connecticut Department of Economic and Community Development), the contractor may request the United States to enter into such litigation to protect the interest of the United States”

Exemptions from above Equal Employment Opportunity Clause (4)(CFR Chap. 60):

- A. Contracts and subcontracts of \$10,000 or less (other than Government bills of lading) are exempt. The amount of the contract, rather than the amount of the Federal financial assistance shall govern in determining the applicability of this exemption.
- B. Except in the case of subcontracts for the performance of construction work at the site of construction, the clause shall not be required to be inserted in subcontracts below the second tier.
- C. Contracts and subcontracts of \$100,000 or less for standard commercial supplies or raw materials are exempt.

The contractor shall not be nor enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

The contractor shall carry out sanctions and penalties for violation of these specifications and the Equal Employment Clause, including suspension, termination and cancellation of existing subcontracts, as imposed or ordered by the Office of Federal Contract Compliance in accordance with Executive Order 11246. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

The contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in the sub-paragraphs above, so as to achieve maximum results from its employees to ensure equal employment opportunity. If the contractor fails to comply with the requirements of the Executive Order, the implementing regulations or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

The contractor shall designate a responsible official to monitor all employment-related activity in order to ensure that the company EEO policy is being carried out. The designated official must keep records and submit reports relating to the provisions hereof as required by the Municipality. Records shall include for each employee the name, address, telephone numbers, construction trade union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g. mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

Nothing herein shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application or requirements for the hiring of local or

other area residents (e.g. those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

Executive Order Number 3.

This contract is subject to the provisions of Executive Order No. 3 of Governor Thomas J. Meskill promulgated June 16, 1971, and, as such, this contract may be canceled, terminated, or suspended by the State Labor Commissioner for violation of or noncompliance with said Executive Order No. Three, or any State or Federal law concerning nondiscrimination, notwithstanding that the Labor Commissioner is not a party to this contract. The parties to this contract, as part of the consideration hereof, agree that said Executive Order No. Three is incorporated herein by reference and made a part hereof. The parties agree to abide by said Executive Order and agree that the State Labor Commissioner shall have continuing jurisdiction in respect to contract performance in regard to nondiscrimination, until the contract is completed or terminated prior to completion.

Executive Order Number 17.

This contract is subject to the provision of Executive Order No. 17 of Governor Thomas J. Meskill, promulgated February 15, 1973, and, as such, this contract may be canceled, terminated, or suspended by the Commissioner of Department of Economic and Community Development or the State Labor Commissioner for violation of or noncompliance with said Executive Order No. Seventeen, notwithstanding that the Labor Commissioner may not be a party to this contract. The parties to this contract, as part of the consideration hereof, agree that Executive Order No. Seventeen is incorporated herein by reference and made a part hereof. The parties agree to abide by said Executive Order and agree that the Commissioner of Department of Economic and Community Development and the State Labor Commissioner shall have joint and continuing jurisdiction in respect to listing all employment openings with the Connecticut State Employment Service.

Certification of Nonsegregated Facilities as required by 41CFR 60-1.8, must be submitted prior to the award of federally assisted construction contracts exceeding \$10,000 which are not exempt from the provisions of the Equal Employment Clause.

Contractors receiving federally assisted construction contract awards exceeding \$10,000 which are not exempt from the provisions of the Equal Employment Clause shall be required to provide for the forwarding of the following notice to prospective subcontractors for supplies and construction contracts where the subcontracts exceed \$10,000 and are not exempt from the provisions of the Equal Employment Clause:

- A. A certification of non-segregated facilities as required by the 32CFR 7439, May 19, 1967, must be submitted prior to the award of a subcontract exceeding \$10,000 which is not exempt from the provisions of the Equal Employment Opportunity Clause.
- B. Contractors receiving subcontract awards exceeding \$10,000 which are not exempt from the provisions of the Equal Employment Opportunity Clause shall be required to provide for the forwarding of this notice to prospective subcontractors for supplies and construction contracts where the subcontracts exceed \$10,000 and are not exempt from the provisions of the Equal Employment Opportunity Clause.

5. COPELAND "ANTI-KICKBACK" PROVISIONS:

The provisions of this section prescribe "Anti-Kickback" regulations under Section 2 of the Act of June 13, 1964, as amended (40 U.S.C. 276c), popularly known as the Copeland Act.

Each contractor or subcontractor shall furnish each week a Statement of Compliance, Form ED-162, to accompany the weekly submission of payroll forms.

Anyone making and/or using a fraudulent document or statement of entry, in any matter within the jurisdiction of any department or agency of the United States, is subject to being fined up to \$10,000 or imprisoned for up to five years, or both (refer to 18 USC 1001-72 Stat.967).

The provisions of this section shall not apply to any contract of \$2,000 or less.

Upon a written finding by the head of a Federal Agency, the Secretary of Labor may provide reasonable limitations, variations, tolerances, and exemptions from the requirements of this section subject to such conditions as the Secretary of Labor may specify.

Deductions made under the circumstances or in the situations described in the paragraphs below may be made without application to and approval of the Secretary of Labor.

- A. Any deduction made in compliance with the requirements of Federal, State, or local law such as Federal or State withholding income taxes and Federal Social Security taxes.
- B. Any deductions of sums previously paid to the employee as a bona fide prepayment of wages when such prepayment is made without discount or interest. A "bona fide prepayment of wages" is considered to have been made only when cash or its equivalent has been advanced to the employee in such a manner as to give the employee complete freedom of disposition of the advanced funds.
- C. Any deduction of amounts required by court process to be paid to another unless the deduction is in favor of the contractor, subcontractor, or any affiliated person, or when collusion or collaboration exists.
- D. Any deduction constituting a contribution on behalf of the employee to funds established by the employer or representative of the employees, or both, for the purpose of providing either from principal or income, or both, medical or hospital care, pensions or annuities or retirement, death benefits, compensation for injuries, illness, accidents, sickness, or disability, or for insurance to provide any of the foregoing, or unemployment benefits, vacation pay, savings accounts, or similar payments for the benefit of employees, their families and dependents; provided, however, that the following standards are met:
 - 1. The deduction is not otherwise prohibited by law.
 - 2. It is either voluntarily consented to by the employee in writing and in advance of the period in which the work is to be done and such consent is not a condition either for the obtaining of or for the continuation of employment, or provided for in a bona fide collective bargaining agreement between the contractor or subcontractor and representatives of its employees.
 - 3. No profit or other benefit is otherwise obtained, directly or indirectly, by the contractor or subcontractor or any affiliated person in the form of commission, dividend, or otherwise.
 - 4. The deductions shall serve the convenience and interest of the employee.
- E. Any deduction contributing toward the purchase of United States Defense Stamps and Bonds when voluntarily authorized by the employee.
- F. Any deduction requested by the employee to enable him to repay loans to or to purchase shares in credit unions organized and operated in accordance with Federal and State credit union statutes.
- G. Any deductions voluntarily authorized by the employee for making contributions to Community Chests, United Givers Funds and similar charitable organizations.

- H. Any deductions voluntarily authorized by the employee for making contributions to governmental or quasi-governmental agencies.
 - I. Any deductions to pay regular union initiation fees and membership dues (not including fines or special assessments) as long as a collective bargaining agreement between the contractor or subcontractor and representatives of its employees provided for such deductions and the deductions are not otherwise prohibited by law.
 - J. Any deductions not more than for the "reasonable cost" of board, lodging, or other facilities meeting the requirements of section 3(m) of the Fair Labor Standards Act of 1938, as amended, and Part 531 of this title. When such a deduction is made, the additional records required under S516.25(a) of this title shall be kept.
6. By execution of this agreement, the municipality hereby certifies that for all subgrants, contacts and subcontracts:
- A. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
 - B. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or Federal contract, grant, loan, or cooperative agreement, the Municipality shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
 - C. The Municipality shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Federal Labor Standards Provisions

U.S. Department of Housing
and Urban Development
Office of Labor Relations

Applicability

The Project or Program to which the construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

A. 1. (i) Minimum Wages. All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section I(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible, place where it can be easily seen by the workers.

(ii) (a) Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(b) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)

(c) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

(d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(ii)(b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the

2. Withholding. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work, all or part of the wages required by the contract, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

3. (i) Payrolls and basic records. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section I(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5 (a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section I(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)

(ii) (a) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit

the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i). This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U.S. Government Printing Office, Washington, DC 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149.)

(b) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be maintained under 29 CFR 5.5 (a)(3)(i) and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(c) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph A.3.(ii)(b).

(d) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under subparagraph A.3.(i) available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and Trainees.

(i) **Apprentices.** Apprentices will be permitted to work at less than the predetermined rate for the work they performed

when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention

fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under 29 CFR Part 5 shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract

6. Subcontracts. The contractor or subcontractor will insert in any subcontracts the clauses contained in subparagraphs 1 through 11 of this paragraph A and such other clauses as HUD or its designee may by appropriate instructions require, and a copy of the applicable prevailing wage decision, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this paragraph.

7. Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act Requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.

10. (i) Certification of Eligibility. By entering into this contract the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's

firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001. Additionally, U.S. Criminal Code, Section 1 01 0, Title 18, U.S.C., "Federal Housing Administration transactions", provides in part: "Whoever, for the purpose of . . . influencing in any way the action of such Administration..... makes, utters or publishes any statement knowing the same to be false..... shall be fined not more than \$5,000 or imprisoned not more than two years, or both."

11. Complaints, Proceedings, or Testimony by Employees. No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.

B. Contract Work Hours and Safety Standards Act. The provisions of this paragraph B are applicable only where the amount of the prime contract exceeds \$100,000. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

(1) **Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.

(2) **Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in subparagraph (1) of this paragraph, the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by the clause set forth in sub paragraph (1) of this paragraph.

(3) **Withholding for unpaid wages and liquidated**

damages. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contract, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

(4) **Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

C. Health and Safety. The provisions of this paragraph C are applicable only where the amount of the prime contract exceeds \$100,000.

(1) No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

(2) The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act, 40 USC 3701 et seq.

(3) The Contractor shall include the provisions of this paragraph in every subcontract so that such provisions will be binding on each subcontractor. The Contractor shall take such action with respect to any subcontract as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

[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.

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

7/13/2009
WWS-CPI

*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 benefit provided:

- 1) Medical or hospital care _____
- 2) Pension or retirement _____
- 3) Life Insurance _____
- 4) Disability _____
- 5) Vacation, Holiday _____
- 6) ther (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 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 funds, 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 contractor 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.

 (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.

 (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**

**FORMS
TABLE OF CONTENTS**

To be completed by:

CONTRACTOR

- 1) Non-Collusion Affidavit of Prime Bidder
- 2) Certification of Bidder Regarding Equal Employment Opportunity
- 3) Contractors Certification Concerning Labor Standards and Prevailing Wage Requirements
- 4) Proposed Subcontractors Breakdown
- 5) Estimated Project Workforce Breakdown - Table B
- 6) Section 3 Compliance Forms
- 7) CT DOL, Contractors Wage Certification Form
- 8) Connecticut Department of Labor Davis-Bacon Apprentice Certification Questionnaire
- 9) Monthly Utilization Report
- 10) Contractor Certification Regarding OSHA

SUBCONTRACTOR

- 1) Non-Collusion Affidavit of Subcontractor
- 2) Certification of Proposed Subcontractor Regarding Equal Employment Opportunity
- 3) Subcontractors Certification Concerning Labor Standards and Prevailing Wage Requirements
- 4) Section 3 Compliance Forms (To be completed on contracts over \$100,000)
- 5) Connecticut Department of Labor Davis-Bacon Apprentice Certification Questionnaire
- 6) Monthly Utilization Report
- 7) Subcontractor Certification Regarding OSHA

NON-COLLUSION AFFIDAVIT OF PRIME BIDDER

State of _____)
County of _____)

_____, being first duly sworn, deposes and says that:

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

(Signature)

(Date)

Subscribed and sworn to before me
this _____ day of _____, 20__.

Title

My commission expires: _____

CERTIFICATION OF BIDDER REGARDING EQUAL EMPLOYMENT OPPORTUNITY

PROJECT NUMBER:

GENERAL

In accordance with Executive Order 11246 (30 F.R. 12319-25), the implementing rules and regulations thereof, and orders of the Secretary of Labor, a Certification regarding Equal Opportunity is required of bidders or prospective contractors and their proposed subcontractors prior to the award of contracts or subcontracts.

CERTIFICATION OF BIDDER

Bidder=s Name: _____

Address: _____

Internal Revenue Service Employer Identification Number: _____

1. Participation in a previous contract or subcontract:

A. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause
 Yes No

B. Compliance reports were required to filed in connection with such contract or subcontract
 Yes No

C. Bidder has filed all compliance reports required by Executive Orders 10925, 11114, 11246 or by regulations of the Equal Employment Opportunity Commission issued pursuant to Title VII of the Civil Rights Act of 1964 Yes No

D. If answer to item C is "No", please explain in detail on the reverse side of this certification.

2. Dollar amount of bid: \$ _____

3. Anticipated performance period _____ days.

4. Expected total number of employees who will perform the proposed construction _____.

5. Non-segregated facilities

A. Notice to Prospective Federally-Assisted Construction Contractors:

i. A Certification of Non-segregated Facilities, as required by the May 9, 1967, order (32 F.R. 7439, May 19, 1967) on Elimination of Segregated Facilities, by the Secretary of Labor, must be submitted to the recipient prior to the award of a federally-assisted construction contract exceeding \$10,000 which is not exempt from the provisions of the Equal Opportunity Clause.

ii. Contractors receiving federally-assisted construction contract awards exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity clause will be required to provide for the forwarding of the following notice to prospective subcontractors for supplies and construction contracts where the subcontracts exceed \$10,000 and are not exempt from the provisions of the Equal Opportunity clause:

B. Notice to Prospective Subcontractors of Requirement for Certification of Non-segregated Facilities:

i. A Certification of Nonsegregated Facilities, as required by the May 9, 1967, order (32 F.R. 7439, May 19, 1967) on Elimination of Segregated Facilities, by the Secretary of Labor, must be submitted prior

CONTRACTORS CERTIFICATION
CONCERNING LABOR STANDARDS AND PREVAILING WAGE REQUIREMENTS

To (Department, Agency, or Bureau)

Date

c/o

Project Number

Project Name

1. The undersigned, having executed a contract with _____ for the Construction of the above-identified project, acknowledges that:

- a) The Labor Standards provisions are included in the aforesaid contract:
 - b) Correction of any infractions of the aforesaid conditions, including infractions by any of his subcontractors and any lower tier subcontractors, is his responsibility;
-

2. He certifies that:

- a) Neither he nor any firm, partnership or association in which he has substantial interest is designated as an ineligible contractor by the Comptroller General of the United States pursuant to Section 5.6 (b) of the Regulations of the Secretary of Labor, Part 5 (29 CFR, Part 5) or pursuant to Section 3 (a) of the Davis-Bacon Act, as amended (40 U.S.C. 276a-2(a)).
 - b) No part of the aforementioned contract has been or will be subcontracted to any subcontractor of such subcontractor or any firm, corporation, partnership or association in which such subcontractor has a substantial interest is designated as an ineligible contractor pursuant to any of the aforementioned regulatory or statutory provisions.
-

3. He agrees to obtain and forward to the aforementioned recipient within ten days after the execution of any subcontract, including those executed by his subcontractors and any lower tier subcontractors, a Subcontractor's Certification Concerning Labor Standards and Prevailing Wage Requirements executed by the subcontractors.

4. He certifies that:

- a) The legal name and business address of the undersigned are:

- b) The undersigned is:

- (1) _____ A Single Proprietorship
- _____ A Partnership
- _____ A Corporation Organized in the State of _____
- _____ Other Organization (describe)

c) The name, title, and address of the owner, partners or officers of the undersigned are:

<u>NAME</u>	<u>TITLE</u>	<u>ADDRESS</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

d) The names and address of all other persons, both natural and corporate, having a substantial interest in the undersigned, and the nature of the interest are (if none, so state):

<u>NAME</u>	<u>TITLE</u>	<u>NATURE OF INTEREST</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

e) The names, addresses and trade classifications of all other building construction contractors in which the undersigned has a substantial interest are (if none, so state):

<u>NAME</u>	<u>TITLE</u>	<u>NATURE OF INTEREST</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

Social Security No. Or
Federal Employer I.D. No. _____ (Contractor)

Date: _____ BY _____

WARNING

U.S. Criminal Code, Section 1010, Title 18, U.S.C., provides in part: "Whoever,.....makes, passes, utters or publishes any statement, knowing the same to be false...shall be fined no more than \$5,000 or imprisoned not more than two years, or both."

ESTIMATED PROJECT WORKFORCE BREAKDOWN - TABLE B

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5
JOB CATEGORY	TOTAL ESTIMATE POSITIONS	NO. POSITIONS CURRENTLY OCCUPIED BY PERMANENT EMPLOYEES	NO. POSITIONS NOT CURRENTLY OCCUPIED	NO. POSITIONS TO BE FILLED WITH L.I.P.A.R.*
OFFICERS/ SUPERVISORS				
PROFESSIONALS				
TECHNICIANS				
HOUSING SALES/ RENTAL/MANAGEMENT				
OFFICE CLERICAL				
SERVICE WORKERS				
OTHERS				

TRADE:

JOURNEYMEN				
HELPERS				
APPRENTICES				
MAX. NO. TRAINEES				
OTHERS				

TRADE:

JOURNEYMEN				
HELPERS				
APPRENTICES				
MAX. NO. TRAINEES				
OTHERS				

TRADE:

JOURNEYMEN				
HELPERS				
APPRENTICES				
MAX. NO. TRAINEES				
OTHERS				

* Lower Income Project Area Residents. Individuals residing within the _____ whose family income does not exceed 80% of the median income in the SMSA _____

SECTION 3 - CONTRACTOR REQUIREMENTS

Contractors and subcontractors, are to make their best effort to give training and employment opportunities to public housing residents, with first priority to the residents of the development for which assistance is expended. In addition, contractors and subcontractors, are to make their best effort to award contracts for covered work "to business concerns that provide economic opportunities", with first priority to residents of the public housing development concerned.

Any contract for construction funded in whole or in part by Federal Assistance in excess of \$100,000.00 is subject to the following requirements:

Training and employment:

To the greatest extent feasible, opportunities for training and employment are to be given to low and very low income persons residing in the metropolitan area, with priority to those living in the service area of the project or the neighborhood in which it is located and to Youthbuild Program participants. Contractors and their sub-contractors shall conduct their routine business in a manner which will ensure compliance with the intent of Section 3.

Effective immediately, 20% of the aggregate number of new hires occurring between July 1, 1995 and June 30, 1996; and 30% of the aggregate number of new hires occurring after July 1, 1996 must be "section 3 individuals".

Section 3 businesses:

Contractors and their sub-contractors must commit to award to Section 3 Business concerns at least 10% of the total dollar amount of all covered contracts for building trades arising in connection with housing rehabilitation, housing construction, and other public construction; and at least 3% of the total dollar amount of all other covered contracts.

All contractors and each of their sub-contractors are required to create and maintain records which clearly show their efforts to comply with these Section 3 requirements.

This contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (Section 3), and as such:

- A.** The work to be performed under this contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (Section 3).

The purpose of Section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by Section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for Housing.

- B.** The parties to this contract agree to comply with HUD's regulations in 24 CFR Part 135, which implement Section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the part 135 regulations.

- C.** The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or worker's representative of the contractor's commitments under this Section 3

clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment can see the notice. The notice shall describe the Section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.

- D. The contractor agrees to include this Section 3 clause in every subcontract subject to compliance with regulations in 24 CFR Part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this Section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR Part 135. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR Part 135.
- E. The contractor will certify that any vacant employment positions, including training positions, that are filler (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR Part 135 require employment opportunities to be directed; were not filled to circumvent the contractor's obligations under 24 CFR Part 135.
- F. Noncompliance with HUD's regulations in 24 CFR Part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

Further, contractors are to submit a Section 3 Plan (see sample attached) as well as the Section 3 Plan Certification by the date of contract signing.

SECTION 3 PLAN

RECIPIENTS/DEVELOPER'S NAME

NAME OF DEVELOPMENT	FUNDING SOURCE	FISCAL YEAR	AMOUNT
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

The plan will serve as the Section 3 Plan in compliance with the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended.

The purpose of Section 3 of the Housing and Urban Development Act of 1968 as amended (12. U.S.C. 1701u) (Section 3) is to ensure that employment and other economic opportunities generated by certain HUD financial assistance shall, to the greatest extent feasible, and consistent with existing Federal, State and local laws and regulations, be directed to low and very low-income person, particularly those who are recipients of government assistance for housing, and to business concerns which provide economic opportunities to low and very low-income persons.

APPLICABILITY: The Section 3 Plan applies to federal activities for housing and community development.

PURPOSE: The purpose of this Plan is to provide to the greatest extent feasible economic opportunities for low and very low-income persons in the form of training, employment, contracting and other economic opportunities arising in connection with the expenditure of housing assistance (including Section 8 assistance), and community development assistance that is used for the following types of projects:

- (i) Housing rehabilitation (including reduction and abatement of lead-based paint hazards, but excluding routine maintenance, repair and renovation).
- (ii) Housing construction; and
- (iii) Other public construction.

THRESHOLD FOR TRAINING AND EMPLOYMENT OPPORTUNITIES

These requirements apply to Housing and Community Development activities for which the amount of the assistance received from The Department of Economic and Community Development exceeds \$200,000.

NUMERICAL GOALS FOR TRAINING AND EMPLOYMENT OPPORTUNITIES

The goals established in this section apply to the entire amount of Section 3 covered assistance awarded in any Federal Fiscal Year (FY) commencing with the first FY following the effective date of this rule.

The numerical goals established in this section represents minimum numerical targets.

Training and employment opportunities will be made available to Section 3 residents as follows:

- (i) 30 percent of the aggregate number of new hires/training opportunities for the one year period beginning in FY 1997 and continuing thereafter.

PREFERENCE FOR SECTION 3 RESIDENTS IN TRAINING AND EMPLOYMENT OPPORTUNITIES

In providing training and employment opportunities generated from the expenditure of Section 3 activities to Section 3 residents the following order of preference will be followed:

- (i) First priority will be given to Section 3 residents in the service area or neighborhood in which the Section 3 covered project is located.
- (ii) Second priority will be given to participants in HUD Youthbuild Programs.
- (iii) Third priority will be given to Homeless persons residing in the area or neighborhood in which the Section 3 covered project is located for housing constructed under the Stewart B. McKinney Homeless Assistance Act.
- (iv) Other Section 3 residents.

DOCUMENTATION OF SECTION 3 RESIDENT ELIGIBILITY FOR TRAINING AND EMPLOYMENT OPPORTUNITIES

Persons requesting consideration to the above preferences will be required to submit appropriate documentation to demonstrate their eligibility.

Acceptable documentation includes, but is not limited to the following:

- Proof of residency in a public housing development.
- Evidence of eligibility for Section 8 voucher certificate or voucher.
- Evidence of eligibility for a Federally assisted program for the poor (e.g. Jobs, JTPA, Job Corps).
- Evidence of eligibility for a State or local assistance program for the poor or receipt of AFDC.
- Income tax records.

THRESHOLD FOR CONTRACTING AND SUBCONTRACTING

The requirements of this section apply to contractors and subcontractors performing work on Section 3 covered project(s) for which the amount of the assistance exceeds \$200,000 and the contract or subcontract exceeds \$100,000.

NUMERICAL GOALS FOR CONTRACTING ACTIVITIES

These goals apply to contract awards in the amount of \$100,000 or more in connection with a Section 3 project, and it applies to contractors and subcontractors.

The _____ commits to award to Section 3 business concerns:

- (1) At least 10 percent of the total dollar amount of all Section 3 covered contracts for building trades work arising in connection with housing rehabilitation, housing construction and other public construction; and
- (2) At least three percent of the total dollar amount of all other Section 3 covered contracts.

PREFERENCE FOR SECTION 3 BUSINESS CONCERNS

The following order of preference will be followed when providing contracting opportunities to the greatest extent feasible to Section 3 businesses:

- (i) First priority will be given to Section 3 business concerns that provide economic opportunities for Section 3 residents in the service area or neighborhood in which the Section 3 covered project is located, and
- (ii) Second priority will be given to applicants selected to carry out HUD Youthbuild Programs.
- (iii) Other Section 3 Residents

Procurements/activities from this award will be conducted in a competitive manner, consistent with 24 CFR 85.36 (c) (2).

ELIGIBILITY FOR PREFERENCES: Business concerns requesting consideration to the above preferences may be required to submit evidence or certify, if requested; that the business concerns is a Section 3 business.

For purposes of this Plan a Section 3 business concern is defined as business that (1) is 51 percent or more owned by Section 3 residents; or (2) whose permanent, full time employees include persons, at least 30 percent of whom are currently Section 3 residents, or within three years of the date of first employment with the business concern were Section 3 residents or (3) that provides evidence of a commitment to subcontract in excess of 25 percent of the dollar award of all subcontracts to be awarded to business concerns that meet the qualification set forth in (1) and (2) above.

GENERAL CONTRACTOR'S SECTION 3 PLAN CERTIFICATION

1. APPLICABLE TO _____
PROJECT NAME _____
2. GENERAL CONTRACTOR'S NAME _____

3. DEVELOPER'S NAME _____

The work to be performed under this contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended. The purpose of Section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD assistance projects covered by Section 3, are, to the greatest extent feasible, and consistent with existing Federal, State and local laws and regulations directed to low- and very low-income persons, particularly those who are recipients of government assistance for housing, and to business concerns which provide economic opportunities to low- and very low-income persons.

1. _____ agree to comply to the greatest extent feasible with the objectives and percentage goals established in the Section 3 Plan developed for the following project _____.
2. _____ agree that to the greatest extent feasible vacant positions in relation to this development will be filled with Section 3 residents.
3. _____ agree to conduct its recruitment activities in a manner consistent with the requirements established in the above stated Section 3 Plan.
4. _____ agree to include in all contracts with subcontractors in excess of \$100,000 the Section 3 Clause and to require the subcontractor to comply with similar certification requirements.
5. _____ agree to maintain proper records to demonstrate the firm's compliance with the Section 3 Plan.
6. _____ agree to list on Table A all projected workforce needs for all phases of this project by occupation, trade, skill level and number of positions.
7. _____ agrees to award to the greatest extent possible, all subcontracts in excess of \$100,000 to eligible Section 3 Firms.

GOOD FAITH EFFORT

At a minimum the following tasks must be completed to demonstrate a good faith effort with the requirement of Section 3. The contracting party and each contractor or subcontractor seeking to establish a good faith effort as required should be filling all training positions with persons residing in the target area.

1. Send notices of job availability subcontracting opportunities subject to these requirements to recruitment sources, trade organizations and other community groups capable of referring eligible Section 3 applicants, including the Department of Labor.
2. Include in all solicitations and advertisements a statement to encourage eligible Section 3 residents to apply.
3. When using a newspaper of major circulation to request bids/quotes or to advertise employment opportunities to also advertise in minority owned newspapers.
4. Maintain a list of all residents from the target area who have applied either on their own or by referral from any service, and employ such persons, if otherwise eligible and if a trainee position exists. (If the contractor has no vacancies, the applicant, if otherwise eligible, shall be listed for the first available vacancy). A list of eligible applicants will be maintained for future vacancies.
5. The contractor must certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR Part 135 require employment opportunities to be directed were not filled to circumvent the contractor's obligation under 24 CFR Part 135.

If Federal and State dollars are combined to fund a project this plan may be replaced by an approved Section 3 Plan as mandated by the Housing and Community Development Act of 1968

We the undersigned have read and have received a copy of the Section 3 Plan for this project. We acknowledge being a party of this Plan and further pledge our commitment to adhere to the objectives of the Plan.

 DEVELOPER SIGNATURE/
 MUNICIPALITY SIGNATURE

 DATE

 TITLE

 CONTRACTOR SIGNATURE

 DATE

 TITLE

DEVELOPER: _____

PROJECT NAME: _____

PROJECT NUMBER: _____

GENERAL CONTRACTOR: _____

SUB CONTRACTOR: _____

(a) The number of employees permanently employed in your _____ area office (or other location from which the contract will be administered) are as follows:

<u>JOB TITLE</u>	<u>TOTAL EMPLOYEES</u>	<u>RACE</u> <u>SEX</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

(b) The number of employees your area office/firm intends to employ for the work covered by this contract, by EEO category or by trade are as follows:

Total number of persons needed: _____

<u>JOB TITLE</u>	<u># NEEDED</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Which of the above positions will be a training position:

JOB TITLE	EST. LENGTH OF TRAINING
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>

(c) If applicable, list construction trades you intend to use in this contract.

List type of work to be subcontracted out.

SECTION 3 CONTRACTOR CERTIFICATION

Project Name: _____

Developer's Name: _____

I understand that my contract with _____ (name of developer/contractor) is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended AND to the Section 3 Plan for this project.

I certify that the firm of _____ (company's name) is **not** a Section 3 company.

I certify that the firm of _____ (company's name) is a bonafide section 3 company, and that it meets the following definition of a Section 3 business (check one):

1. 51% or more of the ownership of this company is owned by section 3 residents, as defined by the developer of this project.
2. Currently, at least 30% of the employees of the company are section 3 residents, as defined by the developer of this project.
3. At least 30% of the employees of the company were section 3 residents, as defined by the developer of this project, within three years of the date of first employment with this company.
4. I commit to subcontract at least 25% of the total value of this contract to Section 3 subcontractors, as these companies are defined above, and to provide the necessary evidence to substantiate this,

Signature of Chief Executive Officer

Date

Part II: Contracts Awarded

1. Construction Contracts:

A. Total dollar amount of all contracts awarded on the project	\$
B. Total dollar amount of contracts awarded to Section 3 businesses	\$
C. Percentage of the total dollar amount that was awarded to Section 3 businesses	%
D. Total number of Section 3 business receiving contracts	

2. Non-Construction Contracts:

A. Total dollar amount of all non-construction contracts awarded on the project/activity	\$
B. Total dollar amount of non-construction contracts awarded to Section 3 businesses	\$
C. Percentage of the total dollar amount that was awarded to Section 3 businesses	%
D. Total number of Section 3 businesses receiving non-construction contracts	

Part III: Summary

Indicate the efforts made to direct the employment and other economic opportunities generated by HUD financial assistance for housing and community development programs, to the greatest extent feasible, toward low- and very low-income persons, particularly those who are recipients of government assistance for housing. (Check all that apply.)

- Attempted to recruit low-income residents through: local advertising media, signs prominently displayed at the project site, contacts with the community organizations and public or private agencies operating within the metropolitan area (or nonmetropolitan county) in which the Section 3 covered program or project is located, or similar methods.
- Participated in a HUD program or other program which promotes the training or employment of Section 3 residents.
- Participated in a HUD program or other program which promotes the award of contracts to business concerns which meet the definition of Section 3 business concerns.
- Coordinated with Youthbuild Programs administered in the metropolitan area in which the Section 3 covered project is located.
- Other; describe below.

Public reporting for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

This agency may not collect this information, and you are not required to complete this form, unless it displays a currently valid OMB number.

Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u., mandates that the Department ensures that employment and other economic opportunities generated by its housing and community development assistance programs are directed toward low- and very low- income persons, particularly those who are recipients of government assistance housing. The regulations are found at 24 CFR Part 135. The information will be used by the Department to monitor program recipients' compliance with Section 3, to assess the results of the Department's efforts to meet the statutory objectives of Section 3, to prepare reports to Congress, and by recipients as self-monitoring tool. The data is entered into a database and will be analyzed and distributed. The collection of information involves recipients receiving Federal financial assistance for housing and community development programs covered by Section 3. The information will be collected annually to assist HUD in meeting its reporting requirements under Section 808(e)(6) of the Fair Housing Act and Section 916 of the HCDA of 1992. An assurance of confidentiality is not applicable to this form. The Privacy Act of 1974 and OMB Circular A-108 are not applicable. The reporting requirements do not contain sensitive questions. Data is cumulative; personal identifying information is not included.

Instructions: This form is to be used to report annual accomplishments regarding employment and other economic opportunities provided to low- and very low-income persons under Section 3 of the Housing and Urban Development Act of 1968. The Section 3 regulations apply to any **public and Indian housing programs** that receive: (1) development assistance pursuant to Section 5 of the U.S. Housing Act of 1937; (2) operating assistance pursuant to Section 9 of the U.S. Housing Act of 1937; or (3) modernization grants pursuant to Section 14 of the U.S. Housing Act of 1937 and to recipients of **housing and community development assistance in excess of \$200,000** expended for: (1) housing rehabilitation (including reduction and abatement of lead-based paint hazards); (2) housing construction; or (3) other public construction projects; and to **contracts and subcontracts in excess of \$100,000** awarded in connection with the Section-3-covered activity.

Form HUD-60002 has three parts, which are to be completed for all programs covered by Section 3. Part I relates to **employment and training**. The recipient has the option to determine numerical employment/training goals either on the basis of the number of hours worked by new hires (columns B, D, E and F). Part II of the form relates to **contracting**, and Part III summarizes recipients' **efforts** to comply with Section 3.

Recipients or contractors subject to Section 3 requirements must maintain appropriate documentation to establish that HUD financial assistance for housing and community development programs were directed toward low- and very low-income persons.* A recipient of Section 3 covered assistance shall submit one copy of this report to HUD Headquarters, Office of Fair Housing and Equal Opportunity. Where the program providing assistance requires an annual performance report, this Section 3 report is to be submitted at the same time the program performance report is submitted. Where an annual performance report is not required, this Section 3 report is to be submitted by January 10 and, if the project ends before December 31, within 10 days of project completion. **Only Prime Recipients are required to report to HUD. The report must include accomplishments of all recipients and their Section 3 covered contractors and subcontractors.**

HUD Field Office: Enter the Field Office name.

1. Recipient: Enter the name and address of the recipient submitting this report.
2. Federal Identification: Enter the number that appears on the award form (with dashes). The award may be a grant, cooperative agreement or contract.
3. Dollar Amount of Award: Enter the dollar amount, rounded to the nearest dollar, received by the recipient.
- 4 & 5. Contact Person/Phone: Enter the name and telephone number of the person with knowledge of the award and the recipient's implementation of Section 3.
6. Reporting Period: Indicate the time period (months and year) this report covers.
7. Date Report Submitted: Enter the appropriate date.

8. Program Code: Enter the appropriate program code as listed at the bottom of the page.
9. Program Name: Enter the name of HUD Program corresponding with the "Program Code" in number 8.

Part I: Employment and Training Opportunities

Column A: Contains various job categories. Professionals are defined as people who have special knowledge of an occupation (i.e. supervisors, architects, surveyors, planners, and computer programmers). For construction positions, list each trade and provide data in columns B through F for each trade where persons were employed. The category of "Other" includes occupations such as service workers.

Column B: (Mandatory Field) Enter the number of new hires for each category of workers identified in **Column A** in connection with this award. New hire refers to a person who is not on the contractor's or recipient's payroll for employment at the time of selection for the Section 3 covered award or at the time of receipt of Section 3 covered assistance.

Column C: (Mandatory Field) Enter the number of Section 3 new hires for each category of workers identified in **Column A** in connection with this award. Section 3 new hire refers to a Section 3 resident who is not on the contractor's or recipient's payroll for employment at the time of selection for the Section 3 covered award or at the time of receipt of Section 3 covered assistance.

Column D: Enter the percentage of all the staff hours of new hires (Section 3 residents) in connection with this award.

Column E: Enter the percentage of the total staff hours worked for Section 3 employees and trainees (including new hires) connected with this award. Include staff hours for part-time and full-time positions.

Column F: (Mandatory Field) Enter the number of Section 3 residents that were trained in connection with this award.

Part II: Contract Opportunities

Block 1: Construction Contracts

Item A: Enter the total dollar amount of all contracts awarded on the project/program.

Item B: Enter the total dollar amount of contracts connected with this project/program that were awarded to Section 3 businesses.

Item C: Enter the percentage of the total dollar amount of contracts connected with this project/program awarded to Section 3 businesses.

Item D: Enter the number of Section 3 businesses receiving payments.

Block 2: Non-Construction Contracts

Item A: Enter the total dollar amount of all contracts awarded on the project/program.

Item B: Enter the total dollar amount of contracts connected with this project awarded to Section 3 businesses.

Item C: Enter the percentage of the total dollar amount of contracts connected with this project/program awarded to Section 3 businesses.

Item D: Enter the number of Section 3 businesses receiving awards.

Part III: Summary of Efforts – Self-explanatory

Submit one (1) copy of this report to the HUD Headquarters Office of Fair Housing and Equal Opportunity, at the same time the performance report is submitted to the program office. The Section 3 report is submitted by January 10. Include only contracts executed during the period specified in item 8. PHA's/IHA's are to report all contracts/subcontracts.

* The terms "low-income persons" and very low-income persons" have the same meanings given the terms in section 3 (b) (2) of the United States Housing Act of 1937. **Low-income persons** mean families (including single persons) whose incomes do not exceed 80 percent of the median income for the area, as determined by the Secretary, with adjustments for smaller and larger families, except that

The Secretary may establish income ceilings higher or lower than 80 percent of the median for the area on the basis of the Secretary's findings such that variations are necessary because of prevailing levels of construction costs or unusually high- or low-income families. **Very low-income persons** mean low-income families (including single persons) whose incomes do not exceed 50 percent of the median family income area, as determined by the Secretary with adjustments or smaller and larger families, except that the Secretary may establish income ceilings higher or lower than 50 percent of the median for the area on the basis of the Secretary's findings that such variations are necessary because of unusually high or low family incomes.

CONNECTICUT DEPARTMENT OF LABOR
WAGE AND WORKPLACE STANDARDS DIVISION
CONTRACTORS WAGE CERTIFICATION FORM

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 _____, 20____.

Notary Public

 Return to:

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

Date issued: July 6, 2005

**CONNECTICUT DEPARTMENT OF LABOR
DAVIS-BACON APPRENTICE CERTIFICATION QUESTIONNAIRE**

The following information is required to obtain an apprentice letter for Davis-Bacon (prevailing wage) jobs. **Please print or type. Complete one form for each apprentice to be certified.**

Section 1: Company Information:

Name: _____

Address: _____

Phone: _____ Fax: _____

Section 2: Apprentice Information:

Name: _____ SS# _____

Trade: _____

OJT hours completed by apprentice: _____ As of this date: _____

Section 3: Project Information:

Name of Project: _____

Project Location: _____

Contract or Project number: _____

***Section 4: If applicable, to be completed by apprentice supervisor (collective bargaining)**

a. Name and Local Union #: _____

b. Percentage of apprentice on wage schedule: _____

c. Date apprentice attained this percentage: _____

***Please note:** If your company is party to a collective bargaining agreement, after completing questionnaire please **forward to the local union apprentice supervisor** so that they may complete Section 4.

Mail or Fax to:

**Connecticut Department of Labor
Office of Apprenticeship Training
David Bacon Certification Request
200 Folly Brook Boulevard
Wethersfield, CT 06109
FAX: (860) 263-6088**

CT COMMISSION ON HUMAN RIGHTS & OPPORTUNITIES
CONTRACT COMPLIANCE REGULATIONS

Sec. 46a-68j-23. Obligations of Contractors

Every contractor awarded a contract subject to contract compliance requirements shall:

- 1) Comply fully with all federal and state anti-discrimination laws, and shall not discriminate or permit a discriminatory practice in such a form, in such a manner and at such a time as may be prescribed by the Commission;
- 2) Cooperate fully with the Commission;
- 3) Submit periodic reports of its employment and subcontracting practice in such a form, in such a manner and at such a time as may be prescribed by the Commission;
- 4) Provide reasonable technical assistance and training to minority business enterprises to promote the participation of such concerns in state contracts and subcontracts;
- 5) Make a good faith effort, based upon the availability of minority business enterprises in the labor market area, to award a reasonable proportion of all subcontracts to such enterprises;
- 6) Maintain full and accurate support data for a period of two (2) years from the date the record is made or the date the contract compliance form is submitted, whichever is later, provided that this provision shall not excuse compliance with any other applicable record retention statute, regulation or policy providing for a period of retention in excess of two (2) years;
- 7) Not discharge, discipline or otherwise discriminate against any person, who has filled a complaint, testified or assisted in any proceeding with the commission;
- 8) Make available for inspection and copying any support data requested by the commission, and make available for interview any agent, servant or employee having knowledge of any matter concerning the investigation of a discriminatory practice complaint or any matter related to a contract compliance review;
- 9) Include a provision in all subcontracts with minority business enterprise requiring that the minority business enterprise provide the commission with such information on the structure and operations as the commission finds necessary to make an informed determination as to whether the standard of Sec. 4a- 60 of the Connecticut General Statutes as amended by Sec. 2 of Public Act 89-253 have been met; and
- 10) Undertake such other reasonable activities or efforts as the commissioner may prescribe to ensure the participation of minority business enterprises as state contractors and subcontractors.

Sec. 46a-68j-24. Utilization of minority business enterprises

Contractors shall make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on all projects subject to contract compliance requirements.

Commission on Human Rights and Opportunities
 Contract Compliance Unit
 21 Grand Street
 Hartford, CT 06106

1. MONTHLY EMPLOYMENT UTILIZATION REPORT (FORM chro cc-257)

PROJECT AREA (MSA):
 2. EMPLOYER'S FEIN NO.

3. PROJECT AAP GOALS
 MINORITY: _____
 FEMALE: _____

4. REPORTING PERIOD
 FROM: _____
 TO: _____

PROJECT NAME:
 CONTRACT NUMBER:

NAME AND LOCATION OF CONTRACTOR (submitting report)

STATE AWARDING AGENCY:

5. CONSTRUCTION TRADE (please identify)	6. WORK HOURS OF TRADE WORKERS EMPLOYED ON PROJECT										9. TOTAL NUMBER OF EMPLOYEES		10. TOTAL NUMBER OF MINORITY EMPLOYEES	
	6a. TOTAL HOURS BY TRADE	6b. BLACK (Not of Hispanic Origin)	6c. HISPANIC	6d. ASIAN OR PACIFIC ISLANDERS	6e. AMERICAN INDIAN OR ALASKAN NATIVE	7. MINORITY PERCENT	8. FEMALE PERCENT	M	F	M	F	M	F	
Journey Worker														
Apprentice														
Trainee														
SUB-TOTAL														
Journey Worker														
Apprentice														
Trainee														
SUB-TOTAL														
Journey Worker														
Apprentice														
Trainee														
SUB-TOTAL														
Journey Worker														
Apprentice														
Trainee														
SUB-TOTAL														
TOTAL JOURNEY WORKERS														
TOTAL APPRENTICES														
TOTAL TRAINEES														
GRAND TOTAL														

11. COMPANY OFFICIAL'S SIGNATURE AND TITLE

12. TELEPHONE NUMBER (including area code)

13. DATE SIGNED

PAGE _____ OF _____

CONTRACTOR CERTIFICATION
REGARDING OSHA

This requirement was created by Public Act No. 08-83 which is codified in Section 31-536 of the Connecticut General Statutes pertaining to the prevailing wage status, and is required for public works construction projects funded in whole or in part by the State or any political subdivision of the State where the total cost of all work to be performed is at least \$100,000.

Any contract awarded on or after July 1, 2009 requires any mechanic, laborer, or worker who performs work in a classification listed on the prevailing wage rate schedule on any public work project is required to complete a ten (10) hour federal OSHA safety and health course and provide proof of completion. The ten-hour OSHA safety course pertains to the ten-hour outreach course conducted in accordance with the Federal OSHA Training Institute standards and in accordance with the Federal OSHA Standard, 29 CFR 1910.268.

I, _____, _____ of _____,
Name Title Company

hereby certifies compliance with the above statute and will demonstrate proof of completion through either:

- a) The presentation of a bona fide student course completion card issued by the Federal OSHA Training Institute; or
- b) The presentation of documentation provided to an employee by a trainer certified by the Institute pending the actual issuance of the completion card; and

shall affix a copy of the above to the certified payroll submitted to the local contracting agency (LCA) in accordance with the Connecticut General Statutes 31-53(f) on which such employee's name first appears.

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

Signature/Title

Company

Date

NON-COLLUSION AFFIDAVIT OF SUBCONTRACTOR

State of _____)

County of _____)

_____, being first duly sworn, deposes and says that:

1. He is _____ of _____, hereinafter referred to as the "Subcontractor";
2. He is fully informed respecting the preparation and contents of the Subcontractor's Proposal submitted by the Subcontractor to _____, the Contractor for certain work in connection with the _____ Contract pertaining to the project in _____.
3. Such Subcontractor's Proposal is genuine and is not a collusive or sham Proposal;
4. Neither the Subcontractor nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other Bidder, firm, or person to submit a collusive or sham Proposal in connection with such Contract, or has in any manner, directly or indirectly, sought by unlawful agreement or connivance with any other Bidder, firm, or person to fix the price or prices in said Subcontractor's Proposal, or to fix any overhead, profit or cost element of the price or prices in said Subcontractor's Proposal, or to secure through collusion, conspiracy, connivance or unlawful agreement any advantage against the _____ (Owner), or any other person interested in the proposed Contract; and
5. The price or prices quoted in the Subcontractor's Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

(Signature)

(Title)

Subscribed and sworn to before me
this _____ day of _____, 20 _____

(Title)

My commission expires: _____

CERTIFICATION OF PROPOSED SUBCONTRACTOR REGARDING EQUAL EMPLOYMENT OPPORTUNITY

Name of Prime Contractor

Project Number

GENERAL

In accordance with Executive Order 11246 (30 F.R. 12319-25), the implementing rules and regulations thereof, and orders of the Secretary of Labor, a Certification regarding Equal Opportunity is required of bidders or prospective contractors and their proposed subcontractors prior to the award of contracts or subcontracts.

SUBCONTRACTOR'S CERTIFICATION

Subcontractor's Name: _____

Address: _____

Internal Revenue Service Employer Identification Number: _____

1. Participation in a previous contract or subcontract:

A. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause
 Yes No

B. Compliance reports were required to be filed in connection with such contract or subcontract
 Yes No

C. Subcontractor has filed all compliance reports required by Executive Orders 10925, 11114, 11246 or by regulations of the Equal Employment Opportunity Commission issued pursuant to Title VII of the Civil Rights Act of 1964 Yes No

D. If answer to item C is "No", please explain in detail on the reverse side of this certification.

2. Dollar amount of bid: \$ _____

3. Anticipated performance period _____ days.

4. Expected total number of employees who will perform the proposed subcontract _____.

5. Non-segregated facilities

A. Notice to Prospective Subcontractors or Requirement for Certification of Non-segregated Facilities:

i. A Certification of Non-segregated Facilities, as required by the May 9, 1967, order (32 F.R. 7439, May 19, 1967) on Elimination of Segregated Facilities, by the Secretary of Labor, must be submitted to the contractor prior to the award of a subcontract exceeding \$10,000 which is not exempt from the provisions of the Equal Opportunity Clause.

ii. Contractors receiving subcontract awards exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity clause will be required to provide for the forwarding of this notice to prospective subcontractors for supplies and construction contracts where the subcontracts exceed \$10,000 and are not exempt from the provisions of the Equal Opportunity clause:

**SUBCONTRACTOR'S CERTIFICATION
CONCERNING LABOR STANDARDS AND PREVAILING WAGE REQUIREMENTS**

To (Department, Agency, or Bureau)	Date
c/o	Project Number
	Project Name

1. The undersigned, having executed a contract with _____
 _____ for _____
 _____ in the amount of \$ _____

in the construction of the above-identified project, certifies that:

- a) The Labor Standards Provisions of The Contract For Construction are included in the aforesaid contract,
- b) Neither he nor any firm, corporation, partnership or association in which he has a substantial interest is designated as an ineligible contractor by the Comptroller General of the United States pursuant to Section 5.6(b) of the Regulations of the Secretary of Labor, Part 5 (29 CFR, Part 5), or pursuant to Section 3(a) of the Davis-Bacon Act, as amended (40 USC 276a-2(a)),
- c) No part of the aforementioned contract has been or will be subcontracted to any subcontractor if such subcontractor or any firm, corporation, partnership or association in which such subcontractor has a substantial interest is designated as an ineligible contractor pursuant to the aforesaid regulatory or statutory provisions.

2. He agrees to obtain and forward to the contractor, for transmittal to the recipient, within ten days after the execution of any lower subcontract, a Subcontractor's Certification Concerning Labor Standards and Prevailing Wager Requirements, executed by the lower tier subcontractor, in duplicate.

The workmen will report for duty on or about _____
(date)

3. He certifies that:

a) The legal name and the business address of the undersigned are:

b) The undersigned is:

- (1) _____ A Single Proprietorship
- _____ A Partnership
- _____ A Corporation Organized in the State of _____
- _____ Other Organization (describe) _____

c) The name, title, and address of the owner, partners or officers of the undersigned are:

NAME	TITLE	ADDRESS

d) The names and addresses of all other persons, both natural and corporate, having a substantial interest in the undersigned, and the nature of the interest are (if none, so state):

NAME	TITLE	NATURE OF INTEREST

e) The names, addresses and trade classifications of all other building construction contractors in which the undersigned has a substantial interest are (if none, so state):

NAME	TITLE	TRADE CLASSIFICATION

Social Security No. or
 Federal Employer I.D. No. _____ (Contractor)

Date: _____ BY _____

WARNING

U.S. Criminal Code, Section 1010, Title 18, U.S.C., provides in part: "Whoever,...makes, passes, utters or publishes any statement, knowing the same to be false...shall be fined no more than \$5,000 or imprisoned not more than two years, or both."

SECTION 3 - CONTRACTOR REQUIREMENTS

Contractors and subcontractors, are to make their best effort to give training and employment opportunities to public housing residents, with first priority to the residents of the development for which assistance is expended. In addition, contractors and subcontractors, are to make their best effort to award contracts for covered work "to business concerns that provide economic opportunities", with first priority to residents of the public housing development concerned.

Any contract for construction funded in whole or in part by Federal Assistance in excess of \$100,000.00 is subject to the following requirements:

Training and employment:

To the greatest extent feasible, opportunities for training and employment are to be given to low and very low income persons residing in the metropolitan area, with priority to those living in the service area of the project or the neighborhood in which it is located and to Youthbuild Program participants. Contractors and their sub-contractors shall conduct their routine business in a manner which will ensure compliance with the intent of Section 3.

Effective immediately, 20% of the aggregate number of new hires occurring between July 1, 1995 and June 30, 1996; and 30% of the aggregate number of new hires occurring after July 1, 1996 must be "section 3 individuals".

Section 3 businesses:

Contractors and their sub-contractors must commit to award to Section 3 Business concerns at least 10% of the total dollar amount of all covered contracts for building trades arising in connection with housing rehabilitation, housing construction, and other public construction; and at least 3% of the total dollar amount of all other covered contracts.

All contractors and each of their sub-contractors are required to create and maintain records which clearly show their efforts to comply with these Section 3 requirements.

This contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (Section 3), and as such:

- A. The work to be performed under this contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (Section 3).

The purpose of Section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by Section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for Housing.

- B. The parties to this contract agree to comply with HUD's regulations in 24 CFR Part 135, which implement Section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the part 135 regulations.
- C. The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or worker's representative of the contractor's commitments under this Section 3

clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment can see the notice. The notice shall describe the Section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.

- D. The contractor agrees to include this Section 3 clause in every subcontract subject to compliance with regulations in 24 CFR Part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this Section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR Part 135. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR Part 135.
- E. The contractor will certify that any vacant employment positions, including training positions, that are filler (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR Part 135 require employment opportunities to be directed; were not filled to circumvent the contractor's obligations under 24 CFR Part 135.
- F. Noncompliance with HUD's regulations in 24 CFR Part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

Further, contractors are to submit a Section 3 Plan (see sample attached) as well as the Section 3 Plan Certification by the date of contract signing.

SECTION 3 PLAN

RECIPIENTS/DEVELOPER'S NAME

NAME OF DEVELOPMENT	FUNDING SOURCE	FISCAL YEAR	AMOUNT
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

The plan will serve as the Section 3 Plan in compliance with the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended.

The purpose of Section 3 of the Housing and Urban Development Act of 1968 as amended (12. U.S.C. 1701u) (Section 3) is to ensure that employment and other economic opportunities generated by certain HUD financial assistance shall, to the greatest extent feasible, and consistent with existing Federal, State and local laws and regulations, be directed to low and very low-income person, particularly those who are recipients of government assistance for housing, and to business concerns which provide economic opportunities to low and very low-income persons.

APPLICABILITY: The Section 3 Plan applies to federal activities for housing and community development.

PURPOSE: The purpose of this Plan is to provide to the greatest extent feasible economic opportunities for low and very low-income persons in the form of training, employment, contracting and other economic opportunities arising in connection with the expenditure of housing assistance (including Section 8 assistance), and community development assistance that is used for the following types of projects:

- (i) Housing rehabilitation (including reduction and abatement of lead-based paint hazards, but excluding routine maintenance, repair and renovation).
- (ii) Housing construction; and
- (iii) Other public construction.

THRESHOLD FOR TRAINING AND EMPLOYMENT OPPORTUNITIES

These requirements apply to Housing and Community Development activities for which the amount of the assistance received from The Department of Economic and Community Development exceeds \$200,000.

NUMERICAL GOALS FOR TRAINING AND EMPLOYMENT OPPORTUNITIES

The goals established in this section apply to the entire amount of Section 3 covered assistance awarded in any Federal Fiscal Year (FY) commencing with the first FY following the effective date of this rule.

The numerical goals established in this section represents minimum numerical targets.

Training and employment opportunities will be made available to Section 3 residents as follows:

- (i) 30 percent of the aggregate number of new hires/training opportunities for the one year period beginning in FY 1997 and continuing thereafter.

PREFERENCE FOR SECTION 3 RESIDENTS IN TRAINING AND EMPLOYMENT OPPORTUNITIES

In providing training and employment opportunities generated from the expenditure of Section 3 activities to Section 3 residents the following order of preference will be followed:

- (i) First priority will be given to Section 3 residents in the service area or neighborhood in which the Section 3 covered project is located.
- (ii) Second priority will be given to participants in HUD Youthbuild Programs.
- (iii) Third priority will be given to Homeless persons residing in the area or neighborhood in which the Section 3 covered project is located for housing constructed under the Stewart B. McKinney Homeless Assistance Act.
- (iv) Other Section 3 residents.

DOCUMENTATION OF SECTION 3 RESIDENT ELIGIBILITY FOR TRAINING AND EMPLOYMENT OPPORTUNITIES

Persons requesting consideration to the above preferences will be required to submit appropriate documentation to demonstrate their eligibility.

Acceptable documentation includes, but is not limited to the following:

- Proof of residency in a public housing development.
- Evidence of eligibility for Section 8 voucher certificate or voucher.
- Evidence of eligibility for a Federally assisted program for the poor (e.g. Jobs, JTPA, Job Corps).
- Evidence of eligibility for a State or local assistance program for the poor or receipt of AFDC.
- Income tax records.

THRESHOLD FOR CONTRACTING AND SUBCONTRACTING

The requirements of this section apply to contractors and subcontractors performing work on Section 3 covered project(s) for which the amount of the assistance exceeds \$200,000 and the contract or subcontract exceeds \$100,000.

NUMERICAL GOALS FOR CONTRACTING ACTIVITIES

These goals apply to contract awards in the amount of \$100,000 or more in connection with a Section 3 project, and it applies to contractors and subcontractors.

The _____ commits to award to Section 3 business concerns:

- (1) At least 10 percent of the total dollar amount of all Section 3 covered contracts for building trades work arising in connection with housing rehabilitation, housing construction and other public construction; and
- (2) At least three percent of the total dollar amount of all other Section 3 covered contracts.

PREFERENCE FOR SECTION 3 BUSINESS CONCERNS

The following order of preference will be followed when providing contracting opportunities to the greatest extent feasible to Section 3 businesses:

- (i) First priority will be given to Section 3 business concerns that provide economic opportunities for Section 3 residents in the service area or neighborhood in which the Section 3 covered project is located, and
- (ii) Second priority will be given to applicants selected to carry out HUD Youthbuild Programs.
- (iii) Other Section 3 Residents

Procurements/activities from this award will be conducted in a competitive manner, consistent with 24 CFR 85.36 (c) (2).

ELIGIBILITY FOR PREFERENCES: Business concerns requesting consideration to the above preferences may be required to submit evidence or certify, if requested; that the business concerns is a Section 3 business.

For purposes of this Plan a Section 3 business concern is defined as business that (1) is 51 percent or more owned by Section 3 residents; or (2) whose permanent, full time employees include persons, at least 30 percent of whom are currently Section 3 residents, or within three years of the date of first employment with the business concern were Section 3 residents or (3) that provides evidence of a commitment to subcontract in excess of 25 percent of the dollar award of all subcontracts to be awarded to business concerns that meet the qualification set forth in (1) and (2) above.

GENERAL CONTRACTOR'S SECTION 3 PLAN CERTIFICATION

1. APPLICABLE TO _____
PROJECT NAME _____
2. GENERAL CONTRACTOR'S NAME _____

3. DEVELOPER'S NAME _____

The work to be performed under this contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended. The purpose of Section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD assistance projects covered by Section 3, are, to the greatest extent feasible, and consistent with existing Federal, State and local laws and regulations directed to low- and very low-income persons, particularly those who are recipients of government assistance for housing, and to business concerns which provide economic opportunities to low- and very low-income persons.

1. _____ agree to comply to the greatest extent feasible with the objectives and percentage goals established in the Section 3 Plan developed for the following project _____.
2. _____ agree that to the greatest extent feasible vacant positions in relation to this development will be filled with Section 3 residents.
3. _____ agree to conduct its recruitment activities in a manner consistent with the requirements established in the above stated Section 3 Plan.
4. _____ agree to include in all contracts with subcontractors in excess of \$100,000 the Section 3 Clause and to require the subcontractor to comply with similar certification requirements.
5. _____ agree to maintain proper records to demonstrate the firm's compliance with the Section 3 Plan.
6. _____ agree to list on Table A all projected workforce needs for all phases of this project by occupation, trade, skill level and number of positions.
7. _____ agrees to award to the greatest extent possible, all subcontracts in excess of \$100,000 to eligible Section 3 Firms.

GOOD FAITH EFFORT

At a minimum the following tasks must be completed to demonstrate a good faith effort with the requirement of Section 3. The contracting party and each contractor or subcontractor seeking to establish a good faith effort as required should be filling all training positions with persons residing in the target area.

1. Send notices of job availability subcontracting opportunities subject to these requirements to recruitment sources, trade organizations and other community groups capable of referring eligible Section 3 applicants, including the Department of Labor.
2. Include in all solicitations and advertisements a statement to encourage eligible Section 3 residents to apply.
3. When using a newspaper of major circulation to request bids/quotes or to advertise employment opportunities to also advertise in minority owned newspapers.
4. Maintain a list of all residents from the target area who have applied either on their own or by referral from any service, and employ such persons, if otherwise eligible and if a trainee position exists. (If the contractor has no vacancies, the applicant, if otherwise eligible, shall be listed for the first available vacancy). A list of eligible applicants will be maintained for future vacancies.
5. The contractor must certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR Part 135 require employment opportunities to be directed were not filled to circumvent the contractor's obligation under 24 CFR Part 135.

If Federal and State dollars are combined to fund a project this plan may be replaced by an approved Section 3 Plan as mandated by the Housing and Community Development Act of 1968

We the undersigned have read and have received a copy of the Section 3 Plan for this project. We acknowledge being a party of this Plan and further pledge our commitment to adhere to the objectives of the Plan.

 DEVELOPER SIGNATURE/
 MUNICIPALITY SIGNATURE

 DATE

 TITLE

 CONTRACTOR SIGNATURE

 DATE

 TITLE

DEVELOPER: _____

PROJECT NAME: _____

PROJECT NUMBER: _____

GENERAL CONTRACTOR: _____

SUB CONTRACTOR: _____

(a) The number of employees permanently employed in your _____ area office (or other location from which the contract will be administered) are as follows:

<u>JOB TITLE</u>	<u>TOTAL EMPLOYEES</u>	<u>RACE SEX</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

(b) The number of employees your area office/firm intends to employ for the work covered by this contract, by EEO category or by trade are as follows:

Total number of persons needed: _____

<u>JOB TITLE</u>	<u># NEEDED</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Which of the above positions will be a training position:

JOB TITLE

**EST. LENGTH
OF TRAINING**

<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>

(c) If applicable, list construction trades you intend to use in this contract.

<hr/>
<hr/>
<hr/>
<hr/>

List type of work to be subcontracted out.

<hr/>
<hr/>
<hr/>
<hr/>

SECTION 3 SUBCONTRACTOR CERTIFICATION

Project Name: _____

Developer's Name: _____

I understand that my contract with _____ (name of developer/contractor) is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended AND to the Section 3 Plan for this project.

I certify that the firm of _____ (company's name) is **not** a Section 3 company.

I certify that the firm of _____ (company's name) is a bonafide section 3 company, and that it meets the following definition of a Section 3 business (check one):

1. 51% or more of the ownership of this company is owned by section 3 residents, as defined by the developer of this project.
2. Currently, at least 30% of the employees of the company are section 3 residents, as defined by the developer of this project.
3. At least 30% of the employees of the company were section 3 residents, as defined by the developer of this project, within three years of the date of first employment with this company.
4. I commit to subcontract at least 25% of the total value of this contract to Section 3 subcontractors, as these companies are defined above, and to provide the necessary evidence to substantiate this,

Signature of Chief Executive Officer

Date

Part II: Contracts Awarded

1. Construction Contracts:

A. Total dollar amount of all contracts awarded on the project	\$
B. Total dollar amount of contracts awarded to Section 3 businesses	\$
C. Percentage of the total dollar amount that was awarded to Section 3 businesses	%
D. Total number of Section 3 business receiving contracts	

2. Non-Construction Contracts:

A. Total dollar amount of all non-construction contracts awarded on the project/activity	\$
B. Total dollar amount of non-construction contracts awarded to Section 3 businesses	\$
C. Percentage of the total dollar amount that was awarded to Section 3 businesses	%
D. Total number of Section 3 businesses receiving non-construction contracts	

Part III: Summary

Indicate the efforts made to direct the employment and other economic opportunities generated by HUD financial assistance for housing and community development programs, to the greatest extent feasible, toward low- and very low-income persons, particularly those who are recipients of government assistance for housing. (Check all that apply.)

- Attempted to recruit low-income residents through: local advertising media, signs prominently displayed at the project site, contacts with the community organizations and public or private agencies operating within the metropolitan area (or nonmetropolitan county) in which the Section 3 covered program or project is located, or similar methods.
- Participated in a HUD program or other program which promotes the training or employment of Section 3 residents.
- Participated in a HUD program or other program which promotes the award of contracts to business concerns which meet the definition of Section 3 business concerns.
- Coordinated with Youthbuild Programs administered in the metropolitan area in which the Section 3 covered project is located.
- Other; describe below.

Public reporting for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

This agency may not collect this information, and you are not required to complete this form, unless it displays a currently valid OMB number.

Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u., mandates that the Department ensures that employment and other economic opportunities generated by its housing and community development assistance programs are directed toward low- and very low- income persons, particularly those who are recipients of government assistance housing. The regulations are found at 24 CFR Part 135. The information will be used by the Department to monitor program recipients' compliance with Section 3, to assess the results of the Department's efforts to meet the statutory objectives of Section 3, to prepare reports to Congress, and by recipients as self-monitoring tool. The data is entered into a database and will be analyzed and distributed. The collection of information involves recipients receiving Federal financial assistance for housing and community development programs covered by Section 3. The information will be collected annually to assist HUD in meeting its reporting requirements under Section 808(e)(6) of the Fair Housing Act and Section 916 of the HCDA of 1992. An assurance of confidentiality is not applicable to this form. The Privacy Act of 1974 and OMB Circular A-108 are not applicable. The reporting requirements do not contain sensitive questions. Data is cumulative; personal identifying information is not included.

Instructions: This form is to be used to report annual accomplishments regarding employment and other economic opportunities provided to low- and very low-income persons under Section 3 of the Housing and Urban Development Act of 1968. The Section 3 regulations apply to any **public and Indian housing programs** that receive: (1) development assistance pursuant to Section 5 of the U.S. Housing Act of 1937; (2) operating assistance pursuant to Section 9 of the U.S. Housing Act of 1937; or (3) modernization grants pursuant to Section 14 of the U.S. Housing Act of 1937 and to **recipients of housing and community development assistance in excess of \$200,000** expended for: (1) housing rehabilitation (including reduction and abatement of lead-based paint hazards); (2) housing construction; or (3) other public construction projects; and to **contracts and subcontracts in excess of \$100,000** awarded in connection with the Section-3-covered activity.

Form HUD-60002 has three parts, which are to be completed for all programs covered by Section 3. Part I relates to **employment and training**. The recipient has the option to determine numerical employment/training goals either on the basis of the number of hours worked by new hires (columns B, D, E and F). Part II of the form relates to **contracting**, and Part III summarizes recipients' **efforts** to comply with Section 3.

Recipients or contractors subject to Section 3 requirements must maintain appropriate documentation to establish that HUD financial assistance for housing and community development programs were directed toward low- and very low-income persons.* A recipient of Section 3 covered assistance shall submit one copy of this report to HUD Headquarters, Office of Fair Housing and Equal Opportunity. Where the program providing assistance requires an annual performance report, this Section 3 report is to be submitted at the same time the program performance report is submitted. Where an annual performance report is not required, this Section 3 report is to be submitted by January 10 and, if the project ends before December 31, within 10 days of project completion. **Only Prime Recipients are required to report to HUD. The report must include accomplishments of all recipients and their Section 3 covered contractors and subcontractors.**

HUD Field Office: Enter the Field Office name.

1. Recipient: Enter the name and address of the recipient submitting this report.
2. Federal Identification: Enter the number that appears on the award form (with dashes). The award may be a grant, cooperative agreement or contract.
3. Dollar Amount of Award: Enter the dollar amount, rounded to the nearest dollar, received by the recipient.
- 4 & 5. Contact Person/Phone: Enter the name and telephone number of the person with knowledge of the award and the recipient's implementation of Section 3.
6. Reporting Period: Indicate the time period (months and year) this report covers.
7. Date Report Submitted: Enter the appropriate date.

8. Program Code: Enter the appropriate program code as listed at the bottom of the page.
9. Program Name: Enter the name of HUD Program corresponding with the "Program Code" in number 8.

Part I: Employment and Training Opportunities

Column A: Contains various job categories. Professionals are defined as people who have special knowledge of an occupation (i.e. supervisors, architects, surveyors, planners, and computer programmers). For construction positions, list each trade and provide data in columns B through F for each trade where persons were employed. The category of "Other" includes occupations such as service workers.

Column B: (Mandatory Field) Enter the number of new hires for each category of workers identified in **Column A** in connection with this award. New hire refers to a person who is not on the contractor's or recipient's payroll for employment at the time of selection for the Section 3 covered award or at the time of receipt of Section 3 covered assistance.

Column C: (Mandatory Field) Enter the number of Section 3 new hires for each category of workers identified in **Column A** in connection with this award. Section 3 new hire refers to a Section 3 resident who is not on the contractor's or recipient's payroll for employment at the time of selection for the Section 3 covered award or at the time of receipt of Section 3 covered assistance.

Column D: Enter the percentage of all the staff hours of new hires (Section 3 residents) in connection with this award.

Column E: Enter the percentage of the total staff hours worked for Section 3 employees and trainees (including new hires) connected with this award. Include staff hours for part-time and full-time positions.

Column F: (Mandatory Field) Enter the number of Section 3 residents that were trained in connection with this award.

Part II: Contract Opportunities

Block 1: Construction Contracts

Item A: Enter the total dollar amount of all contracts awarded on the project/program.

Item B: Enter the total dollar amount of contracts connected with this project/program that were awarded to Section 3 businesses.

Item C: Enter the percentage of the total dollar amount of contracts connected with this project/program awarded to Section 3 businesses.

Item D: Enter the number of Section 3 businesses receiving payments.

Block 2: Non-Construction Contracts

Item A: Enter the total dollar amount of all contracts awarded on the project/program.

Item B: Enter the total dollar amount of contracts connected with this project awarded to Section 3 businesses.

Item C: Enter the percentage of the total dollar amount of contracts connected with this project/program awarded to Section 3 businesses.

Item D: Enter the number of Section 3 businesses receiving awards.

Part III: Summary of Efforts – Self-explanatory

Submit one (1) copy of this report to the HUD Headquarters Office of Fair Housing and Equal Opportunity, at the same time the performance report is submitted to the program office. The Section 3 report is submitted by January 10. Include only contracts executed during the period specified in item 8. PHA's/IHA's are to report all contracts/subcontracts.

* The terms "low-income persons" and very low-income persons" have the same meanings given the terms in section 3 (b) (2) of the United States Housing Act of 1937. **Low-income persons** mean families (including single persons) whose incomes do not exceed 80 percent of the median income for the area, as determined by the Secretary, with adjustments for smaller and larger families, except that

The Secretary may establish income ceilings higher or lower than 80 percent of the median for the area on the basis of the Secretary's findings such that variations are necessary because of prevailing levels of construction costs or unusually high- or low-income families. **Very low-income persons** mean low-income families (including single persons) whose incomes do not exceed 50 percent of the median family income area, as determined by the Secretary with adjustments or smaller and larger families, except that the Secretary may establish income ceilings higher or lower than 50 percent of the median for the area on the basis of the Secretary's findings that such variations are necessary because of unusually high or low family incomes.

**CONNECTICUT DEPARTMENT OF LABOR
DAVIS-BACON APPRENTICE CERTIFICATION QUESTIONNAIRE**

The following information is required to obtain an apprentice letter for Davis-Bacon (prevailing wage) jobs. **Please print or type. Complete one form for each apprentice to be certified.**

Section 1: Company Information:

Name: _____

Address: _____

Phone: _____ Fax: _____

Section 2: Apprentice Information:

Name: _____ SS# _____

Trade: _____

OJT hours completed by apprentice: _____ As of this date: _____

Section 3: Project Information:

Name of Project: _____

Project Location: _____

Contract or Project number: _____

***Section 4: If applicable, to be completed by apprentice supervisor (collective bargaining)**

a. Name and Local Union #: _____

b. Percentage of apprentice on wage schedule: _____

c. Date apprentice attained this percentage: _____

***Please note:** If your company is party to a collective bargaining agreement, after completing questionnaire please forward to the local union apprentice supervisor so that they may complete Section 4.

Mail or Fax to:

**Connecticut Department of Labor
Office of Apprenticeship Training
David Bacon Certification Request
200 Folly Brook Boulevard
Wethersfield, CT 06109
FAX: (860) 263-6088**

CT COMMISSION ON HUMAN RIGHTS & OPPORTUNITIES
CONTRACT COMPLIANCE REGULATIONS

Sec. 46a-68j-23. Obligations of Contractors

Every contractor awarded a contract subject to contract compliance requirements shall:

- 1) Comply fully with all federal and state anti-discrimination laws, and shall not discriminate or permit a discriminatory practice in such a form, in such a manner and at such a time as may be prescribed by the Commission;
- 2) Cooperate fully with the Commission;
- 3) Submit periodic reports of its employment and subcontracting practice in such a form, in such a manner and at such a time as may be prescribed by the Commission;
- 4) Provide reasonable technical assistance and training to minority business enterprises to promote the participation of such concerns in state contracts and subcontracts;
- 5) Make a good faith effort, based upon the availability of minority business enterprises in the labor market area, to award a reasonable proportion of all subcontracts to such enterprises;
- 6) Maintain full and accurate support data for a period of two (2) years from the date the record is made or the date the contract compliance form is submitted, whichever is later, provided that this provision shall not excuse compliance with any other applicable record retention statute, regulation or policy providing for a period of retention in excess of two (2) years;
- 7) Not discharge, discipline or otherwise discriminate against any person, who has filled a complaint, testified or assisted in any proceeding with the commission;
- 8) Make available for inspection and copying any support data requested by the commission, and make available for interview any agent, servant or employee having knowledge of any matter concerning the investigation of a discriminatory practice complaint or any matter related to a contract compliance review;
- 9) Include a provision in all subcontracts with minority business enterprise requiring that the minority business enterprise provide the commission with such information on the structure and operations as the commission finds necessary to make an informed determination as to whether the standard of Sec. 4a- 60 of the Connecticut General Statutes as amended by Sec. 2 of Public Act 89-253 have been met; and
- 10) Undertake such other reasonable activities or efforts as the commissioner may prescribe to ensure the participation of minority business enterprises as state contractors and subcontractors.

Sec. 46a-68j-24. Utilization of minority business enterprises

Contractors shall make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on all projects subject to contract compliance requirements.

Commission on Human Rights and Opportunities
 Contract Compliance Unit
 21 Grand Street
 Hartford, CT 06106

1. MONTHLY EMPLOYMENT UTILIZATION REPORT (FORM chro cc-257)

PROJECT AREA (MSA):
 2. EMPLOYER'S FEIN NO.

3. PROJECT AAP GOALS
 MINORITY: _____
 FEMALE: _____

4. REPORTING PERIOD
 FROM: _____
 TO: _____

PROJECT NAME:
 CONTRACT NUMBER:

NAME AND LOCATION OF CONTRACTOR (submitting report)

STATE AWARDING AGENCY:

5. CONSTRUCTION TRADE (please identify)	6. WORK HOURS OF TRADE WORKERS EMPLOYED ON PROJECT										9. TOTAL NUMBER OF EMPLOYEES M F M F	10. TOTAL NUMBER OF MINORITY EMPLOYEES M F	
	6a. TOTAL HOURS BY TRADE M F	6b. BLACK (Not of Hispanic Origin) M F	6c. HISPANIC M F	6d. ASIAN OR PACIFIC ISLANDERS M F	6e. AMERICAN INDIAN OR ALASKAN NATIVE M F	7. MINORITY PERCENT	8. FEMALE PERCENT						
Journey Worker Apprentice Trainee													
SUB-TOTAL													
Journey Worker Apprentice Trainee													
SUB-TOTAL													
Journey Worker Apprentice Trainee													
SUB-TOTAL													
Journey Worker Apprentice Trainee													
SUB-TOTAL													
TOTAL JOURNEY WORKERS													
TOTAL APPRENTICES													
TOTAL TRAINEES													
GRAND TOTAL													

11. COMPANY OFFICIAL'S SIGNATURE AND TITLE

12. TELEPHONE NUMBER (Including area code)

13. DATE SIGNED

PAGE _____ OF _____

SUBCONTRACTOR CERTIFICATION
REGARDING OSHA

This requirement was created by Public Act No. 08-83 which is codified in Section 31-536 of the Connecticut General Statutes pertaining to the prevailing wage status, and is required for public works construction projects funded in whole or in part by the State or any political subdivision of the State where the total cost of all work to be performed is at least \$100,000.

Any contract awarded on or after July 1, 2009 requires any mechanic, laborer, or worker who performs work in a classification listed on the prevailing wage rate schedule on any public work project is required to complete a ten (10) hour federal OSHA safety and health course and provide proof of completion. The ten-hour OSHA safety course pertains to the ten-hour outreach course conducted in accordance with the Federal OSHA Training Institute standards and in accordance with the Federal OSHA Standard, 29 CFR 1910.268.

I, _____ of _____,
Name Title Company

hereby certifies compliance with the above statute and will demonstrate proof of completion through either:

- a) The presentation of a bona fide student course completion card issued by the Federal OSHA Training Institute; or
- b) The presentation of documentation provided to an employee by a trainer certified by the Institute pending the actual issuance of the completion card; and

shall affix a copy of the above to the certified payroll submitted to the local contracting agency (LCA) in accordance with the Connecticut General Statutes 31-53(f) on which such employee's name first appears.

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

Signature/Title Company Date

DEPARTMENT OF ECONOMIC AND COMMUNITY DEVELOPMENT

PROJECT SIGN – SMALL CITIES PROGRAM

8'-0"

(INSERT NAME OF THE PROJECT)

Funds Provided by the U.S. Department of Housing and Urban Development
through the State of Connecticut's Small Cities Program



STATE OF CONNECTICUT
Dannel P. Malloy, Governor

Department of Economic and Community Development
Catherine Smith, Commissioner

and the

(Insert Name of Town/City)

(Insert Name of Chief Elected Official and Title)

(Insert Name of Architect)

(Insert Name of General Contractor)

Program Consultant – L. Wagner & Associates



EQUAL HOUSING OPPORTUNITY

4'-0"

SIGN PANEL: 3/4" MDO-EXT-APA PLYWOOD SUPPORTED WITH (2) 4X4 TREATED WOOD COLUMNS AND SECURED 4' INTO GRADE. TOP OF SIGN AT 8'-0" ABOVE GRADE.

COLORS: ALL LETTERS AND SYMBOLS ARE TO ROYAL BLUE. THE BACKGROUND WILL BE WHITE ENAMEL. BACK OF PLYWOOD AND SUPPORT STRUCTURE SHALL BE PAINTED MATTE BLACK.

TYPEFACE: HELVETICA MEDIUM

STATE SEAL: WILL BE PROVIDED BY THE DEPARTMENT OF ECONOMIC AND COMMUNITY DEVELOPMENT.

LOCATION: SIGN MUST BE LOCATED TO BE CLEARLY VISIBLE TO THE PUBLIC.

TIMING: INSTALL AT THE START OF CONSTRUCTION AND REMOVE AT CONSTRUCTION COMPLETION.

SECTION N

FEDERAL AND STATE WAGE RATES

Wage Rates

The wages paid on an hourly basis to any mechanic, laborer, or workman employed upon the work herein contracted to be done, and amount of payment or contribution paid or payable on behalf of each such employee to any employee welfare fund, as defined in Section 31-53 of the General Statutes, shall be at a rate equal to the rate customary or prevailing for the same work in the same trade or occupation in the Town in which such public works project is being constructed. Any Contractor who is not obligated by agreement to make payment or contribution, on behalf of such employee welfare fund, shall pay to each employee, as part of his wages, the amount of payment or contribution for his classification on each pay day.

The Contractor shall comply with all Federal Statutes and all Connecticut General Statutes pertaining to the payment of prevailing wages. The Contractor shall provide to the Borough weekly certified payrolls of his employees and any subcontractors employed on the work.

Schedule of State Minimum Hourly Wage Rate

Schedule of minimum hourly wage rates issued by the State of Connecticut Labor Department follows.

Schedule of Federal Minimum Hourly Wage Rates

Schedule of minimum hourly wage rates issued by the United States Department of Labor follows.

**STATE OF CONNECTICUT LABOR DEPARTMENT
MINIMUM HOURLY WAGE RATES**

Project: Nettleton Drive Storm Drainage And Street Improvements

Minimum Rates and Classifications
for Heavy/Highway Construction
H 15565

**Connecticut Department of Labor
Wage and Workplace Standards Division**

By virtue of the authority vested in the Labor Commissioner under provisions of Section 31-53 of the General Statutes of Connecticut, as amended, the following are declared to be the prevailing rates and welfare payments and will apply only where the contract is advertised for bid within 20 days of the date on which the rates are established. Any contractor or subcontractor not obligated by agreement to pay to the welfare and pension fund shall pay this amount to each employee as part of his/her hourly wages.

Project Number: Project Town Naugatuck
FAP Number: State Number:
Project: Nettleton Drive Storm Drainage And Street Improvements

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	22.51
2) Carpenters, Piledrivermen	29.11	20.29
2a) Diver Tenders	29.11	20.29

As of: Monday, August 22, 2011

Project: Nettleton Drive Storm Drainage And Street Improvements

3) Divers	37.57	20.29
4) Painters: (Bridge Construction) Brush, Roller, Blasting (Sand, Water, etc.), Spray	41.35	16.35
4a) Painters: Brush and Roller	29.17	16.35
4b) Painters: Spray Only	31.47	15.40
4c) Painters: Steel Only	30.47	15.40
4d) Painters: Blast and Spray	32.17	16.35
4e) Painters: Tanks, Tower and Swing	31.17	16.35
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)	34.80	21.05

As of: Monday, August 22, 2011

Project: Nettleton Drive Storm Drainage And Street Improvements

6) Ironworkers: (Ornamental, Reinforcing, Structural, and Precast Concrete Erection	33.00	26.58 + a
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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)	38.67	24.46
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----LABORERS---- - Last updated 4/27/11

8) Group 1: Laborer (Unskilled), Common or General, acetylene burner, concrete specialist	25.75	15.60
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9) Group 2: Chain saw operators, fence and guard rail erectors, pneumatic tool operators, powdermen, air tool operator	26.00	15.60
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10) Group 3: Pipelayers (Installation of water, storm drainage or sewage lines outside of the building line with P6, P7 license)	26.25	15.60
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11) Group 4: Jackhammer/Pavement breaker (handheld); mason tenders (cement/concrete), catch basin builders, asphalt rakers, air track operators, block pavers and curb setters	26.25	15.60
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12) Group 5: Toxic waste removal (non-mechanical systems)	27.75	15.60
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As of: Monday, August 22, 2011

Project: Nettleton Drive Storm Drainage And Street Improvements

13) Group 6: Blasters	27.50	15.60
Group 7: Asbestos Removal, non-mechanical systems (does not include leaded joint pipe)	26.75	15.60
Group 8: Traffic control signalmen	16.00	15.60
---LABORERS (TUNNEL CONSTRUCTION, FREE AIR). Shield Drive and Liner Plate Tunnels in Free Air.--- Last updated 4/27/11---		
13a) Miners, Motormen, Mucking Machine Operators, Nozzle Men, Grout Men, Shaft & Tunnel Steel & Rodmen, Shield & Erector, Arm Operator, Cable Tenders	30.32	15.60 + a
13b) Brakemen, Trackmen	29.44	15.60 + a
---CLEANING, CONCRETE AND CAULKING TUNNEL---Last updated 4/27/11---		
14) Concrete Workers, Form Movers, and Strippers	29.44	15.60 + a

As of: Monday, August 22, 2011

Project: Nettleton Drive Storm Drainage And Street Improvements

15) Form Erectors	29.74	15.60 + a
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----ROCK SHAFT LINING, CONCRETE, LINING OF SAME AND
TUNNEL IN FREE AIR:---Last updated 4/27/11----

16) Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers	29.44	15.60 + a
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17) Laborers Topside, Cage Tenders, Bellman	29.33	15.60 + a
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18) Miners	30.32	15.60 + a
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----TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED
AIR: ---Last updated 4/27/11----

18a) Blaster	35.213	15.60 + a
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19) Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders	35.036	15.60 + a
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As of: Monday, August 22, 2011

Project: Nettleton Drive Storm Drainage And Street Improvements

20) Change House Attendants, Powder Watchmen, Top on Iron Bolts	33.268	15.60 + a
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21) Mucking Machine Operator	35.745	15.60 + a
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----TRUCK DRIVERS---(*see note below)

Two axle trucks	27.88	15.71 + a
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Three axle trucks; two axle ready mix	27.98	15.71 + a
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Three axle ready mix	28.03	15.71 + a
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Four axle trucks, heavy duty trailer (up to 40 tons)	28.08	15.71 + a
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Four axle ready-mix	28.13	15.71 + a
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As of: Monday, August 22, 2011

Project: Nettleton Drive Storm Drainage And Street Improvements

Heavy duty trailer (40 tons and over)	28.33	15.71 + a
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Specialized earth moving equipment other than conventional type on-the road trucks and semi-trailer (including Euclids)	28.13	15.71 + a
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----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)	35.05	19.40 + a
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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)	34.73	19.40 + a
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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)	33.99	19.40 + a
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Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper)	33.60	19.40 + a
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Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Spreader; Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24" Mandrel)	33.01	19.40 + a
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As of: Monday, August 22, 2011

Project: Nettleton Drive Storm Drainage And Street Improvements

Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller.	33.01	19.40 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	32.70	19.40 + 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).	32.36	19.40 + a
Group 8: Mechanic, Grease Truck Operator, Hydroblaster, Barrier Mover, Power Stone Spreader; Welder; Work Boat under 26 ft.; Transfer Machine.	31.96	19.40 + 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).	31.53	19.40 + a
Group 10: Vibratory Hammer, Ice Machine, Diesel and Air Hammer, etc.	29.49	19.40 + a
Group 11: Conveyor, Earth Roller; Power Pavement Breaker (whiphammer), Robot Demolition Equipment.	29.49	19.40 + a
Group 12: Wellpoint Operator.	29.43	19.40 + a

As of: Monday, August 22, 2011

Project: Nettleton Drive Storm Drainage And Street Improvements

Group 13: Compressor Battery Operator.	28.85	19.40 + a
Group 14: Elevator Operator; Tow Motor Operator (Solid Tire No Rough Terrain).	27.71	19.40 + a
Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	27.30	19.40 + a
Group 16: Maintenance Engineer/Oiler	26.65	19.40 + a
Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator.	30.96	19.40 + a
Group 18: Power Safety Boat; Vacuum Truck; Zim Mixer; Sweeper; (minimum for any job requiring CDL license).	28.54	19.40 + a

****NOTE: SEE BELOW**

---LINE CONSTRUCTION---(Railroad Construction and Maintenance)---Last updated 9/3/2010---

As of: Monday, August 22, 2011

Project: Nettleton Drive Storm Drainage And Street Improvements

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---Last updated 4/17/09---		
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

As of: Monday, August 22, 2011

Project: Nettleton Drive Storm Drainage And Street Improvements

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: **Monday, August 22, 2011**

Project: Nettleton Drive Storm Drainage And Street Improvements

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 journey person 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.

As of: Monday, August 22, 2011

Project: Nettleton Drive Storm Drainage And Street Improvements

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: Monday, August 22, 2011

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 ULTIMATELY ARISE CONCERNING 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

You are here: [DOL Web Site](#) [Wage and Workplace Standards](#) 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.

← -- [Workplace Laws](#)


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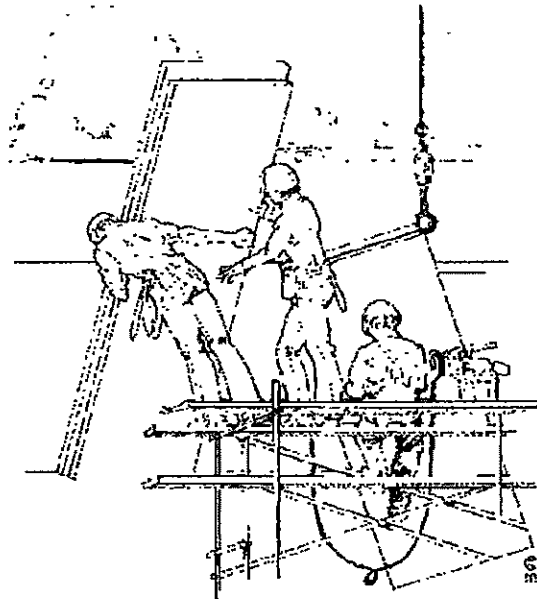
~NOTICE~

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

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): _____

Information Bulletin

Occupational Classifications

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. PILEDIVERMEN. LATHERS. RESILIENT 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 hhg 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**

Operates 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, fascia, 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(1)(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 contract or project;

(a) Except as provided in paragraph (1) (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 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*

**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.

Connecticut Department of Labor
Wage and Workplace Standards Division
FOOTNOTES

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.

**FEDERAL
MINIMUM HOURLY WAGE RATES**

General Decision Number: CT100001 07/08/2011 CT1

Superseded General Decision Number: CT20080001

State: Connecticut

Construction Type: Highway

Counties: Fairfield, Litchfield, Middlesex, New Haven, Tolland and Windham Counties in Connecticut.

HIGHWAY CONSTRUCTION PROJECTS

August 19, 2011
Borough of Naugatuck – Nettleton Avenue
Storm Drainage Improvements Project –
REBID
Federal Wage Decision #CT100001
Modification #16

Modification Number	Publication Date
0	03/12/2010
1	04/23/2010
2	04/30/2010
3	05/07/2010
4	06/04/2010
5	07/02/2010
6	07/16/2010
7	07/23/2010
8	07/30/2010
9	08/20/2010
10	10/08/2010
11	11/05/2010
12	04/22/2011
13	06/03/2011
14	06/10/2011
15	06/17/2011
16	07/08/2011

BRCT0001-004 04/01/2011

Rates Fringes

BRICKLAYER

BRICKLAYERS, CEMENT MASONS, CEMENT FINISHERS, PLASTERERS AND STONE MASONS.	\$ 32.50	22.51
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CARP0024-006 05/02/2011

LITCHFIELD COUNTY

Harwinton, Plymouth, Thomaston, Watertown

MIDDLESEX COUNTY

NEW HAVEN COUNTY

Beacon Falls, Bethany, Branford, Cheshire, East Haven, Guilford, Hamden, Madison, Meriden, Middlebury, Naugatuck, New Haven, North Branford, North Haven, Orange (east of Orange Center Road and north of Route 1, and north of Route 1 and east of the Oyster River), Prospect, Southbury, Wallingford, Waterbury, West Haven, Wolcott, Woodbridge

TOLLAND COUNTY

Andover, Columbia, Coventry, Hebron, Mansfield, Union, Willington

WINDHAM COUNTY

	Rates	Fringes
Carpenters:		
Carpenters, Piledrivers.....	\$ 29.11	20.29
Diver Tenders.....	\$ 29.11	20.29
Divers.....	\$ 37.57	20.29

CARP0043-004 05/02/2011

	Rates	Fringes
Carpenters: (TOLLAND COUNTY Bolton, Ellington, Somers, Tolland, Vernon)		
CARPENTERS, PILEDRIVERS.....	\$ 29.11	20.29
DIVER TENDERS.....	\$ 29.11	20.29
DIVERS.....	\$ 37.57	20.29

CARP0210-002 05/02/2011

	Rates	Fringes
Carpenters:		
CARPENTERS, PILEDRIVERS.....	\$ 29.11	20.29
DIVER TENDERS.....	\$ 29.11	20.29
DIVERS.....	\$ 37.57	20.29

FAIRFIELD COUNTY

Bethel, Bridgeport, Brookfield, Danbury, Darien, Easton,
Fairfield, Greenwich, Monroe, New Canaan, New Fairfield,
Newtown, Norwalk, Redding, Ridgefield, Shelton, Sherman,
Stamford, Stratford, Trumbull, Weston, Westport, Wilton;

LITCHFIELD COUNTY

Barkhamstead, Bethlehem, Bridgewater, Canaan, Colebrook,
Cornwall, Goshen, Kent, Litchfield, Morris, New Hartford, New
Milford, Norfolk, North Canaan, Roxbury, Salisbury, Sharon,
Torrington, Warren, Washington, Winchester, Woodbury;

NEW HAVEN COUNTY

Ansonia, Derby, Milford, Orange (west of Orange Center Road
and south of Route 1 and west of the Oyster River), Oxford,
Seymour;

ELEC0003-002 05/08/2008

	Rates	Fringes
Electricians		
FAIRFIELD COUNTY		
Darien, Greenwich, New Canaan, Stamford.....	\$ 44.75	30.42

* ELEC0035-001 06/01/2011

Rates Fringes

Electricians:

MIDDLESEX COUNTY
 (Cromwell, Middlefield,
 Middleton and Portland);
 TOLLAND COUNTY; WINDHAM
 COUNTY.....\$ 36.40 21.31

ELEC0090-002 06/01/2011

	Rates	Fringes
Electricians:.....	\$ 35.70	21.52
LITCHFIELD COUNTY		

Plymouth Township;

MIIDDLESEX COUNTY

Chester, Clinton, Deep River, Durham, East Haddam, East
 Hampton, Essex, Haddam, Killingworth, Old Saybrook, Westbrook;

NEW HAVEN COUNTY

All Townships excluding Beacon Falls, Middlebury, Milford,
 Naugatuck, Oxford, Prospect, Seymour, Southbury, Waterbury and
 Wolcott.

ELEC0488-002 06/01/2010

	Rates	Fringes
Electricians.....	\$ 34.80	21.05
FAIRFIELD COUNTY		

Bethel, Bridgeport, Brookfield, Danbury, Easton, Fairfield,
 Monroe, New Fairfield, Newtown, Redding, Ridgefield, Shelton,
 Sherman, Stratford, Trumbull;

LITCHFIELD COUNTY

Except Plymouth;

NEW HAVEN COUNTY

Beacon Falls, Middlebury, Milford, Naugatuck, Oxford,
 Prospect, Seymour, Southbury, Waterbury and Wolcott

ENGI0478-001 05/07/2011

	Rates	Fringes
Power equipment operators:		
GROUP 1.....	\$ 35.05	19.40
GROUP 2.....	\$ 34.73	19.40
GROUP 3.....	\$ 33.99	19.40
GROUP 4.....	\$ 33.60	19.40
GROUP 5.....	\$ 33.01	19.40
GROUP 6.....	\$ 32.70	19.40
GROUP 7.....	\$ 32.36	19.40
GROUP 8.....	\$ 31.96	19.40

GROUP 9.....	\$ 31.53	19.40
GROUP 10.....	\$ 29.49	19.40
GROUP 11.....	\$ 29.49	19.40
GROUP 12.....	\$ 29.43	19.40
GROUP 13.....	\$ 30.96	19.40
GROUP 14.....	\$ 28.85	19.40
GROUP 15.....	\$ 28.54	19.40
GROUP 16.....	\$ 27.71	19.40
GROUP 17.....	\$ 27.30	19.40
GROUP 18.....	\$ 26.65	19.40

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 (skoooper).

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.

IRON0015-002 06/28/2010

	Rates	Fringes
Ironworkers: (Reinforcing, Structural and Precast Concrete Erection).....	\$ 33.00	26.58+a

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

LAB00056-003 04/03/2011

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 25.75	15.60
GROUP 2.....	\$ 26.00	15.60
GROUP 3.....	\$ 26.25	15.60
GROUP 4.....	\$ 26.75	15.60
GROUP 5.....	\$ 27.50	15.60
GROUP 6.....	\$ 27.75	15.60
GROUP 7.....	\$ 16.00	15.60

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

PAIN0011-001 06/01/2011

	Rates	Fringes
Painters:		
Blast and Spray.....	\$ 32.17	16.35
Brush and Roll.....	\$ 29.17	16.35
Tanks, Towers, Swing.....	\$ 31.17	16.35

PAIN0011-003 06/01/2011

	Rates	Fringes
Painters; (BRIDGE CONSTRUCTION)		
Brush, Roller, Blasting (Sand, Water, etc.) Spray...	\$ 41.35	16.35

TEAM0064-001 04/03/2011

	Rates	Fringes
Truck drivers:		
2 Axle Ready Mix.....	\$ 27.98	15.71+a
2 Axle.....	\$ 27.88	15.71+a
3 Axle Ready Mix.....	\$ 28.03	15.71+a
3 Axle.....	\$ 27.98	15.71+a
4 Axle Ready Mix.....	\$ 28.13	15.71+a
4 Axle.....	\$ 28.08	15.71+a
Heavy Duty Trailer 40 tons and over.....	\$ 28.33	15.71+a
Heavy Duty Trailer up to 40 tons.....	\$ 28.08	15.71+a
Specialized (Earth moving equipment other than conventional type on-the-road trucks and semi-trailers, including Euclids).....	\$ 28.13	15.71+a

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.

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

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

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

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.

END OF GENERAL DECISION

SECTION O

TECHNICAL SPECIFICATIONS

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DIVISION 2 – SITEWORK

02011	Exploratory Excavation
02122	Tree Protection and Trimming
02140	Dewatering
02160	Safe Operation Sheet Piling
02200	Earthwork
02221	Trenching, Backfilling and Compaction
02222	Management of Potentially Contaminated Soil
02230	Pavement Subbase
02270	Erosion and Sediment Control
02315	Rock Excavation
02511	Hot Mix Asphalt Paving
02513	Concrete Pavement
02529	Resetting of Existing Granite Curbs
02580	Pavement Markings
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02605	Manholes
02606	Altering Existing Manholes
02610	Buried Pipe Installation
02611	Reinforced Concrete Pipe
02612	Polyvinyl Chloride Pipe
02613	Ductile Iron Pipe
02619	High Density Polyethylene Pipe
02620	Aluminized Corrugated Steel Pipe
02661	Water Services
02676	Cold Milling Existing Pavement
02770	Curbing
02830	Chain Link Fence & Gates
02920	Topsoil
02930	Seeding

DIVISION 3 - CONCRETE

03300	Cast-in-Place Concrete
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SECTION 02011 EXPLORATORY EXCAVATION

PART 1 - GENERAL

1.1 SUMMARY

- A. This section includes the excavation and backfilling of test pits for the purpose of verifying the exact locations of underground utilities, structures, and other subsurface conditions.

1.2 SUBMITTALS

- A. Sketches: Submit a sketch showing the location of the subsurface features which were uncovered in the test pit, including the following information:
 - 1. Horizontal location of the subsurface feature relative to three individual surface features.
 - 2. Depth of feature below ground surface.
 - 3. Diameter, type, and condition of pipe or conduit.
 - 4. Orientation of pipe, conduit or structure relative to other site features.
 - 5. Other pertinent dimensions.
 - 6. Test pit identification number.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 GENERAL

- A. Perform test pits only within the limits of the work, easements and rights of way, unless otherwise authorized or directed by the Owner's Representative.
- B. Excavate test pits with care to avoid damage to structures and utilities. Excavate by hand if necessary. Promptly repair any damaged utilities and structures at no cost to the Owner.
- C. Test pit excavations and submittals shall be completed prior to procurement of utilities and structures to allow time to clarify field adjustments based on the information gathered.

3.2 EXCAVATION

- A. Excavate test pits in advance of construction, at the locations shown on the Drawings at all catch basin laterals, or where directed by the Owner's Representative. Determine the exact location of all pipes, conduits, duct, or other interfering structures in both horizontal and vertical locations. Excavate to the depth and width necessary to accurately determine the locations of the utilities of interest.
- B. Excavate test pits with care to avoid damage to structures and utilities. Excavate by hand if necessary.
- C. Any utilities or structures damaged by the Contractor during excavations shall be immediately repaired at no additional cost to the Owner. Public and private utility companies shall be notified of any damage to utilities.

3.2 BACKFILL

- A. Test pits shall remain open and protected until all required information has been obtained by the Contractor and Owner's Representative.
- B. Backfill test pits in accordance with Section "Trenching and Backfilling" and grade surface as suitable for temporary traffic or use.

3.3 COMPLETION

- A. Upon satisfactory execution of the required test pits submit sketches to the Owner's Representative.
- B. The Owner's Representative shall adjust pipe elevations, alignment or design as necessary to minimize interferences.

END OF SECTION 02011

SECTION 02122 TREE PROTECTION AND TRIMMING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes trimming and protection of trees that are indicated to remain but interfere with or are close to new construction, as herein specified. Trees which are to remain and must be protected are not all indicated on the Drawings. The Contractor shall protect all trees within the project area.
- B. The Contractor shall take particular care to protect trees and shrubs and private personal property. He shall make good any damage to the satisfaction of the Owner's Representative.

1.2 SUBMITTALS

- A. Arborist Qualifications: Submit qualifications of arborist.
- B. Certification: Submit written certification by qualified arborist that trees indicated to remain have been protected during the course of construction in accordance with recognized standards and that where damage did occur, trees were promptly and properly treated. Indicate which damaged trees (if any) are incapable of retaining full growth potential and are recommended to be replaced.

1.3 QUALITY ASSURANCE

- A. Arborist Qualifications: Engage a qualified arborist who has successfully completed tree protection and trimming, to perform the following work:
 - 1. Remove branches from trees that are to remain, if required.
 - 2. Recommend procedures to compensate for loss of roots and perform initial pruning of branches and stimulation of root growth where removed to accommodate new construction.
 - 3. Recommend procedures for root trimming and observe root trimming operations.
 - 4. Recommend procedures for excavation and grading work juxtaposed to established plants.
 - 5. Perform tree repair work for damage incurred by new construction.

1.4 PROJECT CONDITIONS

- A. Temporary Protections: Provide temporary fencing, barricades, or other suitable guards located outside drip-line (outer perimeter of branches) to protect trees and other plants that are to remain from damage.
- B. Protect root systems: Do not store construction materials, debris, or excavated material within drip line of trees to remain. Do not permit vehicles within drip line. Restrict foot traffic to prevent excessive compaction of soil over root systems within drip line. Trim root systems in advance of construction as recommended

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 GENERAL

- A. Protect tree root systems from damage due to noxious materials caused by run-off or spillage during mixing, placement, or storage of construction materials. Protect root systems from flooding, eroding, or excessive wetting resulting from dewatering operations.
- B. Do not allow fires under or adjacent to trees or other plants that are to remain.
- C. Remove branches from trees that are to remain, if required to clear new construction.
 - 1. Where directed by Owner's Representative, extend pruning operation to restore natural shape of entire tree.
 - 2. Cut branches and roots, if required, with sharp pruning instruments; do not break or chop.
 - 3. D. Protect existing trees to remain with woodvill snow fence, boards and chain link fence

3.2 EXCAVATION AROUND TREES

- A. Excavate within proximity of trees only where indicated. Do not machine excavate within drip-line.
- B. Where excavating for new construction is required within drip line of trees, hand excavate to minimize damage to root systems. Provide sheeting at excavations if required. Use narrow-tine spading forks and comb soil to expose roots.
 - 1. Relocate roots in backfill areas wherever possible. If large, main lateral roots are encountered, expose beyond excavation limits as required to bend and relocate without breaking. If encountered immediately adjacent to location of new construction and relocation is not practical, cut roots approximately 3 inches back from new construction.
- C. Do not allow exposed roots to dry out before permanent backfill is placed; provide temporary earth cover or pack with peat moss and wrap with burlap. Water and maintain in moist condition and temporarily support and protect from damage until permanently relocated and covered with earth.
- D. Where trenching for utilities is required within drip line, tunnel under or around roots by hand digging. Do not cut main lateral roots or tap roots; cut only smaller roots that interfere with installation of new work. Cut roots with sharp pruning instruments; do not break or chop.
- E. Prune branches to balance loss to root system caused by damage or cutting of root system.

3.3 GRADING AND FILLING AROUND TREES

- A. Maintain existing grade within drip-line of trees.
- B. Lowering Grades: Where existing grade is above new finish grade shown around trees, gradually slope grade away from trees as recommended by arborist. Do not reduce grade within drip-line.
 - 1. Prune branches to stimulate root growth and to compensate for loss of roots. Provide subsequent maintenance during the Contract period as recommended by arborist. Provide Owner with typed instructions for recommended long-range maintenance procedures to be followed after completion of construction operations.

C. Raising Grades:

1. Minor Fills: Where existing grade is 6 inches or less below elevation of finish grade shown, use topsoil fill material specified. Place in single layer and do not compact; hand grade to required finish elevations.
2. Moderate Fills: Where existing grade is more than 6 inches, but less than 12 inches below finish grade elevation, place a layer of drainage fill on existing grade before placing topsoil. Carefully place against trunk of tree approximately 2 inches above finish grade elevation and extend not less than 18 inches from tree trunk on all sides. For balance of area within drip line perimeter, place drainage fill to an elevation 6 inches below grade and complete fill with a layer of topsoil to finish grade elevation. Do not compact drainage fill or topsoil layers; hand grade to required elevations.

3.4 REPAIR AND REPLACEMENT OF TREES

- A. Repair trees damaged by construction operations. Make repairs promptly after damage occurs to prevent progressive deterioration of damaged trees.
- B. Remove and replace dead and damaged trees that arborist determines to be incapable of restoration to normal growth pattern.
 1. Provide new trees of same size and species as those being replaced.
 2. If trees over 6 inches in caliper measurement (taken 12 inches above grade) are required to be replaced, provide new trees of 6-inch caliper size and of species selected by the Owner's Representative.

3.5 DISPOSAL

- A. All turf, trees, roots, stumps, and debris, and other material deemed unsuitable for construction shall be removed immediately from the site.
- B. No stumps or other debris shall be felled, sidecast, or placed outside the project limits.
- C. Tree, root and stump material shall be disposed of off-site at no additional cost to the Owner.

END OF SECTION 02122

SECTION 02140 DEWATERING

PART 1 - GENERAL

1.1 SUMMARY

- A. This section includes furnishing and maintaining a dewatering system to continuously lower and control groundwater levels and hydrostatic pressures in order to maintain near-dry conditions for construction of the work as shown on the plans and specified herein.
- B. This section includes requirements for treatment of construction dewatering in accordance with local, state and federal permits and regulations.

1.2 DEFINITIONS

- A. Construction Dewatering: Pumped or drained discharges of groundwater and/or stormwater from excavations or other points of accumulation associated with a construction activity.

1.3 SUBMITTALS

- A. Submit a dewatering plan at least two weeks prior to the start of any dewatering operation. The plan shall include the following as a minimum:
 - 1. Description and details of proposed dewatering system for structure excavations, trench excavation and cuts within groundwater table, including installation methods, material descriptions, pipe sizes, pump capacities, power sources (if applicable), standby equipment and maintenance procedures.
 - 2. Layout of dewatering systems, including location of sumps, deep wells, well points, header pipes, pumps and discharge lines.
 - 3. Description and details of monitoring equipment and procedures including locations of observation wells and settlement markers. Include estimated frequency of reading and record keeping procedures for monitoring devices.
 - 4. Description and details of dewatering discharge locations and erosion / sedimentation control measures.
 - 5. Estimate of time required to lower groundwater levels after start of pumping and estimated duration of dewatering activity.
 - 6. Description and details of proposed dewatering treatment system, including treatment methods and capacities, material descriptions and product data, metering and monitoring methods and contingencies.
- B. Submit observation well materials and product data.

1.4 REGULATORY STANDARDS

- A. Code of Federal Regulations (CFR) Title 40 Protection of the Environment
- B. The Clean Water Act Sections 301,302, 306, 307, 308, 318, 402, and 405

1.5 QUALITY ASSURANCE

- A. The Owner's Representative shall be notified immediately if any settlement or movement is detected based upon monitoring points and general observation. Upon recognition of settlement due to dewatering operations the Contractor shall immediately submit a modified dewatering plan prior to continuing work, which details mitigation methods to prevent further settlement. Any damage caused from settlement due to dewatering methods shall be repaired by the Contractor at no additional cost to the Owner.

1.6 PROJECT CONDITIONS

- A. Refer to the Memorandum Re: Geotechnical and Environmental Investigation, Nettleton Avenue Storm Drain, Borough of Naugatuck, CT by Katherine Adnams, PE, and to the Environmental Subsurface Investigation Report, Nettleton Area Storm Drain Improvements in Naugatuck, CT dated January 6, 2011 for soil and groundwater data. These documents are available upon request to the Borough of Naugatuck. Contractors shall make their own interpretation of subsurface conditions that may affect methods or the cost of construction of the Work.

1.7 PERMITS

- A. The Contractor shall obtain a "General Permit for the Discharge of Storm Water and Dewatering Wastewaters associated with Construction Activities" prior to commencing Construction.
- B. The Contractor shall file a registration for either a "General Permit for the Discharge of Groundwater Remediation Wastewater to a Sanitary Sewer" or a "General Permit for the Discharge of Groundwater Remediation Wastewater Directly to Surface Water" prior to commencing Construction, including supporting documents. The Contractor shall determine which permit is applicable based on their means and methods.

PART 2 - PRODUCTS

2.1 DEWATERING SYSTEM

- A. Provide a dewatering system of adequate size and capacity to lower and maintain the groundwater at the specified level. The system shall include standby pumps, auxiliary hoses and power source for continuous operation.
 - 1. Dewatering system shall consist of wellpoints, deep wells, cut-off walls, riser pipes, swing joints, header lines, valves, pumps, discharge lines, and all other necessary fittings, accessories and equipment for a complete operating system.
- B. Observation Wells for Monitoring Dewatering:
 - 1. Observation Wells: 2" diameter Schedule 40 PVC riser pipe and screen sections. Screen shall contain 0.01 foot diameter slots with a total length of 10 feet. Riser pipe sections shall be dictated by the subsurface conditions encountered in each borehole and all sections shall extend two to three feet above the ground surface. All sections shall be connected with flush-mounted threaded couplings.
 - 2. Sand: Clean concrete sand conforming to ASTM C 33.

2.2 DEWATERING TREATMENT SYSTEM

- A. Provide a dewatering treatment system when discharging to sanitary sewer system or surface water. System at a minimum shall consist of a settling basin or other treatment system designed to remove total suspended solids (TSS) to that level which will not cause pollution to the discharge. System must treat water to below effluent limitations as required by the POTW Authority and the General Permit for the Discharge of Groundwater Remediation Wastewater to a Sanitary Sewer if discharged to a sanitary sewer system. System must treat water to below effluent limitations as required by the General Permit for the Discharge of Groundwater Remediation Wastewater Directly to Surface Water if discharged to a surface water.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Installation of dewatering observation wells:
 - 1. Install the observation wells at locations indicated on the dewatering plan or where directed by the Owner's Representative.
 - 2. Install PVC well within bore hole at a depth such that the center of the slotted screen is at the same elevation as the anticipated center of the production well screen.
 - 3. Sand shall be added to the annulus while the hollow stem auger casing is being removed to a level of two feet above the screen. A bentonite-cement grout shall be emplaced into the well bore with a tremie pipe concurrently with the removal of the hollow stem auger above the sand layer.
 - 4. The observation well shall be developed after completion by surging and pumping, either mechanical or with an air line. Test each observation well to verify that the installation is performing properly and obtain baseline readings.
- B. Protect observation well standpipes from damage until the completion of dewatering operations and maintain accessibility to each.
- C. Establish settlement markers and obtain baseline readings.

3.2 INSTALLATION OF DEWATERING SYSTEM

- A. Install the dewatering system in accordance with the dewatering plan and as required by site conditions. Locate elements of the system to allow a continuous dewatering operation without interfering with the installation of any permanent project Work.

3.3 OPERATION

- A. Operate and maintain the dewatering system in accordance with the dewatering plan.
- B. Keep the system in continuous operation from the time excavation is started in the dewatering area (or before if required by site conditions to lower the groundwater to the elevations specified) until the time backfilling is completed at least 2 feet above the normal groundwater level.
 - 1. The Contractor shall modify procedures at no additional cost to the Owner if the dewatering operation results in boils, loss of fines, softening of ground or instability or slopes. A modified dewatering plan shall be submitted to the Owner's Representative describing changes to the system.

3.4 FIELD CONTROL

- A. The Contractor shall continuously check and record observation well levels and settlement marker readings as indicated in the dewatering plan or as directed by the Owner's Representative. The Owner's Representative shall be notified immediately of any signs of settlement. Maintain observation wells and settlement markers until groundwater is allowed to return to its normal level.
- B. The Contractor shall take all such precautions and do any and all Work necessary to protect the stability and integrity of adjacent property, pavements, buildings, structures and utilities from settlement or other movement that may be caused by his dewatering operations. The Contractor shall be solely responsible for any damage or injury to adjacent property, pavements, buildings, structures or utilities caused by his dewatering or other operations or his failure to use corrective or preventive procedures or methods.
- C. The Contractor shall continually sample/screen and monitor groundwater discharge in accordance with the permits and CTDEP limitations. Dewatering shall immediately stop and adjustments to the treatment system shall be made in accordance with the permit requirements as necessary if monitoring indicates any levels, readings or visible indication of a violation.

3.5 TREATMENT OF CONSTRUCTION DEWATERING

- A. When discharge to sanitary sewers or surface waters is required, the Contractor shall install the appropriate approved treatment systems to control pollutants and total suspended solid discharge and protect against scour.
 - 1. Furnish, install and maintain treatment system as indicated in the dewatering plan and approved shop drawings.

3.6 DISCHARGE

- A. Dewatering discharges shall be in accordance with the permits cited in 1.7A of this Section.
- B. Dewatering discharges shall be maintained in such a manner as not to endanger public health, property, or any portion of the Work under construction or completed.
- C. The Contractor shall take measures to protect slopes / banks of water bodies during dewatering discharge from erosion. Sediment traps and scour protection shall be provided when discharging directly to surface water.
- D. All dewatering discharge shall be conveyed in closed conduit. Trench excavations shall not be used as temporary ditches.
- E. Dewatering discharges shall not cause a violation of water quality standards and an objectionable discoloration of the receiving water. There shall be no discharge of floating solids or visible foam in other than trace amounts.
- F. The Contractor shall coordinate and assist the Owner's Representative with any discharge sampling and monitoring requirements necessary under the permits cited in 1.7A. Discharge Sampling and Monitoring Reports shall be kept on-site at all times.

3.7 REMOVAL

- A. When system is no longer required, gradually decrease the pumping rate until the water table resumes its natural position so that the velocity of the returning groundwater will be low enough as not to carry

fines.

- B. When the dewatering system is no longer required and when directed by the Owner's Representative, dismantle and remove the system and all appurtenances from the site.
- C. Backfill and compact any sumps, excavations and settling basins utilized for the dewatering system in accordance with Section "Trenching, Backfilling and Compaction".
- D. Abandon observation wells upon removal of the dewatering system. All observation well shall be completely filled with grout.
- E. Remove settlement monitoring points upon removal of dewatering system.
- F. Remove and dispose of accumulated sediment from dewatering treatment system in accordance with local regulations including bearing the cost of cleaning; sediment disposal and any analytical testing required for disposal. Remove treatment systems and/or restore settling basin area to original conditions as necessary.

END OF SECTION 02140

SECTION 02160 SAFE OPERATION SHEET PILING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes, but is not limited to, the following:
 - 1. Shoring and bracing necessary to protect existing buildings, streets, walkways, utilities, and other improvements and excavation against loss of ground or caving embankments.
 - 2. Maintenance of shoring and bracing.
 - 3. Removal of shoring and bracing, as required.
- B. The purpose of this work is to insure the safety of workmen and the public exposed to the hazard of falling or sliding material. It shall be the Contractor's responsibility to provide protection adequate for this purpose. Details of this sheeting must conform with the requirements of Title 29 Code of Federal Regulations, Part 1926, Safety and Health Regulations for Construction (OSHA). The Owner's Representative shall reserve the right to increase the minimum requirements set forth therein, depending on the hazard.
- C. Where necessary, the sides of trenches and excavations shall be supported by adequate sheeting, shoring and bracing. The Contractor shall be held accountable and responsible for the sufficiency of all sheeting, shoring and bracing used and for all damage to persons or property resulting from the improper quality, strength, placing maintaining or removing of the same. Where sheeting is removed, care shall be taken not to disturb the new work or existing utilities and structures.
- D. No sheeting is to be left in place unless expressly permitted by the Owner's Representative.

1.2 PERFORMANCE REQUIREMENTS

- A. Design, furnish, install, monitor, and maintain excavation support and protection system capable of supporting excavation sidewalls and of resisting soil and hydrostatic pressure and superimposed and construction loads.
 - 1. Delegated Design: Design excavation support and protection system, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
 - 2. Prevent surface water from entering excavations by grading, dikes, or other means.
 - 3. Install excavation support and protection systems without damaging existing buildings, structures, and site improvements adjacent to excavation.
 - 4. Monitor vibrations, settlements, and movements.

1.3 SUBMITTALS

- A. Delegated-Design Submittal: For excavation support and protection system indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
- B. Layout drawings for excavation support system and other data prepared by, or under the supervision of, a qualified professional engineer.

- C. System design and calculations must be acceptable to local authorities having jurisdiction.

1.4 QUALITY ASSURANCE

- A. Engineer Qualifications: A professional engineer legally authorized to practice in jurisdiction where Project is located, and experienced in providing successful engineering services for excavation support systems similar in extent required for this Project.
- B. Regulations: Comply with codes and ordinances of governing authorities having jurisdiction.

1.5 PROJECT CONDITIONS

- A. Project-Site Information: Geotechnical borings have been completed for this Project and are available for information only. Owner will not be responsible for interpretations or conclusions drawn from the data
 - 1. Make additional test borings and conduct other exploratory operations necessary for excavation support and protection.
 - 2. The geotechnical borings are available from the Owner.
- B. Before starting work, verify governing dimensions and elevations. Verify condition of adjoining properties. Take photographs or video tape to record any existing settlement or cracking of structures, pavements, and other improvements. Prepare a list of such damages, verified by dated photographs or video tape, and signed by Contractor and others conducting investigation.
- C. During excavation, resurvey benchmarks weekly, maintaining accurate log of surveyed elevations for comparison with original elevations. Promptly notify Owner's Representative if changes in elevations occur or if cracks, sags, or other damage is evident.
- D. Survey Work: Engage a qualified land surveyor or professional engineer to survey adjacent existing buildings, structures, and site improvements; establish exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.
 - 1. During installation of excavation support and protection systems, regularly resurvey benchmarks, maintaining an accurate log of surveyed elevations and positions for comparison with original elevations and positions. Promptly notify Owner's Representative if changes in elevations or positions occur or if cracks, sags, or other damage is evident in adjacent construction.

1.6 EXISTING UTILITIES

- A. Protect all existing active utility services and structures.
- B. Notify municipal agencies and service utility companies having jurisdiction. Comply with requirements of governing authorities and agencies for protection, relocation, removal, and discontinuing of services.
- C. Interruption of Existing Utilities: Do not interrupt any utility serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility according to requirements indicated:
 - 1. Notify Owner no fewer than two days in advance of proposed interruption of utility.
 - 2. Do not proceed with interruption of utility without Owner's written permission

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 GENERAL

- A. In general, this item will be required wherever an excavation exceeds five feet in depth and the side slopes are not laid back to a safe gradient as set forth in Title 29 Code of Federal Requirements, Part 1926, Safety and Health Regulations for Construction (OSHA).
- B. Wherever shoring is required, locate the system to clear permanent construction and to permit forming and finishing of concrete surfaces. Provide shoring system adequately anchored and braced to resist earth and hydrostatic pressures.

3.2 REMOVAL AND REPAIRS

- A. Remove excavation support and protection systems when construction has progressed sufficiently to support excavation and bear soil and hydrostatic pressures. Remove in stages to avoid disturbing underlying soils or damaging structures, pavements, facilities, and utilities.
 - 1. Fill voids immediately with approved backfill compacted to density specified in Section "Trenching and Backfilling".
 - 2. Repair or replace, as approved by Owner's Representative adjacent work damaged or displaced by removing excavation support and protection systems.

END OF SECTION

SECTION 02200 EARTHWORK

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
1. Preparing subgrades for fills, walks, pavements, lawns, and plantings.
 2. Excavating for walks, pavements, lawns and plantings.
 3. General excavation
 4. Site filling, grading and compaction

1.2 REFERENCE STANDARDS

- A. The latest edition of the following standards, as referenced herein, shall be applicable.
1. "State of Connecticut Department of Transportation, Standard Specifications"
 2. "Standard Specifications for Highway Materials and Methods of Sampling and Testing, American Association of State Highway and Transportation Officials (AASHTO)."
 3. American Society for Testing and Materials (ASTM).

1.3 DEFINITIONS

- A. Backfill: Soil materials used to fill an excavation.
- B. Borrow: Satisfactory soil imported from off-site for use as fill or backfill.
- C. Excavation: Removal of material encountered above subgrade elevations.
1. Below Grade Excavation: Excavation below subgrade elevations as directed by Owner's Representative. .
 2. Bulk Excavation: Excavations more than 10 feet in width and pits more than 30 feet in either length or width.
 3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated dimensions without direction by Owner's Representative. Unauthorized excavation, as well as remedial work directed by Owner's Representative, shall be without additional compensation.
- D. Fill: Soil materials used to raise existing grades.
- E. Rock: Rock material in beds, ledges, unstratified masses, and conglomerate deposits and boulders of rock material exceeding 1 cu. yd. for bulk excavation or 3/4 cu. yd. for footing, trench, and pit excavation that cannot be removed by rock excavating equipment equivalent to the following in size

and performance ratings, without systematic drilling, ram hammering, ripping, or blasting, when permitted:

1. Excavation of Footings, Trenches, and Pits: Late-model, track-mounted hydraulic excavator; equipped with a 42-inch- (1065-mm-) wide, short-tip-radius rock bucket; rated at not less than 120-hp (89-kW) flywheel power with bucket-curling force of not less than 25,000 lbf (111 kN) and stick-crowd force of not less than 18,700 lbf (83 kN); measured according to SAE J-1179.
 2. Bulk Excavation: Late-model, track-mounted loader; rated at not less than 210-hp (157-kW) flywheel power and developing a minimum of 45,000-lbf (200-kN) breakout force; measured according to SAE J-732.
- F. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, manholes, catch basins, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- G. Subbase Course: Layer placed between the subgrade and base course for asphalt paving, or layer placed between the subgrade and a concrete pavement or walk.
- H. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.

1.4 SUBMITTALS

- A. Pre-Qualification Testing: Submit samples and test results from the qualified testing laboratory for each proposed source of backfill, imported material and on-site material to be reused, for review by the Owner's Representative at least, one (1) week prior to use of the material. Submittal shall specifically indicate the proposed use for the material. Three test reports completed within three months prior to construction may be submitted for commercial earth borrow sources or suppliers of stone products (crushed stone or CONNDOT graded stone products) in lieu of prequalification tests as approved by the Owner's Representative. Test shall include the following:
1. Particle Size Analysis:
 - a. Method: ASTM D422
 - b. Number of Tests: One (1) per sample; three (3) per potential source.
 - c. Acceptance Criteria: Gradation within specified limits.
 2. Maximum Density Determination:
 - a. Method: ASTM D698 - Standard Proctor
 - b. Number of Tests: One (1) per sample; three (3) per potential source.
 3. Pre-Qualified Material Sources: Contractor may submit, in lieu of independent laboratory test results, a copy of recent certification, gradation and proctor from proposed source. Owner's Representative may require additional testing by an independent testing laboratory when:
 - a. The latest test for the source is two (2) years old.
 - b. A change in the character of the material occurs.
 - c. The Owner's Representative determines that additional testing is necessary due to the observed properties of the supplied material.

- B. Qualification Testing During Construction:
 - 1. Additional samples shall be submitted at the direction of the Owner's Representative if the soil materials visually change from previous excavations
 - 2. Submit additional samples, geotechnical tests, analytical test data and certifications for every 500 cubic yards of material imported or reused on-site or anytime consistency of material changes in the opinion of the Owner's Representative.
- C. Field Quality Control Tests: Submit field quality control tests reports, investigations and recommendations from an independent qualified testing laboratory to the Owner's Representative in accordance with the Field Quality Control requirements

1.5 QUALITY ASSURANCE

- A. Comply with Section "Quality Requirements"
- B. Field Testing and Inspection Service:
 - 1. Contractor shall coordinate with the independent soil testing laboratory to be used for soil testing.
 - 2. The Contractor shall coordinate Field Quality Control testing with the independent laboratory approved by the Owner's Representative and comply with the recommendations of the laboratory.
- C. The Contractor shall provide additional soil gradation and compaction testing when required by the Owner's Representative if it appears that materials changed.
- D. The Owner's Representative will determine the suitability of materials that are to be used in the work and should any materials encountered be unsatisfactory for the purpose intended, they shall be removed from the site at the Contractor's expense.

1.6 PROJECT REQUIREMENTS

- A. The Contractor shall accept the site in the condition in which it exists at the time of the award of the Contract.
- B. Notify the Owner's Representative of any unexpected subsurface condition.
- C. Protect excavations by shoring, bracing, sheet piling, or by other methods, as required to ensure the stability of the excavation. Comply with OSHA requirements.
- D. Underpin or otherwise support structures adjacent to the excavation which may be damaged by the excavation. This includes all utility lines.
- E. Protection of Existing Utilities:
 - 1. Locate existing underground utilities in areas of work. If utilities are to remain in place, provide adequate means of support and protection during earthwork operations. Comply with OSHA requirements.

2. Coordinate interruption and/or termination of utilities with the utility companies and the Owner.
3. Provide a minimum of forty-eight (48) hours notice to the Owner and receive written notice to proceed before interrupting any utility.
4. Demolish and completely remove from the site any existing underground utilities designated to be removed, as shown on the Drawings or as specified in Section "Site Clearing."
5. Repair any damaged utilities as acceptable to the Owner, Owner's Representative, and utility company at no additional cost to the Owner.

F. Protection of Persons and Property:

1. Barricade open excavations occurring as part of this work and post with warning lights, if required.
2. Operate warning lights as recommended by authorities having jurisdiction.
3. Protect structures, utilities, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.
4. Perform excavation within drip-line of large trees to remain by hand, and protect the root system from damage or dryout to the greatest extent possible. Maintain moist conditions for root system and cover exposed roots with burlap. Paint root cuts of 1" diameter and larger with emulsified asphalt tree paint.

G. Comply with the specified Soil Erosion and Sediment Control practices and plans

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. General: All materials shall be supplied from a CONNDOT approved source(s). Provide borrow soil materials when sufficient suitable materials are not available from excavations.
- B. Structural Fill: On-site soils are not suitable for structural fill and controlled fill beneath pavement shall be sound, durable sand, gravel, stone or blends of these materials, free from organic, frozen or other deleterious materials and shall be 3/8" crushed stone or conform to the following gradation requirements:

<u>Sieve</u>	<u>Percent Passing</u>
3 1/2 "	100
3/4"	50-100
No. 4	25-75

The fraction, passing the No. 4 sieve shall have less than 15%, passing the No. 200 sieve.

- C. Granular Fill: Sound, durable, sand, gravel, stone, or blends of these materials, free from organic, frozen or other deleterious materials (CONNDOT Article M.02.06 Grading "B").

<u>Sieve</u>	<u>Percent Passing</u>
5"	100
3 1/2"	90-100
1 1/2"	55-95
1/4"	25-60
No. 10	15-45
No. 40	5-25
No. 100	0-10
No. 200	0-5

1. Fines passing No. 200 shall be non-plastic.
2. Particle size analysis shall show no gap grading.
3. Existing track subbase or reclaimed track pavement and subbase material may be suitable for use as granular fill provided gradation is submitted to verify compliance with CONNDOT gradation.

- D. Pavement Subbase: Refer to Section "Pavement Subbase"
- E. Crushed Stone: Shall conform to CONNDOT Section M.01.01 gradations
- F. Sand: Shall be silica based, clean washed sand conforming to ASTM C-33 Fine Aggregate Concrete Sand. Gradation shall conform to ASTM C-33 or AASHTO M-6.
- G. Topsoil: Refer to Section "Topsoil"

PART 3 - EXECUTION

3.1 PREPARATION

- A. Establish required lines, levels, contours and datum.
- B. Maintain benchmarks and other elevation control points. Re-establish, if disturbed or destroyed, at no additional cost to the Owner.
- C. Install required soil erosion and sediment control measures as specified
- D. Establish location, depth and extent of utilities
- E. Establish dewatering system and controls as necessary

3.2 DEWATERING

- A. Provide in accordance with Section "Dewatering"
- B. The Contractor shall grade the site to direct surface water run-off away from construction areas. Work areas shall be sealed on a daily basis with a smooth drum roller.

3.3 GENERAL EXCAVATION

- A. Excavation shall consist, in general, of the excavation of whatever substance is encountered to the

lines, grades and sections shown on the Drawings, including excavation as necessary for grading and other similar features.

- B. All suitable materials removed in excavation shall be used in the construction of embankments, subgrade, shoulders, slopes, grades and at such other places as directed. The Owner's Representative shall be the sole judge of what constitutes suitable material if materials to be re-used visually change or shall direct the Contractor to perform further testing if required.
- C. Removal of materials beyond the indicated subgrade elevations, without authorization by the Owner's Representative, shall be classified as unauthorized excavation and shall be performed at no additional cost to the Owner.
- D. Excavation shall be performed in proper sequence with all other associated operations.
- E. Maintain the slopes of excavation in a safe condition until completion of the grading operations.
- F. All excavation work shall be inspected and approved by the Owner's Representative before proceeding with construction.
- G. Any excess excavation and material deemed unsuitable for re-use shall be removed from the site and legally disposed.
- H. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations

3.4 EXCAVATION FOR UTILITY TRENCHES

- A. Refer to Section "Trenching and Backfilling".

3.5 PREPARATION OF SUBGRADE

- A. Notify Owner's Representative when excavations have reached required subgrade.
- B. If Owner's Representative determines that unsuitable material is present, continue excavation and replace with approved concrete or compacted structural fill material as directed.
- C. Proof roll subgrade (track and paved areas): Proof-roll subgrade with a minimum of six passes with a smooth drum roller in vibratory mode at a speed not to exceed three feet per second. The roller shall have a weight of at least ten tons when operated in static mode. Any areas which pump or weave during proof rolling shall be undercut by a minimum of 12 inches and backfilled with structural fill or 3/8" crushed stone. If the vibratory roller tends to bring up moisture, the site soils shall be proof rolled with the roller operating in static mode.
- D. Protect subgrades against freezing temperatures or frost. Provide protective insulating materials as necessary.
- E. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Owner's Representative.
- F. Rock at subgrade: In areas where the subgrade consists of bedrock, the Contractor shall remove and additional 12 inches of rock and replace with compacted pavement subbase material.

3.6 STORAGE OF SOIL MATERIALS

- A. Stockpile borrow materials and suitable excavated materials. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water.
- B. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.
 - 1. Stockpiled soils shall be located and segregated from other materials and stockpiles identified by the Contractor for the intended use, field “tugged” and tested for compliance with this Specification and the intended use.
 - 2. Stockpiles shall be surrounded by silt fence and haybales and covered with a minimum of 6 mil polyethylene.

3.7 FILL

- A. Preparation: Remove vegetation, topsoil, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface before placing fills.
- B. Plow, scarify, bench, and break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- C. Prior to placing fill over undistributed material, scarify to a minimum depth of six (6) inches.
- D. Place and compact fill material in layers to required subgrade elevations as follows:
 - 1. Under non-steep (>3:1) landscape areas, walks, pavements and field use granular fill material.
 - 2. Under steep slope (3:1 and less) landscape areas, steps, ramps, building slabs, footings and foundations use structural fill.
- E. Place fill materials evenly and uniformly to required elevations in lifts not to exceed 6 inches.
- F. When work is suspended during periods of freezing weather, measures shall be taken to prevent fill already in place from freezing. Upon resumption of work after any inclement weather, prepare the exposed surface by proof rolling to identify any zones of soft/loose soils. Soft/loose materials or frozen soils shall be removed and replaced by compacted granular fill.

3.8 MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill layer before compaction to within 2 percent of optimum moisture content.
 - 1. Do not place fill material on surfaces that are muddy, frozen, or contain frost or ice.
 - 2. Remove and replace, or scarify and air-dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.9 COMPACTION

- A. Compact soil in accordance with the following requirements:

1. Structural and Granular Fill: Each layer shall be compacted to a dry density at least 95 percent of the maximum dry density as determined in accordance with ASTM D1557.
- B. Compaction equipment used for the Work is subject to approval by the Owner's Representative. Any equipment not originally manufactured for compaction purposes and equipment which is not in proper working order will not be approved.
- C. Vibratory Drum Compactors: A self-propelled compactor classified for use according to the developed compactive force rating per linear inch of drum width (PLI). Perform compaction in accordance with CONNDOT Section 2.14.03.

3.10 GRADING

- A. The present and finished grade lines are shown on the contract drawings. Grade over the entire area, as shown on the drawings, shall be to the finished subgrade levels.
- B. All cutting, filling, backfilling and grading necessary shall be completed to bring the area to the subgrade levels indicated on the Contract Drawings.
- C. Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
 1. Provide a smooth transition between adjacent existing grades and new grades.
 2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances. Sufficient grading shall be done during the progress of the work so that the entire site shall be well drained and free from water pockets.
- D. Tolerances: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
 1. Lawn or Unpaved Areas: Plus or minus 1 inch (25 mm).
 2. Walks: Plus or minus 1 inch (25 mm).
 3. Pavements: Plus or minus 1/2 inch (13 mm).
- E. Finish grading for topsoil and seeding shall be done after construction of structures and roadway surface areas is substantially complete.

3.11 FIELD QUALITY CONTROL

- A. Testing Agency: The Contractor will coordinate with the qualified independent geotechnical engineering testing agency to perform field quality-control testing.
 1. Allow testing agency to inspect and test subgrades, subbase courses and each fill layer. Proceed with subsequent earthwork only after test results for previously completed work comply with requirements.
- B. Moisture Content: Prior to placing structural fill moisture content testing shall be performed to verify the optimum moisture content in accordance with ASTM D698.
- C. In-Place Density Testing: In-place density testing shall be performed to ascertain the compacted density of the fill and backfill materials in accordance with the following methods:

1. Method: AASHTO T191, Sand Cone Method
 2. Method: AASHTO T238, Nuclear Method
- D. Frequencies: In-place density tests will be performed at the following locations and frequencies:
1. Landscape Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 2500 sq. ft. (186 sq. m) or less of landscape area, but in no case fewer than three tests.
 2. Paved Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 2000 sq. ft. (186 sq. m) or less of paved area, but in no case fewer than three tests.
 3. Trench Backfill: Refer to Section “Trenching and Backfilling”
 4. The Owner’s Representative may direct additional tests to establish gradation, maximum density, and in-place density as required by working conditions, at the Contractor's expense.
- E. Acceptance Criteria: The sole criterion for acceptability of in-place fill shall be in situ dry density. Minimum dry density for all fill or backfill shall be as indicated in the Compaction requirements. If a test fails to qualify, the fill shall be further compacted and re-tested. Subsequent test failures shall be followed by removal and replacement of the material.
1. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil to depth required; recompact and retest until specified compaction is obtained.

3.12 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
 1. Scarify or remove and replace soil material to depth as directed by Owner’s Representative; reshape and recompact.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible.

3.13 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus soil and waste material, including unsuitable soil, trash, and debris, and legally dispose of it off Owner's property at no additional cost to the owner.

3.14 SUSPENSION OF WORK

- A. Whenever the work is suspended, excavations shall be protected and the roadways, if any, left unobstructed. Within or adjacent to private property, material shall be stored at such locations as will not unduly interfere with traffic of any nature and in no case shall materials be stored in

locations which will cause damage to existing improvements.

END OF SECTION 02200

SECTION 02221 TRENCHING AND BACKFILLING

PART 1 - GENERAL

1.1 SUMMARY

- A. The Contractor shall provide all labor, materials, equipment, and services necessary for, and incidental to complete the work within this section. This Section includes but is not limited to the following as related to utility installations:
 - 1. Trenching and excavation
 - 2. Preparing subgrades
 - 3. Bedding
 - 4. Backfilling and compaction
- B. This section includes excavation, backfilling and compaction for utility structures including but not limited to catch basins, manholes and vaults.

1.2 REFERENCE STANDARDS

- A. The latest edition of the following standards, as referenced herein, shall be applicable.
 - 1. "State of Connecticut Department of Transportation, Standard Specifications"
 - 2. "Standard Specifications for Highway Materials and Methods of Sampling and Testing, American Association of State Highway and Transportation Officials (AASHTO)."
 - 3. American Society for Testing and Materials (ASTM).

1.3 DEFINITIONS

- A. Refer to Section "Earthwork"

1.4 SUBMITTALS

- A. Submit Qualifications of the Contractor's Independent Testing Laboratory for Owner approval.
- B. Pre-Qualification Testing: Refer to Section "Earthwork"
- C. Qualification Testing During Construction:
 - 1. Additional samples shall be submitted at the direction of the Owner's Representative if the soil materials visually change from previous excavations
 - 2. Submit additional samples, geotechnical tests, analytical test data and certifications for every 1,000 cubic yards of material imported or reused on-site or anytime consistency of material changes in the opinion of the Owner's Representative.
- D. Field Quality Control Tests: Submit field quality control tests from an independent qualified testing laboratory to the Owner's Representative in accordance with the Field Quality Control requirements

1.5 QUALITY ASSURANCE

- A. Comply with Section “Quality Requirements”
- B. Field Testing and Inspection Service:
 - 1. Contractor shall coordinate with the independent soil testing laboratory to be used for soil testing.
 - 2. The Contractor shall coordinate Field Quality Control testing with the independent laboratory approved by the Owner’s Representative and comply with the recommendations of the laboratory.
- C. The Contractor shall provide additional soil gradation and compaction testing when required by the Owner’s Representative if it appears that materials changed.
- D. The Owner’s Representative will determine the suitability of materials that are to be used in the work and should any materials encountered be unsatisfactory for the purpose intended, they shall be removed from the site at the Contractor's expense.

1.6 PROJECT REQUIREMENTS

- A. The Contractor shall accept the site in the condition in which it exists at the time of the award of the Contract.
- B. Notify the Owner’s Representative of any unexpected subsurface condition.
- C. Protect excavations by shoring, bracing, sheet piling, or by other methods, as required to ensure the stability of the excavation. Comply with OSHA requirements.
- D. Protection of Existing Utilities: Refer to Section “Earthwork”
- E. Protection of Persons and Property: Refer to Section “Earthwork”

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Pipe Zone Bedding: Shall consist of durable crushed rock or durable crushed gravel stone, free from ice and snow, sand, clay, loam, or other deleterious or organic material. Gradation shall conform to CONNDOT Section M.01.01 (No. 6)

<u>Sieve</u>	<u>Percent Passing</u>
1"	100
3/4"	90-100
1/2"	20-55
3/8"	0-15
No. 4	0-5

- B. Pipe Zone Backfill: Sound, durable sand, gravel, stone or blends of these materials, free from organic, frozen or other deleterious materials, conforming to the following gradation requirements:

<u>Sieve</u>	<u>Percent Passing</u>
2"	100
1/4"	30 - 65
No. 40	5 - 40
No. 200	0 - 10

- C. Trench Backfill (Suitable Material): Sound, durable sand, gravel, stone or blends of these materials, free from organic, frozen or other deleterious materials, meeting the requirements of CONNDOT Article M.02.06 Grading "B"

Run-of-trench material meeting the criteria above shall be considered suitable material and shall be used for trench backfill only after tested and approved by the Owner's Representative. The Contractor shall pay for all additional testing required to determine the conformance of run-of-trench material, if at any time during the Work this material appears to be in non-conformance in the opinion of the Owner's Representative.

- D. Structure Backfill: Backfill adjacent to Retaining Walls, Columns and Footings shall conform to structural fill requirements. Refer to Section "Earthwork"
- E. Detectable Warning Tape: All new underground plant shall be marked with warning tape in accordance with State of Connecticut Public Act 16-345 and DPUC Regulations.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Establish required lines, levels, contours and datum.
- B. Maintain benchmarks and other elevation control points; re-establish if disturbed or destroyed, at no additional cost to the Owner.
- C. Establish location and extent of existing utilities prior to commencement of excavation.

3.2 EXCAVATION

- A. All excavation shall be made to such depth as required and of the width shown on the Contract Drawings to provide suitable room for building the structures and laying the pipe(s) they are to contain and for sheeting, shoring, pumping and draining as necessary, and for removing peat, silt, or any other materials which the Owner's Representative may deem unsuitable.
- B. Trench excavation for pipes shall be made by open cut to accommodate the pipe or structure at the depths indicated on the Contract Drawings. Excavation shall be made to such a depth and to the width indicated on the Contract Drawings so as to allow a minimum of six (6) inches of pipe zone bedding to be placed beneath the bottom of all structures and barrels, bells or couplings of all pipes installed unless otherwise specified on the drawings.
- C. The bottom of the trench shall be accurately graded to provide a uniform layer of bedding material, as required, for each section of pipe. Trim and shape trench bottoms and leave free of irregularities, lumps, and projections.
- D. Stockpile excavated subsoil for reuse where directed or approved. Remove excess or unsuitable excavated material from site.

- E. Excavation Below Grade: If, in the opinion of the Owner's Representative, existing material below the trench grade is unsuitable for properly placing bedding material and laying pipe, the Contractor shall excavate and remove the unsuitable material and replace the same with an approved fill material properly compacted.
- F. Stability of Excavation: Slope sides of excavations shall comply with federal, state and local codes and ordinances having jurisdiction. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated. Maintain sides and slopes of excavation in safe condition until completion of backfilling.
- G. Removal of materials beyond the indicated subgrade elevations, without authorization by the Owner's Representative, shall be classified as unauthorized excavation and shall be performed at no additional cost to the Owner.

3.3 DEWATERING

- A. The Contractor shall remove all water from the excavation promptly and continuously throughout the progress of the work and shall keep the excavation dry at all times until the structures to be built therein are completed and are backfilled or have sufficient weight to resist uplift pressures. Groundwater levels shall be depressed to a minimum of 2 feet below excavation subgrade. No pipe or masonry is to be laid in water and water shall not be allowed to rise on or flow over any pipe or masonry until such time as approved by the Owner's Representative.
- B. All necessary precautions shall be taken to prevent disturbances of and to properly drain the subgrades upon which concrete is to be placed and upon which pipe is to be laid. If necessary, in the opinion of the Owner's Representative, well points, deep wells, or other means shall be used to lower the ground-water level, and observation wells shall be installed to confirm that groundwater levels are lowered as specified. Well points, if used, shall be shifted frequently to avoid drainage from too long a distance. Provide a suitable point of discharge in a manner satisfactory to the Owner's Representative.
- C. Precautions shall be taken to protect uncompleted work from flooding during storms or from other causes. All pipe lines or structures not stable against uplift during construction or prior to completion shall be thoroughly braced or otherwise protected.
- D. Refer to Section "Dewatering"

3.4 BEDDING AND BACKFILLING

- A. General: Bedding and backfilling shall be accomplished in three stages unless otherwise specified on the Contract Drawings. The first stage shall involve placement of "pipe zone bedding" as a layer(s) of selected material required to support, or to stabilize unsound or unsatisfactory foundation conditions. The second stage shall involve placement of "pipe zone backfill" from the top of the bedding material up to one (1) foot above the pipe. The third stage involves the placement of "trench backfill" in the remainder of the trench up to the surface of the ground or the bottom of any special surface treatment subgrade elevation.
- B. Bedding
 - 1. The bedding material shall be placed in the trench after the trench has been excavated a minimum of six (6) inches below the bell of the pipe to permit the placing of not less than six (6) inches of bedding material unless otherwise specified on the Contract Drawings. Where, in the opinion of the Owner's Representative, more than six (6) inches of bedding material shall be required, the excavation shall be performed and bedding placed to the depth ordered by the Owner's Representative.

2. The bedding material shall be placed to the full width of trench. The bedding material shall be placed in loose lifts not exceeding six (6) inches to the elevation shown on the Contract Drawings or directed by the Owner's Representative. The bedding material shall be tamped and compacted to form a firm and even bearing surface.
- C. Pipe Zone Backfill: Pipe zone backfill shall be placed to the elevation shown on the Contract Drawings in loose lifts not-to-exceed six (6) inches in thickness, before compaction. The backfill shall be placed on both sides of the pipe at the same time and to approximately the same elevation. Any pipe that is damaged or moved out of alignment, regardless of cause, shall be replaced or realigned at the Contractor's expense. Each layer shall be thoroughly compacted by hand-tamping or mechanical means being careful not to damage the pipe. When the pipe zone backfill reaches one (1) foot over the top of the pipe, the entire surface shall be compacted by mechanical means.
 - D. Trench Backfill: The remainder, if any, of the trench above the pipe zone backfill shall be backfilled with suitable material loose lifts not exceeding six (6) inches in thickness before compaction. Each layer shall be thoroughly compacted by mechanical means.
 - E. Compaction: Pipe trench backfill (pipe zone bedding, pipe zone backfill and trench backfill) shall be compacted by tamping or rolling to achieve the following compaction requirements
 1. General Areas: A minimum dry density of 90 percent of the standard Proctor maximum dry density of the material used (ASTM D698).
 2. Traffic Areas and Structures: Backfill in pipe trenches to be covered with asphalt; concrete or other hardscape designed for vehicular traffic loading and backfill around structures shall be compacted to a minimum of 95 percent of standard Proctor maximum dry density.
 3. Backfill materials shall be placed with water content within plus or minus 4 percent of optimum moisture content per the standard Proctor method (ASTM D698). Any water used for compaction shall be provided by the Contractor at his own expense.
 4. The approval of the Owner's Representative of the proposed method of compaction of backfill shall in no way be construed as relieving the Contractor of responsibility of settlement of trenches, etc. and any settlement shall be repaired by him at his own expense.

3.5 BACKFILLING AROUND STRUCTURES

- A. The Contractor shall not place backfill against any structure without obtaining the approval of the Owner's Representative. No dumping shall be allowed where materials would flow against or around such structures. Backfill material shall be deposited in horizontal layers not exceeding six (6) inches in loose thickness or as shown on the Contract Drawings and thoroughly compacted by hand or pneumatic tampers to the satisfaction of the Owner's Representative.
- B. No backfill or compaction shall take place against any cast-in-place concrete footings or slabs prior to seven (7) days initial concrete set, or against any cast-in-place concrete walls prior to achieving the desired design strength.

3.6 SUSPENSION OF WORK

- A. Whenever the work is suspended, excavations shall be protected and the roadways, if any, left unobstructed. Within or adjacent to private property, material shall be stored at such locations as will not unduly interfere with traffic of any nature and in no case shall materials be stored in locations

which will cause damage to existing improvements.

3.7 FIELD QUALITY CONTROL

- A. Notify the Owner's Representative at least one (1) working day in advance of all phases of filling and backfilling operations.
- B. In-place density testing shall be performed to ascertain the compacted density of the fill and backfill materials in accordance with the following methods:
 - 1. In-place relative density:
 - a. Method: AASHTO T191, Sand Cone Method
AASHTO T238, Nuclear Method
- C. In-place density tests on trench backfills shall be provided for every 500 cubic yards of fill and in vertical lifts not exceeding two (2) feet, and at least once daily.
- D. One particle size analysis (ASTM D422) and one standard Proctor compaction test (ASTM D698) shall be completed for every 1,000 cubic yards of material placed.
- E. The Owner's Representative may direct additional tests to establish gradation, maximum density, and in-place density as required by working conditions, at the Contractor's expense.
- F. Acceptance Criteria: The criteria for acceptability of in-place fill shall be in-situ dry density and moisture content. If a test fails to qualify, the fill shall be further compacted and re-tested. Subsequent test failures shall be followed by removal and replacement of the material.

3.8 DISPOSAL OF MATERIAL

- A. Excess and unsuitable materials shall be removed and disposed of off-site by the Contractor at no additional cost to the Owner.

END OF SECTION 02221

SECTION 02222 MANAGEMENT OF POTENTIALLY CONTAMINATED SOIL

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Develop a Material Handling Plan consistent with this specification.
- B. Stockpile, transport, test and dispose of soil off-site and complete any other handling required for proper management and disposal of urban fill and potentially contaminated soil. The materials covered by this specification are urban fill and soils that are potentially contaminated but do not meet the criteria for definition as a hazardous waste. The contamination may include, but is not limited to: volatile and semi-volatile organic compounds, total petroleum hydrocarbons and metals.
- C. Conduct all soil management activities in accordance with the State of Connecticut Department Of Environmental Protection (CT DEP), Bureau of Materials Management and Compliance Assurance, Division of Engineering and Enforcement's "General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer)" dated September 7, 2006.
- D. Conduct all tasks associated with these items in accordance with all Federal, State, County, and local regulations.
- E. Develop a written site-specific health and safety plan (HASP) prior to commencing any on-site work and continue to implement, maintain, and enforce the plan until final demobilization from the site. The development, implementation, and maintenance of the HASP is the Contractor's sole responsibility.
- F. Submit the HASP and Materials Handling Plan to the Engineer for review.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Furnish all materials required by the Contractor's approved Material Handling Plan. As a minimum, furnish:
 - 1. 20 mil (2 layers of 10 mil acceptable) minimum plastic sheeting for base of any stockpiles.
 - 2. 6 mil plastic sheeting for covering of contaminated soil/sediment in any stockpiles. Stockpiles must be covered at all times, except when adding/removing soils from said stockpiles.
 - 3. Waterproof tarpaulins for covering of trucks/roll-offs.
 - 4. Geo-Fabric for delineation of excavation area.

PART 3 - EXECUTION

3.1 ADVANCE PREPARATION

- A. **Material Handling Plan:** At least 14 days prior to commencing work, prepare and submit a Material Handling Plan (the Plan) to the Engineer for review. The Plan must be reviewed by the Engineer prior to the commencement of work. Include, as a minimum, written procedures detailing the operations to be used to transport, stockpile, sample, analyze, and dispose of contaminated soil/sediment. Procedures must incorporate the provisions of the HASP (Part 3.1B of this Section) and address environmental protection considerations such as dust control, equipment/truck decontamination, covering of trucks, maintenance and management of stockpiles. Also include in the Plan the following:
1. The method(s) of treatment/disposal that will be used.
 2. For off-site treatment/disposal, identification of and information on the proposed permitted treatment/disposal facilities to include: Facility name; address; contact person; signed letter of agreement from the facility of intent to accept the waste as specified in the contract; listing of all permits, licenses, letters of approval authorizing the disposal of wastes of this description at the designated facility as they pertain to this Contract.
 3. For off-site treatment/disposal or movement through an active lane, identification of and information on the proposed waste transporter to include: Name; address; telephone number; contact person; EPA and any required state-specific transporter ID number; and any and all necessary permit authorizations for waste to be transported from the stockpile locations to treatment/storage/disposal facilities.
- B. **Contractor's Site-Specific Health and Safety Plan:**
1. Within 7 days after the date of Notice to Proceed and prior to mobilization to the site, submit a site-specific Health and Safety Plan. As a minimum, address aspects of worker protection and measures designated to prevent migration of hazardous or contaminated material to the environment, including but not limited to the provisions and guidelines contained herein, and the following specific topics:
 - a. Worker training.
 - b. Worker medical surveillance.
 - c. A detailed description of the planned movement of labor, equipment, and materials from and between work areas as work progresses, including measures to be employed to prevent

recontamination of previously cleaned areas and contamination of areas that do not now contained hazardous materials.

- d. A detailed description of the personnel decontamination facilities to be employed.
 - e. A detailed description of the wash-down area for decontamination of vehicles and equipment and the methods used to collect, store, treat, and ultimately dispose of wash-down decontamination waters and sediment.
 - f. Personnel protective equipment types to be used.
 - g. Personnel hygiene and personnel decontamination procedures.
 - h. Personnel and community air monitoring.
 - i. Emergency and first-aid equipment and supply.
 - j. Dust and particulate emission control.
 - k. Monitoring and mitigation of worker heat and cold stress.
 - l. On-site and off-site contingency and emergency response plan.
 - m. Activity hazard/risk analysis.
 - n. Standard operating procedures.
 - o. Record-keeping.
- C. Notifications: At least 10 days prior to beginning the work, provide the Engineer with the anticipated scheduled dates and work locations for removal/treatment of all contaminated materials.
- D. If the Contractor's schedule, means and methods require them to transfer, stage, and/or temporarily store greater than 10,000 cubic yards at any one time of contaminated soil and/or sediment at the designated stockpiling site, the Contractor shall be responsible for obtaining an authorization under "General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer)" (Form *DEP-SW-REG-001* of the Bureau of Materials Management and Compliance Assurance of the CT DEP) on behalf of the Borough. Contractor shall file with the commissioner a registration form which meets the requirements of Section 4 of the general permit and the applicable fee *and* shall obtain an approval of registration by the commissioner prior to work.

3.2 MATERIAL HANDLING

- A. Testing and Preliminary Classification of Soil: The locations where contaminated soil/sediments are anticipated are as indicated in a report titled "Environmental Subsurface Investigation Report" dated 1/6/2011 and in a memorandum titled "Geotechnical and Environmental Investigation" dated 6/3/2010, both of which are available upon request to the Borough of Naugatuck, and are generally located along Trowbridge Place between Nettleton Avenue and Goodyear Avenue. The Engineer will perform testing consisting of visual and olfactory observation and organic vapor monitoring of the soil/sediment during excavation. Segregate/stockpile soil/sediment as follows or as indicated by the Engineer:
- 1. Non-Contaminated Native Soils: Native soil/sediment with no visual or

olfactory evidence of contamination for which PID/FID readings are under 10 ppm above background or as otherwise determined by the Engineer shall be considered non-contaminated. Provided that they meet the requirements for backfill in Section 02221, these soils can be used without restriction on-site. Non-contaminated native soils not re-used as backfill are to be removed from the project site as clean fill by the Contractor.

2. Non-Contaminated Urban Fill: Urban fill materials with no visual or olfactory evidence of contamination for which PID/FID readings are under 10 ppm above background or as otherwise determined by the Engineer shall be considered non-contaminated and can be used without restriction on-site. Soils not re-used as backfill are to be stockpiled at the designated stockpile location separately from other soil classes. Testing as outlined in Part 3.2B is required prior to off-site disposal or off-site re-use.
3. Low Contaminated soil: Soil determined by visual, olfactory, and/or photoionic evidence of contamination with PID/FID testing values of greater than 10 ppm, but less than 50 ppm above background or as determined by the Engineer shall be segregated from other soil classes. Lower Potentially Contaminated Soil can be used without restriction on-site. Soils not re-used as backfill are to be stockpiled at the designated location separately from other soil classes. Testing is required prior to off-site disposal or off-site re-use.
4. High Contaminated Soil: Soil determined by visual, odor, and/or photoionic evidence of contamination with PID/FID testing values of greater than 50 above background or as determined by the Engineer shall be segregated from non-contaminated and low contaminated potential soil. Soils are to be stockpiled at the designated location separately from other soil classes. The Engineer has the final determination of which category the soil shall be stockpiled. It is not anticipated at this time that any soils will be classified as “high contaminated soil”.

B. Stockpiling and Segregation:

1. Any excavated soils may be re-used in the same excavation within the same area provided the following:
 - a. The soils meet specification requirements for backfill in Section 02221.
 - b. The soils do not represent a “significant environmental hazard” as defined in CGS Section 22a-6(u).
 - c. The upper foot of the excavation is filled with clean fill materials or paved.
 - d. Any excess contaminated materials are handled in accordance with

this Section.

2. All staging/stockpiling shall be performed at 211 Spring Street, Naugatuck, CT. Staging/stockpiling at any other locations is prohibited.
3. Potentially contaminated material shall be transported to the designated stockpiling location identified in Part 3.3B-2 of this Section, and segregated into non-contaminated urban fill, low-contaminated soil and high-contaminated soil stockpiles as determined by preliminary testing as outlined in Testing and Preliminary Classification in Part 3.2A of this Section. Contaminated soil may be in stockpiles or placed in roll-offs.
 - a. Prior to transporting to the designated stockpile site in trucks or roll-offs, cover with waterproof tarpaulins. Secure the tarpaulin and maintain the cover throughout transport.
 - b. If soil is placed in stockpiles, prepare the stockpile area by removing all large stones, roots, or other debris which may puncture the liner. Place the stockpile on a minimum of 20 mil or equivalent plastic ground cloth and cover by 6 mil minimum polyethylene sheeting or equivalent to protect against leaching or runoff of contaminants into groundwater or storm water. Weight or secure the sheeting by appropriate means and as necessary to prevent tearing or removal by weather. Grade surrounding surface to provide for positive drainage away from the pile. Maintain covering and grading for as long as the stockpile exists.
 - c. If soils are stored at the stockpiling site in roll-offs, cover with waterproof tarpaulins. Secure the tarpaulin and maintain the cover throughout storage.
 - d. Do not mix contaminated material with soils that are determined to be non-contaminated based on the preliminary classification.
4. Stockpiles shall be labeled as follows: "contaminated soil, awaiting analytical results, initial accumulation date: xx/xx/xx [add date when collection/excavation initiated]."
5. Institute appropriate procedures and security measures to ensure the protection of site personnel and the public from contaminated materials as described in the Material Handling Plan submitted by the Contractor.
6. Notify the Engineer immediately of any soil that appears to contain unknown contaminants (based on visual, odor, or PID/FID testing) or that varies significantly from the material originally identified.
7. Prior to backfilling trench excavations with re-used soils, Contractor shall

place geofabric in the base and at sidewalls of the excavations.

8. Conduct all stockpiling and soil management activities in accordance with the State of Connecticut Department Of Environmental Protection (CT DEP), Bureau of Materials Management and Compliance Assurance, Division of Engineering and Enforcement's "General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer)" dated September 7, 2006.

C. Sampling and Laboratory Analysis:

1. Initial sampling and analysis to determine if soils require off-site disposal at a disposal facility/landfill will be conducted by the Engineer. Engineer will sample and arrange for testing for all parameters listed in the Connecticut State Agencies Regulations §22a-133k, also known as the Remediation Standard Regulations (RSRs). Sampling will be conducted on the following stockpile types: Non-Contaminated Urban Fill, Low Contaminated Soil and High Contaminated Soil.
2. Results of laboratory analyses will be provided to the Contractor.
3. Soil with contaminant levels that exceed the applicable criteria of the Connecticut State Agencies Regulations §22a-133k but that is not classified as hazardous waste is considered to be "special waste". Soils which are determined by the Engineer as outlined in Part 3.2C-1 of this Section to be "special waste" will require off-site disposal at a disposal facility/landfill. Soils classified as "special waste" shall be further characterized by the Contractor as follows:
 - a. Sampling shall be conducted by a person thoroughly trained in sampling protocols using standard accepted sampling practices that are representative of the pile.
 - b. Perform analyses and testing for all parameters as defined in "Special Waste Category Examples And The Minimal Chemical Analyses Recommended By DEP For Disposal Into A Solid Waste Disposal Area Or Into A Resources Recovery Facility" (Form *DEP-WEED-INST-200* of the Bureau of Materials Management and Compliance Assurance of the DEP).
 - c. Ensure that all analyses and testing is conducted as required by the intended disposal facility/landfill (if off-site disposal is determined to be required based on the results of said sampling). Disposal/treatment facilities may require laboratory testing for criteria of hazardous waste or for other criteria.
 - d. Perform all analyses at an independent laboratory certified by the

Connecticut Department of Public Health for the intended analyses.

- e. Provide a copy of the analysis report to the Engineer within 2 days of receipt. No removal of special waste shall occur prior to the Engineer's receipt and review of the laboratory report. No removal of special waste from the designated stockpile location shall occur without authorization from the Borough or Engineer.

3.3 FINAL CLASSIFICATION OF SOIL

A. Testing and Final Classification of Soil

1. Soil with contaminant levels below the applicable criteria in Connecticut State Agencies Regulations §22a-133k shall be designated as non-contaminated soils and removed from the stockpile location by the Contractor. This designation shall be made by the Engineer in accordance with Part 3.2C-1 of this Section.
2. Soil with contaminant levels that exceed the applicable criteria of the Connecticut State Agencies Regulations §22a-133k but that is not classified as hazardous waste is considered to be "special wastes". The disposal of special wastes, as defined in section 22a-209-1 of the Regulations of Connecticut State Agencies (RCSA), requires written authorization from the Waste Engineering and Enforcement Division prior to delivery to any solid waste disposal facility in Connecticut.
3. If soils that are not to be re-used on-site are classified as "special waste" by the Engineer as described in Part 3.2C, thus requiring disposal at an off-site disposal facility/landfill, Contractor shall prepare an "Authorization Application for Disposal of Special Waste" (Form *DEP-WEED-APP-200* of the Bureau of Materials Management and Compliance Assurance of the DEP), including supporting documentation, on behalf of the Borough. The Contractor shall be responsible for providing the necessary analytical data in support of this application.
4. If disposal of soil designated as special waste at an off-site disposal facility/landfill is required, Contractor shall prepare any necessary authorizations required by the disposal facility/landfill on behalf of the Borough. Note that this authorization is separate from the authorization required in Part 3.3A-3 of this Section.
5. After receiving authorization, Contractor shall arrange for the transportation and disposal of soil designated as special waste at an off-site disposal facility/landfill in accordance with Parts 3.4 and 3.5 of this Section.

3.4 TRANSPORTATION OFF-SITE

- A. Load and transport soil designated as special waste in vehicles with a current waste transporter's permit (as required by federal and state regulations). Verify and document that the transporter has a current waste transporter's permit (as required) authorizing the transport of the project waste materials to the intended off-site facility. Coordinate all shipments and arrivals at the disposal facility to meet project schedule requirements. Complete any required shipping papers, placarding, and weighing/load measurements and provide documentation/copies to the Engineer.
- B. Cover roll-offs and trucks with waterproof tarpaulins to prevent runoff or evaporation of contaminants and blowing of soil.
- C. Perform actions necessary to remedy situations involving material spilled in transit and to prevent mud and dust from being tracked from the site.
- D. Do not combine material from any other source with material from the project site.

3.5 DISPOSAL/TREATMENT

- A. For On-Site Fill:
 - 1. Place soil as indicated by the Engineer as fill in accordance with the requirements contained in Sections 02200 and 02221 and/or other applicable sections of the Standard Specifications.
- B. For Disposal Other than as Fill:
 - 1. Provide for proper disposal of all soil designated as special waste at an off-site disposal facility/landfill by the methods and procedures described in the Material Handling Plan submitted in accordance with Part 3.1B of this Section. Provide for proper disposal of all soil designated as special waste at an off-site disposal facility/landfill within 45 days of receipt of the results of laboratory analysis performed in accordance with Parts 3.2C-5 and C-7 of this Section. Do not remove any soil designated as special waste from the stockpile location prior to authorization by the Engineer. Contractor is responsible for obtaining any additional commercial user permits required by the disposal facility/landfill.
 - 2. Soil with contaminant levels below the applicable criteria Connecticut State Agencies Regulations §22a-133k shall be removed by the Contractor. Soils determined to be non-contaminated based on testing performed by the Engineer shall not be transported from the designated stockpile location without authorization from the Engineer. Non-contaminated soils are to be removed from the designated stockpile

location and disposed off-site by the Contractor within 15 days of receiving the results of laboratory analysis from the Engineer.

3.6 BASIS FOR ACCEPTANCE

- A. Submission of evidence that all material has been tested, handled and disposed of in accordance with the approved Material Handling Plan and this Section will be the basis of acceptance for work completion.

3.7 METHOD OF MEASUREMENT

- A. Contractor shall be responsible for transportation of non-contaminated urban fill, low contaminated soils, and high contaminated soils to the designated stockpile location.
- B. No additional payment shall be made for soil transported to the designated stockpile location.
 - 1. The Contractor shall include initial transport whether directly to off-site disposal (for non-contaminated native soils) or to stockpile location in unit prices for pipe, etc.
- C. Payment shall be made for each cubic yard of stockpiled soils determined to be non-contaminated.
 - 1. The Contractor shall present a cost for transportation, handling and off-site disposal as a single unit price cost in their bid summary.
- D. Payment shall be made for each ton of soil requiring testing and off-site disposal at a disposal facility/landfill (“special waste”). This quantity of soil is estimated to be 480 cubic yards.
 - 1. The Contractor shall present costs for testing, transportation, handling and off-site disposal as a single unit price cost in their bid summary.

END OF SECTION 02222

SECTION 02230 PAVEMENT SUBBASE

PART 1 - GENERAL

1.1 SUMMARY

- A. The Contractor shall provide all labor, materials, equipment, and services necessary for, and incidental to, the placement of pavement subbase as shown on the Contract Drawings or as specified herein.
- B. Subbase shall be placed in conformance with the lines, grades, thicknesses and typical sections as shown or detailed on the Contract Drawings.

1.2 QUALITY ASSURANCE

- A. Reference Standards:
 - 1. The latest edition of the following standards, as referenced herein, shall be applicable.
 - a. “State of Connecticut Department of Transportation, Standard Specifications for Roads, Bridges and Incidental Construction.”
 - b. “Standard Specifications for Highway Materials and Methods of Sampling and Testing, American Association of State Highway and Transportation Officials (AASHTO)”.
- B. Testing Laboratory Qualifications: To qualify for acceptance, the soil testing laboratory must demonstrate to the Owner’s Representative’s satisfaction, based on evaluation of laboratory-submitted criteria conforming to ASTM E 699, that it has the experience and capability to conduct the required testing without delaying the progress of the Work.
- C. Field Testing and Inspection Service: Contractor shall retain the services of the same independent soil testing laboratory used for the source qualification testing to provide soil testing during pavement subbase installation.

1.3 SUBMITTALS

- A. Certification:
 - 1. The Contractor shall submit documentation from material supplier. This documentation shall show conformance to the requirements stated in PART 2 - PRODUCTS.
 - 2. All materials shall be from CONNDOT approved source(s).
- B. Test Reports
 - 1. The testing laboratory shall submit written reports of all tests, investigations, findings, and recommendations to the Contractor and the Owner’s Representative.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Subbase Course:
 - 1. Processed Aggregate Base: material conforming to the requirements of CONNDOT Article M.05.01 and conform to the following gradation requirements:

<u>Sieve</u>	<u>Percent Passing</u>
2 1/2"	100
2 "	95-100
3/4 "	50-75
1/4 "	25-45
No. 40	5-20
No. 100	2-12

- B. It shall be the Contractor's responsibility to provide a material which meets this specification and is within his capabilities to fine grade to the required tolerances. Should the subbase course become unstable at any time prior to the placement of the overlying course due to the gradation of the material furnished, the Contractor shall, at his own expense, correct the unstable condition to the satisfaction of the Owner's Representative.
- C. All material shall meet the specified gradation prior to placement. All processing shall be completed at the source.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Establish required lines, levels, contours, and datum.
- B. Maintain benchmarks and other elevation control points. Re-establish, if disturbed or destroyed at no additional cost to the owner.
- C. Place subbase only after subgrade has been proof-rolled and approved by the Owner's Representative.

3.2 PLACING

- A. All subbase material shall be placed in uniform horizontal layers with a maximum compacted thickness of six (6) inches.
- B. Place the subbase in a manner to avoid segregation. Uncontrolled spreading shall not be permitted.

3.3 COMPACTION

- A. Where subbase courses must be moisture-conditioned before compaction, uniformly apply water to the surface. Prevent free water from appearing on the surface during, or subsequent to, compaction operations.
- B. All portions of each layer shall be compacted to a density not less than 95 percent of the maximum density.
- C. After compaction, the top surface of the subbase course shall not extend more than 1/4 inch above nor more than 1/4 inch below the specified grade at any location.

3.4 TRAFFIC ON SUBBASE

- A. The movement of traffic over the final surface of the subbase may be permitted at locations designated by, and under such restrictions as ordered by the Owner's Representative, provided

such movements take place prior to the final finishing of this course to the specified tolerance. The movement of construction equipment on this course may be permitted, at locations designated by and under such restrictions, as ordered by the Owner's Representative.

- B. Should the subbase become mixed with the subgrade or any other material, through any cause whatsoever, the Contractor shall, at his expense, remove such mixture and replace it with the appropriate subbase material.

3.5 FIELD QUALITY CONTROL

- A. Notify the Owner's Representative at least one (1) working day in advance of all phases of filling and backfilling operations.
- B. The Contractor shall provide compaction testing to ascertain the compacted density of the fill and backfill materials in accordance with the following methods:
 - 1. In-place relative density:
 - a. Method: AASHTO T191, Sand Cone Method
AASHTO T238, Nuclear Method
 - b. One test per every 250 cubic yards of fill at every 6" lift. (Minimum one per 5,000 sf)
- C. Compaction tests will be provided for every 250 cubic yards of fill for each lift.
- D. The Owner's Representative may direct additional tests to establish gradation, maximum density, and in-place density as required by working conditions. This testing shall not relieve the contractor of their required field quality control.
- E. Acceptance Criteria: The sole criterion for acceptability of in-place subbase shall be in situ dry density. Minimum dry density for all subbase shall be 95 percent of the maximum dry density. If a test fails to qualify, the fill shall be further compacted and re-tested, at the contractor's expense. Subsequent test failures shall be followed by removal and replacement of the material.

END OF SECTION 02230

SECTION 02270 EROSION AND SEDIMENT CONTROL

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section covers work necessary for stabilization of soil to prevent erosion and sedimentation during and after construction and land disturbing activities. The work shall include the furnishing of all labor, material, tool, and equipment to perform the work and services necessary as herein specified and as indicated on the Drawings. This shall include installation, maintenance, and final removal of all temporary soil erosion and sediment control measures. All erosion and sediment control methods and devices used shall conform to the latest requirements imposed by federal, state and local authorities.
- B. The use of temporary control measures shall be coordinated with the permanent erosion control features specified elsewhere to the extent practical, to assure effective and continuous erosion control.
- C. The Contractor shall be responsible for repair of any damage caused and shall be financially responsible for any penalties imposed. Any complaints, fines, etc. relating to ineffective erosion and sediment control, shall be the sole responsibility of the Contractor.
- D. The Contractor shall protect adjacent properties and watercourses from soil erosion and sediment damage throughout construction.

1.2 SUBMITTALS

- A. Erosion and Sediment Control Work Plan: Submit Erosion and Sediment Control Work Plan at least two (2) weeks prior to start of any trenching or land disturbance activities. The review will be only for the information of the Owner and third parties for an overall understanding of the project relating to access, maintenance of existing facilities and proper utilization of the site. The Contractor shall remain responsible for the adequacy and safety of the means, methods and sequencing of construction. The plan shall include, but not be limited to the following items:
 - a. Final phasing plan for sequence of construction and controls, indicating any changes and variations from proposed controls
 - b. General description of construction methods.
 - c. Maintenance schedule and procedures
 - d. Details of dust control measures.
 - e. Proposed locations of stockpiled excavation and/or backfill materials.
 - f. Any other controls or measures necessary to comply with regulations as required
- B. Catch Basin Sediment Capture Device: Submit product data.

1.3 QUALITY ASSURANCE

- A. Reference Standards: The latest edition of the following standards, as referenced herein, shall be applicable.
 - 1. "State of Connecticut Department of Transportation Standard Specifications."

2. "Standard Specifications for Highway Materials and Methods of Sampling and Testing, American Association of State Highway and Transportation Officials (AASHTO)".
 3. Connecticut Guidelines for Erosion and Sediment Control, Latest Edition
- B. Regulatory Requirements: The Contractor shall comply with the requirements for soil erosion and sedimentation control, and other requirements of governmental authorities having jurisdiction, including the United States of America, the State of Connecticut and the Borough of Naugatuck. In the event of conflict between these specification requirements and pollution control laws, rules or regulations of other Federal or State agencies, the more restrictive laws, rules or regulations shall apply.
- C. Soil erosion and sediment control measures shall at all times be satisfactory to the Owner. The Owner will inform the Contractor of unsatisfactory conditions if observed. If the unsatisfactory condition is not corrected within 24 hours, the Owner may suspend the performance of any or all other construction until the unsatisfactory condition has been corrected. Such suspension shall not be the basis of any claim by the Contractor for additional compensation nor for an extension of time to complete the work.
- D. The Contractor shall inspect all soil erosion and sediment control measures at least at the beginning and the end of each day to ascertain that all devices are functioning properly.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Stone - CONNDOT Article M.02.06, Grading "A" and M.01.01 gradations.
- B. Mulch - Hay, straw, wood chips, or other suitable material clean of noxious weeds and deleterious material.
- C. Temporary Grasses - Rye grass, cereal grasses, or other quick-growing species suitable to the area and as a temporary cover, which will not compete with the grasses specified for permanent cover.
- D. Silt Fencing - "Envirofence" by Mirafi, "Propex Silt Stop" by Amoco, "Silt Fence II" by American Engineering Fabrics, or equal.
- E. Hay Bales - Hay bales, 2 inch x 2 inch stakes, clean of noxious weeds
- F. Catch Basin Sediment Capture Device: Siltsack or approved equal.

PART 3 - EXECUTION

3.1 GENERAL

- A. Construction Sequencing & Phasing: It shall be the Contractor's responsibility to determine the final sequence of construction, and installation of controls to comply with the local and State regulations.
- B. All Work under this contract shall be performed in such a manner that objectionable conditions shall not be created in water courses through or adjacent to the project area.
- C. The Contractor shall be responsible for the selection of appropriate temporary erosion control measures to suit the intended construction methods if they differ from controls specified. The

Contractor shall submit a scheme(s) of control measures for each potentially impacted area prior to construction for approval by the Owner's Representative.

- D. The erosion and sediment control measures shall be installed and constructed prior to clearing, disturbance or grading of any portion of the project. Where land disturbance is necessary, temporary seeding or mulching must be used on areas which will be exposed for more than 30 days. Permanent stabilization should be performed as soon as possible after completion of grading. After the entire project area is stabilized, the accumulated sediment shall be removed from the project area. Erosion control devices shall remain in place until disturbed areas are permanently stabilized. The soil stabilization measures selected shall be in conformance with the most current version of the technical standard, 2002 Connecticut Guidelines For Soil Erosion & Sediment Control.
- E. The Owner's Representative shall have the authority to limit the surface area of erodible earth material exposed by clearing and grubbing, the surface area of erodible earth material exposed by excavation, borrow and fill operations and to direct the Contractor to provide immediate permanent or temporary pollution control measures to minimize damage to adjacent property and to minimize contamination of adjacent streams or other watercourses, lakes, ponds or other areas of water impoundment.
- F. The Contractor shall incorporate all permanent erosion control features into the project at the earliest practical time as outlined in his accepted schedule. Temporary control measures shall be those that are needed prior to installation of permanent control features; or that are needed temporarily to control erosion that develops during normal construction practices, but are not associated with permanent control features on the project.

3.2 TEMPORARY STABILIZATION

- A. Trench excavations shall be stabilized with temporary hot mix asphalt or cold patch no later than end of each working week or at least once per week.
- B. Topsoil stockpiles, staging areas and disturbed pervious portions of the project area where construction activity temporarily ceases for at least 30 days shall be stabilized with temporary seed and mulch no later than (7) days from the last construction activity in that area.
 - 1. Temporary seed shall be applied in accordance with the 2002 Connecticut Guidelines For Soil Erosion & Sediment Control (Temporary Seeding – TS)

3.3 STOCKPILES

- A. Stockpiles of all materials shall be completely contained by silt fencing and/or haybales.
- B. Stockpiles of all materials shall be completely covered by polyethylene when not active and at the end of each working day.
- C. Stockpiles shall be graded to minimize wind blown dust and erosion.

3.4 PERMENANT STABLIZATION

- A. No later than 14 days after the last construction activity is completed over areas to be permanently vegetated, the area shall be stabilized with permanent seeding. Verify seeding dates with Owner's Representative. If Owner's Representative determines that seed cannot be applied due to climate,

topsoil shall not be spread and mulching shall be applied to the exposed surface to stabilize soils until the next recommended seeding period.

3.5 CATCH BASIN PROTECTION

- A. Catch basin inlets shall be protected with approved controls, including all existing catch basins. Proposed catch basins shall be protected immediately after installation.
- B. Catch basin protection shall consist of catch basin sediment capture device or stone and block protection as detailed.

3.6 DUST CONTROL

- A. Construction activities at the project site shall not result in emissions of fugitive dust into the atmosphere. Control measures to counter fugitive dust shall be increased in response to the intensity of construction activity and prevailing weather conditions. Fugitive dust particles shall not be allowed to become airborne during dry and breezy meteorological conditions.
- B. Construction shall be properly phased to minimize the length of time that soils are exposed before final materials are placed and landscaping is completed. Exposed earth will be stabilized with mulch, grass, pavement, or other cover as early as possible.
- C. The Contractor shall implement the following precautions during construction to minimize the generation of fugitive dust on un-stabilized areas:
 - 1. Water for control of active construction areas, active unpaved roads, and other surfaces, which can give rise to airborne dust. Water shall be applied to new disturbed areas immediately following site grading by earth moving equipment.
 - 2. Soil tackifier that consists of an emulsified liquid soil stabilizer of organic, inorganic or mineral origin, including modified resins, complex surfactant, copolymers, or high grade latex acrylics. Calcium chloride shall not be used. The solutions shall be non-asphaltic, nontoxic to human, animal and plant life, non-corrosive and nonflammable. Materials used shall meet local, state, and federal guidelines for intended use. All materials are to be applied according to the manufacturer's recommendations and all safety guidelines shall be followed in storing, handling, and applying materials.
 - 3. Mulch: Apply mulch in accordance with CT guidelines for erosion and sediment control.
 - 4. Stockpile management: Stockpiled material shall be covered, shielded and stabilized at all times. If the stockpile is topsoil the contractor shall apply mulch and seed to form a vegetative cover on storage piles, especially those that will remain dormant for an extended period. Stockpile height shall be minimized.
 - 5. Street-sweeping: Mechanical sweeping shall be used at the end of each working day on the site and on haul routes during construction to clean all paved areas on and adjacent to the construction site as need or as requested by the Owner.
 - 6. Construction vehicle control: Tracking of sediment shall be controlled through the use of stabilized construction entrances, wheel wash systems and the institution of maximum speed limits.
 - 7. The Contractor is responsible for dust control during the construction process, even during periods when there is not active construction at the site. The Borough and/or the

Owner's Representative shall inspect the site to assure dust is adequately controlled. If the dust control measures are not adequate, the contractor shall be required to increase these measures as directed by the Borough or the Owner's Representative at no additional cost to the Owner.

3.7 WINTER SHUTDOWN

- A. If construction activities proceed through the winter season, access points should be enlarged and stabilized to provide for snow stockpiling. Drainage structures shall be kept open and free of potential snow and ice dams. Inspection and maintenance are necessary to ensure the function of these practices during runoff events.
- B. For sites where construction activities temporarily cease, temporary and/or permanent soil stabilization measures shall be installed within seven (7) days from the date the soil disturbing activity ceased. Disturbed areas shall be stabilized with seed and mulch, or other approved methods, even if the ground is covered by significant amounts of snow. All stockpiles shall be covered with polyethylene and secured.

3.8 MAINTENANCE & REPAIR

- A. The Contractor shall maintain all erosion and sediment controls until final stabilization has been completed and accepted by the Owner.
- B. The Contractor shall maintain proprietary erosion and sediment control devices per manufacturer's recommendations and remove sediment from all other measures as required.
- C. The Contractor shall maintain a stockpile of additional materials on-site for use in emergency action or repair including but not limited to stone, filter fabric, silt fencing, water, and haybales.

3.9 CLEANING & DISPOSAL

- A. Remove and dispose of all temporary materials and accumulated soil materials off-site at no additional cost to the Owner.
- B. All catch basin sumps including existing and new basins within the project area shall be cleaned by the Contractor prior to final inspection at no additional cost to the Owner.

END OF SECTION 02270

SECTION 02315 ROCK EXCAVATION

PART 1 - GENERAL

1.1 SUMMARY

- A. This section includes the following:
 - 1. Excavation and disposal of rock
 - 2. Preparation of rock subgrade

1.2 REFERENCE STANDARDS

- A. The latest edition of the following standards, as referenced herein, shall be applicable.
 - 1. "State of Connecticut Department of Transportation, Standard Specifications"

1.3 SUBMITTALS

- A. Submit the following in accordance with the submittal procedures
 - 1. Submit a Rock Excavation and Blasting plan at least two (2) weeks prior to start of any earth moving activities. The review will be only for the information of the Owner and third parties for an overall understanding of the project relating to access, maintenance of existing facilities and proper utilization of the site. The Contractor shall remain responsible for the adequacy and safety of the means, methods and sequencing of construction. The plan shall include, but not be limited to the following items:
 - a. Detailed schedule and sequence of work.
 - b. General description of construction methods.
 - c. Numbers, types, and sizes of equipment proposed to perform general rock excavation
 - d. Blasting program, distance-quantity of explosive tables for the production blasting, details of blast rounds and sequence of blasting (submitted by licensed vibration/blasting consultant)
 - e. Details of dust control measures.
 - f. Proposed locations of stockpiled excavation materials.
 - g. Proposed surplus excavated material off-site disposal areas
 - h. Vibratory Equipment: Indicate equipment to be used for compaction
 - 2. Preconstruction survey by a vibration/blasting consultant to be a Registered Professional Engineer in the State of Connecticut, and to have a minimum of 10 years experience as a vibration/blasting consultant.

3. Blast records: Submit one copy of blast records to the Engineer within 7 days after blasting. Keep and submit to Engineer and at time specified by Engineer, an accurate record of each blast showing general location of blast, depth and number of drillholes, kind and quantity of explosive used, kind and number and interval of delay periods used, and other data required for a complete record.

1.4 QUALITY ASSURANCE

- A. Blasting shall be performed by a qualified licensed blasting contractor familiar with local requirements and regulations
- B. Employ an approved, independent, vibration/blasting consultant to conduct test blasting prior to production blasting, to devise suitable blasting procedures for production blasting, and to monitor production blasting. The vibration/blasting consultant shall be a Registered Professional Engineer in the State of Connecticut, and to have a minimum of 10 years experience as a vibration/blasting consultant.
- C. The vibration/blasting consultants shall perform pre-blast surveys on all structures and drinking wells along the proposed pipe alignment.
- D. Trial blast to develop control procedures for production blasting so that no disturbance or damage shall be done to utilities, equipment, wells, buildings, or structures.
- E. Based on the results of test blasting, have the vibration blasting consultant develop a suitable blasting program and distance-quantity of explosive tables for the production blasting. Conduct production blasting operations in accordance with the blasting program.
- F. Blast vibrations and airblast overpressures shall be monitored during construction.
- G. The Contractor shall comply with the CONNDOT Division 1 General Requirements Section 1.07.08 – Use of Explosives.

1.5 DEFINITIONS

- A. Rock:
 1. Rip Rock: Any material that cannot be removed by scrapers, loaders, pans, dozers, or graders; and requires the use of a single-tooth ripper mounted on a crawler tractor having a minimum draw bar pull rated at not less than 56,000 pounds
 2. Blast Rock (general excavation): Any material which cannot be excavated with a single-tooth ripper mounted on a crawler tractor having a minimum draw bar pull rated at not less than 56,000 pounds (Caterpillar D-8K or equivalent) or by a Caterpillar 977 front end loader or equivalent; and occupying an original volume of at least one (1) cubic yard
 3. Blast Rock (trench excavation): Any material which cannot be excavated with a backhoe having a bucket curling force rated at not less than 25,700 pounds (Caterpillar Model 225 or equivalent), and occupying an original volume of at least one-half (1/2) cubic yard.

1.6 SAFETY REQUIREMENTS

- A. Keep explosives on the site only in such quantity as needed for work under way and only during time as being used. Notify Engineer at least 24 hours in advance of intention to store and use explosives. Store explosives in a secure manner and separate from all tools. Store caps or detonators safely at a point over 100 ft. distant from explosives. Promptly remove from premises remaining material when need for explosives has ended.
- B. Conform to State, Federal, and municipal laws, ordinances, and regulations relating to transportation, storage, handling, and use of explosives. If any of above-mentioned laws, ordinances, or regulations require a licensed blaster to perform or supervise the work of blasting, employ a licensed blaster. Require him to have his license on site and permit examination by Engineer or other officials having jurisdiction.
- C. Conduct operations involving explosives with all possible care to avoid injury to persons and property. Do blasting only with such quantities and strengths of explosives and in such manner as will break rock approximately to intended lines and grades, leaving rock not to be excavated in an unshattered condition. Avoid excessive cracking of rock upon or against which any structure will be built. Prevent injury to existing pipes, structures and property above or below ground. Cover rock with logs or mats, or both. Give sufficient warning to persons in vicinity of work before a charge is exploded.
- D. Complete blasting within a distance of 50 ft. before any portion of a masonry structure is placed or any pipe is laid.
- E. Determine presence of two-way-radios, stray electrical currents and other conditions adversely affecting blasting operations and implement necessary precautions to prevent accidents and premature blasts.

1.7 PERMITS

- A. The Contactor shall pay for and obtain all necessary blasting permits required by the Borough of Naugatuck or any other regulatory agency.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXCAVATION

- A. Excavate rock in pipe trenches, before laying pipe, to no less than 8 in. all around the pipe.
- B. Excavate rock in locations of footings to no less than 6 in. all around footing.
- C. Excavate rock as required to achieved grades indicated on Contract Drawings to a depth of 12 inches below subgrade.
- D. Remove piles of boulders or loose rock encountered within limits of earth embankments.

3.2 BLASTING

- A. Blast rock in accordance with blasting program. Complete shattering before any pipe or fitting is placed within 50 ft. of rock to be shattered.

3.3 SUBGRADE PREPARATION

- A. Remove shattered rock. If rock below normal depth is shattered due to drilling or blasting operations of Contractor or Engineer considers such shattered rock to be unfit for foundations, remove it and backfill excavation with concrete as required, except that in pipe trenches, use screened gravel for backfill. Do such removal and backfilling at no additional compensation.
- B. Remove from the rock surface all vegetation, dirt, sand, clay, boulders, scale, excessively cracked rock, loose fragments, ice, snow, and other objectionable substances. Use picking, barring, wedging, streams of water under sufficient pressure, stiff brushes, hammers, steam jets, and other effective means to accomplish this cleaning, and remove free water left on the surface of rock. Perform all of above before any masonry or embankment is built on or against rock
- C. Remove dirt and loose rock, as directed, from designated areas and clean surface of rock thoroughly. Remove water in depressions, so that whole surface of designated area can be inspected to determine whether seams or other defects exist.
- D. Rough surfaces of rock foundations sufficiently to bond well with masonry and embankments to be built thereon and, if required, cut to rough benches or steps.
- E. Backfill trench to correct subgrade to the lines and grades of the proposed installations. Refer to Section "Trenching and Backfilling & Section "Earthwork" for material and installation requirements below subgrade.
- F. At site grading cut locations where rock has been over-excavated to a 12 inch depth, subgrade shall be achieved by filling with compacted pavement subbase material

3.4 FIELD QUALITY CONTROL (BLASTING)

- A. Monitoring: The vibration/blasting consultant shall perform continuous monitoring of blasting operations. Monitor blasting with a minimum of two 3-component seismometers that record the entire particle velocity wave train and not just peak velocities. Obtain accurate, legible seismometer records of monitored blasts. If monitoring indicates non-compliance with the thresholds indicated below the Engineer shall be immediately notified and the blasting operation shall discontinue. The vibration consultant shall recommend revised blasting procedures, which shall be initiated prior to recommencing blasting operation
 - 1. Peak Particle Velocity Monitoring: Peak particle velocities shall be monitored adjacent to foundations of nearby structures and wells and shall be limited to 0.5 to 1.0 inches per second
 - 2. Air Blast Level Monitoring: Air blast levels shall be monitored and shall be restricted to less than 140 decibels.
- B. If evidence of disturbance or damage to utilities, equipment, buildings, or structures is observed or reported, immediately notify the Engineer and discontinue blasting operations and require vibration/blasting consultant to recommend revised blasting procedures. Initiate the revised procedures before blasting is continued.
- C. Restore or replace utilities, equipment, buildings, or structures damaged by blasting operations at no cost to the Owner.

3.5 DISPOSAL

- A. Excess excavated rock shall be disposed of legally off-site at no additional cost to the Owner

END OF SECTION 02315

SECTION 02511 HOT MIX ASPHALT PAVING

PART 1 - GENERAL

1.1 SUMMARY

- A. The Contractor shall provide all labor, materials, equipment, and services necessary for, and incidental to the placement of asphalt concrete pavement, as shown on the Drawings or as specified herein.
- B. Asphalt concrete pavement shall be placed in conformance with the lines, grades, thicknesses and typical sections as shown or detailed on the Drawings.

1.2 QUALITY ASSURANCE

- A. Reference Standards:
 - 1. The latest edition of the following standards, as referenced herein, shall be applicable.
 - a. "Standard Specifications, State of Connecticut Department of Transportation."
 - b. "Standard Specifications for Highway Materials and Methods of Sampling and Testing, American Association of State Highway and Transportation Officials (AASHTO) T230."

1.3 SUBMITTALS

- A. Material Certificates:
 - 1. The Contractor shall provide copies of material certificates signed by the asphalt concrete supplier and the Contractor, certifying that each material complies with, or exceeds, the specified requirements.
- B. Samples:
 - 1. The Contractor shall furnish earth materials to the testing laboratory for analysis and report, as directed by the Owner's Representative, or as outlined in the specifications and paid for by Contractor.
- C. Test Reports:
 - 1. The testing laboratory shall submit written reports of all tests, investigations, findings, and recommendations to the Contractor and the Owner's Representative.

1.4 PROJECT REQUIREMENTS

- A. Coordinate the placement of asphalt concrete pavement with the completion of underground work by other trades.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Subbase course shall be in accordance with Section 02230 "Pavement Subbase".
- B. Binder Course – CLASS 1, CONNDOT Section M.04.05.
- C. Top Course – CLASS 2, CONNDOT Section M.04.05.
- D. Tack Coat – Section 4.06.
- E. General – Asphalt concrete and all related items shall meet the requirements of CONNDOT Section 4.06.02.
- F. It shall be the Contractor's responsibility to provide a material which meets this specification and is within his capabilities to fine grade to the required tolerances. Should the subbase course become unstable at any time prior to the placement of the overlying course due to the gradation of the material furnished, the Contractor shall, at his own expense, correct the unstable condition to the satisfaction of the Owner's Representative.
- G. All material shall meet the specified gradation prior to placement. All processing shall be completed at the source.

PART 3 - EXECUTION

3.1 GENERAL

- A. Asphalt concrete shall not be applied on a wet surface or when the air temperature is below 45°F or above 95°F, unless otherwise directed, or when weather conditions would prevent proper construction.
- B. All application equipment, methods, and installation shall conform to CONNDOT Standards unless otherwise specified.

3.2 PREPARATION

- A. Establish required lines, levels, contours, and datum.
- B. Maintain benchmarks and other elevation control points. Re-establish, if disturbed or destroyed at no additional cost to the Owner.
- C. Place subbase only after subgrade has been proof-rolled and approved by the Owner's Representative. Unstable or weak subgrade materials shall be replaced with suitable material at the Contractor's expense.
- D. The subbase shall be placed and compacted true to line and grade as shown on the Drawings and conforming to Section "Pavement Subbase."
- E. Proof roll prepared subbase surface with a 10 ton static steel wheel roller, to check for unstable or otherwise unsuitable areas, as determined by the Owner's Representative. Replace and recompact all unsatisfactory areas, as approved by the Owner's Representative, prior to commencement of paving

operations.

- F. Notify the Owner's Representative forty-eight (48) hours prior to commencing paving.
- G. Apply tack coat, at a rate of 0.1 to 0.25 gallons per square yard, to contact surfaces of previously constructed asphalt or portland cement concrete and surfaces abutting or projecting into the asphalt concrete pavement.

3.3 TRAFFIC ON SUBBASE

- A. The movement of traffic over the final surface of the subbase may be permitted at locations designated by, and under such restrictions as ordered by the Owner's Representative, provided such movements take place prior to the final finishing of this course to the specified tolerance. The movement of construction equipment on this course may be permitted, at locations designated by and under such restrictions, as ordered by the Owner's Representative. At locations where permission is granted for such movement, the temporary surface of the course, upon which the construction traffic is running, shall be placed and maintained at least 2 inches above the final surface of the course. Just prior to paving and after all construction traffic, not required for the removal, has ceased, the 2 inch protective layer shall be removed, and the exposed surface of the course prepared and compacted to the specified tolerance.
- B. Should the subbase become mixed with the subgrade or any other material, through any cause whatsoever, the Contractor shall, at his expense, remove such mixture and replace it with the appropriate subbase material.

3.4 PAVEMENT INSTALLATION

- A. Place and compact asphalt pavement courses in accordance with Section 4.06 unless specified.
- B. Place inaccessible and small areas by hand, and compact with hot hand tampers or vibrating plate compactors.
- C. Compaction shall be by means of a static steel wheel roller only, unless otherwise approved by the Owner's Representative, based upon work conditions.
- D. If during placement of any asphalt concrete course the mixture or surface is deemed unsatisfactory by Owner's Representative, such areas shall be removed and patched at the Contractor's expense. Removal of hardened or set asphalt shall be by saw cutting.
- E. Tack coat shall be placed between successive courses if more than forty-eight (48) hours have elapsed after placing the preceding course. The tack coat shall be applied at a rate of 0.10 to 0.25 gallons per square yard.
- F. The asphalt concrete course shall be rolled/compacted until the finished surface is free from depressions, waves or other defects that would prevent proper drainage. The finished surface shall be uniform in texture and appearance.
- G. After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.

3.5 FIELD QUALITY CONTROLS - PAVEMENT

- A. Test in-place asphalt concrete courses for compliance with requirements for thickness and surface smoothness. Repair or remove, and replace unacceptable paving as directed by the Owner's Representative.

B. Course Thickness Tolerances:

1. 1/4 inch from nominal thickness for courses less than or equal to 4 inches.
2. 1/2 inch from nominal thickness for courses greater than 4 inches.

C. Cumulative Thickness Tolerances:

1. 1/4 inch from total nominal thickness for nominal cumulative thicknesses less than or equal to 4 inches.
2. 1/2 inch from total nominal thickness for nominal cumulative thicknesses greater than 4 inches.

D. Surface Smoothness Tolerances: Test finished surface of each asphalt concrete course for smoothness using a 10 foot straight-edge applied with, and perpendicular to, the centerline of the paved area.

1. Base and Binder Courses: 1/4 inch
2. Top Course: 3/16 inch
3. Check the surface smoothness at intervals as directed by the Owner's Representative.

3.6 ACCEPTANCE CRITERIA

A. Subbase:

1. The sole criterion for acceptability of in-place subbase shall be in situ dry density. Minimum dry density for all subbase shall be 95 percent of the maximum dry density. If a test fails to qualify, the fill shall be further compacted and re-tested. Subsequent test failures shall be followed by removal and replacement of the material.

B. Pavement

1. The basis of acceptance will be the complete installation of the pavement in accordance with the Drawings, specs, and approved Shop Drawings.

END OF SECTION 02511

SECTION 02513 CONCRETE PAVEMENT

PART 1 - GENERAL

1.1 SUMMARY

- A. The Contractor shall provide all labor, materials, equipment, and services necessary for, and incidental to, the installation of concrete sidewalk as shown on the Drawings, or as specified herein.

1.2 QUALITY ASSURANCE

- A. Reference Standards:

- 1. The latest edition of the following standards, as referenced herein, shall be applicable.

- a. "State of Connecticut Department of Transportation, Standard Specifications."
- b. American Society of Testing and Materials (ASTM)
- c. American Concrete Institute (ACI).

- B. The Contractor shall provide and pay for all costs in connection with an approved independent testing facility to determine conformance of materials with the specifications, if at any time during the Work, materials appear unsuitable in the opinion of the Owner's Representative.

1.3 SUBMITTALS

- A. Concrete:

- 1. The Contractor shall furnish the name and location of the concrete supplier.
- 2. Submit the design mix for each class of concrete prior to use in the Work.

- B. Product Data:

- 1. Submit manufacturer's catalog cuts, specifications, and installation instructions.

- C. Test Results:

- 1. The testing laboratory shall submit written reports of all tests, investigations, and recommendations to the Contractor and the Owner's Representative.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Concrete:

- 1. All cast-in-place concrete shall be ready mixed concrete meeting the following criteria:

- a. 28 day compressive strength-4000 psi
- b. Air entrainment-4% to 8%
- c. Slump-2" to 4"

- B. Premoulded Expansion Joint Filler:

- 1. Concrete curbing and any fixed structures shall be provided with a 1/2" premoulded

expansion joint filler conforming to ASTM D1751.

2. The premoulded expansion joint filler shall be “pre-cut” to match the concrete sidewalk cross-sectioned dimensions as detailed on the Drawings.

C. Fabric Reinforcement:

1. Flat sheets of 6 x 6 - W 2.9 x W 2.9, ASTM A 185, welded wire fabric.

D. Curing and Materials:

1. Impervious Sheeting: ASTM C171.
2. Liquid Membrane Curing Compound: ASTM C309, compound shall be free of paraffin or petroleum.
3. “Kure-N-Seal 0800” by Sonneborn, “Cure & Seal” by Symons, or equal.

E. Sealants:

1. Joint Sealers: ASTM D 1850.

F. Forms:

1. Concrete pavement forms shall be of wood or steel, straight of sufficient strength to resist springing during depositing and consolidating concrete, and of a height equal to the full depth of the finished concrete pavement.
2. Wood forms shall be surfaced plank, 2-inch nominal thickness, straight and free from warp, twist, loose knots, splits or other defects. Wood forms shall have a nominal length of 10 feet, with a minimum of three stakes per form, at maximum spacing of 4 feet. Corners, deep sections, and radius bends shall have additional stakes and braces, as required. Radius bends may be formed with 3/4-inch boards, laminated to the required thickness.
3. Steel forms shall be channel-formed sections with a flat top surface and with welded braces at each end and at not less than two intermediate points. Form ends shall be interlocked and self-aligning. Forms shall include flexible forms for radius forming, corner forms, form spreaders, and fillers. Forms shall have a nominal length of 10 feet, with a minimum of two welded stake pockets per form. Stake pins shall be solid steel rods with chamfered heads and pointed tips, designed for use with steel forms.

PART 3 - EXECUTION

3.1 INSPECTION

- A. The Contractor shall notify the Owner’s Representative 24 hours before placing concrete in order to give the Owner’s Representative an opportunity to inspect the formwork, reinforcing and related items prior to placement of the concrete.
- B. Delivery tickets shall show the amount of cement, brand, and amount of all admixtures, in addition to information required by ASTM C94, Section 14. Water added on the job shall be approved and the amount noted on the delivery ticket and initialed by the Contractor.

3.2 SUBBASE PREPARATION

- A. Concrete pavement shall be constructed on a compacted granular subbase as shown on the Drawings.

- B. The completed subbase shall be tested for grade and cross section with a template extending the full width of the sidewalk and supported between side forms.
- C. The subbase shall be maintained in a smooth, compacted condition in conformity with the required section and established grade, until the concrete is placed.
- D. The subbase shall be in a moist condition when concrete is placed.
- E. The subbase shall be prepared and protected so as to produce a subbase free from frost when the concrete is deposited.

3.3 FORMWORK

- A. Earth cuts may not be used as forms for vertical surfaces.
- B. All forms shall be built mortar tight and of materials sufficient in strength to hold concrete without bulging between supports. Forms shall be maintained to eliminate the formation of joints due to shrinkage of the forms. Concrete, misshapen by bulges or deformations caused by inadequate forms, shall be removed or corrected as ordered by the Owner's Representative. All replacements or corrections shall be made at the Contractor's expense.
- C. All surfaces of wooden forms that will be in contact with exposed concrete shall be thoroughly treated with an approved lacquer in the procedure recommended by the manufacturer. Forms so treated shall be protected from being damaged or dirtied prior to placing of the concrete.
- D. Metal forms shall be treated with an approved form lacquer or may be treated with an approved form oil. The metal used for forms shall be of sufficient thickness to remain true to shape. All bolt and rivet heads shall be designed to hold the forms rigidly together and to allow removal, without injury to the concrete. Metal forms which do not have smooth surfaces, correct alignment and clean surfaces shall not be used.
- E. Side forms shall not be removed for less than 12 hours after finishing has been completed.

3.4 CONCRETE PLACEMENT AND FINISHING

- A. Preparation:
 - 1. Set forms true to line and grade and anchor rigidly in position.
 - 2. Transverse expansion joints shall be installed at sidewalk returns and opposite expansion joints in adjoining curbs. Longitudinal expansion joints shall be installed between concrete sidewalk and abutting concrete curb or other fixed structures, continuously. Transverse expansion joints shall be installed equally at not more than 25 feet on center, unless otherwise directed by the Owner's Representative, or as detailed on the Drawings.
 - 3. Transverse expansion joints shall be filled with 1/2-inch joint filler strips. Joint filler shall be placed with top edge 1/4 inch below the surface and shall be held in place with steel pins or other devices to prevent warping of the filler during floating and finishing. Protect the top edge of the joint filler during concrete placement with a temporary cap and remove after concrete has been placed.
 - 4. Expansion joints shall be formed about structures and features that project through or into the sidewalk pavement, using joint filler of the type, thickness, and width indicated. The filler shall be installed in such manner as to form a complete, uniform separation between the structure and sidewalk pavement.

B. Placement of Fabric Reinforcement:

1. Prior to placement, clean reinforcement thoroughly of mill and rust scale and of coatings which could destroy or reduce bond. Where there is a delay in depositing concrete after the positioning of reinforcement, reclean reinforcement, if necessary.
2. Place reinforcement midway between top and bottom of the slab and secure against displacement.
3. Lap edges and ends of adjoining sheets of fabric reinforcement at least half the mesh width. Offset end laps in adjacent sheets to prevent continuous joints at ends. Interrupt reinforcement at expansion joints, stopping 2 inches from edges.

C. Concrete Placement:

1. Concrete shall be placed in the forms in one layer of such thickness that when compacted and finished the sidewalk will be of the thickness indicated. After concrete has been placed in the forms, a strike-off guided by side forms shall be used to bring the surface to proper section to be compacted.
2. The concrete shall be tamped and consolidated with a suitable wood or metal tamping bar, and the surface shall be finished to grade with a wood float. Finished surface of the walk shall not vary more than 3/16 inch from the testing edge of a 20-foot straightedge. Irregularities exceeding the above shall be satisfactorily corrected. The surface shall be divided into rectangular areas by means of contraction joints spaced at intervals shown on the drawings.
3. Place concrete in accordance with ACI 301 unless otherwise specified herein.
4. Cold Weather Concreting: Comply with ACI 305 for placement at temperatures of, or expected to be, below 40°F.
5. Hot Weather Concreting: Comply with ACI 306 for placement at temperature of, or expected to be, above 90°F.

D. Concrete Finishing:

1. After straight edging, when most of the water sheen has disappeared, and just before the concrete hardens, the surface shall be finished to a smooth and uniformly fine granular or sandy texture free of waves, irregularities, or tool marks. A scored surface shall be produced by brooming with a fiber-bristle brush in a direction transverse to that of the traffic, or as otherwise shown on the drawings.
2. All slab edges, including those at formed joints, shall be finished carefully with an edger having a radius of 1/8 inch. Corner and edges which have crumbled and areas which lack sufficient mortar for proper finishing shall be cleaned and filled solidly with a properly proportioned mortar mixture and then finished.
3. The completed surface shall be uniform in color and free of surface blemishes and tool marks.

3.5 CURING

A. Impervious Sheeting Method:

1. The entire exposed surface shall be wetted with a fine spray of water and then covered with impervious sheeting material. Sheets shall be laid directly on the concrete surface with the light colored side up and overlapped 12 inches when a continuous sheet is not used.
2. The curing medium shall not be less than 18 inches wider than the concrete surface to be cured, and shall be securely weighted down by heavy wood planks, or by placing a bank of moist earth along edges and laps in the sheets.
3. Sheets shall be satisfactorily repaired or replaced if torn or otherwise damaged during curing. The curing medium shall remain on the concrete surface to be cured for not less than 7 days.

B. Membrane Curing Method:

1. The entire exposed surface shall be cured with a membrane forming curing compound.
2. Curing compound shall be applied in two (2) coats by hand operated pressure sprayers at a coverage of approximately 200 square feet per gallon for both coats, unless otherwise approved by the Owner's Representative based upon manufacturer's data.
3. The second coat shall be applied in a direction approximately at right angles to the direction of application of the first coat. The compound shall form a uniform, continuous, coherent film that will not check, crack, or peel and shall be free from pinholes or other imperfections. Apply an additional coat to all surfaces showing discontinuity, pinholes or other defects.
4. Concrete surfaces that are subjected to heavy rainfall within 3 hours after curing compound has been applied shall be resprayed by the above method and at the above coverage at no additional cost to the Owner.
5. Expansion-joint openings shall be sealed at the top by inserting moistened paper or fiber rope or covering with strips of waterproof paper prior to application of the curing compound, in a manner to prevent the curing compound entering the joint.
6. Concrete surfaces to which membrane-curing compounds have been applied shall be adequately protected for 7 days from pedestrian and vehicular traffic and from any other action that might disrupt the continuity of the membrane. Any area covered with curing compound and damaged by subsequent construction operations within the 7 day curing period shall be resprayed as specified above at no additional expense to the Owner.

3.6 SEALING JOINTS

- A. At the end of the curing period, expansion joints shall be carefully cleaned and filled with joint sealer. Concrete at the joint shall be surface dry, and the atmospheric and pavement temperatures shall be above 50°F, at the time of application of joint sealing materials.
- B. Joints shall be filled flush with the concrete surface in such manner as to minimize spilling on the walk surface. Spilled sealing material shall be removed immediately and the surface of the walk cleaned. Dummy groove joints shall not be sealed.

3.7 BACKFILLING AND RESTORATION

- A. After curing, debris shall be removed, and the area adjoining the concrete shall be backfilled, graded, and compacted to conform to the surrounding area in accordance with lines and grades indicated.

- B. All lawns, pavements, driveways, shrubs, or other improvements affected by sidewalk placement shall be restored to their original condition.

3.8 PROTECTION

- A. The Contractor shall protect the curbing and keep it in alignment and “first class” condition until the completion of the Contract. Any curbing, which is damaged prior to final acceptance of the Work, shall be removed and replaced at the Contractor’s expense.

END OF SECTION 02513

SECTION 02529 RESETTING OF EXISTING GRANITE CURBS

GENERAL

1.1 SUMMARY

- A. The work under this Section consists of furnishing all labor, materials and equipment necessary for the resetting of existing granite curbs as shown on the Drawings, or as specified herein.
- B. Existing granite curbs shall be reset when they are removed or disturbed during construction.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION

3.1 GENERAL

- A. The Contractor shall remove and reset old curb, as shown on the Plans or ordered by the Owner's Representative. Care shall be taken in removing old curb so that there shall be no unnecessary breakage, and all curb damaged in removing, hauling or storing, due to the carelessness of the Contractor, shall be replaced with new curb at his own expense.
- B. The Contractor shall modify existing old curb as necessary to fit to new work.

3.2 INSTALLATION

- A. The curb shall be set true to line and grade on an approved foundation course providing a firm and uniform bearing. The foundation course shall consist of granular material as specified under its respective item. All spaces under the curb shall be carefully and thoroughly rammed so that it shall be completely supported throughout its entire length.
- B. The trench for the curb shall be excavated for a width equal to the curb width plus six inches and to a depth equal to the bottom of the subbase course, all as indicated on the Plans or ordered by the Owner's Representative.
- C. The curb shall be excavated from the "sidewalk" side. If this is not possible, then the Contractor shall replace the excavated pavement with similar material.
- D. The joint between the curb and the pavement shall be sealed with an approved bituminous material or with concrete.
- E. Curb sections shall be fitted together as closely as possible but not closer than 1/8 of an inch to form a joint.
- F. The joints in the curb shall be carefully filled with cement mortar, and rodded in place. The top and exposed front shall be neatly pointed flush with the curb surfaces and satisfactorily cleaned of all excess mortar.
- G. After the curb has been set, the trenches shall be backfilled and thoroughly tamped with approved material.

- H. The Contractor shall protect the curb and keep it in alignment and first class condition until the completion of the contract. Any curb which is damaged at any time previous to the final acceptance of the work shall be removed and satisfactorily replaced at the Contractor's expense.

END OF SECTION 02529

SECTION 02580 PAVEMENT MARKING

PART 1 - GENERAL

1.1 SUMMARY

- A. This section includes provisions for removal of existing pavement markings and for new pavement markings on finished surfaces.
- B. This section includes provisions for new pavement markings on finished surfaces.

1.2 REFERENCES

- A. "State of Connecticut Department of Transportation, Standard Specifications."
- B. "Standard Specifications for Highway Materials and Methods of Sampling and Testing, American Association of State Highway and Transportation Officials (AASHTO)."
- C. "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities," US Department of Justice.

1.3 SUBMITTALS

- A. Pavement marking plan indicating lane separations and defined parking spaces. Note dedicated handicapped spaces with international graphics symbol.
- B. One (1) manufacturer's label including product analysis for each paint type and color.

1.4 QUALITY ASSURANCE

- A. Conform to all requirements of regulatory agencies having jurisdiction.

1.5 SITE CONDITIONS

- A. Perform the painting operations after working hours, on weekends or at such time so as not to interfere with the flow of traffic. Provide temporary barriers to prevent vehicles from driving over newly painted areas.
- B. Apply paint on dry, clean pavement surface, when the air temperature is above 40°F.
- C. All pavement markings require glass bead application, except parking stall markings.
- D. Existing pavement markings have not been depicted on the Plans. The Contractor shall locate and measure all markings prior to disturbance.

1.6 SEQUENCING AND SCHEDULING

- A. Coordinate pavement markings with regulatory authorities having jurisdiction.
- B. Schedule pavement markings to follow the completion of paved surfaces.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Marking Paint: CTDOT Article M.07.21.
 - 1. Colors: White, yellow.
- B. All paints and solvent shall conform to Federal, State and Local air pollution regulations, including those for the control (emission) of volatile organic compounds (VOC) as established by the US Environmental Protection Agency, and the Connecticut Department of Environmental Protection.
- C. Glass Beads: CTDOT Article M.07.30, Glass Beads for Reflectorized Pavement Marking Paints.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION

- A. Remove dust, dirt, and other foreign material detrimental to paint adhesion.
- B. Mark layout of pavement markings with chalk or paint prior to final application.
- C. Grind, scrape or sandblast existing pavement markings as indicated on the Drawings or as required by the Owner's Representative. Conduct grinding, scraping, or sandblasting operations in such a manner that the finished pavement surface is not damaged or left in a pattern that will mislead or misdirect traffic.
- D. Painting out existing pavement markings will only be approved for short-term temporary use.

3.2 APPLICATION

- A. Apply pavement markings in accordance with CTDOT Requirements.
- B. Apply glass beads to wet paint film at a rate of 6 pounds per gallon of paint using an automatic mechanical glass bead dispenser.
- C. Use rollers and brushes for miscellaneous markings.
- D. Use templates and guides to provide uniform patterns and straight edges.

END OF SECTION 02580

SECTION 02602 MAINTENANCE OF WASTEWATER AND STORMWATER FLOWS

PART 1 - GENERAL

1.1 SUMMARY

- A. The Contractor shall provide all labor, materials, equipment and services necessary for, and incidental to the maintenance and rerouting of stormwater and wastewater flows in existing sewers during the construction period, to allow for the proper installation of replacement sewers.
- B. The Contractor shall provide the necessary pumps, piping, fittings, controls and monitoring equipment and backup or stand by equipment to ensure the continuous flow of storm water and wastewater around the construction area during all periods of flow.
- C. Storm water and wastewater from main sewers shall not be allowed to flow in open trenches nor be allowed to flow on the ground surface. The Contractor shall be responsible for any damages resulting from the storm or wastewater flow maintenance operation and shall repair and bear the costs for same.

1.2 SUBMITTALS

- A. Flow Maintenance Plan:
 - 1. The Contractor shall prepare a detailed plan for the maintenance and rerouting of storm drain and sewage flows. The plan shall indicate the type, size and capacities of all pumps and piping and a piping plan indicating the locations where storm water and wastewater will be pumped from and discharged to, for each sewer segment to be constructed.
 - 2. Show locations where existing sewers will be temporarily plugged and how variations in wastewater flows will be handled.
 - 3. Indicate power sources, fuel supplies, flow control equipment, and provisions for backup or emergency equipment in the event of pump failure or other mechanical failures.
 - 4. The Flow Maintenance Plan shall include provisions for supervision and monitoring of the flow maintenance operation.
 - 5. Submit drawings and a written plan to the Owner's Representative for approval no later than 10 days prior to commencing work.
- B. Product Data:
 - 1. Submit manufacturers catalog cuts, specifications, and installation instructions for all pumping and control equipment.

PART 2 - PRODUCTS

2.1 GENERAL

- A. All pumps, piping, fittings, control equipment and incidental materials shall be of suitable quality and of durable construction to function in the intended capacity and reliability.

PART 3 - EXECUTION

3.1 SET-UP OF OPERATION

- A. The flow maintenance and bypassing equipment shall be set up and tested prior to the construction of new sewer segments. The flow maintenance plans shall be completely operational before existing sewer segments are disrupted and taken out of service. The process of set-up and testing shall be repeated for each change in flow bypassing location.

3.2 CONTINUITY OF OPERATION

- A. Proper supervision and operation and maintenance of the flow maintenance and bypassing equipment shall be provided at all times to ensure the uninterrupted rerouting of flows and to prevent a potential health hazard associated with raw sewage flowing over the ground surface.
- B. Provide adequate spare parts, fuel supplies and tools to make adjustments, repairs and modifications in an expedient manner.
- C. Provide standby equipment to replace vital components (such as pumps) in the event that primary systems fail.

3.3 PUMPS AND PIPING

- A. Pumps shall be capable of handling the maximum flow for the given sewer line and shall be capable of handling variations in flow without pump damage.
- B. Pump suction and discharge piping shall be capable of handling maximum flows without excessive headloss. Piping shall be selected to handle maximum line pressures with a factor of safety for surge and shut-off pressures. Provide the necessary supports and thrust restraints at all bends and fittings to prevent excessive pipe displacement, leakage and breakage.
- C. The Contractor is advised that flows in storm and sanitary sewers in the project area may suddenly increase substantially during periods of rainfall and/or snow melt. The Contractor shall take necessary precautions to avoid overflows during the flow maintenance operation.

END OF SECTION 02602

SECTION 02605 MANHOLES & STRUCTURES

PART 1 - GENERAL

1.1 SUMMARY

- A. The Contractor shall provide all labor, materials, equipment and services necessary for, and incidental to, the installation of dry wells, manholes, covers, steps, and piping connections as shown on the Drawings and as specified herein.
- B. All items shall conform in shape, size, dimensions and materials to the details shown on the Drawings or as directed by the Owner's Representative.

1.2 QUALITY ASSURANCE

- A. Reference Standards Comply with applicable provisions and recommendations of the following, except as otherwise shown or specified.
 - 1. American Society of Testing and Materials (ASTM)
 - 2. American National Standards Institute (ANSI)

1.3 SUBMITTALS

- A. Samples:
 - 1. Gaskets
 - 2. Manhole Steps
 - 3. Miscellaneous accessories
- B. Shop Drawings: Submit the following for approval:
 - 1. Design and construction details of all precast concrete units.
 - 2. Fabrication, assembly and installation details for all castings and miscellaneous metal works.
- C. Product Data:
 - 1. Manufacturer's catalog cuts, specifications, and installation instructions.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to the site to prevent interruption of the Work.
- B. All materials shall be inspected by the Contractor upon delivery to the site. The Contractor shall notify the Owner's Representative of any loss or damages. Replace loss or repair damage to new condition at the Contractor's expense.
- C. Store materials to allow easy access for inspection and identification.

PART 2 - PRODUCTS

2.1 PRECAST CONCRETE

- A. All precast concrete units shall be as manufactured by Connecticut Precast Corp. Arrow Concrete Product; Concrete Systems, Inc.; United Concrete Products or approved equal.

- B. Precast units shall conform to the dimensions shown on the Drawings and as detailed in Shop Drawings approved by the Owner's Representative.
- C. Unless otherwise specified, precast sections shall conform to ASTM C478.
- D. Precast bases / sumps shall be of the "base unit" type, with an integral base and barrel section. The barrels shall be constructed in increments of one (1) foot to provide the indicated height with the fewest joints. Openings for pipe connections will not be permitted closer than one (1) foot to the nearest joint. Mark the date of manufacture and name or trademark of manufacturer in the inside of each section.
- E. Barrels, servicing pipes less than 27 inch diameter, shall be 48 inch diameter. Barrels, servicing pipes 27 inch diameter and larger shall be 60 inch diameter. Larger diameter barrels shall be provided as indicated on the Drawings or as specified herein.
- F. Joints shall be rubber and concrete using O-ring gaskets (ASTM C443) or butyl rubber gaskets (ASTM C443), or tongue and groove buttered with 1:2 cement mortar (ASTM C270, Type M). All joints shall be sealed with cement mortar inside and out, and troweled smooth to the contour of the wall surface.
- G. A precast eccentric cone, or precast slab where shown, shall be provided at the top of the barrel to receive the frame and cover. The slab or cover shall be designed for an H-20 loading.

2.2 MANHOLE STEPS

- A. Manhole sections shall contain manhole steps at twelve (12) inches on center. The steps shall be embedded in the concrete and accurately positioned both vertically and horizontally.
- B. Steps shall be capable of withstanding a 300-pound concentrated live load without permanent distortion, conforming to the requirements of ANSI A14.3, OSHA, and the details shown on the Drawings.
- C. Manhole rungs shall be steel reinforced copolymer polypropylene plastic. Rungs shall be 14 in. wide, M.A. Industries type PS2-PF, or equal. Copolymer polypropylene shall be type II, grade 16906 meeting ASTM Specification D2146. Steel reinforcing shall be 3/8 in. diameter, grade 60 conforming to ASTM Specification A615 and shall be continuous throughout the rung. The portion of the legs to be embedded in the precast section shall have fins and be tapered to insure a secure bond.
- D. Steps shall be aluminum alloy 6061-T6 or 6065-T5, and surfaces in contact with concrete shall be coated with an approved bitumastic paint.

2.3 FRAMES AND COVERS / GRATES

- A. Frames and covers / grates shall be cast iron, ASTM A48, Class 30, free from flaws or unsightly defects.
- B. Frames and covers / grates shall conform to the details on the Drawings
- C. Frames and covers / grates shall be designed for an H-20 loading

PART 3 - EXECUTION

3.1 EARTHWORK

- A. Earthwork shall be in accordance with Section "Trenching and Backfilling"

3.2 PRECAST SECTIONS

- A. Base units shall be placed on a minimum 12-inch foundation of pipe zone bedding material, and be set at the proper elevation, carefully leveled, and aligned.
- B. Barrel units shall be set vertical with steps and sections in proper alignment. Joints shall be installed in accordance with 2.1 (F) and manufacturer's recommendations.
- C. Lifting holes shall be sealed tight with a tapered solid rubber plug driven into the hole and the remaining void filled with mortar on the outside only.

3.3 GRADE RINGS

- A. Grade rings placed upon the eccentric cone or slab, shall be used for all manholes to provide the potential for future adjustment.
- B. Grade rings shall be placed in a combined thickness of at least 8 inches but not more than 20 inches, in order to bring the manhole frame to proper grade.
- C. Consecutive grade ring layers shall be laid on an even mortar bed.

3.4 PIPE CONNECTIONS

- A. Pipe connections to manholes shall be installed true to line and grade as shown on the Drawings. Wall fittings shall be watertight, compatible with the sewer pipe joint. Connections shall conform to the details shown on the Drawings.

3.5 INVERT CHANNEL AND BENCH WALLS

- A. An invert channel and bench walls shall be constructed as shown on the Drawings to provide a smooth transition in flow through the manhole. The invert channel and bench wall shall be constructed of 3,000 psi concrete. Benches shall be built-up to the height called for on the Drawings, or as directed by the Owner's Representative, and given a steel trowel finish. Care shall be taken to slope all benches for proper drainage to the invert channel.

3.6 FRAMES

- A. Frames shall be firmly set and bonded at the proper grade to conform with the finished grade shown on the Drawings.
- B. Frames for manholes in unpaved areas shall be set at an elevation higher than finished grade as shown on the Drawings, or as directed by the Owner's Representative.

3.7 WATERTIGHTNESS

- A. All manholes shall be free of visible leakage. Each manhole shall be inspected, and all leaks shall be repaired in a manner approved by the Owner's Representative.

END OF SECTION 02605

SECTION 02606 ALTERING EXISTING MANHOLES

PART 1 - GENERAL

1.1 SUMMARY

- A. The Contractor shall provide all labor, material, equipment and services necessary for, and incidental to, the alteration of existing manholes as shown on the Drawings and as specified herein.
- B. All alterations shall conform in shape, size, dimensions, and materials to the details shown on the Drawings or as directed by the Owner's Representative.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. All materials used shall conform to the applicable provisions described in Section "Manholes," except as otherwise specified.
- B. Concrete Masonry Units: ASTM C139
- C. Mortar: ASTM C270, Type M

PART 3 - EXECUTION

3.1 CONNECTION TO EXISTING MANHOLES

- A. The Contractor shall make connections to existing manholes as shown on the Drawings or as specified herein.
- B. For connections to precast or cast-in-place concrete manholes, the Contractor shall core drill a hole one (1) inch larger than the O.D. of the sewer pipe into the existing manhole at the location and elevation shown on the Drawings.
- C. For connections to masonry manholes, the Contractor shall open the sidewall of the existing manhole by removing masonry units no more than necessary to accommodate the sewer pipe.
- D. Connection methods shall be in accordance with the details shown on the Drawings. Any open spaces around the new pipe entry shall be sealed with mortar to prevent leakage.
- E. The existing bench and channel shall be removed and reconstructed to permit flow through the manhole as it now exists and also for the new sewer pipe. Bench and channel reconstruction shall conform with the details on the Drawings, or as directed by the Owner's Representative.
- F. The Contractor shall be responsible for diverting flow through the manhole in order to allow connection and bench and channel construction.

3.2 CHANGING ELEVATIONS OF EXISTING MANHOLES

- A. Raise or lower the existing frames of manholes by the addition or removal of appropriate masonry courses, to the elevations shown on the Drawings or as directed by the Owner's Representative.

- B. Parge the exterior surface with mortar when masonry courses are added or when the exterior surface is disturbed.
- C. Where the manhole frames cannot be lowered by removal of masonry courses, such as may be the case with precast concrete manholes, the upper barrel section shall be removed and/or replaced with a section of less depth, to permit the necessary adjustment of the frame.
- D. Frames and covers damaged during the Work shall be replaced at the Contractor's expense.

3.3 CLEAN-UP

- A. Each manhole, reconstructed or adjusted, shall be cleaned of accumulated silt, debris, or foreign matter prior to final acceptance of the Work.

END OF SECTION 02606

SECTION 02610 BURIED PIPE INSTALLATION

PART 1 - GENERAL

1.1 SUMMARY

- A. This section includes the installation of buried piping.

1.2 REFERENCES

- A. American Society of Testing and Materials (ASTM).
- B. American National Standards Institute (ANSI).
- C. American Water Works Association (AWWA).
- D. Uni-Bell Plastic Pipe Association.

1.3 SUBMITTALS

- A. Submit for approval a schedule for all proposed testing. Include proposed testing procedures indicating the sequence in which pipe sections will be tested and description of methods and equipment to be used.
- B. Field Test Reports: Submit results of field testing directly to Owner's Representative with copy to Contractor

1.4 STORAGE, AND HANDLING

- A. Deliver and store materials within the Contract limits, as approved by Owner's Representative.
- B. Handle materials carefully with approved handling devices in accordance with manufacturer's recommendations. Special care shall be exercised during delivery and storage to avoid damage to the materials.
- C. Do not drop or roll products off trucks. Products are not to be otherwise dragged, rolled, or skidded.
- D. Materials shall be stored on heavy wood blocking or platforms in accordance with the manufacturer's instructions and recommendations. Materials shall not be in contact with the ground and their interiors shall be maintained free from dirt and other foreign matter.
- E. Products cracked, gouged, chipped, dented, or otherwise damaged will not be approved and are to be removed and replaced at the Contractor's expense, unless the product can be repaired in a manner acceptable to the manufacturer and the Owner's Representative. All repairs shall be at the Contractor's expense.

1.5 COORDINATION

- A. Contractor shall be responsible for coordinating site utility work with other trades to ensure building service connection locations are verified and coordinated prior to commencing site installation.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Conform to individual pipe specification(s).
- B. Pipe transition fittings: Shall be as indicated on the drawings. If not specifically indicated selection shall be based on pressure requirements of the system and types of materials being joined. Product selection shall be approved by the Owner's Representative.
- C. Grout
 - 1. Description: ASTM C 1107, Grade B, nonshrink and nonmetallic, dry hydraulic-cement grout.
 - a. Characteristics: Post hardening, volume adjusting, nonstaining, noncorrosive, nongaseous, and recommended for interior and exterior applications.
 - b. Design Mix: 5000-psi (34.5-MPa), 28-day compressive strength.
 - c. Packaging: Premixed and factory packaged.
- D. Flowable Fill, or Controlled Density Fill (CDF)
 - 1. Description: Low-strength-concrete, flowable-slurry mix.
 - a. Cement: ASTM C 150, Type I, portland.
 - b. Density: 115- to 145-lb/cu. ft.
 - c. Aggregates: ASTM C 33, natural sand, fine and crushed gravel or stone, coarse.

PART 3 - EXECUTION

A. EXISTING STRUCTURES

- 1. All known surface and underground structures, except electric and telephone service connections, and water, gas and sewer service pipes, on or immediately adjacent to the work, are shown on the Plans. Sewer, drainage, water and gas pipes, manholes and similar structures located in or adjacent to the location of the structures included in this Contract, are shown on the Contract Drawings. This information is shown for the convenience of the Contractor in accordance with the best information available, but is not guaranteed to be correct or complete. The Contractor shall explore the route ahead of trenching and shall uncover all known obstructing pipes sufficiently to determine their location. Necessary changes in location may be made by the Engineer to avoid unanticipated obstructions.
- 2. Wherever water or gas mains, electric or telephone ducts, or electric or telephone poles are encountered and may be in any way interfered with, the Contractor shall keep the utility company involved fully informed in advance. The Contractor shall cooperate with the utility company in the protection, removal, relocation and replacement of such structures.
- 3. The Contractor shall, at his own expense, sustain in their places and protect from direct or indirect injury all utilities, pipes, poles, conduit, walls, buildings and other structures and property in the vicinity of his work, and he shall be responsible for all damage and assume all expense for direct or indirect injury caused by his work to any of them or to any person or property by reason of injury to them.

4. Guard rails, posts, guard cables, signs, poles, markers, mailboxes, fences, walls and stone walls, and other private improvements, which are temporarily removed, damaged or destroyed to facilitate installation of the sewer, shall be replaced and restored to a condition as good as or better than existed and to the satisfaction of the Owner or Inspector.
5. The Contractor shall, at his own expense, retain the services of a licensed surveyor to replace property markers, on or adjacent to privately owned property, which have been disturbed during the course of construction.

3.2 UTILITY DEMOLITION

- A. Disconnect, demolish, and remove piped utility systems, equipment, and components indicated to be removed.
 1. Piping to Be Removed:
 - a. Existing pipe shall be removed when in conflict with proposed work.
 - b. The existing pipe, which is in conflict with proposed utility work, grading or new construction, shall be removed from the trench width in its entirety. Each end of the removed pipe shall be sawcut and bulkheaded. The Contractor shall ensure that the removed section of pipe is exposed at both sides of the trench to allow for bulkheading.
 - c. Excavations due to removal below subgrade or below final grade shall be backfilled and compacted with suitable material in accordance with Trenching, Backfilling & Compaction.
 - d. All pipes to be removed are not called out on the Contract Drawings.
 - e. Dispose of material in accordance with local regulations at no additional cost to the Owner.
 2. Pipe to be Abandoned in Place:
 - a. Pipe which is not in conflict with proposed work and is less than 12" in diameter shall be abandoned in place when indicated on the Contract Drawings.
 - b. The ends of the pipe shall be bulkheaded if a portion of the pipe has been removed or if the pipe is connected to a manhole, which is to remain.
 3. Pipe to be Abandoned by Flowfill:
 - a. Pipes to be abandoned, which are greater than or equal to 12" in diameter shall be filled with Controlled Density Fill (CDF).
 - b. Each pipe reach to be abandoned with CDF shall be filled from the upgradient end of the pipe reach wherever possible. The CDF shall completely fill each pipe reach. Bulkheads shall be provided at each end if the pipe to be flowfilled.
 - c. The Contractor shall aid the flow of the CDF when necessary by providing temporary access points, pumping or vibration.

d. The pipes to be abandoned by flowfill are indicated on the Contract Drawings.

4. Structure to be Abandoned in Place

a. Where existing structures such as catch basins, drain manholes, sewer manholes, and utility manholes are to be abandoned in place, the Contractor shall remove the frames, grates, and covers and sawcut the structure to a minimum of 1 foot below final grade.

b. The Contractor shall core drill a minimum of four (4), 2-inch diameter drainage holes in the invert of each structure, bulkhead all existing pipe connections and then backfill the structure with CDF or crushed stone.

c. Dispose of material in accordance with local regulations at no additional cost to the Owner.

5. Structures to be Removed

a. Structures such as catch basins, drain manholes, sewer manholes, and utility manholes shall be removed completely when in conflict with proposed work,

b. The structure shall be removed from the trench or excavation in its entirety and the exposed pipe connections sawcut and abandoned in accordance with the pipe or ductbank to be abandoned or removed.

c. Excavations due to removal below subgrade or below final grade shall be backfilled and compacted with suitable material in accordance with Section "Trenching and Backfilling.

d. Dispose of material in accordance with local regulations at no additional cost to the Owner.

3.3 BURIED PIPE INSTALLATION

A. General:

1. Installation of all pipe, fittings, valves, specials and appurtenances shall be subject to the review and/or approval of the Owner's Representative.

2. Install piping valves and fittings as shown, specified and as recommended by the manufacturer and in conformance with referenced standards, and approved Shop Drawings.

3. Request instructions from Owner's Representative before proceeding if there is a conflict between the manufacturer's recommendations and the Drawings or Specifications.

4. All piping and appurtenances shall be inspected by the Owner's Representative prior to installation. Owner's Representative's inspection will not relieve Contractor or manufacturer from responsibility for damaged products.

5. Present all conflicts between piping systems and equipment, structures or facilities to Owner's Representative for determination of corrective measures before proceeding.

6. Take field measurements prior to installation to ensure proper fitting of Work. Uncover the existing pipelines sufficiently in advance of the proposed Work in order that the type and location of the existing pipes and joints and other information required to fabricate the

proposed piping can be determined. Obtain whatever information is required to complete the connections of the proposed pipelines to the existing pipelines.

7. Carefully examine all piping for cracks, damage or other defects before installation. Immediately remove defective materials from the site, unless the defective materials can be repaired in a manner acceptable to the manufacturer and Owner's Representative. Remove, replace or repair at the Contractor's expense piping found to be broken or defective.
8. Inspect interior of all piping and mating surfaces and remove all dirt, gravel, sand, debris or other foreign material before installation. Maintain the interior of all piping clean until acceptance of the completed Work. Prevent foreign matter from entering joint space.
9. Install buried piping accurately to line and grade shown, specified or directed, unless otherwise approved by the Owner's Representative. Use accurate means of determining and checking the alignment and grade subject to the approval of the Owner's Representative. Remove and relay piping that is incorrectly installed at Contractor's expense.
10. Do not lay piping in water, unless approved by the Owner's Representative. Ensure that the water level in the trench is at least 6 inches below the bottom of piping. Maintain a dry trench until jointing and backfilling are complete, unless otherwise specified in these Specifications or approved by the Owner's Representative.
11. Pipe laying work shall be conducted so that trenching operations are not advanced too far ahead of the pipe laying operation resulting in excessive lengths of open trench. In general, open trench ahead of pipe laying shall not exceed 50 feet.
12. Start laying piping at lowest point and proceed toward the higher elevations, unless otherwise approved by the Owner's Representative. Slope piping uniformly between elevations shown on the Drawings or as otherwise provided by the Owner's Representative.
13. Where pipe crossings occur, the lower pipe shall be laid first and all backfill thoroughly compacted to the level of the higher pipe before the higher pipe is installed. Backfill material under such conditions may be earth, broken stone, or 2500 psi concrete.
14. Install piping so that the barrel of the piping and not the joints receives the bearing pressure from the trench bottom, or other bedding condition.
15. No piping shall be brought into position until the preceding length, valve, fitting, or special has been bedded and secured in place.
16. Whenever pipe laying is not actively in progress, the open ends of the piping shall be closed by a temporary plug or cap to prevent soil, water and other foreign matter from entering the piping.
17. Where required for inserting valves, fittings, special appurtenances, and closures, shall be made with a machine specially designed for cutting piping and in accordance with the manufacturer's instructions for field cutting of pipe. Make cuts carefully, without damage to piping, so as to leave a smooth end at right angles to the axis of the piping. Taper cut ends and file off sharp edges until smooth. Flame cutting will not be permitted. Replace and repair damaged piping.
18. Blocking under piping will not be permitted unless specifically approved by Owner's Representative for special conditions.
19. Touch up protective and linings and coatings prior to installation.

20. Rotate piping to place outlets in proper position.
- B. Bedding and Backfilling:
1. Bedded and installed piping in conformance with Section “Trenching, and Backfilling” and as shown, except as otherwise specified.
 2. No piping shall be laid until Owner’s Representative approves the bedding condition.
 3. Excavation in excess of that required as shown on the Drawings or specified, which is not authorized by the Owner’s Representative, shall be at the Contractor’s expense. Backfilling and compaction of the overexcavated areas shall be at the Contractor’s expense.
 4. Carefully and thoroughly compact all pipe bedding and fill up to the pipe centerline with hand-held pneumatic compactors.
- C. Restraints, Supports, and Thrust Blocks:
1. Install restrained joints as shown, specified, required, and as recommended by manufacturer. Assembly of restrained joints shall be in strict accordance with manufacturer’s recommendations.
 2. Provide concrete and metal cradles, collars, and blocks as shown on the Drawings or otherwise required by Owner’s Representative.
 3. Thrust Blocks:
 - a. Provide concrete thrust blocking to resist test pressure on all plugs, caps, tees, bends and other fittings in pressure piping systems unless otherwise shown on the Drawings.
 - b. Conform to the details for concrete thrust blocks and tie rods.
 - c. Concrete: 3000 psi, placed around the fittings to completely fill the space between the fittings and the undisturbed walls of the trench. Do not overlap any joint with concrete and place concrete so as not to interfere with removing or installing any of the jointing hardware.
 4. Retainer Glands (for water distribution and sewer forcemain piping):
 - a. Provide retainer glands for joint restraint of all fittings and valves.
 - b. Retainer glands shall be Megalug Series 1100 as manufactured by EBAA or approved equal.
- D. Transitions From One Type of Pipe to Another:
1. Provide all necessary adapters, specials and connection pieces required when connecting different types and sizes of pipe or connecting pipe made by different manufacturers.
- E. Work Affecting Existing Piping:
1. Location of Existing Piping:

- a. Locations of existing piping shown shall be considered approximate. Contractor shall perform all necessary subsurface investigation to verify actual locations in the field.
 - b. Determine exact location of existing piping to make connections, relocate, replace or which may be disturbed during earth moving operations, or which may be affected by work in any way.
 - c. Coordinate all excavations with utility companies, Owner and Owner's Representative.
2. Taking Existing Pipelines Out of Service:
- a. Do not take pipelines out of service unless specifically approved by Owner's Representative.
 - b. Notify Owner's Representative at least 48 hours prior to taking any pipeline out of service.

3.4 SPECIFIC PIPE INSTALLATION

A. Polyvinyl Chloride Pipe (PVC):

- 1. Gravity Sewers: Install all PVC piping in accordance with ASTM D234 "Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity Flow Applications".
- 2. Lay pipe with bell and spigot joints with bells upstream.
- 3. Completely clean all jointing surfaces and adjacent areas prior to making joint.
- 4. Field cut pipe for shorter than standard pipe lengths. Cut ends square and perpendicular to the pipe axis. Remove and smoothly bevel ends. Field spigots shall be stop marked with a felt tip mark or wax crayon for proper length of assembly insertion. The angle and depth of field bevels, and lengths to stop marks, shall be comparable in quality to factory made spigots.
- 5. Assemble all joints in accordance with recommendations of the manufacturer. If a lubricant is required to facilitate assembly it shall have no detrimental effect on the gasket or on the pipe when subjected to prolonged exposure.
- 6. Rotate the spigot by hand or with a strap wrench to verify proper jointing. If unusual joining resistance is encountered or if the insertion mark does not reach the flush position, disassemble the joint, inspect for damage, reclean the joint components and repeat the assembly steps.
- 7. Use a bar and wood blocking to properly seat pipe joints. **DO NOT USE BACKHOE BUCKET, OR SIMILAR MACHINERY, TO FORCE JOINT ASSEMBLY.**

B. High Density Polyethylene Gravity Piping (HDPE):

- 1. Install in accordance with the pipe manufacturer's specifications
- 2. Completely clean all jointing surfaces and adjacent areas prior to making joints.

3. Field cut pipe for shorter than standard pipe lengths. Cut ends square and perpendicular to the pipe axis. Remove and smoothly bevel ends.
 4. Assemble all joints in accordance with recommendations of the manufacturer. If a lubricant is required to facilitate assembly, it shall have not detrimental affect on the gasket or on the pipe when subjected to prolonged exposure.
- C. Ductile Iron Pipe (DIP):
1. Install all ductile iron piping in accordance with ANSI/AWWA C600.
 2. Lay pipe with bell and spigot joints with bells upstream. Lay water pipe on a continuously rising grade from low points to high points at service lines, hydrants or air valves.
 3. Unless otherwise noted, minimum depth of pipe shall be 5'-0" measured from top of pipe to finished grade.
 4. Field cut pipe for shorter than standard pipe lengths. Cut ends square, perpendicular to the pipe axis and properly beveled without damaging the pipe or cement mortar lining. Do not lay cut pipe within three lengths of a bend or at the end of a line.
 5. Mechanical Joint Installation:
 - a. Thoroughly clean the last eight inches of the outside of the spigot and the inside of the bell with a wire brush to remove foreign matter and paint with a soap solution prior to assembling mechanical joints.
 - b. Slip the gland and soaped rubber ring on the spigot end of the pipe immediately after apply the soap solution.
 - c. Centrally locate the spigot in the bell and push the pipe forward to seat the spigot in the bell. Press the gasket into place evenly within the bells and move the gland along the pipe into position for bolting.
 - d. Insert bolts and hand tighten all nuts. Nuts spaced 180 degrees apart shall be tightened alternately in order to produce an equal pressure on all parts of the gland. Tighten all nuts with a torque-limiting wrench in accordance with the torque recommendations of the manufacturer.
 - e. Final assembly of pipe with harnessed joints shall conform to the requirements of the manufacturer. Tighten nuts with a torque-limiting wrench in accordance with the torque recommendations of the manufacturer.
 6. Push-On Joint Installation:
 - a. Thoroughly clean the last eight inches of the outside of the spigot and the inside of the bell with a wire brush to remove foreign matter and paint with a soap solution prior to assembling mechanical joints.
 - b. Clean, flex, and then place the rubber gasket in the bell in accordance with the manufacturer's instructions. The gasket shall be smoothed out around the entire circumference of the bell to remove bulges and prevent interference with the proper entry of the spigot of the entering pipe section. A thin film of an approved lubricant may be applied to the surface of the gasket that will come in contact with the spigot of the entering pipe and/or the outside of the spigot of the entering pipe.

- c. Centrally locate the spigot in the bell and push the pipe forward until it just makes contact with the gasket. After the gasket is compressed and before the spigot is installed entirely, check the gasket for proper positioning around the full circumference of the joint.
- d. Push or pull the spigot end of the entering pipe past the gasket until it makes contact with base of the bell. Where an unreasonable amount of force is required, remove the spigot of the entering pipe and verify proper positioning of the rubber gasket. Damaged gaskets shall not be used.
- e. Two (2) bronze wedges shall be installed at each joint in the 10 o'clock and 2 o'clock positions. Care shall be taken to ensure that the wedges do not become displaced due to pipe movement during laying and backfilling.

7. Joint Deflection:

- a. When it is necessary to deflect pipe from a straight line, in either horizontal or vertical direction, the allowed deflection shall not exceed 80% of that specified in ANSI/AWWA C600 or in the manufacturer's installation instructions, whichever is less.
- b. Deflect push-on joints after final joint assembly.
- c. Deflect mechanical after joint assembly but prior to tightening bolts.

3.5 FIELD QUALITY CONTROL

A. General:

- 1. Notify Owner's Representative 48 hours in advance of testing.
- 2. Provide all testing apparatus including pumps, hoses, gauges, fittings, temporary bulkheads, plugs, compressors and miscellaneous other required items.
- 3. Provide temporary blocking and bracing or approved thrust and joint restraint to prevent joint separation and pipe movement during testing.
- 4. Unless otherwise approved, conduct all tests in the presence of the Owner's Representative and in the presence of local authorities having jurisdiction.
- 5. Water Source:
 - a. Provide all water for testing, flushing and other water uses. The source of the water shall be subject to the approval of the Owner's Representative.
 - b. The point of introduction of water for conducting tests shall be subject to the approval of the Owner's Representative.
- 6. All costs for tests shall be included in the Contractor's bid.
- 7. Locate, and repair or replace, section of piping which fail the test and retest until acceptance.

B. Required Tests for Gravity Sanitary Sewers:

1. Perform the following tests after all the sewer pipe has been installed and prior to final acceptance.
 - a. Deflection Test
 - b. Alignment Test
 - c. Low Pressure Air Test
 - d. Corroborative Infiltration/Exfiltration Test
 - e. Television Inspection, if required based on results of (c) and (d) above.
2. Perform tests prior to placement of pavement, or other construction which may, in the opinion of the Owner's Representative, be detrimentally effected by excavation required for repairs.
3. Perform the tests only after the backfill has been in place to its full depth for a minimum of 30 days.
4. Submit details prior to making tests of proposed testing procedures with a description of methods and equipment to the Owner's Representative for approval.
5. Deflection Test:
 - a. Deflection test all flexible sewer pipe with a "go/no-go" mandrel with a diameter equal to 95% of the inside diameter of the pipe.
 - b. Maximum pipe deflection: 5%.
6. Alignment Test:
 - a. Alignment test all sewer pipe with the hand-lamp method.
 - b. The full diameter of the pipe shall be visible when viewed between consecutive manholes.
7. Air Test:
 - a. Air test all sewer pipe, including laterals, in conformance with ASTM C828. The length of lateral piping shall not be considered in the calculation of acceptance times.
 - b. Commensurately increase test pressure for groundwater elevations above the pipe, in accordance with UNI- B-6 by Uni-Bell Plastic Pipe Association.
 - c. Method:
 - (1) Clean and wet thoroughly the inside of the pipe before test is performed.
 - (2) Insert test plugs in ends of pipe to be tested.
 - (3) Slowly fill the pipe with air to a pressure of 4 psig. Maintain pressure between 4 and 3.5 psig for at least two minutes for temperature stabilization.
 - (4) Check all plugs for tightness.
 - (5) With a pressure of approximately 4 psig in pipe, disconnect air supply.

- (6) Allow pressure to decrease to 3.5 psig.
 - (7) Determine elapsed time for pressure drop from 3.5 psig to 2.5 psig.
- d. The line is considered acceptable if the time for the pressure to decrease from 3.5 psig to 2.5 psig is not less than the amount determined by the following table, except that Reinforced Concrete Pipe shall be half this duration.

MINIMUM ACCEPTANCE TIMES

Pipe Diameter (in.)	Minimum Time (min:sec)	Length for Minimum Time (ft.)	Time for Longer Length (sec.)
4	3:46	597	0.380 L
6	5:40	398	0.854 L
8	7:34	298	1.520 L
10	9:26	239	2.374 L
12	11:20	194	3.418 L
15	14:10	159	5.342 L
18	17:00	133	7.692 L
21	19:50	114	10.470 L
24	22:40	99	13.674 L
27	25:30	88	17.306 L
30	28:20	80	21.366 L
33	21:10	72	25.852 L
36	34:00	66	30.768 L

Where L is the test length.

- e. If the leakage in the section tested exceeds the specified amount, repair or replace the section tested to reduce the leakage to within the specified limits and repeat the test until the leakage requirements are met.
 - f. The Contractor may, at his option, infiltration/exfiltration test all sewer pipe in lieu of the air test.
8. Corroborative Infiltration/Exfiltration Test:
- a. Where air testing is used for leakage testing, corroborative infiltration/exfiltration testing shall be performed.
 - b. Test the three (3) sewer sections which indicate the greatest rate of air loss.
 - c. If the infiltration/exfiltration tests prove acceptable no additional testing is required; however, if the air test is not verified by the corroborative testing, complete infiltration/exfiltration testing shall be required as the basis for final acceptance.
9. Infiltration Test:
- a. Use the infiltration test when groundwater levels are at least two feet above the top of the pipe for the lengths of the section tested during the period of the tests.
 - b. Measure leakage by a watertight well, weir, or other approved means installed at the lower end of each section under test.
 - c. Test for a period of at least 3 days.

- d. Total leakage of any section tested shall not exceed the rate of 200 or 50 gallons per mile of pipe per 24 hours per inch of nominal internal diameter, for concrete and PVC pipe respectively.
- e. If the leakage in the section tested exceeds the specified amount, repair or replace the sections to reduce the leakage to within the specified limits and repeat until the leakage requirements are met.

10. Exfiltration Test:

- a. Use the exfiltration test if the groundwater levels are less than two (2) feet above the top of the pipe for the lengths of the section tested during the period of the test.
- b. Fill the pipe and manhole with water to provide a positive differential head of at least two feet on the top of the pipe (or the top of the groundwater) at the highest point of the pipeline under test.
- c. During exfiltration testing the maximum internal pipe pressure at the lowest end shall not exceed 25 feet of water.
- d. The amount of water added to maintain this head shall be the leakage.
- e. Test for a period of at least four hours.
- f. Total leakage of any section tested shall not exceed the rate of 200 gallons or 50 gallons per mile of pipe per 24 hours per inch of nominal internal diameter for concrete and PVC pipe respectively.
- g. If the leakage in the section tested exceeds the specified amount, repair or replace sections to reduce the leakage to within the specified limits and repeat the test until the leakage requirements is met.
- h. On steep grades it may be necessary to place plugs in the pipe between manholes to avoid excessive pressures in the sewer pipe and against the caps at the end of house and building connections.

11. Television Inspection:

- a. If a section of sewer has failed the air and exfiltration/infiltration tests, or is proven poorly aligned by the lamp test, inspect the sewer by closed-circuit television to locate and repair defective section of sewer.
- b. The Owner's Representative will notify the Contractor in writing which completed sewers shall be inspected by closed-circuit television and commence the television inspection within 15 days of the Owner's Representative's written notification.
- c. Notify the Owner's Representative at least 5 days prior to commencement of television inspection.
- d. No television inspection shall be performed without the Owner's Representative or his representative present to witness the inspection.
- e. Provide the Owner's Representative with three (3) copies of a report of the televising inspection of each section of completed sewer inspected. Show the exact

location and extent of all cracks, loose joints, holes, vertical and horizontal, misalignment, faulty service connections, caved-in pipe, points of infiltration, obstructions, debris and all else detrimental to the proper functioning and service of the completed sewer. Provide the actual television inspection video with the report showing all the above conditions found, at all wyes, tees and laterals and as directed by the Owner's Representative. The Owner's Representative will review the report and will instruct the Contractor, to repair any conditions which, in the opinion of the Owner's Representative, are detrimental to the proper function and service of the sewer.

12. Visual Inspection: Prior to final acceptance, a visual inspection of all appurtenance structures, i.e. manholes, chambers, etc., will be required. Repair visual leaks, regardless of their magnitude.

C. Required Tests for Waterlines and Force Mains:

1. Perform the following after the pipe has been installed and prior to final acceptance:
 - a. Pressure Test.
 - b. Leakage Test.
2. Presumptive hydrostatic tests may be performed when the system is partially backfilled to "check" the work, but final acceptance shall be based on hydrostatic tests performed on the finished system after it is completely backfilled.
3. Pressure Test:
 - a. Test piping to 1.5 times the pipe working pressure, or 150 psi, whichever is greater. Measure test pressures at the lowest point in the pipe section and correct to the elevation of the gauge.
 - b. Relieve trapped air at the section high points through hydrants, or taps installed for this purpose, provided temporary installations are removed and plugged after acceptance.
 - c. Maintain the test pressure for a period of two (2) hours with a maximum pressure variation of 5 psi.
4. Leakage Test:
 - a. Conduct the leakage test concurrently with the pressure test.
 - b. The maximum allowed leakage is determined by the following formula:
$$L = \frac{N \times D \times P^{1/2}}{7400}$$
where L = allowable leakage, in gph
where N = No. of joints in test section
where D = nominal pipe diameter, in inches
where P = average test pressure, in psig
5. Acceptance shall be determined on the basis of allowable leakage. If any pipe section discloses leakage greater than that specified, locate, repair and retest until the leakage is within the limits specified.
6. Make all visible leaks tight regardless of the amount of leakage, and if the lines do not meet

the above leakage test, repair and retest as necessary until the leakage requirement is met. Repair or replace all defective work.

D. Disinfection of Potable Water Mains

1. Disinfect all potable water mains in accordance with the latest version of AWWA C651, except that the placement of chlorine powder or tablets inside the pipe during installation shall not be allowed. Disinfect water mains after the piping has passed the pressure and leakage testing.
2. Flush the pipe with water at a minimum velocity of 2.5 feet per second (fps) to clear all foreign material from the pipe.
3. Apply a chlorine solution with a concentration between 50 parts per million (ppm) and 100 ppm. The chlorine solution shall remain in the piping for a minimum of 24 hours. The concentration at the end of this period shall be at least 25 ppm in all sections of the main. Repeat the entire procedure if the residual is less than 25 ppm.
 - a. While the chlorinated water is being added, all appurtenances (valves, hydrants, etc.) shall be operated so as to completely disinfect the new work.
 - b. Position valves so that the chlorine solution in the section being disinfected will not flow into water mains in active service.
 - c. Chlorine residual samples shall be taken as directed by the Owner's Representative.
4. After the twenty four (24) hour retention period, flush the main until residual testing indicates that the chlorine concentration is approximately that of the neighboring service area.
 - a. Dispose of heavily chlorinated water into sanitary sewer or tank truck.
 - b. The Owner and the owner of the sanitary sewer system shall be notified a minimum of twenty-four (24) hours prior to the discharge of any water to the sanitary sewer. Contractor shall submit to the Owner's Representative written confirmation that the owner of sanitary sewer system has approved the discharge of water to its sanitary sewer.
 - c. Under no circumstances will the emptying of water onto roadways, or into ditches, culverts, streams or wetlands be allowed.
5. After disinfection and final flushing, and prior to placing the lines in service, the Contractor shall collect bacteriological samples and submit samples to an approved testing laboratory. Two consecutive sets of samples shall be taken at least 24 hours apart in accordance with AWWA C651. The collection points shall be as directed by the Owner's Representative and local authority having jurisdiction.
 - a. The testing laboratory performing the bacteriological analysis shall be acceptable to the Owner's Representative.
 - b. Submit three (3) copies of the laboratory analysis to the Owner's Representative.
 - c. Should safe results not occur after laboratory tests, the Contractor shall, at his expense, repeat the disinfection procedure until safe results are obtained.

d. Contractor shall pay for all testing required.

6. All precaution shall be taken to maintain dry and sanitary conditions and prevent contamination of any piping. If, in the opinion of the Owner's Representative, contamination has occurred, the Contractor shall repeat the disinfection procedure and testing at his cost and expense.

E. Required Tests For Storm Sewers

1. Perform the following tests after the storm drainage pipe has been installed and prior to final acceptance:

a. Alignment Test, for all pipe

2. Based upon visual observations, the Owner's Representative may order additional testing, including the following:

- (1) Television Inspection, if required by the Owner's Representative.
- (2) Deflection Test, if required by the Owner's Representative

3. Perform tests prior to placement of pavement, or other construction which may, in the opinion of the Owner's Representative, be detrimentally effected by excavation required for repairs.

4. Submit details prior to making tests of proposed testing procedures with a description of methods and equipment to the Owner's Representative for approval.

5. Alignment Test:

a. All storm drainage pipe will be subject to a visual inspection in order to identify proper alignment, grade and excessive deflection.

b. The Owner's Representative may choose to perform an alignment test using the hand-lamp method, in which case the full diameter of the pipe shall be visible when viewed between consecutive structures.

6. Television Inspection:

a. The Owner's Representative will notify the Contractor in writing which completed sewers shall be inspected by closed-circuit television.

b. The Contractor shall commence the television inspection within 15 days of the Owner's Representative's written notification. The Contractor shall notify the Owner's Representative at least 5 days prior to commencement of television inspection.

c. No television inspection shall be performed without the Owner's Representative or his representative present to witness the inspection.

d. The Contractor shall provide the Owner's Representative with three (3) copies of a report of the televising inspection of each section of completed sewer inspected. Show the exact location and extent of all cracks, loose joints, holes, vertical and horizontal, misalignment, faulty service connections, caved-in pipe, points of infiltration, obstructions, debris and all else detrimental to the proper functioning and service of the completed sewer. The Contractor shall provide the actual

television inspection video with the report showing all the above conditions found, at all wyes, tees and laterals and as directed by the Owner's Representative.

- e. The Owner's Representative will review the report and will instruct the Contractor, to repair any conditions which, in the opinion of the Owner's Representative, are detrimental to the proper function and service of the storm pipe.

7. Deflection Test:

- a. The Owner's Representative will notify the Contractor in writing which completed sewers shall be tested by the deflection method.
- b. The Contractor shall commence the deflection test within 15 days of the Owner's Representative's written notification. The Contractor shall notify the Owner's Representative at least 5 days prior to commencement of television inspection.
- c. No Deflection testing shall be performed without the Owner's Representative or his representative present to witness the test.
- d. The deflection test shall be performed on flexible drainage pipe with a "go/no-go" mandrel with a diameter equal to 95% of the inside diameter of the pipe being tested.
- e. The maximum pipe deflection shall be 5%.
- f. The Owner's Representative will review the Deflection Test results and will instruct the Contractor, to repair any conditions which, in the opinion of the Owner's Representative, are detrimental to the proper function and service of the storm pipe.

- 8. Visual Inspection: Prior to final acceptance, a visual inspection of all appurtenance structures, i.e. manholes, chambers, etc., will be required. Repair visual leaks, regardless of their magnitude.

END OF SECTION

SECTION 02611 REINFORCED CONCRETE PIPE

PART 1 - GENERAL

1.1 SUMMARY

- A. This section includes the installation of Class IV reinforced concrete piping systems.
- B. All piping, fittings, and appurtenances shall be new, clean and in accordance with material specifications. In no instance shall second-hand or damaged materials be acceptable.

1.2 REFERENCES

- A. "State of Connecticut Department of Transportation, Standard Specifications for Roads, Bridges and Incidental Construction."
- B. "American Concrete Pipe Association."
- C. American Society of Testing and Materials (ASTM).

1.3 SUBMITTALS

- A. Product Data:
 - 1. Submit manufacturer's catalog cuts, specifications and installation instructions.

1.4 QUALITY ASSURANCE

- A. Product Markings: Plainly and permanently mark each pipe length with the following information:
 - 1. Pipe class diameter and specification designation
 - 2. Date of manufacture
 - 3. Name or trademark of manufacturer
 - 4. Identification of plant
- B. Basis of Acceptance: Conform to ASTM C76 for basis of acceptance of pipe supplied under this section. Submit certification that the testing machine has been calibrated in accordance with ASTM E4 at a minimum of once per year.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Delivery and Storage:
 - 1. Deliver to and store pipe, fittings, specials, appurtenances and accessories within the work limits shown on the Drawings.
 - 2. Exercise special care during delivery and storage to avoid damage to the products.
 - 3. Store products in locations where unnecessary handling is avoided and where they will not interfere with the Owner's operations, construction operations or public travel.
- B. Handling:

1. Handle pipe, fittings, specials appurtenances and accessories carefully with approved handling devices in strict conformance with the manufacturer's recommendations.
 2. Do not drop products off trucks, or otherwise drag, roll or skid products.
- C. Products cracked, gouged, chipped, dented or otherwise damaged will not be approved and shall be removed from the site and replaced at the Contractor's expense, unless the product can be repaired in a manner acceptable to the manufacturer and Engineer. All repairs shall be at the Contractor's expense.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Pipe and Fittings:

1. Provide only new reinforced concrete pipe and fittings. In no case will secondhand or damaged material be acceptable.
2. Conform to the requirements of ASTM C76, Class IV, Wall B.

B. Joints:

1. Provide bell and spigot joints, sealed with an elastomeric gasket conforming to the requirements of ASTM C443. The bell and spigot shall be designed to enclose the gasket on all surfaces when the joint is in its final position.
2. Joints shall be designed so as to permit effective jointing to reduce leakage and infiltration and to permit placement without appreciable irregularities in the flow line.

C. Flared End Sections:

1. Use standard design flared end sections manufactured of the same material as specified for pipe, by the same manufacturer.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Inspect all pipe and fittings prior to laying in the trench. Remove defective pipe and fittings from the site.
- B. Do not backfill until inspection by the Engineer, unless otherwise approved by the Engineer.

3.2 INSTALLATION

- A. Trenching, backfilling and compaction shall conform to Section 02221 "Trenching, Backfilling, and Compaction."
- B. Pipe installation shall conform to Section 02610 "Buried Pipe Installation."

END OF SECTION 02611

SECTION 02612 POLYVINYL CHLORIDE PIPE

PART 1 - GENERAL

1.1 SUMMARY

- A. This section includes the installation of polyvinyl chloride piping systems.
- B. All piping, fittings, and appurtenances shall be new, clean and in accordance with material specifications. In no instance will second-hand or damaged materials be acceptable.

1.2 REFERENCES

- A. American Water Works Association (AWWA).
- B. American Society of Testing and Materials (ASTM).
- C. National Sanitation Foundation (NSF).

1.3 QUALITY ASSURANCE

- A. Product Markings: Plainly and permanently mark each pipe length with the following information:
 - 1. Nominal pipe size.
 - 2. Plastic pipe material designation.
 - 3. Standard thermoplastic pipe dimension ratio.
 - 4. Pressure rating.
 - 5. ASTM designation.
 - 6. Manufacturers name or trademark and date of manufacture.
 - 7. Potable water pipe marking or seal, if applicable.
- B. Submit certification that the pipe is suitable for potable water. Conform to NSF Standard 14 for testing requirements.

1.4 SUBMITTALS

- A. Product Data:
 - 1. Submit manufacturer's catalog cuts, specifications and installation instructions.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Delivery and Storage:
 - 1. Deliver and store pipe, fittings, specials, appurtenances and accessories and within the work limits as shown on the Drawings.
 - 2. Exercise special care during delivery and storage to avoid damage to the products.
 - 3. Store products in locations where unnecessary handling is avoided and where they will not interfere with the Owner's operations, construction operations or public travel.
- B. Handling:
 - 1. Handle pipe, fittings, specials appurtenances and accessories carefully with approved

handling devices in strict conformance with the manufacturer's recommendations.

2. Do not drop or roll products off trucks, or otherwise drag, roll or skid products.
- C. Products cracked, gouged, chipped, dented or otherwise damaged will not be approved and are to be removed and replaced at no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Pipe and Fittings:

1. Pressure Pipe for Water Distribution: 4 inch through 12 inch conforming to AWWA C900. DR Series made from Class 12454-A or Class 12454-B virgin compounds in accordance with ASTM D1784.
2. Pressure Rated Sewer Pipe: 4 inch through 15 inch conform to ASTM D-2241 made from Class 12454-B virgin compounds in accordance with ASTM D1784, SDR 26.
3. Gravity Sewer: 4 inch through 15 inches conforming to ASTM D-3034 Type PSM. SDR 35.
4. Gravity Sewer: 18 inches through 27 inches conforming to ASTM F-679, wall thickness T-1.

B. Joints:

1. Join pipe joints, including fittings, shall be joined with an integral bell and spigot type rubber gasketed joint.
2. Conform to ASTM F-477 for gaskets and mark to indicate nominal pipe size and proper insertion direction.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Inspect all pipe and fittings prior to laying in the trench. Remove defective pipe and fittings from the site.
- B. Do not backfill until inspection by the Owner's Representative, unless otherwise approved by the Owner's Representative.

3.2 INSTALLATION

- A. Conform to Section "Trenching and Backfilling."
- B. Conform to Section "Buried Pipe Installation."

3.3 TESTING

- A. Conform to Section "Buried Pipe Installation."

END OF SECTION 02612

SECTION 02613 DUCTILE IRON PIPE

PART 1 - GENERAL

1.1 SUMMARY

- A. This section includes specifications for materials to be used in ductile iron piping systems.
- B. Pipe, fittings, couplings, specials, jointing materials, bolts, nuts, gaskets, factory-applied painting, and all other appurtenances required for the installation, testing and completion of piping systems are included in this section.

1.2 REFERENCES

- A. American Society of Testing and Materials (ASTM)
- B. American National Standards Institute (ANSI)
- C. American Waterworks Association (AWWA)

1.3 SUBMITTALS

- A. Submit the following in accordance with conditions of the contract and Division 1 specification sections.
 - 1. Illustrations, specifications, and engineering data including: Dimensions, materials, size, weight, coatings, and linings for pipe, fittings and appurtenances.
 - 2. Manufacturer's instructions and recommendations for installation of pipe joints, fittings and appurtenances.
 - 3. Statement of compliance with ANSI/AWWA Specifications.

1.4 QUALITY ASSURANCE

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Delivery and Storage:
 - 1. Deliver and store materials within the Contract limits, as approved by Owner's Representative.
- B. Handling:
 - 1. Handle materials carefully with approved handling devices in accordance with manufacturer's recommendations.
 - 2. Do not drop or roll products off trucks. Products are not to be otherwise dragged, rolled or skidded.
- C. Products cracked, gouged, chipped, dented or otherwise damaged will not be approved and are to be removed and replaced at the Contractor's expense, unless the product can be repaired in a manner acceptable to the manufacturer and Owner's Representative.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Provide only new ductile iron piping, fittings, and appurtenances. In no case, will second-hand or damaged material be acceptable.

2.2 EQUIPMENT

- A. Ductile Iron Pipe:
 - 1. Centrifugally cast in accordance with ANSI/AWWA C151/A21.51
 - 2. Working Pressure: 150 psi
 - 3. Pressure Class: 350 psi
 - 4. Joints: Push-on, ANSI/AWWA C111/A21.11
Mechanical, ANSI/AWWA C111/A21.11
Modifications of each
 - 5. Laying Length: 18 or 20 feet

2.3 COMPONENTS

- A. Fittings:
 - 1. Cast or Ductile Iron: ANSI/AWWA C110/21.10, or ANSI/AWWA C153/A21.53 ductile iron compact fittings.
 - 2. Joints: Mechanical, ANSI/AWWA C111/A21.11
 - 3. Working Pressure: 250 psi, if ANSI/AWWI C110/A21.10 fittings are used or 350 psi if ANSI/AWWA C153/A21.
- B. Modified Joints: Where restrained joints are shown on the Drawings, pipe and fittings shall be furnished with M.J. retainer glands or other pipe-manufactured-provided joint restraint.

2.4 ACCESSORIES

- A. Lining and Coating:
 - 1. All ductile iron pipe and fittings shall be furnished with a seal coated cement mortar lining conforming to ANSI/AWWA C104/A21.4, except that the lining thickness shall be twice the standard thickness and never less than 1/8 inch.
 - 2. Buried pipe and fittings shall be furnished with a standard bitumastic coating conforming to ANSI A21.51.
- B. Miscellaneous: Furnish the required joint accessories consisting of gray or ductile iron glands, high-strength low alloy steel tee bolts and nuts, SBR rubber gaskets, and joint lubricant.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Trenching, backfilling and compaction shall conform to Section “Trenching and Backfilling.”
- B. Conform to Section “Buried Pipe Installation.”

3.2 FIELD QUALITY CONTROL

- A. Tests:
 - 1. Conform to Section “Buried Pipe Installation” for testing.
- B. Inspection:
 - 1. Inspect all pipe and fittings prior to laying in the trench. Remove defective pipe and fittings from the site.
 - 2. Do not backfill until inspection by the Owner’s Representative, unless otherwise approved by the Owner’s Representative.

END OF SECTION 02613

SECTION 02619 HIGH DENSITY POLYETHYLENE PIPE

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The Contractor shall provide all labor, materials, equipment and services necessary for, and incidental to, the installation of polyethylene piping systems as shown on the Drawings and as specified herein.
- B. All piping, fittings, and appurtenances shall be new, clean and in accordance with material specifications. In no instance shall second- hand or damaged materials be acceptable.

1.2 QUALITY ASSURANCE

A. Reference Standards:

- 1. The latest edition of the following standards, as referenced herein, shall be applicable.
 - a. “Standard Specifications, Construction and Materials, New York State Department of Transportation, Office of Engineering.”
 - b. “Standard Specifications for Highway Materials and Methods of Sampling and Testing, American Association of State Highway and Transportation Officials (AASHTO).”
 - c. American Society of Testing and Materials (ASTM).

1.3 SUBMITTALS

A. Product Data:

- 1. Submit manufacturer’s catalog cuts, specifications and installation instructions, for both pipe and coupling system.
- 2. Submit manufacturer’s certification that product was manufactured, tested, and supplied in accordance with the standards specified herein.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Delivery and Storage:

- 1. Pipe, fittings, specials, appurtenances and accessories shall be delivered to and stored within the Contractor’s work limits as shown on the Drawings.
- 2. Special care shall be exercised during delivery and storage to avoid damage to the products.
- 3. Products shall be stored so as to avoid unnecessary handling and in locations where they will not interfere with the Owner’s operations or public travel.

B. Handling:

- 1. Pipe, fittings, special appurtenances and accessories shall be handled carefully with approved handling devices in strict conformance with the manufacturer’s recommendations.
- 2. Products shall not be dropped nor shall products be otherwise dragged, rolled or skidded.

- C. Products cracked, gouged, chipped, dented or otherwise damaged will not be approved and shall be removed and replaced at the Contractor's expense, unless the product can be repaired in a manner acceptable to the manufacturer and Owner's Representative. All repairs shall be at the Contractor's expense.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Pipe:

- 1. Pipe shall have smooth interior and annular exterior corrugations conforming to the following standards:
 - a. 4" to 10" shall meet AASHTO M252, Type S.
 - b. 12" through 60" shall meet AASHTO M294, Type S or ASTM F2306.
 - c. Pipe shall be ADS N-12 ST IB high-density polyethylene pipe (HDPE) as manufactured by Advanced Drainage Systems (ADS) or approved equal.

B. Joints & Fittings:

- 1. Pipe shall have integral gasketed bell and spigot.
- 2. Joints shall conform to AASHTO M294 standards.
- 3. Gaskets shall conform to ASTM F714 standards.

C. Flared End Section:

- 1. Flared end sections shall be HDPE end sections as manufactured by ADS, or approved equal.
- 2. End sections shall be fastened to the last corrugation of the pipe length using a high strength nylon cable tie supplied by the manufacturer through pre-drilled holes at the top of the end section collar.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Inspect all pipe and fittings prior to laying in the trench. Remove defective pipe and fittings from the site.
- B. Do not backfill until inspection by the Owner's Representative, unless otherwise approved by the Owner's Representative.

3.2 INSTALLATION

- A. Trenching, backfilling and compaction shall conform to Section Trenching and Backfilling."
- B. Pipe installation shall conform to Section "Buried Pipe Installation."

3.3 TESTING

- A. Refer to Section "Buried Pipe Installation."

END OF SECTION 02619

SECTION 02620 ALUMINIZED CORRUGATED STEEL PIPE

PART 1 - GENERAL

1.1 SUMMARY

- A. The Contractor shall provide all labor, materials, equipment and services necessary for, and incidental to, the installation of aluminized corrugated steel piping systems as shown on the Drawings and specified herein.
- B. All piping, fittings, and appurtenances shall be new, clean and in accordance with material specifications. In no instance shall second-hand or damaged materials be acceptable.

1.2 REFERENCES

- A. "State of Connecticut Department of Transportation, Standard Specifications for Roads, Bridges and Incidental Construction."
- B. "Standard Specifications for Highway Materials and Methods of Sampling and Testing, American Association of State Highway and Transportation Officials (AASHTO)"
- C. American Society of Testing and Materials (ASTM).

1.3 SUBMITTALS

- A. Product Data:
 - 1. Submit manufacturer's catalog cuts, specifications and installation instructions for both pipe and coupling system.
 - 2. Submit fabrication and assembly details for all fittings and fabrications.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Delivery and Storage:
 - 1. Deliver to and store pipe, fittings, specials, appurtenances and accessories within the work limits shown on the Drawings.
 - 2. Exercise special care during delivery and storage to avoid damage to the products.
 - 3. Store products in locations where unnecessary handling is avoided and where they will not interfere with the Owner's operations, construction operations or public travel.
- B. Handling:
 - 1. Handle pipe, fittings, specials appurtenances and accessories carefully with approved handling devices in strict conformance with the manufacturer's recommendations.
 - 2. Do not drop products off trucks, or otherwise drag, roll or skid products.
- C. Products cracked, gouged, chipped, dented or otherwise damaged will not be approved and shall be removed from the site and replaced at the Contractor's expense, unless the product can be repaired in a manner acceptable to the manufacturer and Engineer. All repairs shall be at the Contractor's expense.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Pipe:

1. Pipe shall be helically corrugated aluminized steel pipe (ACSP) having a continuous spiral lock seam, conforming to the requirements of AASHTO M-36.
2. All piping shall be annularly rolled at the ends.
3. Pipe shall be formed from sheet conforming to the requirements of AASHTO M-274.
4. Pipe shall be 14 gauge aluminized steel, type 2.

B. Couplings:

1. Field joints shall be made with steel band couplers of the same alloy as that used for the pipe.
2. Band couplers shall be one gauge lighter than that of the pipe, with the exception of 18 gauge pipe which shall have 18 gauge couplers.
3. Band couplers shall have corrugations that match the pipe corrugations. One piece or two piece band couplers are acceptable for use in making filed joints. Band couplers shall be of the hugger type.
4. Band width shall have the following minimum widths:
 - a. Band Width Pipe Diameter: 7" for 12" through 30" pipe
12" for 30" through 72" pipe
5. Half inch diameter galvanized steel bolts and nuts shall be used on coupling bands for pipe diameters 12" and greater. 3/8" diameter is acceptable for diameters less than 12".
6. Any aluminum in contact with concrete shall be thoroughly coated with zinc chromate primer, which shall be permitted to dry prior to concrete placement.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Inspect all pipe and fittings prior to laying in the trench. Remove defective pipe and fittings from the site.
- B. Do not backfill until inspection by the Engineer, unless otherwise approved by the Engineer.

3.2 INSTALLATION

- A. Trenching, backfilling and compaction shall conform to Section 02221 "Trenching, Backfilling, and Compaction."
- B. Pipe installation shall conform to Section 02610 "Buried Pipe Installation."

END OF SECTION 02611

SECTION 02661 WATER SERVICES

PART 1 - GENERAL

1.1 SUMMARY

- A. This section includes provisions for the installation of water services.
- B. Unless otherwise permitted, existing water valves shall not be operated by the Contractor. Whenever the operation of a water valve is necessary, the Contractor shall make arrangements, at least 24 hours in advance of the need, to have the Owner's forces perform the required operations. Contractor must prepare and distribute customer notices to all affected customers at least 24 hours prior to any shutdown of service.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's catalog cuts, specifications and installation instructions.

1.3 REFERENCES

- A. American Society of Testing and Materials (ASTM).
- B. American Waterworks Association (AWWA)
- C. American National Standards Institute (ANSI)

PART 2 - PRODUCTS

2.1 EQUIPMENT

- A. Materials in contact with potable water shall be made from copper alloy no. C83600 in accordance with ASTM B62 and ASTM B584.
- B. Pipe and Fittings:
 - 1. Pipe: Type K copper tubing, ASTM B88.
 - 2. Fittings: Wrought copper, compression end, ANSI B16.22
- C. Corporation Stops and Curbstops: Meet Borough of Naugatuck standards.
 - 1. Curb Box: Extension type with stationary rod and arch pattern base:
 - 2. Lid: Cast iron removable brass pentagon head plug. "Water" shall be cast into lid
 - 3. Valve Keys: Two (2) keys, designed to fit curb stop.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Trenching, backfilling and compaction conforming to Section "Trenching and Backfilling."
- B. Pipe installation conforming to Section "Buried Pipe Installation."

3.2 INSPECTION

- A. Inspect all pipe and fittings prior to laying in the trench. Remove all defective pipe and fittings from the site.
- B. Do not backfill until inspection by the Owner's Representative, unless otherwise approved by the Owner's Representative.

END OF SECTION 02661

SECTION 02676 COLD MILLING EXISTING PAVEMENT

PART 1 - GENERAL

1.1 SUMMARY

- A. The Contractor shall provide all labor, materials, equipment, and services necessary for, and incidental to, the milling, shaping and removal of portions of existing surfaces by a cold milling process, and subsequent cleaning, utilizing equipment and procedures meeting the requirements in this specification.
- B. Cold-milling shall be performed to the elevations and cross-slopes required to the installation of the new pavement section shown on the Drawings.

1.2 REFERENCE STANDARDS

- A. The latest edition of the following standards, as referenced herein, shall be applicable.
 - 1. "State of Connecticut Department of Transportation, Standard Specifications"
 - 2. "Standard Specifications for Highway Materials and Methods of Sampling and Testing, American Association of State Highway and Transportation Officials (AASHTO)."
 - 3. American Society for Testing and Materials (ASTM).

1.3 SUBMITTALS

- A. Post Mill Survey: The Contractor shall survey the post-milled elevations along the proposed edge of pavement, and record the elevations corresponding to proposed elevations shown on the Drawings. This information shall be submitted to the Owner's Representative for verification prior to proceeding with subsequent work.

1.4 PROJECT REQUIREMENTS

- A. Coordinate the milling of existing asphalt concrete pavement with the completion of other items of this Contract.

PART 2 - PRODUCTS

2.1 EQUIPMENT

- A. Milling machines shall be power operated, self-propelled machines capable of removing the desired thickness of existing surfaces. The machines shall have sufficient power, traction and stability to accurately maintain depth of cut and slope. They shall be capable of producing a finished profile and cross slope to within 1/4 inch of that required and shall produce a uniform surface texture free from gouges and ridges greater than 3/8 inch in depth.
- B. The machines shall be equipped with a means to control dust and other particulate matter created by the cutting action.
- C. The machines shall have an integral loading system or sufficient equipment shall be provided to accomplish complete removal of milled material at a rate equivalent to the milling rate.

- D. Vacuum trucks, street sweepers or power brooms shall be used to clean the milled surfaces. The Owner's Representative may disallow the use of power brooms in urban, residential or other sensitive areas if he deems the dust raised by the broom to be objectionable.

PART 3 - EXECUTION

3.1 GENERAL

- A. Milling shall be performed at the locations and in accordance with the details indicated on the plans.
- B. Where indicated on the plans, profile and cross slope shall be controlled by a taut reference string line. The reference elevations shall be established by the Contractor and subject to the approval of the Owner's Representative. The reference elevations shall be based upon proposed bottom of curb elevations, as indicated on the Drawings.
- C. The milled surface shall be crowned to provide the required cross slope, and sufficient to allow the installation of the proposed asphalt concrete pavement overlay. Where the required cross slope cannot be achieved by the milling process due to refusal at the curblines, the pavement crown shall be provided by installation of an asphalt shim course, at no additional cost.
- D. Any potential difficulties in obtaining the specified elevations at the curblines are to be brought immediately to the attention of the Owner's Representative.
- E. All equipment and methods shall conform to CTDOT Standard Specifications, unless otherwise specified.

3.2 REMOVAL OF EXISTING PAVEMENT

- A. All milled material, including that removed by other means, shall be immediately removed from the milled surfaces and adjacent surfaces. Surfaces shall be cleaned of all fines and dust prior to opening to traffic. The Contractor shall conduct his operations in such a manner that dust is controlled and is not objectionable. Milled and adjacent surfaces shall be cleaned again, as directed by the Contracting Officer, prior to the placement of tack coats, or pavement courses if traffic has been allowed on the milled surface and/or if more than 48 hours have elapsed since the initial cleaning.
- B. Milled longitudinal or transverse vertical faces exceeding 1-1/4 inches in height that would be exposed to traffic during non-work hours shall be sloped or tapered in a manner approved by the Contracting Officer so as not to create a traffic hazard. Milling operations shall be conducted to preclude the possibility of pavement runoff collecting along milled joints and creating a traffic hazard.
- C. Areas not accessible to the milling machine, such as around and/or adjacent to inlets, manholes, curbs and transverse joints on structures, may be removed by a small milling machine, handwork or other methods approved by the Owner's Representative.
- D. The Contractor shall maintain drainage at catch basins, according to the details shown on the plans, or in a manner approved by the Owner's Representative.
- E. When working adjacent to traffic, the Contractor shall immediately remove material that is spilled on the traveled way.

3.3 DISPOSAL OF MATERIAL

- A. Material removed during the milling process, including foreign debris within or on the pavement, shall become the property of the Contractor and shall be disposed of at a site obtained by the Contractor.

3.4 CLEANING OF MILLED SURFACES

- A. Sweeping of milled surfaces or other approved methods of cleaning shall be carried out directly behind the milling process. All milled material shall be removed to the satisfaction of the Owner's Representative.
- B. Immediately prior to commencing asphalt paving operations, the milled surfaces shall again be thoroughly cleaned in accordance with these specifications.

3.5 FIELD QUALITY CONTROLS

- A. Damage to milled surfaces resulting from traffic or other causes such as, but not limited to, raveling, fuel spillage or any contaminants which would inhibit bond, shall be repaired or remilled by the Contractor in a manner approved by the Owner's Representative.

END OF SECTION 02676

SECTION 02770 CURBING

PART 1 - GENERAL

1.1 SUMMARY

- A. The work under this Section consists of furnishing all labor, materials and equipment necessary for the installation of 5" x 16" Granite Curbs, Bituminous Concrete Curb and Pre-Cast Concrete Curb as shown on the Plans.

1.2 SUBMITTALS

- A. Shop Drawings: Submit the following for approval:
 - 1. Design and construction details of all precast concrete units.
 - 2. Manufacturer's catalog cuts, specifications for concrete, curing compounds, reinforcement and admixtures.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Granite Curbs:
 - 1. Granite shall be tough, dense, sound and durable, of uniform light color, reasonably fine grained and free from seams, cracks or other structural defects.
 - 2. Furnish curbs with sawed top, split face and ends. Straight pieces shall be a minimum of 4 feet long. Curb segments on curves with radius of 100 feet or less shall be shaped to the required curvature, with the ends split on radial lines
 - 3. Top and front surfaces shall be true planes at right angles to each other, as seen with a straight edge. No projections greater than 3/4 inch or depression greater than 1/2 inch on the split surfaces will be acceptable. Top surface shall not vary more than 1/8 inch.
 - 4. Drill holes will not be permitted in exposed curb surfaces
 - 5. Match existing curb as to color, appearance and dimensions.
- B. Bituminous Concrete Curb: Conform to ConnDOT Section 8.15
- C. Pre-Cast Concrete Curb
 - 1. Pre-Cast Concrete Curbing shall be as manufactured by United Concrete Products Inc., Cromwell Concrete Products Inc., or equal.
 - 2. Curbing shall be manufactured in accordance with ConnDOT Section 8.11.
 - 3. Concrete shall meet the following criteria:
 - a. 28 day compressive strength- 4,000 psi
 - b. Air entrainment- 5.0% to 7.0%

4. Materials shall conform with ConnDOT M.03.01
 5. All curved sections shall consist of pre-fabricated to the radii shown on the plans.
- D. Mortar: Conform to ConnDOT Section M.11.04
- E. Dry Concrete: One (1) part portland and cement mix with six (6) parts coarse aggregate dry mix.

2.2 PRECAST CURB FABRICATION

- A. Precast concrete curb shall be fabricated to conform to the size and shape shown on the plans. Curb to be set on radius of 100 feet or less shall be cast to the curve required and ends shall be formed or sawed on radial lines.
- B. The Manufacturer shall produce curb sections that are uniform in appearance. The concrete mix shall be cast in steel or fiberglass forms unless another type of form is preapproved. The concrete shall be thoroughly consolidated by external or internal vibrations, or a combination of both.
- C. Curing shall be accomplished in accordance with methods approved by the ConnDOT and in accordance with the Manufacturer's recommendations.

PART 3 - EXECUTION

3.1 INSTALLATION (PRECAST CONCRETE AND GRANITE CURB)

- A. Set curbs true to line and grade on a foundation of dry concrete. Fill voids to completely support entire length of curb.
- B. Butt Joint curb sections together.
- C. Comply with installation requirement of ConnDOT
- D. Butt joint curb sections together.

3.2 INSTALLATION (BITUMINOUS CONCRETE CURB)

- A. Comply with installation requirement of ConnDOT.

END OF SECTION 02770

SECTION 02830 CHAIN LINK FENCE AND GATES

PART 1 - GENERAL

1.1 SUMMARY

- A. The Contractor shall provide all labor, materials, equipment, and services necessary for, and incidental to, the installation of chain link fence and gates, as shown on the Drawings and as specified herein.

1.2 QUALITY ASSURANCE

- A. Comply with standards of the Chain Link Fence Manufacturer’s Institute.
- B. Provide steel fence and related gates as a complete system produced by a single manufacturer, including necessary erection accessories, fittings and fastenings.
- C. Comply with ASTM A-120 for requirements of Schedule 40 piping.
- D. Height of fence shall be measured from the top of concrete footing to the top of post.

1.3 SUBMITTALS

- A. Shop Drawings: Show application to project, include gates.
- B. Product Data: Manufacturer’s catalog cuts, with printed specifications, and installation instructions.
- C. Samples: One sq. ft. minimum of fence fabric, and two of each size post tops and extension arms.

PART 2 - PRODUCTS

2.1 STEEL FRAME WORK

- A. Nominal Framework Sizes shall be the following:

Fence Height	Line Posts	End, Corner & Pull Posts	Rails & Braces	Gate Frames	*Gate Posts	Concrete Foundation Dia.		Depth
						Diameters	Corner/End	
						Line Posts	Pull & Gate Posts	
3'	1-1/2"	2"	1-1/4"	1-1/2"	2-1/2"	12"	12"	4'
3'-6"	1-1/2"	2"	1-1/4"	1-1/2"	2-1/2"	12"	12"	4'
4'	1-1/2"	2"	1-1/4"	1-1/2"	2-1/2"	12"	12"	4'
4'-6"	1-1/2"	2"	1-1/4"	1-1/2"	2-1/2"	12"	12"	4'
5'	1-1/2"	2"	1-1/4"	1-1/2"	2-1/2"	12"	12"	4'
6'	2"	2"	1-1/4"	1-1/2"	2-1/2"	12"	18"	4'
8'	2"	2-1/2"	1-1/4"	1-1/2"	3-1/2"	12"	18"	4'
10'	3"	4"	1-1/4"	1-1/2"	4"	18"	18"	4'
12'	3"	4"	1-1/4"	1-1/2"	4"	18"	18"	5'
16'	3-1/2"	4"	1-1/4"	1-1/2"	4"	18"	18"	5'.0

Schedule 40 S/L Pipe Table		
Nominal Size (In.)	Actual Outside Diameter (In.)	Weight *(lb/ft)
1	1.315	1.67
1-1/4	1.660	2.27
1-1/2	1.900	2.71
2	2.375	3.65
2-1/2	2.875	5.79
3	3.500	7.58
3-1/2	4.000	9.11

50,000 psi Hot Dipped Aluminized Steel Tubing		
Nominal Size (In.)	Actual Outside Diameter (In.)	Weight *(lb/ft)
1	1.315	
1-1/4	1.660	1.83
1-1/2	1.900	2.28
2	2.375	3.12
2-1/2	2.875	4.64
3	3.500	5.71
3-1/2	4.000	6.56

2.2 CHAIN LINK FABRIC

- A. One-piece fabric widths.
- B. Chain link, No.9 gauge, 2 inch mesh.
- C. Selvages: Knuckled top and bottom.

2.3 SWING GATE FRAMES

- A. Assemble gate frames by welding or with special steel fittings and rivets for rigid connections, as shown on the Drawings or on Shop Drawings approved by the Owner's Representative.

2.4 GATE HARDWARE

- A. Hinges: Non-lift-off type, offset to permit 180 degree swing, and of suitable size and weight to support gate. Provide 1-1/2 pair of hinges for each leaf over 6 feet high.
- B. Latch: Provide plunger bar type complete with flush plate set in concrete for all double gates and single gates over 10 feet. Padlock eye shall be an integral part of latch construction.
- C. Keeper for Vehicle Gates: Provide keeper which automatically engages the gate leaf and holds it in open position until manually released.

2.5 MISCELLANEOUS MATERIALS AND ACCESSORIES

- A. Post Tops: Steel, wrought iron, or malleable iron.
- B. Stretcher Bars: One piece equal to full height of fabric, minimum cross-section 3/16 inch x 3/4 inch.
- C. Metal Bands (for stretcher bars): Steel, wrought iron, or malleable iron, to secure stretcher bars to end, corner, pull and gate posts.
- D. Wire Ties:
 - 1. For tying fabric to line posts, rails and braces: 9 gauge steel wire.
 - 2. For tying fabric to tension wire: 11 gauge steel hog rings.
- E. Truss Rods: 3/8 inch diameter.
- F. Tension Wire: 7 gauge coiled spring steel wire.

G. Angle Beams, I Beams and Steel Shapes: ASTM A-36.

H. Bolts and Nuts: ASTM A-307, Grade A.

2.6 FINISHES

A. Steel Framework:

1. Pipe: Galvanized in accordance with F1083, 1.8 oz. zinc per sq. ft.
2. Class "B" Steel Tubing: Exterior; 1.0 oz zinc per sq. ft. plus a coating of chromate and polyurethane. Interior; zinc rich organic coating.

B. Fabric:

1. Aluminized or galvanized in accordance with F-1083, 1.8 oz zing per sq. ft.

C. Fence and Gate Hardware, Miscellaneous Materials, Accessories:

1. Wire Ties: Galvanized Finish, ASTM A-90 2.0 oz. zinc per sq. ft.
2. Hardware and Other Miscellaneous Items: Galvanized Finish, ASTM A-153 (Table 1).
3. Angle Beams, I Beams, and Steel Shapes: Galvanized in accordance with ASTM A-123, 2.0 oz zinc per sq. ft.

PART 3 - EXECUTION

3.1 PREPARATION

A. Coordinate fence and gate installation with completion of finished grading including topsoiling, and paving.

3.2 INSTALLATION

A. Space posts equidistant in the fence line with a maximum of 10 feet on center.

B. Earth: Excavate holes as indicated for fence and gate posts. Set posts in center of hole and fill hole with concrete. Plumb and align posts. Vibrate or tamp concrete for consolidation. Finish concrete in a dome shape above ground to shed water. Do not attach fabric to posts until concrete has cured a minimum of 7 days.

C. Locate corner posts at corners and at changes in direction. Use pull posts at all abrupt changes in grade and at intervals no greater than 500 feet. On runs over 500 feet, space pull posts evenly between corner or end posts. On long curves, space pull posts so that the strain of the fence will not bend the line posts.

D. Install top rail continuously through post caps or extension arms, bending to radius for curved runs. Install expansion couplings as recommended by fencing manufacturers.

E. Install intermediate rails in one piece between posts and flush with post on fabric side using special offset fittings where necessary.

- F. Diagonally brace corner posts, pull posts, and terminal posts to adjacent line posts with truss rods and turnbuckles.
- G. Attach fabric to security side of fence. Maintain a 1 inch clearance above finished grade except when indicated otherwise. Thread stretcher bars through fabric using one bar for each gate and end post and two for each corner and pull post. Pull fabric tight so that the maximum deflection of fabric is 2 inches when a 30 pound pull is exerted perpendicular to the center of a panel. Maintain tension by securing stretcher bars to posts with metal bands spaced 15 inches oc. Fasten fabric to steel framework with wire ties spaced 12 inches oc for line posts and 24 inches oc for rails and braces. Bend back wire ends to prevent injury. Tighten stretcher bar bands, wire ties, and other fasteners securely.
- H. Position bolts for securing metal bands and hardware so nuts are located opposite the fabric side of fence. Tighten nuts and score excess threads.
 - 1. Secure post tops, extension arms, and caps with one-way cadmium plated steel screws.
- I. Install gates plumb and level and adjust for full opening without interference. Install ground-set items in concrete for anchorage, as recommended by fence manufacturer. Adjust hardware for smooth operation and lubricate where necessary.
- J. Tension Wire: Support bottom edge of fabric with coil spring tension wire. Weave tension wire through fabric or fasten with hog rings spaced 24 inches oc. Tie tension wire to posts with 9 gauge wire ties.

END OF SECTION 02830

SECTION 02920 TOPSOIL

PART 1 - GENERAL

1.1 SUMMARY

- A. This section includes provisions for the placement of topsoil in conformance with the lines, grades and thicknesses as shown on the Drawings and as herein specified.
- B. Minimum thickness is six (6) inches, for all areas disturbed during construction and not receiving other surface treatment.
- C. The Contractor shall furnish all materials and perform all work in accordance with these specifications, drawings, and instructions provided by the Owner.

1.2 SUBMITTALS

- A. Samples: Furnish earth materials to the testing laboratory for analysis and report, as directed by the Owner's Representative or as outlined in the specifications.
- B. Quality Control Submittals:
 - 1. Test Reports: The testing laboratory shall submit written reports of all tests, investigations, and recommendations to the Contractor and the Owner's Representative. Indicate quantities of materials necessary to bring topsoil into compliance with textural/gradation requirements. Indicate quantity of lime and quantity and analysis of fertilizer.

1.3 REFERENCES

- A. Comply with the latest edition of the following standards:
 - 1. "State of Connecticut Department of Transportation Standard Specifications."
 - 2. "Standard Specifications for Highway Materials and Methods of Sampling and Testing, American Association of State Highway and Transportation Officials (AASHTO)."
 - 3. ASTM International (ASTM)
 - a. C33, Standard Specification for Concrete Aggregates.
 - b. C602, Standard Specification for Agricultural Liming Materials
 - 4. U.S. Bureau of Reclamation (USBR)
 - a. 514.4.4, Reclamation Instructions, Series 510—Land Classification Techniques and Standards, Part 514—Laboratory Procedures, Chapter 4—Particle-Size Analyses.
 - b. 14.8.7, Reclamation Instructions, Series 510—Land Classification Techniques and Standards, Part 514—Laboratory Procedures, Chapter 8—Soil Chemical Tests

1.4 QUALITY ASSURANCE

- A. Provide and pay for all costs in connection with an approved independent testing facility to determine conformance of soils and aggregate with the specifications.

1.5 PROJECT CONDITIONS

- A. Coordinate the placement of topsoil with the completion of all underground work including that of the other trades.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Topsoil: Natural, friable, fertile, fine loamy soil possessing the characteristics of representative topsoils in the vicinity which produces a heavy growth; free from subsoil, objectionable weeds, litter, sods, stiff clay, stones larger than 1 inch in diameter, stumps, roots, trash, toxic substances, or any other material which may be harmful to plant growth or hinder planting operations. Contractor is to verify amount stockpiled and supply any additional as needed:

- 1. Topsoil shall contain not less than 6% nor more than 20% organic matter as determined by the wet combustion method (chronic acid reduction); topsoil shall have a pH value of not less than 5.5 nor more than 7.0;
- 2. Topsoil shall meet the following mechanical analysis:

Size of Screen	% of Soil Retained	% of Soil Passing
1"	0	100
1/4	3	97
No. 100	40-60	40-60

- 3. Imported topsoil in which more than 60% of the material passing a No. 100 sieve shall be rejected. All percentages are to be based on the dry weight of the samples.
- 4. Laboratory tests of the topsoil shall be performed by a certified testing laboratory, and shall perform tests for the following:
 - a. Sieve particle size analysis and gradient of mineral content
 - b. Chemical analysis of the following:
 - (1) pH and buffer pH
 - (2) percent of organic content
 - (3) nutrient levels of phosphorus, potassium magnesium, manganese, iron, zinc and calcium
 - (4) soluble salt
 - (5) cation exchange capacity (CEC)
 - c. Recommended fertilizer and rate of application for low and medium level nutrient soils.

2.2 MATERIAL ACCEPTANCE

- A. Topsoil may be acquired from approved sites that are designated on the Drawings. If no sites are designated, material proposed for use as topsoil must be stockpiled, sampled, and tested prior to use.

- B. Topsoil containing foreign material may be rejected on the basis of visual examination by the Owner's Representative, prior to testing.
- C. Acceptance of topsoil shall be based upon test results. Tested topsoil must be approved in writing by the Owner's Representative before any material is used.

2.3 SOIL AMENDMENT

- A. Textural Amendments: Amend as necessary to conform to required composition by incorporating sand, peat, manure, or sawdust
- B. Fertilizer: Shall be delivered to the site, mixed as specified, in the original unopened standard size bags showing weight, analysis and name of manufacturer. Store fertilizer in a weatherproof place and in such a manner that it shall be kept dry and its effectiveness shall not be impaired.
 - 1. Percentages of nitrogen, phosphorus and potash shall be based on laboratory test recommendations. For the purpose of bidding, assume 10% nitrogen, 6% phosphorus and 4% potash by weight. At least 50% of the total nitrogen shall contain no less than 3% water-insoluble nitrogen. At least 60% of the nitrogen content shall be derived from super-phosphate containing not less than 18% phosphoric acid or bone meal containing 25% - 30% phosphoric acid and 2% - 3% nitrogen. Potash shall be derived from muriate of potash containing 55% - 60% potash.
 - 2. Grass or sodded areas shall have fertilizer applied according to soil text report or as specified on the drawings.
- C. Organic Matter: Leaf matter and yard waste composted sufficiently to break down all woody fibers, seeds, and leaf structures, and free of toxic and non-organic matter. Organic matter shall be commercially prepared compost. Coarse sand shall be clean, sharp, natural sands free of limestone, shale and slate particles, ASTM C-33 fine aggregate with a Fines Modulus Index of 2.75 or greater.
- D. Lime: Shall be ground palletized, or pulverized lime manufactured to meet agricultural standards and contain a maximum of 60 percent oxide.

PART 3 - EXECUTION

3.1 STOCKPILING

- A. Stockpile topsoil from on-site sources or provide from off-site sources and stockpile, if on-site quantities are deficient.
- B. Stockpiles are to contain not less than 200 cu. yds. or the minimum required for the project.
- C. Stockpiles are to have a height of at least 4' and be trimmed to uniform surfaces and slopes.
- D. The sites of all stockpiles and adjacent areas, which have been disturbed are to be graded and put into an acceptable condition by seeding, as directed by the Owner's Representative.

3.2 PREPARATION

- A. Preparation - Disk, drag, harrow or hand rake subgrade to a depth of 3 inches to provide bond for topsoil. Topsoil, which must be transported across finished walks, shall be delivered in such a manner that no damage will be done to the walks. The Contractor shall be responsible for the repair of such damage.

- B. Before placing topsoil, rake subsoil surface clear of stones larger than 1½ inches, debris, and roots. Compact topsoil to form a layer with minimum depth of 4 inches in lawn areas and 12 inches in shrub beds. Topsoil shall be placed so that after final settlement there will be good drainage (and conforming to elevations shown on drawings). Contractor is to maintain surfaces and place any additional topsoil necessary to replace that which may have eroded before acceptance.
- C. Locations containing unsuitable subsoil shall be treated in one of the following manners:
 - 1. Where unsuitability within the construction site is deemed by the Owner to be due to excessive compaction caused by heavy equipment or by the presence of boards, mortar, concrete or other construction materials in subgrade, and where the natural subsoil is other than A.A.S.H.T.O. classification of A6 or 7, the Contractor shall loosen such areas with spikes, discs, or other means to loosen the soil to a condition acceptable by the Owner. The Contractor shall also remove all debris and objectionable material. Soil should be loosened to a minimal depth of 12 inches with additional loosening as required to obtain adequate drainage. Contractor may introduce peat moss, sand, or organic matter into the subsoil to obtain adequate drainage should he so desire. All such remedial measures shall be considered as incidental to the work and no extra payment shall be made for this part of the work; and,
 - 2. Where subgrade is deemed by the Owner to be unsuitable because the natural subsoil falls into an AASHTO classification of A6 or 7 and contains moisture in excess of 30%, then such a condition shall be rendered suitable by installation of a subdrainage system or by other means described elsewhere in these specifications. Where such conditions have not been known or revealed prior to planting time and where they have not been recognized in the preparation of drawings and specifications, then the Owner shall issue a change order to install the proper remedial measures, all of which shall be in addition to the contract sum.

3.3 TOPSOIL PLACEMENT

- A. Do not place topsoil when subsoil or topsoil is frozen, excessively wet, or otherwise detrimental to the Work.
- B. Mix soil amendments, lime, and fertilizer with topsoil before placement or spread on topsoil surface and mix thoroughly into entire depth of topsoil before planting or seeding. Delay mixing of fertilizer if planting or seeding will not occur within 3 days.
- C. Place 1/2 of total depth of topsoil and work into subgrade soil to create a transition layer. Place remainder of topsoil to depth after compacting to 75 percent where seeding and planting are scheduled.
- D. Uniformly distribute to within 1/2 inch of final grades. Fine grade topsoil eliminating rough or low areas and maintaining levels, profiles, and contours of subgrade to ensure positive drainage.
- E. Remove stones exceeding 1 inch, roots, sticks, debris, and foreign matter during and after topsoil placement.
- F. Remove surplus subsoil and topsoil from Site. Grade stockpile area as necessary and place in condition acceptable for planting or seeding.

3.4 CLEANING

- A. Remove all surplus subsoil and topsoil from project site.
- B. Leave the site in clean, satisfactory condition ready to receive subsequent operations.

END OF SECTION

SECTION 02930 SEEDING

PART 1 - GENERAL

1.1 SUMMARY

- A. The Contractor shall provide all labor, services, materials, equipment, and incidentals necessary for, and required to complete the preparation of ground surfaces, fertilization of applicable areas, seeding, mulching of applicable surface areas, and maintenance of turf areas until such time as project is accepted by Owner.
- B. Seed shall be sown from April 1 to June 15, or from August 15 to October 15 of given calendar year, unless otherwise approved by Owner.

1.2 SUBMITTALS

- A. Quality Control Submittals:
 - 1. Certification:
 - a. Submit vendor's certified analysis for each grass seed mixture required, stating botanical and common name, percentages by weight, percentages by purity, germination, and weed seed.

1.3 QUALITY ASSURANCE

- A. All turf and grasses work shall be performed by one Contractor, with proven expertise in this type of construction.
- B. Package standard products with the manufacturer's certified analysis. For other materials, provide analysis by recognized laboratory made in accordance with methods established by the Association of Official Agriculture Chemists, wherever applicable.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver packaged materials in containers, showing weight, analysis, and name of manufacturer. Protect materials from deterioration during delivery, and while stored on site.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Fertilizer:
 - 1. Commercial fertilizer (5-10-5) inorganic, or organic, containing not less than five (5) percent nitrogen, ten (10) percent available phosphoric acid, and five (5) percent water soluble potash.
 - 2. If, as an alternative, the Contractor wishes to substitute for commercial fertilizer 5-10-5, another commercial fertilizer with a 1-2-1 ratio, such as 10-20-10 or 6-12-6, they may do so with the approval of the Owner and the rate of fertilizer to be used shall be whatever amount is required to furnish the same amount of nitrogen as would be supplied by the 5-10-5.

B. Seed:

1. Seed shall be fresh, clean, new-crop seed mixed in the proportions specified for species and variety, conforming to Federal and State Standards.
2. Use the following standard mixture blue seal classic, unless a special mixture is otherwise indicated or approved by the Owner.

Species	% By Weight	% By Purity	% By Germination
Kentucky Bluegrass *	60	85	80
Creeping Red Fescue	20	95	85
Perennial Rye	20	95	85

Note: * - Kentucky Bluegrass must consist of a minimum of two varieties.

3. Weed seed content shall not exceed 0.25%.

C. Mulch:

1. Provide and install a mulch adequate to protect the seeding during its growing period. It shall be the responsibility of the Contractor to determine the appropriate mulching techniques for the particular site conditions and acquire approval of the same from the Owner.
2. Clean straw for gentle slopes, consisting of stalks of oats, wheat, rye, or other approved crops which are free of noxious weed seeds. Weight shall be based on a fifteen (15) percent moisture content.

D. Water: Clean and potable.

PART 3 - EXECUTION

3.1 PREPARATION OF TOPSOIL

- A. Clean topsoil of roots, plants, stones, clay lumps and other extraneous materials harmful or toxic to plant growth.
- B. Mix fertilizer into top 2 inches (5 cm) of topsoil at a rate of 10 pounds (3.7 kg) per 1,000 square feet. (92.9 m²)
- C. Water dry topsoil to depth of 4 inches (10cm) at least 48 hours prior to seeding to obtain a loose friable seed bed.

3.2 SEEDING

- A. Apply seed only when wind velocities are less than five (5) miles per hour (9km/hr).
- B. Sow half the seed with mechanical seeder.
- C. Sow remaining half of the seed at right angles to the direction of the first seeding pattern, using the same method.
- D. Apply seed at the rate of 4 pounds (1.5 kg) per 1,000 square feet (92.9 sq. meters) of disturbed area.

- E. Cover seed to a depth of 1/8-inch (3mm) by raking, harrowing, or cultipacking.
- F. Roll seeded area with roller weighing no more than 150 pounds per foot of roller width.
- G. Water seeded areas to a depth of four (4) inches (10cm) as required during the maintenance period.

3.3 MULCHING

- A. Spread straw uniformly over seeded area with 75% ground coverage and at least 1-1/2 inches loose depth.
 - 1. If, in the opinion of the Owner, wind will disrupt the mulching, apply asphalt emulsion at a rate of 10 gallons (37.81) per 1,000 square feet (92.9 m²).

3.4 HYDROSEEDING

- A. Mix specified seed, fertilizer, and pulverized mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.
- B. Apply slurry uniformly to all areas to be seeded. Rate of application as required to obtain specified seed sowing rate.

3.5 PROTECTION

- A. Immediately after seeding, erect barricades and warning signs as required to protect newly planted areas from pedestrian and vehicular traffic. Maintain barricades throughout maintenance period until grass and/or turf is established.
- B. Repair or replace damaged landscape work as directed by Owner.

3.6 MAINTENANCE

- A. Begin maintenance immediately after seed placement.
- B. Watering:
 - 1. Keep soil moist during seed germination period.
 - 2. Supplement rainfall to produce a total depth penetration of 2 inches per day after germination.
 - 3. Prevent erosion and displacement of seed.
- C. Mowing:
 - 1. When grass reaches 4 inches in height, mow to 2-1/2 inches in height.
 - 2. Maintain grass between 1-1/2 inches and 2-1/2 inches in height.
 - 3. Do not cut off more than 30% of grass leaf in a single mowing.
 - 4. Remove grass clippings.
- D. Reseed and mulch spots larger than 1 square foot not having uniform coverage.

- E. Maintain lawns by watering, fertilizing, weeding, mowing, trimming, and other operations such as rolling, regarding, and replanting as required to establish a smooth, acceptable lawn, free of eroded or bare areas.

- F. Maintain and protect all seeded areas until final acceptance of the Contract. Final acceptance of “Seeding” will not be made until an acceptable uniform stand of grass is obtained in all new lawn areas, except that the Owner at their discretion may accept a portion or portions of the “Seeding” at various times. Upon acceptance by the Owner of a seeded area, the Owner will immediately assume responsibility for maintenance and protection of that portion of the Contract Seeding.

END OF SECTION 02930

SECTION 03300 CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies cast-in place concrete, including formwork, reinforcing, mix design, placement procedures, and finishes.
- B. Concrete paving and walks are specified in Division 2.

1.2 SUBMITTALS

- A. Submit: Flow fill and concrete design mixes.

1.3 QUALITY ASSURANCE

- A. Codes and Standards: Comply with provisions of following codes, specifications, and standards, except where more stringent requirements are shown or specified:
 - 1. ACI 318, "Building Code Requirements for Reinforced Concrete."
 - 2. Concrete Reinforcing Steel Institute (CRSI), "Manual of Standard Practice."

PART 2 - PRODUCTS

2.1 FORM MATERIALS

- A. Forms for Unexposed Finish Concrete: Plywood, lumber, metal, or other acceptable material. Provide lumber dressed on at least 2 edges and one side for tight fit.
- B. Forms for Cylindrical Columns and Supports: Metal, fiberglass-reinforced plastic, or paper or fiber tubes. Provide paper or fiber tubes of laminated plies with water-resistant adhesive and wax-impregnated exterior for weather and moisture protection. Provide units with sufficient wall thickness to resist wet concrete loads without deformation.

2.2 REINFORCING MATERIALS

- A. Reinforcing Bars: ASTM A 615, Grade 60, deformed.
- B. Steel Wire: ASTM A 82, plain, cold-drawn steel.
- C. Welded Wire Fabric: ASTM A 185.
- D. Supports for Reinforcement: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place. Use wire-bar-type supports complying with CRSI specifications.

2.3 CONCRETE MATERIALS

- A. Portland Cement: ASTM C 150, Type I.
 - 1. High-Early Strength Portland Cement: ASTM C 150, Type III.
 - 2. Use one brand of cement throughout project unless otherwise acceptable to Engineer.

- B. Fly Ash: ASTM C 618, Type F, Loss of Ignition (L.O.I.) 3 percent maximum.
- C. Normal Weight Aggregates: ASTM C 33 and as herein specified. Provide aggregates from a single source for exposed concrete.
 - 1. For exterior exposed surfaces, do not use fine or coarse aggregates containing spalling-causing deleterious substances.
 - 2. Local aggregates not complying with ASTM C 33 but that special tests or actual service have shown to produce concrete of adequate strength and durability may be used when acceptable to Engineer.
- D. Lightweight Aggregates: ASTM C 330.
- E. Water: Drinkable.
- F. Admixtures, General: Provide admixtures for concrete that contain not more than 0.1 percent chloride ions.
- G. Air-Entraining Admixture: ASTM C 260, certified by manufacturer to be compatible with other required admixtures.
 - 1. Available Products: Subject to compliance with requirements, products that may be incorporated in the work include, but are not limited to, the following:
 - a. "Air-Tite," Cormix.
 - b. "Air-Mix" or "Perma-Air," Euclid Chemical Co.
 - c. "Darex AEA" or "Daravair," W.R. Grace & Co.
 - d. "MB-VR" or "Micro-Air," Master Builders, Inc.
 - e. "Sealtight AEA," W.R. Meadows, Inc.
 - f. "Sika AER," Sika Corp.
- H. Flowable Fill (Controlled Density Fill): The materials for this work shall conform to the requirements of CONNDOT Article M.03.01. Flowable fill grout shall be a mixture of Portland Cement, Fly Ash (optional), Fine Aggregates, Air Entraining Agent, and Water. Flowable fill grout shall have a minimum air content of 8% and shall be proportioned to produce a 28-day compressive strength of approximately 345-690 kPa (50-100psi).

2.4 PROPORTIONING AND DESIGN OF MIXES

- A. Prepare design mixes for each type and strength of concrete by either laboratory trial batch or field experience methods as specified in ACI 301. If trial batch method used, use an independent testing facility acceptable to Engineer for preparing and reporting proposed mix designs. The testing facility shall not be the same as used for field quality control testing.
 - 1. Limit use of fly ash to not exceed 15 percent of cement content by weight.
- B. Submit written reports to Engineer of each proposed mix for each class of concrete at least 15 days prior to start of work. Do not begin concrete production until proposed mix designs have been reviewed by Engineer.
- C. Design mixes to provide normal weight concrete with the following properties, as indicated on drawings:

1. 4000-psi, 28-day compressive strength; W/C ratio, 0.44 maximum (non-air-entrained), 0.35 maximum (air-entrained).
 2. 3500-psi, 28-day compressive strength; W/C ratio, 0.51 maximum (non-air-entrained), 0.40 maximum (air-entrained).
 3. 3000-psi, 28-day compressive strength; W/C ratio, 0.58 maximum (non-air-entrained), 0.46 maximum (air-entrained).
 4. 2500-psi, 28-day compressive strength; W/C ratio, 0.67 maximum (non-air-entrained), 0.54 maximum (air-entrained).
- D. Lightweight Concrete: Proportion mix as specified. Design mix to produce strength as noted on drawings, with a splitting tensile strength factor (Fct) of not less than 5.5 for 3000-psi concrete and a dry weight of not less than 95 lbs. or more than 110 lbs. after 28 days. Limit shrinkage to 0.03 percent at 28 days.

2.5 ADMIXTURES

- A. Use air-entraining admixture in exterior exposed concrete unless otherwise indicated. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having total air content with a tolerance of plus or minus 1-1/2 percent within following limits::
1. Concrete structures and slabs exposed to freezing and thawing, deicer chemicals, or hydraulic pressure:
 - a. 4.5 percent (moderate exposure); 5.5 percent (severe exposure) 1-1/2-inch max aggregate.
 - b. 4.5 percent (moderate exposure); 6.0 percent (severe exposure) 1-inch max. aggregate.
 - c. 5.0 percent (moderate exposure); 6.0 percent (severe exposure) 3/4-inch max aggregate.
 - d. 5.5 percent (moderate exposure); 7.0 percent (severe exposure) 1/2-inch max aggregate.
- B. Water-Cement Ratio: Provide concrete for following conditions with maximum water-cement (W/C) ratios as follows:
1. Subjected to freezing and thawing; W/C 0.45.
 2. Subjected to deicers/watertight; W/C 0.40.
 3. Subjected to brackish water, salt spray, or deicers; W/C 0.40.
- C. Slump Limits: Proportion and design mixes to result in concrete slump at point of placement as follows:
1. Concrete Collars: Not more than 4 inches.

2.6 CONCRETE MIXING

- A. Provide batch ticket for each batch discharged and used in work, indicating project identification name and number, date, mix type, mix time, quantity, and amount of water introduced.

- B. Ready-Mix Concrete: Comply with requirements of ASTM C 94, and as specified.
 - 1. When air temperature is between 85°F (30°C) and 90°F (32°C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes, and when air temperature is above 90°F (32°C), reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 GENERAL

- A. Coordinate the installation of joint materials and vapor retarders with placement of forms and reinforcing steel.

3.2 FORMS

- A. General: Design, erect, support, brace, and maintain formwork to support vertical and lateral, static and dynamic loads that might be applied until concrete structure can support such loads. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation, and position. Maintain formwork construction tolerances complying with ACI 347.
- B. Construct forms to sizes, shapes, lines, and dimensions shown and to obtain accurate alignment, location, grades, level, and plumb work in finished structures. Provide for openings, offsets, sinkages, keyways, recesses, moldings, rustications, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts, and other features required in work. Use selected materials to obtain required finishes. Solidly butt joints and provide backup at joints to prevent leakage of cement paste.
- C. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces where slope is too steep to place concrete with bottom forms only. Kerf wood inserts for forming keyways, reglets, recesses, and the like, for easy removal.
- D. Provide temporary openings where interior area of formwork is inaccessible for cleanout, for inspection before concrete placement, and for placement of concrete. Securely brace temporary openings and set tightly to forms to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- E. Cleaning and Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, or other debris just before concrete is placed. Retighten forms and bracing before concrete placement as required to prevent mortar leaks and maintain proper alignment.

3.3 PLACING REINFORCEMENT

- A. General: Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars," for details and methods of reinforcement placement and supports and as herein specified.
 - 1. Avoiding cutting or puncturing vapor retarder during reinforcement placement and concreting operations.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials that reduce or destroy bond with concrete.

- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as approved by Engineer. Pulling Welded Wire Fabric into position during concrete placement will not be permitted.
- D. Place reinforcement to obtain at least minimum coverages for concrete protection. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.
- E. Install welded wire fabric in as long lengths as practicable. Lap adjoining pieces at least one full mesh and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.
- F. Welding or tackwelding of reinforcement shall not be allowed.

3.4 JOINTS

- A. Construction Joints: Locate and install construction joints as indicated or, if not indicated, locate so as not to impair strength and appearance of the structure, as acceptable to Engineer.
- B. Provide keyways at least 1-1/2 inches deep and one-fourth the thickness of the joint in width in construction joints in walls and slabs and between walls and footings. Accepted bulkheads designed for this purpose may be used for slabs.
- C. Place construction joints perpendicular to main reinforcement. Continue reinforcement across construction joints except as otherwise indicated. Do not continue reinforcement through sides of strip placements.
- D. Use bonding agent on existing concrete surfaces that will be joined with fresh concrete.

3.5 PREPARATION OF FORM SURFACES

- A. General: Coat contact surfaces of forms with an approved, nonresidual, low-VOC, form-coating compound before reinforcement is placed.
- B. Do not allow excess form-coating material to accumulate in forms or to come into contact with in-place concrete surfaces against which fresh concrete will be placed. Apply in compliance with manufacturer's instructions.
- C. Tape all joints in forms for exposed finish concrete.

3.6 CONCRETE PLACEMENT

- A. Inspection: Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast in. Notify other crafts to permit installation of their work; cooperate with other trades in setting such work.
- B. General: Comply with ACI 304, "Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete," and as herein specified.
- C. Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete that has hardened sufficiently to cause the formation of seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as herein specified. Deposit concrete to avoid segregation at its final location.
- D. Placing Concrete in Forms: Deposit concrete in forms in horizontal layers not deeper than 24 inches and in a manner to avoid inclined construction joints. Where placement consists of several layers,

place each layer while preceding layer is still plastic to avoid cold joints.

1. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures for consolidation of concrete in accordance with ACI 309.
 2. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than visible effectiveness of machine. Place vibrators to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing segregation of mix.
- E. Cold-Weather Placing: Comply with provisions of ACI 306 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
- F. When air temperature has fallen to or is expected to fall below 40°F (4°C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50°F (10°C) and not more than 80°F (27°C) at point of placement.
1. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
 2. Do not use calcium chloride, salt, and other materials containing antifreeze agents or chemical accelerators unless otherwise accepted in mix designs.
 3. Provisions shall be made for maintaining the concrete at a minimum temperature of not less than 50°F and not more than 85°F for a period of at least seven (7) days.
 4. Use of non-vented heaters shall not be permitted. At the end of the curing period, gradually reduce the temperature at a rate not to exceed 1 degree per hour until the temperature within the enclosure equals the temperature outside the enclosure, in accordance with ACI 306.
- G. Hot-Weather Placing: When hot weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 305 and as herein specified.
1. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90°F (32°C). Mixing water may be chilled, or chopped ice may be used to control temperature provided water equivalent of ice is calculated to total amount of mixing water. Use of liquid nitrogen to cool concrete is Contractor's option.
 2. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedment in concrete.
 3. Fog spray forms, reinforcing steel, and subgrade just before concrete is placed.
 4. Use water-reducing retarding admixture when required by high temperatures, low humidity, or other adverse placing conditions, when acceptable to Engineer.

3.7 CONCRETE CURING AND PROTECTION

- A. General: Comply with ACI 301 and ACI 308 and as herein described; protect freshly placed concrete from premature drying and excessive cold or hot temperatures. In hot, dry, and windy weather,

protect concrete from rapid moisture loss before and during finishing operations with an evaporation-control material. Apply in accordance with manufacturer's instructions after screeding and bull floating, but before power floating and troweling.

- B. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than 7 days. If initial cure is not possible due to weather and curing is to be by application of curing compound use high solids curing compound as specified.
- C. Curing Methods: Perform curing of concrete by curing and sealing compound, by moist curing, by moisture-retaining cover curing, and by combinations thereof, as herein specified.

3.8 REMOVAL OF FORMS

- A. General: Formwork not supporting weight of concrete, such as sides of beams, walls, columns, and similar parts of the work, may be removed after cumulatively curing at not less than 50°F (10°C) for 24 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form-removal operations, and provided curing and protection operations are maintained.

3.9 REUSE OF FORMS

- A. Clean and repair surfaces of forms to be reused in work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-coating compound as specified for new formwork.
- B. When forms are extended for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close joints. Align and secure joint to avoid offsets. Do not use "patched" forms for exposed concrete surfaces except as acceptable to Engineer.

3.10 MISCELLANEOUS CONCRETE ITEMS

- A. Filling In: Fill in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after work of other trades is in place. Mix, place, and cure concrete as herein specified, to blend with in-place construction. Provide other miscellaneous concrete filling shown or required to complete work.

3.11 CONCRETE SURFACE REPAIRS

- A. Patching Defective Areas: Repair and patch defective areas with cement mortar immediately after removal of forms, when acceptable to Engineer.
 - 1. Cut out honeycomb, rock pockets, voids over 1/4 inch in any dimension, and holes left by tie rods and bolts, down to solid concrete but in no case to a depth of less than 1 inch. Make edges of cuts perpendicular to the concrete surface. Thoroughly clean, dampen with water, and brush-coat the area to be patched with specified bonding agent. Place patching mortar before bonding compound has dried.
 - 2. For exposed-to-view surfaces, blend white portland cement and standard portland cement so that, when dry, patching mortar will match color surrounding. Provide test areas at inconspicuous location to verify mixture and color match before proceeding with patching. Compact mortar in place and strike-off slightly higher than surrounding surface.
- B. Repair methods not specified above may be used, subject to acceptance of Engineer.

END OF SECTION 03300