

TOWN OF GLASTONBURY

INVITATION TO BID

<u>BID #</u>	<u>ITEM</u>	<u>DATE & TIME REQUIRED</u>
GL-2010-53	House Street Sidewalks and Pedestrian Bridge	July 15 th , 2010 at 11:00 a.m.

The Town of Glastonbury is currently seeking bids for the construction of approximately 2,600 linear feet of concrete sidewalk along House Street from Hebron Avenue to Spring Street Extension. The project also includes the construction of two segmental retaining walls and a pre-fabricated pedestrian bridge of welded steel construction on concrete abutments.

Prevailing Wages: The contractor must comply with Section 31-53 of the Connecticut General Statutes as amended, including annual adjustments in prevailing wages.

Bid Forms and plans may be obtained on the Town's website at www.glastonbury-ct.gov or at the Office of the Purchasing Agent, Town Hall, 2155 Main Street, Glastonbury, Connecticut 06033 (second level).

The Town reserves the right to waive informalities or reject any part of, or the entire bid, when said action is deemed to be in the best interests of the Town. All Sealed Bids must be submitted to the Office of the Purchasing Agent no later than the time and date indicated. All bids will be publicly opened and read.

Mary F. Visone
Purchasing Agent

TABLE OF CONTENTS

SECTION

Invitation to Bid	IB
Table of Contents	IB
Information for Bidders	IB
General Construction Specifications	GCS
Special Conditions	SC
Detailed Construction Specifications	DCS
Bid Proposal	BP
Attachment A - Prevailing Wage Information	
Attachment B – CNG Specifications	
Attachment C – Retaining Wall Soils Data	
Attachment D – Pedestrian Bridge Soils Data	
Attachment E - Construction Plans	

**HOUSE STREET SIDEWALKS AND PEDESTRIAN BRIDGE
INVITATION TO BID**

BID #GL-2010-53

1. Sealed bids (**one original and one copy**) on the attached Bid Forms will be received at the Office of the Purchasing Agent, Town Hall, 2155 Main Street, Glastonbury, Connecticut 06033 (second level). At the designated time of opening, they will be publicly opened, read, recorded and placed on file.
2. Whenever it is deemed to be in the best interest of the Town, the Town Manager, Purchasing Agent or designated representative shall waive informalities in any and all bids. The right is reserved to reject any bid, or any part of any bid, when such action is deemed to be in the best interest of the Town of Glastonbury.
3. The award will be on the basis of bid total cost unless otherwise specified. The bid total cost shall be arrived at by the mathematical calculation of the unit price multiplied times the quantity specified for each line item, and the total sum of all line items in the bid. In the event that the Town finds computational errors in a respondent's bid proposal, the bid total cost shall be recalculated by the Town based on the unit prices contained in the bid proposal.
4. Bids will be carefully evaluated as to conformance with stated specifications.
5. The envelope enclosing your bid should be clearly marked by bid number, time of bid opening, and date.
6. Specifications must be submitted complete in every detail and, when requested, samples shall be provided. If a bid involves any exception from stated specifications, they must be clearly noted as exceptions, underlined, and attached to the bid.
7. The Bid Documents contain the provisions required for the requested item. Information obtained from an officer, agent, or employee of the Town or any other person shall not affect the risks or obligations assumed by the Bidder or relieve him/her from fulfilling any of the conditions of the bid.
8. Each Bidder is held responsible for the examination and/or to have acquainted themselves with any conditions at the job site which would affect their work before submitting a bid. Failure to meet this criteria shall not relieve the Bidder of the responsibility of completing the bid without extra cost to the Town of Glastonbury.
9. Any bid may be withdrawn prior to the above-scheduled time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified shall not be considered. No Bidder may withdraw a bid within sixty (60) days after the actual date of the opening thereof. Should there be reasons why a bid cannot be awarded within the specified period, the time may be extended by mutual agreement between the Town and the Bidder.
10. Each bid must be accompanied by a bid bond payable to the Town for ten percent (10%) of the total amount of the bid. The bid bond of the successful Bidder will be retained until the payment bond and performance bond have been executed and approved, after which it will be returned. A certified check may be used in lieu of a bid bond. The Town of Glastonbury will not be liable for the accrual of any interest on any certified check submitted. Cashier's checks will not be accepted.
11. A 100% Performance and Payment bond are required of the successful bidder. This bond shall cover all aspects of the specification and shall be delivered to the Purchasing Agent prior to the issuance of a purchase order. The Performance and Payment Bond will be returned upon the delivery and acceptance of the bid items.
12. The Bidder agrees and warrants that in the submission of this sealed Bid, they will not discriminate or permit discrimination against any person or group of persons on the grounds of

race, color, religion, national origin, sex, or physical disability including, but not limited to blindness, unless it is shown by such Bidder that such disability prevents performance of that which must be done to successfully fulfill the terms of this sealed Bid or in any manner which is prohibited by the laws of the United States or the State of Connecticut: and further agrees to provide the Human Relations Commission with such information requested by the Commission concerning the employment practices and procedures of the Bidder. An Affirmative Action Statement will be required by the successful Bidder.

13. Bidder agrees to comply with all of the latest Federal and State Safety Standards and Regulations and certifies that all work required in this bid will conform to and comply with said standards and regulations. Bidder further agrees to indemnify and hold harmless the Town for all damages assessed against the Town as a result of Bidder's failure to comply with said standards and/or regulations.
14. All correspondence regarding any purchase made by the Town of Glastonbury shall reference the Town's purchase order number. Each shipping container shall clearly indicate both Town purchase order number and item number.
15. Bidder is required to review the Town of Glastonbury Code of Ethics adopted July 8th, 2003 and effective August 1, 2003. Bidder shall acknowledge that they have reviewed the document in the area provided on the bid / proposal response page (BP). The selected Bidder will also be required to complete and sign an Acknowledgement Form prior to award. The Code of Ethics and the Consultant Acknowledgement Form can be accessed at the Town of Glastonbury website at www.glastonbury-ct.gov. Upon entering the website click on **Bids & RFPs**, which will bring you to the links for the **Code of Ethics** and the **Consultant Acknowledgement Form**. If the Bidder does not have access to the internet a copy of these documents can be obtained through the Purchasing Department at the address listed within this bid.
16. **Non-Resident Contractors:**

The Town is required to report names of non-resident (out-of-State) contractors to the State of Connecticut, Department of Revenue Services (DRS) to ensure that Employment Taxes and other applicable taxes are being paid by Contractors. **Upon award, all non-resident contractors must furnish a five percent (5%) sales tax guarantee bond (State Form AU-766) or a cash bond for five percent (5%) of the total contract price (State Form AU-72) to DRS even though this project is exempt from most sales and use taxes.**

See State Notice to Non-Resident Contractors SN 2005 (12). If the above bond is not provided, the Town is required to withhold five percent (5%) from the contractor's payments and forward it to the State DRS.

The contractor must promptly furnish to the Town a copy of the **Certificate of Compliance** issued by the State DRS.
17. Bidder shall include on a sheet(s) attached to its proposal a complete disclosure of all past and pending mediation, arbitration and litigation cases that the bidder or its principals (regardless of their place of employment) have been involved in for the most recent five years. Please include a statement of the issues in dispute and their resolution. Acceptability of Bidder based upon this disclosure shall lie solely with the Town.
18. Bidder or its principals, regardless of their place of employment, shall not have been convicted of, nor entered any plea of guilty, or nolo contendere, or otherwise have been found civilly liable or criminally responsible for any criminal offense or civil action. Bidder shall not be in violation of any State or local ethics standards or other offenses arising out of the submission of bids or proposals, or performance of work on public works projects or contracts.

19. It is the responsibility of the bidder to check the Town's website before submitting bid for addendums posted prior to bid opening.

20. **Prevailing Wage Rates:**

Wage Rate Determination for this Project from the State of Connecticut is included in the bid documents. Certified payrolls for site labor shall be filled out weekly and submitted monthly to the Town on the correct State form (See Project Manual). The Town reserves the right to, without prior notice, audit payroll checks given to works on site in order to ascertain that wages and fringe benefits are being paid as required by the State of Connecticut. Contractor to comply with Connecticut General Statutes Section 31-53, as amended. Please make special note of the State requirement to adjust wage and fringe benefit rates on each July 1st following the original published rates. These revised rates are available via the internet. See State material attached.

NOTE that bidder is to include in its bid proposal all costs required by such annual increases in the PREVAILING RATES. No Escalation Clauses are to be included in the bidder's proposal and no Escalation Clauses will be in the Contract Agreement. Bidder is to anticipate any future increases and include these costs in its quotation.

Contractor's invoices will not be paid if certified payrolls are incomplete, incorrect or not received in a timely manner.

All Apprentices must be registered with the State of Connecticut and their number shall not exceed the number allowed by law. Otherwise, all workers must be paid at least the Journeyman rate listed including benefits.

OSHA SAFETY AND HEALTH CERTIFICATION:

Effective July 1, 2009: Any Mechanic, Laborer, or Worker, who performs work in a classification listed on the prevailing wage rate schedule on any public works project covered under C.G.S. Section 31-53, both on site and on or in the public building, must have completed a federal OSHA Safety and Health course within the last 5 years.

21. **Qualifications Statements and References:**

Respondents shall include a description of three (3) projects with references to demonstrate successful experience with similar projects as part of their bid response.

IMPORTANT: Failure to comply with general rules may result in disqualification of the Bidder.

NOTE: Any technical questions regarding this bid shall be made **in writing** (email acceptable) and directed to Daniel A. Pennington P.E., Town Engineer / Manager of Physical Services, 2155 Main Street, PO Box 6523, Glastonbury, CT 06033; daniel.pennington@glastonbury-ct.gov. Fax (860) 652-7734 between the hours of 8:00 a.m. – 4:30 p.m. For administrative questions concerning this bid/proposal, please contact Mary F. Visone, Purchasing Agent, at (860) 652-7588. All questions, answers, and/or addenda, as applicable will be posted on the Town's website at www.glastonbury-ct.gov. (Upon entering the website click on Bids & RFP's). The request must be received at least five (5) business days prior to the advertised response deadline. **It is the respondent's responsibility to check the website for addenda prior to submission of any bid/proposal.**

01.00 WORKMANSHIP, MATERIALS AND EMPLOYEES

01.01 Wherever in this contract the word "Engineer" is used, it shall be understood as referring to the Town Engineer/Manager of Physical Services of the Town of Glastonbury acting personally or through any assistants duly authorized.

01.02 The entire work described herein shall be completed in accordance with the plans and specifications to the full intent and meaning of the same. Unless otherwise specified, all materials incorporated in the permanent work shall be new, and both workmanship and material shall be of good quality. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials.

01.03 The wording "furnish", "install", "construct", "furnish and install", or any similar terms, unless specifically noted to the contrary, shall include all labor, materials, water, tools, equipment, light, power, transportation, and any other services required for the completion of the work.

01.04 The Contractor shall at all times enforce strict discipline and good order among his employees, and shall seek to avoid employing on the work any unfit person or anyone not skilled in the work assigned to him.

02.00 SUPERINTENDENT

02.01 The Contractor shall keep on the work during its progress, in the absence of the Contractor, a competent Superintendent. The Superintendent shall be acceptable to the Engineer and shall fully represent the Contractor. All directions given to the Superintendent shall be binding as if given to the Contractor.

03.00 PRECONSTRUCTION MEETING

03.01 A Preconstruction Meeting will be held with the Engineer, Contractor, and any private utility company prior to commencing any work. The Engineer shall arrange the meeting based on a mutually convenient time.

04.00 PERMITS

04.01 Other than local permits, all permits, licenses, and fees required for the performance of the Contract work shall be secured and paid for by the Contractor.

04.02 A State Department of Transportation Encroachment Permit will be required for the project and shall be obtained by the Contractor at no additional cost to the Town.

05.00 PROPERTY ACCESS

05.01 The Contractor shall take all proper precautions to protect from injury or unnecessary interference, and provide proper means of access to abutting property where the existing access is cut off by the Contractor.

05.02 The Contractor shall take all proper precautions to protect persons from injury or unnecessary inconvenience and leave an unobstructed way along the public and private places for travelers, vehicles, and access to hydrants.

05.03 The Contractor shall make arrangements with the adjacent property owners for such trespass as he may reasonably anticipate in the performance of the work. All such arrangements shall be reported, in writing, to the Engineer.

06.00 PROTECTION OF THE PUBLIC AND OF WORK AND PROPERTY

06.01 The Contractor shall continuously maintain adequate protection of all work from damage, and shall take all reasonable precautions to protect the Town from injury or loss arising in connection with the Contract.

06.02 The Contractor shall adequately protect adjacent private and public property as provided by law and the Contract Documents.

06.03 The Contractor shall make good any damage, injury, or loss of his work and to the property of the Town resulting from lack of reasonable protective precautions.

07.00 EXISTING IMPROVEMENTS

07.01 The Contractor shall conduct his work so as to minimize damage to existing improvements. Except where specifically stated otherwise in the specifications, drawings, or as directed by the Engineer, it will be the responsibility of the Contractor to restore to their original condition, as near as practical, all improvements on public or private property. This shall include:

- a. Property within and adjacent to the side of installation such as shrubs, walks, driveways, fences, etc.
- b. Utility mains, ducts, poles, and services. The Contractor is hereby notified that utilities, if/where shown on the plans, are at approximate locations. These locations are subject to possible errors in the source of information and errors in transcription. The Contractor shall make certain of the exact location of all mains, ducts, poles, and services prior to excavation.

08.00 SEPARATE CONTRACTS

08.01 The Engineer reserves the right to let other contracts in connection with this work. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work, and shall properly connect and coordinate his work with theirs. Wherever work being done by the Town of Glastonbury forces or by other contractors is contiguous to work covered by this Contract, the respective rights of the various interests involved shall be established by the Engineer to secure the completion of the various portions of the work.

09.00 INSPECTION OF WORK

09.01 The Town shall provide sufficient personnel for the inspection of the work.

09.02 The Engineer shall at all times have access to the work whenever it is in preparation or progress, and the Contractor shall provide proper facilities for such access and for inspection.

09.03 If the specifications or the Engineer's instructions require any work to be specially tested or approved, the Contractor shall give the Engineer timely notice of its readiness for inspection and, if the inspection is by another authority other than the Engineer, of the date fixed for such inspection. Inspections by the Engineer shall be made promptly. If any work should be covered up without approval or consent of the Engineer, it must, if required by the Engineer, be uncovered for examination and properly restored at the Contractor's expense.

09.04 Reinspection of any work may be ordered by the Engineer. If such work is found to be in accordance with the Contract Documents, the Town shall pay the cost of reinspection and replacement. If such work is not in accordance with the Contract Documents, the Contractor shall pay such cost.

10.00 RIGHT TO INCREASE OR DECREASE WORK

10.01 The Town shall have the right to increase or decrease the amount of work herein specified as may be required.

11.00 RIGHT OF ENGINEER TO STOP WORK FOR WEATHER CONDITIONS

11.01 Should the work, in the opinion of the Engineer, be in danger by reason of inclemency of weather, or could not be finished in time to prevent such danger, the Contractor shall cease operations upon order of the Engineer, and shall not resume them until ordered to do so by the Engineer when the weather conditions are favorable. The Contractor shall, upon such orders, discontinue work, remove all materials or appliances for or in use upon the work, and place the streets in proper condition for use by the public during the time the work is suspended as herein provided, without cost to the Town.

12.00 CONTRACTOR TO BE RESPONSIBLE FOR IMPERFECT WORK OR MATERIALS

12.01 Any faithful work or imperfect material that may be discovered before the acceptance and the payment of the work shall be corrected upon the order of the Engineer. The acceptance and payment of the work does not in any manner relieve the Contractor of his obligation to construct work in the proper manner and the use of materials herein specified.

13.00 TOWN MAY NOTIFY CONTRACTOR IF WORK IS NOT CARRIED ON SATISFACTORILY

13.01 If, in the opinion of the Engineer, the Contractor is not proceeding with the work at a sufficient rate of progress so as to finish in the time specified, or has abandoned said work, or is not complying with the terms and stipulations or the Contract and specifications, the Engineer may serve notice on the Contractor to adopt such methods as will ensure the completion of the work in the time specified.

13.02 If, within five days after the Engineer has notified the Contractor that his work is not being carried on satisfactorily as before mentioned, the Engineer shall have the right to annul the Contract and manage the work under the direction of the Engineer, or re-let, for the very best interest of the Town as a new contract, the work under said new Contract shall be considered the responsibility of the defaulting Contractor.

13.03 Additional costs incurred over and above the original Contract shall be borne by the Performance Bond.

14.00 DEDUCTIONS FOR UNCORRECTED WORK

14.01 If the Engineer deems it inexpedient to correct work that has been damaged or that was not done in accordance with the Contract, an equitable deduction from the Contract price shall be made therefor.

14.02 The Contractor shall promptly remove from the premises all materials condemned by the Engineer as failing to meet Contract requirements, whether incorporated in the work or not, and the Contractor shall promptly replace and re-execute his own work in accordance with the Contract and without expense to the Town, and shall bear the expense of making good all work by other contractors destroyed or damaged by such removal or replacement.

14.03 If the Contractor does not remove such condemned work and materials as promptly as possible after written notice, the Engineer may remove them and store the materials at the expense of the Contractor.

15.00 CLEANING UP

15.01 The Contractor must remove all debris of every description as the work progresses and leave the surroundings in a neat and orderly condition to the satisfaction of the Engineer.

15.02 Upon completion, and before acceptance and final payment, the Contractor shall remove from the site all equipment, forms, surplus material, rubbish and miscellaneous debris and leave the site in a neat and presentable condition.

16.00 ROYALTIES AND PATENTS

16.01 The Contractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall save the Town of Glastonbury harmless from loss on account thereof, except that the Town of Glastonbury shall be responsible for all such loss when a particular manufacturer, product, or process is specified by the Town of Glastonbury.

01.00 NOTICE TO CONTRACTOR

01.01 Intent of Contract: The intent of the Contract is to prescribe a complete work or improvement that the Contractor undertakes to do, in full compliance with the specifications, plans, special provisions, proposal, and Contract. The Contractor shall perform all work in close conformity with the lines, grades, typical cross-sections, dimensions, and other data shown on the plans or as modified by written orders, including the furnishing of all materials, implements, machinery, equipment, tools, supplies, transportation, labor, and all other things necessary to the satisfactory prosecution and completion of the project.

01.02 The Contractor is hereby alerted to the fact that the State of Connecticut Department of Transportation Standard Specifications for Roads, Bridges and Incidental Construction, Form 816 (Form 816") and supplements thereto are to be considered part of the Contract Documents. The Form 816 shall not be provided by the Town and any cost associated therewith shall be the responsibility of the Contractor. In case of any discrepancy between the Contract Drawings or Specifications and the Form 816, the matter shall immediately be submitted to the Engineer. The Engineer shall have sole authority in resolving any discrepancies.

01.03 Much time and effort has gone into this project in an effort to minimize impact on trees and adjacent properties. Extreme care shall be taken by the Contractor to honor commitments made by the Town. Prior to doing any work, the Contractor should meet with the Engineer to become familiar with the conditions encountered and commitments made.

02.00 COMMUNICATIONS

02.01 All notices, demands, requests, instructions, approvals, proposals, and claims must be in writing.

02.02 Any notice to, or demand upon, the Contractor shall be sufficiently given if delivered at the office of the Contractor stated on the signature page of the Agreement (or at such other office as the Contractor may, from time to time, designate) in a sealed, postage-prepaid envelope or delivered with charges prepaid to any telegraph company for transmission, in each case addressed to such office.

02.03 All papers required to be delivered to the Town shall, unless otherwise specified in writing to the Contractor, be delivered to the Town Engineer/Manager of Physical Services, 2155 Main Street, Glastonbury, CT 06033, and any notice to, or demand upon, the Town shall be delivered at the above address in a sealed, postage-prepaid envelope or delivered with charges prepaid to any telegraph company for transmission, in each case addressed to such office or to such other representatives of the Town, or to such other address as the Town may subsequently specify in writing to the Contractor for such purpose.

02.04 Any such notice shall be deemed to have been given as of the time of actual delivery or, in case of mailing, when the same should have been received in due course of post or, in the case of telegrams, at the time of actual receipt, as the case may be.

03.00 PARTIAL USE OF IMPROVEMENTS

03.01 The Town may, at its election, give notice to the Contractor and place in use those sections of the work that have been completed, inspected and can be accepted as complying with the Contractor Documents and if, in its opinion, each such section is reasonably safe and fit for the use and accommodation for which it was intended, provided:

- a. The use of such sections of the work shall not materially impede the completion of the remainder of the work by the Contractor.
- b. The Contractor shall not be responsible for any damages or maintenance costs due directly to the use of such sections.
- c. The use of such sections shall in no way relieve the Contractor of his liability due to having used defective materials or to poor workmanship.
- d. The period of guarantee shall not begin until the date of the final acceptance of all work required under this Contract.

04.00 INSURANCE

04.01 The Contractor shall, at its own expense and cost, obtain and keep in force during the entire duration of the Project or Work the following insurance coverage covering the Contractor and all of its agents, employees and sub-contractors and other providers of services and shall name the **Town its employees and agents as an Additional Insured** on a primary and non-contributory basis to the Bidders Commercial General Liability and Automobile Liability policies. **These requirements shall be clearly stated in the remarks section on the Contractors Certificate of Insurance.** Insurance shall be written with Carriers approved in the State of Connecticut and with a minimum Best's Rating of A-. In addition, all Carriers are subject to approval by the Town. Minimum Limits and requirements are stated below:

- a. Worker's Compensation Insurance:
 - Statutory Coverage
 - Employer's Liability
 - \$100,000 each accident/\$500,000 disease-policy limit/\$100,000 disease each employee
- b. Commercial General Liability:
 - Including Premises and Operations, Products and Completed Operations, Personal and Advertising Injury, Contractual Liability and Independent Contractors
 - Limits of Liability for Bodily Injury and Property Damage
Each Occurrence: \$1,000,000
Aggregate: \$2,000,000
(The Aggregate Limit shall apply separately to each job.)
 - A Waiver of Subrogation shall be provided.

c. Automobile Insurance:

- Including all owned, hired, borrowed, and non-owned vehicles
- Limit of Liability for Bodily Injury and Property Damage
Per Accident: \$1,000,000

04.02 The Contractor shall direct its Insurer to provide a Certificate of Insurance to the Town before any work is performed. The Certificate shall specify that the Town shall receive 30 days advance written notice of cancellation or non-renewal. The Certificate shall evidence all required coverage including the Additional Insured and Waiver of Subrogation. The Contractor shall provide the Town copies of any such policies upon request.

04.03 INDEMNIFICATION: To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Town and its consultants, agents, and employees from and against all claims, damages, losses and expenses, direct, indirect or consequential (including but not limited to fees and charges of engineers, attorneys and other professionals and court and arbitration costs) arising out of or resulting from the performance of the Contractor's work, provided that such claim, damage, loss or expense is caused in whole or in part by any negligent act or omission by the Contractor, or breach of its obligations herein or by any person or organization directly or indirectly employed or engaged by the Contractor to perform or furnish either of the services, or anyone for whose acts the Contractor may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

05.00 WORK BY OTHERS

05.01 Private utilities, contractors, developers or other parties may be expected to be working within the Contract area during this Contract. It shall be the responsibility of the Contractor to coordinate his work with the work being done by others in order that the construction shall proceed in an efficient and logical manner. The Contractor shall have no claim or claims whatever against the Town, the Engineer, or other parties due to delays or other reasons caused by the work by others or his failure to coordinate such work.

06.00 CONTRACTOR'S WORK AND STORAGE AREA

06.01 The Contractor shall contact the Town to determine if any specific locations will be designated, or gain its approval prior to using any area for storage of equipment, materials and trailers during the period of this Contract. The Contractor shall confine his work/storage area to the limits as designated or approved and shall be responsible for the security of the work/storage area. Upon completion of the Contract, the Contractor shall remove all equipment and materials, except as otherwise specified, and restore the site to its original condition as approved by the Engineer and at no cost to the Town.

07.00 DISPOSAL AREA

07.01 The Tryon Street Bulky Waste Facility will be available to the Contractor, at no charge, for disposal of materials that are accepted at that facility. Acceptable materials include brush, stumps, demolition materials, and excess excavated earth materials. Unacceptable materials are hazardous wastes such as pesticides, oil based paints and thinners, or other wastes as designated by the State Department of Environmental Protection. Demolition material cannot contain asbestos or other hazardous materials. The Contractor is required to obtain a disposal area for all other unsuitable or surplus materials at no cost to the Town.

08.00 DUST CONTROL

08.01 During the progress of the work, the Contractor shall conduct his operations and maintain the area of his activities so as to minimize the creation and dispersion of dust. If the Engineer decides that it is necessary to use water or calcium chloride for more effective dust control, the Contractor shall furnish and spread the material, as directed, without additional compensation.

09.00 MAINTENANCE / GUARANTEE PERIOD

09.01 The Contractor shall be held responsible to the Town for maintenance for a minimum of one-year following completion of all work under this Contract with respect to defects, settlements, etc.

10.00 PROTECTION OF EXISTING UTILITIES

10.01 Before starting any excavation, the Contractor shall submit to the Engineer plans or details showing the proposed method the Contractor will use to support and protect all existing utilities during construction. The furnishing of such plans and details shall not serve to relieve the Contractor of any responsibility for the proper conduct of the work.

10.02 There will be no extra payment for submitting plans or details for supporting and protecting all existing utilities during construction.

11.00 TIME FOR COMPLETION/NOTICE TO PROCEED

11.01 Within ten (10) calendar days after the date of the Notice of Award, the Contractor must provide the appropriate bond and insurance certificates to the Town Purchasing Agent and must be issued a Purchase Order for the Project prior to initiating any work.

11.02 The work under this Contract shall be substantially complete by October 30th, 2010. An additional thirty (30) days of contract time will be allowed in the spring starting on April 1, 2011 for final restoration of the project site.

12.00 LIQUIDATED DAMAGES

12.01 As actual damages for any delay in completion of the work that the Contractor is required to perform under this Contract are impossible to determine, the Contractor and the Sureties shall be liable for and shall pay to the Town the sum of \$100.00 as fixed, agreed and liquidated damages for each calendar day of delay from the above-stipulated completion, or completion as modified in writing by both parties, until such work is satisfactorily completed and accepted.

13.00 SCHEDULE OF DRAWINGS

13.01 The Contractor is hereby alerted that the plan set entitled "Plans Depicting Proposed Sidewalks for House Street" including 9 sheets prepared by the Town of Glastonbury Engineering Division and 3 sheets entitled "House Street Pedestrian Bridge" prepared by Anchor Engineering Services, Inc. are to be considered part of these specifications.

14.00 CHANGES IN THE WORK

14.01 The Town reserves the right to perform portions of the work in connection with these plans and specifications. The reduction in the work to be performed by the Contractor shall be made without invalidating the Contract. Whenever work is done by the Town contiguous to other work covered by this Contract, the Contractor shall provide reasonable opportunity for the execution of the work and shall properly coordinate his work with that of the Town.

15.00 LAYOUT OF WORK

15.01 The Town shall provide stake-out of the work in accordance with the plans or as directed by the Engineer. The Contractor shall protect all stakes from damage or destruction and shall be responsible to assure that the grade stakes have not been altered prior to actual construction. The Town shall replace grade stakes that have been removed, at no cost to the Contractor, if their removal was caused by reasons beyond reasonable care and protection by the Contractor. If it is determined by the Engineer that the Contractor did not provide reasonable protection, the cost of re-staking will be deducted from any amounts due the Contractor in the performance of the work.

16.00 REMOVAL AND STORAGE OF MATERIALS AND STRUCTURES FOUND ON THE WORK

16.01 All salvable materials, including topsoil, gravel, fill materials, etc. and structures, including drainage pipes, catch basins and manhole frames and covers, guide railing, etc. that are not to remain in place or that are not designated for use in the work, shall be carefully removed by the Contractor and stored at such places as directed by the Engineer. All salvable materials removed and stored shall remain the property of the Town. The Engineer shall determine the materials or structures to be salvaged.

17.00 PROSECUTION AND PROGRESS

17.01 The Contractor shall give the Engineer a seven-day advance written notice of construction activities that will alter traffic patterns that result in lane shifts, detours, temporary closures of lane(s), permanent closure of lane(s), or lane reductions. This advance notification will allow the Town to publish news releases and/or provide public radio announcements to inform the public of revised traffic patterns or possible traffic delays. Failure of the Contractor to provide such timely notice shall be considered a breach of Contract and will subject the Contractor to stop work orders until such time as the seven-day notice has been satisfied.

18.00 EXTRA AND COST PLUS WORK

18.01 Extra and cost plus work shall be governed by Article 1.04.05 and Article 1.09.04 of the Form 816.

19.00 COMPLIANCE WITH ENVIRONMENTAL PERMITS

19.01 A Town of Glastonbury Inland Wetland Permit and Section 4.11 Flood Zone Permit were required for this project and this approval is included on the construction plans. By submitting a bid, the Contractor confirms that they have read and are familiar with all of the required conditions of these permits and will conduct the work in a manner consistent with these requirements.

20.00 SUBMITTALS AND MATERIALS TESTING

20.01 The Contractor shall provide source and supply information, sieve analysis, and material samples for gravel subbase, process stone base, granular fill, pervious structural backfill, riprap, and other granular materials to the Town for review and approval. The Town shall retain a lab for testing of these materials as required and shall perform in place compaction testing at no expense to the Contractor.

20.02 Shop drawings / catalog cuts shall be provided by the Contractor for all pre-cast concrete structures, pipes and fittings, erosion control products, seed mixes, and other items to be supplied for review and approval by the Engineer as described in the specifications and the Form 816.

20.03 Mix designs for all bituminous and portland cement concrete materials shall be provided by the Contractor to the Engineer for review and approval.

20.04 Certified Materials Test Reports and Materials Certificates shall be provided for all products and materials to be provided under this contract as described in these specifications and the Form 816.

20.05 Shop drawings and calculations for the proposed segmental retaining wall (site no. 1) shall be provided as described in Section 240.0.

20.05 Shop drawings and calculations for the proposed pedestrian bridge shall be provided as described in Section 600.0.

TABLE OF CONTENTS

SECTION	DESCRIPTION	PAGE
002.0	PREPARATION OF SITE	8
003.0	REMOVAL, CARE, AND RE-ESTABLISHMENT OF EXISTING PLANTINGS.....	10
107.0	BITUMINOUS CONCRETE LIP CURBING	14
201.0	CONCRETE SIDEWALKS.....	15
204.0	GRADING AND TOPSOILING.....	17
205.0	TURF ESTABLISHMENT	18
206.0	SEDIMENTATION CONTROL SYSTEM	20
207.0	SEDIMENT CONTROL SACK	21
213.0	EARTHWORK AND GRADING FOR SIDEWALK CONSTRUCTION.....	22
214.0	BASE COURSE UNDERNEATH SIDEWALKS	23
215.0	PERMANENT DRIVEWAY REPAIRS	24
221.0	METAL BEAM RAIL TYPE RB-350	25
228.0	TREE PROTECTION TRENCH.....	26
240.0	SEGMENTAL RETAINING WALL (SITE NO. 1)	27
241.0	SEGMENTAL RETAINING WALL (SITE NO. 2)	34
301.0	MAINTENANCE AND PROTECTION OF TRAFFIC	36
302.0	TRAFFICPERSON.....	38
403.0	EARTH TRENCH EXCAVATION.....	39
404.0	TRENCH DEWATERING.....	45
405.0	BACKFILLING AND CONSOLIDATION	46
407.0	CATCH BASINS AND DROP INLETS.....	49
509.0	RESET MANHOLE	50
600.0	PRE-FABRICATED PEDESTRIAN BRIDGE.....	51
610.0	STRUCTURE EXCAVATION.....	55
615.0	PROTECTION AND SUPPORT OF EXISTING UNDERGROUND CNG FACILITIES ...	56
620.0	GRANULAR FILL	58
624.0	PERVIOUS STRUCTURE BACKFILL	59
630.0	CLASS "A" CONCRETE	61
632.0	CONDUIT SLEEVE.....	62
640.0	DEFORMED STEEL BARS	63
645.0	STRUCTURAL STEEL	64
650.0	CONCRETE CYLINDER CURING BOX.....	65
660.0	DAMP-PROOFING	66

002.0 PREPARATION OF SITE

002.1 General: The Contractor shall furnish all labor, materials, tools, and equipment necessary and shall do all work to prepare the site as indicated on the drawings and as herein specified.

002.2 Tree Removal: Removal of trees as indicated on the plans shall be performed by workman skilled in the area of tree removal under the supervision of a Connecticut Licensed Arborist. The Contractor shall mark all trees, shrubs, and plants to be removed in accordance with the plans and these specifications. The Engineer shall have 7 days to field review the markings and make any adjustments prior to the start of the clearing operation.

Trees and shrubs within the right-of-way or within any property owned by the Town of Glastonbury that are designated for removal must be posted as such by the Glastonbury Tree Warden (Mr. Greg Foran of the Parks and Recreation Department, 652-7686) for a period of 10 days prior to removal. **No trees or shrubs within the Town of Glastonbury right-of-way shall be cut or removed until such posting has been completed and subsequent approval given by the Tree Warden.**

In general, no trees, etc. in public streets and highways are to be cut or damaged in any way except as noted on the plans. Trees, bushes, and growing crops on other lands may be cut, removed, or trimmed only to the extent provided in the terms of the rights-of-way or access rights possessed by the Town, and also only within the limits and in the manner, if any, indicated by the Engineer or by the drawings or Special Conditions.

002.3 Tree Trimming: Trimming of trees by a Connecticut Licensed Arborist is included under this item as required for clearance of construction equipment and pedestrians below the tree canopy. When the canopy of a tree must be elevated for clearance above the proposed sidewalk, trimming shall be done around the entire circumference of the tree.

002.4 Tree Protection and Care of Property: The Contractor shall install high visibility construction fence at the drip line of the tree canopy as shown on the plans and as directed by the Engineer to protect existing trees that are not to be cut from damage during construction. The Engineer, at his sole discretion, may also direct the Contractor to enclose the trunks of trees adjacent to his work that are not to be cut with substantial wooden boxes of such height as may be necessary to protect them from injury from piled material, from equipment, from his operations, or otherwise due to his work. Excavating machinery and cranes shall be of suitable type and be operated with care to prevent injury to trees not to be cut, and particularly to overhanging branches and limbs.

Branches, limbs, and roots shall not be cut except by permission of the Engineer. All cutting shall be smoothly and neatly done without splitting or crushing. In case of cutting or unavoidable injury to branches, limbs, and trunks of trees, the cut or injured portions shall be neatly trimmed and covered with an application of grafting wax or tree-healing paint, as directed.

Cultivated hedges, shrubs, and plant that might be injured by the Contractor's operations shall be protected by suitable means or shall be dug up and temporarily replanted and maintained. After the construction operations have been substantially completed, they shall be replanted in their original positions and cared for until growth is re-established. If cultivated hedges, shrubs, and plants are injured to such a degree as to affect their growth or diminish their beauty or usefulness, they shall be replaced by items of kind and quality at least equal to the kind and quality existing at the start of the work.

On paved surfaces, the Contractor shall not use or operate tractors, bulldozers, or other power-operated equipment, the treads of wheels that are so shaped as to cut or otherwise injure such surfaces.

- 002.5 Clearing: From areas to be cleared, the Contractor shall cut or otherwise remove all trees, saplings, brush, vines, and other vegetable matter such as snags, sawdust, bark, etc., and refuse. The area to be cleared shall be confined to the width shown on the plans or as stipulated in the Proposal. Vines, brush, and similar undergrowth shall be cut as close to the ground as practicable. Trees may be cut leaving a longer stump to facilitate their removal by power-operated equipment. No trees shall be cut or trimmed unless they are so indicated on the drawings.

Clearing shall also include removal and disposal of all items shown on the plans to be removed, or directed by the Engineer to be removed as part of the project, including, but not limited to, removal and disposal of existing concrete sidewalk, concrete steps, drainage structures, fences, and any and all other structures or materials not specifically listed in the Bid Proposal but required to be removed to accomplish the work.

All road signs, mail boxes, etc., shall be removed and reset as directed.

- 002.6 Grubbing: Grubbing shall consist of the complete removal of all tree stumps and roots larger than two inches in diameter to a minimum depth of 12-inches below the finish grade surface. All excavations made below the finished surface by the removal of trees, stumps, etc. shall be filled with suitable material and thoroughly compacted in such a manner that its surface will conform to the surrounding surface.

Stump grinding shall be used for stump removal where the potential for damage to adjacent improvements or underground utilities exists due to the excavation of stumps, or as directed by the Engineer. The requirements for grubbing noted above shall also apply to stump grinding operations.

- 002.7 Disposal: All materials removed during trimming, tree removal, and clearing and grubbing operations shall be disposed of by the Contractor in a manner satisfactory to the Engineer.

- 002.8 Payment: Except as provided otherwise in the Bid Proposal or Special Conditions, this work shall be paid for at the Contract Lump Sum Price for "Preparation of Site", which price shall include protection of existing trees and vegetation, tree removal and tree trimming under the supervision of a Connecticut Licensed Arborist, clearing and grubbing within the limits of the work, stump grinding, removal and disposal of trees, roots, stumps, brush, concrete steps, and other objects, leveling of areas to accommodate the work, and all labor, materials, tools, and equipment necessary thereto.

003.0 REMOVAL AND RE-ESTABLISHMENT OF EXISTING PLANTINGS

003.1 General: The Contractor shall furnish all labor, materials, tools, and equipment necessary and shall do all work necessary to remove, care for, and re-establish existing plantings in landscaped areas as indicated on the drawings and as herein specified. This includes four (4) holly bushes on the property of #250 House Street.

003.2 Construction Methods: Cultivated hedges, shrubs, and other plants in landscaped areas that are to be disturbed by the Contractor's operations shall be dug up for relocation. When removing the plantings, care shall be taken to ensure that the root ball is of a sufficient size to contain the entire root mass of the plant.

Protection, care and re-establishment of plantings shall be performed according to Article 3, SECTION 9.49 FURNISHING, PLANTING and MULCHING TREES, SHRUBS, VINES and GROUND COVER PLANTS of the Form 816, and as follows below.

Re-establishment of plants shall be performed by persons skilled in the care and installation of such plantings. Plants shall be re-established at located adjacent to the work area as directed by the Engineer as soon as possible to minimize possible damage to the plant. Bark mulch shall be installed as required to restore the disturbed portions of the landscaped areas to match the original condition.

If cultivated hedges, shrubs, and plants are injured to such a degree as to affect their growth or diminish their beauty or usefulness, they shall be replaced by items of kind and quality at least equal to the kind and quality existing at the start of the work.

003.3 Payment: Except as provided otherwise in the Bid Proposal, this work shall be paid for at the Contract Lump Sum Price for "REMOVAL AND RE-ESTABLISHMENT OF EXISTING PLANTINGS", which price shall include and all labor, materials, tools, and equipment necessary thereto.

105.0 PERMANENT PAVEMENT

105.1 General: The Contractor shall furnish all labor, materials, tools, and equipment necessary and shall construct all permanent pavement as required for proposed areas of full depth roadway pavement construction shown on the plans, and as required to replace roadway pavement removed or damaged by his operations, as herein specified and as directed.

Prior to excavation in paved areas of the roadway, the Contractor shall cut the surface of the existing pavement with a pneumatic cutter or its equal. The pavement shall be cut in as straight a line as possible on both sides of the proposed trench for the entire length of the job.

Temporary pavement shall be placed over all trenches in paved areas where directed by the Engineer. The Contractor shall maintain all temporary pavement until the permanent pavement is placed.

In the replacement of pavement, the Contractor shall not feather the edges between the new and existing pavement. Materials and methods of construction shall conform, insofar as applicable, to the Form 816.

105.2 Gravel and Process Stone Base Course: The Contractor shall furnish and place the pavement base course on compacted backfill material. The base shall be laid in two courses. The first course shall be not less than ten (10) inches compacted thickness of an acceptable gravel and shall be in accordance with the Form 816, Section 3.02 ROLLED GRAVEL BASE. The uppermost course shall be not less than four (4) inches compacted thickness of an acceptable processed stone. Care should be taken to prevent the separation of the fines from the aggregate during dumping and grading operations. The Contractor shall apply water to the gravel base, as needed, to obtain the desired compaction.

The Contractor shall maintain this gravel in such condition as to provide a good roadway surface until the permanent surfacing is applied.

105.3 Preparation for Permanent Resurfacing: If temporary pavement has been placed, it shall be removed by the Contractor at no cost, and the gravel and process stone base course restored as hereinafter specified.

Prior to placing pavement, all backfill shall have been properly compacted as required to eliminate settling or backfill. No pavement shall be placed over poorly compacted backfill. Backfill and rolled gravel base course shall have been compacted, brought to the proper elevation, and dressed so that new pavement construction shall be at the required grade. The Contractor shall maintain the surfaces of all excavated and disturbed areas until the pavement is placed. If there is a time lapse of more than 24 hours between completion of preparation of subgrade, or placing of rolled gravel base course, and placing of pavement, or if subgrade or rolled gravel base course has been eroded or disturbed by traffic, the subgrade or rolled gravel base course shall be restored before placing pavement.

105.5 Permanent Paving: Permanent pavement shall be a bituminous concrete surface and shall consist of a one and one-half (1 ½) inch top course and one and one-half (1 ½) inch binder course over the previously prepared gravel and process stone base so that the total compacted thickness of the bituminous concrete is not less than three (3) inches, or thicker as required to match the existing pavement. Where the entire road surface is to

be overlaid as directed by the Engineer, the top course shall be applied in widths of at least ten (10) feet by suitable spreaders.

The following procedure shall be followed when making a permanent patch:

- a. The temporary pavement patch shall be removed.
- b. The trench subgrade material shall be fully compacted by a method acceptable to the Engineer.
- c. Gravel subbase and processed stone base shall be placed in the trench and rolled to full compaction with a seven (7) to ten (10) ton roller or vibratory roller of equal compaction to within three (3) inches of the existing road surface, at the depth required to match the existing pavement thickness.
- d. The existing pavement shall then be cut back a minimum of twelve (12) inches from the edges of the original trench in straight lines.
- e. The area immediately adjacent to the edges of the trench must be swept clean so that no loose sand, temporary patch, or other debris remains, and the exposed edges of the pavement cuts coated with a tack coat approved by the Engineer.
- f. An approved bituminous concrete binder shall be placed and compacted with the specified roller to within one and one-half (1 ½) inches of the existing road surface.
- g. An approved bituminous surface course shall be placed and compacted with the specified roller so that the completed surface shall be flush with the adjoining surfaces and finished to match them.
- h. All joints shall be sealed with a hot bituminous asphalt sealer approved by the Engineer.
- i. When there is two (2) feet or less between a curb or edge of pavement and the edge of the trench excavation, restoration of the pavement shall be extended to include the curb or edge of pavement.

All bituminous pavement shall conform to the Form 816, Section 4.06. All depth measurements shall be considered to be compacted depths. Bituminous material shall be compacted to 90% density.

The Contractor shall remove and acceptably dispose of all excavated material before proceeding with the remainder of the work.

Permanent pavement, in all cases, shall be applied so that the whole roadway or paved area shall have a true and uniform surface, and the pavement shall conform to the proper grade and cross-section with a smooth transition to existing pavement.

105.7

Surface Maintenance: Until the expiration of the guarantee period, the Contractor shall maintain surfacing placed under this Contract and shall promptly correct any defect such as cracks, depressions, and holes that may occur. At all times, the surfacing shall be kept in a safe and satisfactory condition for traffic. If defects occur in surfacing constructed by the Contractor, the Contractor shall remove all bituminous concrete and

base course as necessary to properly correct the defect. The Contractor shall replace the base course and bituminous concrete as specified herein.

105.8

Measurement and Payment: This item will be measured and paid as follows:

Permanent Pavement: Permanent pavement will be measured and paid by the square yard complete in place to the depth as indicated on the plans or as directed by the Engineer. This item shall include removal of temporary pavement, excavation, rolled gravel and process stone base courses, bituminous concrete, saw cutting, joint sealing, compaction, and all other labor, equipment, and materials incidental thereto.

107.0 BITUMINOUS CONCRETE LIP CURBING

107.1 General: This item shall conform to Section 8.15 BITUMINOUS CONCRETE LIP CURBING, of the Form 816.

201.0 CONCRETE SIDEWALKS

201.1 General: The Contractor is to construct sidewalks to lines and grades as shown on the drawings or at locations as directed by the Engineer. The sidewalks shall be of monolithic construction and five inches thick, except at industrial and commercial driveways where it shall be eight inches thick and reinforced with 6" x 6" 10/10 steel mesh. Sidewalk construction shall include the removal of existing and construction of new house lateral walks where new sidewalk grades make it necessary. At street corners where the intersection is rounded with a radius of less than 25 feet to the curb, the sidewalk slabs will be a minimum of five feet in length and constructed of five-inch thick concrete. The sidewalk shall pitch to the street at a slope of ¼-inch per foot or as directed by the Engineer.

Pedestrian sidewalk ramps are to be constructed to the lines and grades shown on the plans at locations directed by the Engineer, and shall be a minimum of five inches thick. This work shall also include furnishing and installing Detectable Warning Strips in the locations and to the dimensions and details shown on the plans or as ordered by the Engineer.

201.2 Forms: The forms used shall be five-inch steel or 2" x 6" wood firmly supported and staked to the line and grade given by the Engineer. The forms shall be free from warp and shall be of sufficient strength to resist springing out of shape. All forms shall be cleaned and oiled before use.

201.3 Concrete: The concrete furnished shall conform with respect to composition, transportation, mixing and placing, to Class F Cement Concrete 4,000 PSI, as specified by the State of Connecticut Department of Transportation in its latest specification and revisions. An approved air-entraining admixture shall be used to entrain 5% to 7% air in the concrete.

201.4 Detectable Warning Strips: The Detectable Warning Strip shall be a prefabricated detectable warning surface tile as manufactured from Engineered Plastics Inc. 300 International Drive, Suite 100 Williamsville, NY 14221, telephone number (800) 682-2525 or the approved equal from ADA Fabricators, INC. P.O Box 179 North Billerica, MA 01862 telephone number (978) 262-9900. The tile shall conform to the dimensions shown on the plans and have a brick red homogeneous color throughout in compliance with Federal Standard 595A Color #22144 or approved equal.

The Detectable Warning Strip shall be set directly in poured concrete according to the plans and the manufacturer's specifications or as directed by the Engineer. The Contractor shall place two 11.34 Kg concrete blocks or sandbags on each tile to prevent the tile from floating after installation in wet concrete.

201.5 Dowels: Smooth dowels, 5/8-inch in diameter, measuring 24 inches in length shall be installed within all expansion and contraction joints, concrete driveway aprons and the last end section of each sidewalk slab poured at the end of each working day.

Dowels are also to be installed between new and existing concrete slabs. Where new or repaired walks abut up against existing concrete sidewalks, the Contractor shall drill two holes measuring ¾-inches in diameter and 12 inches in depth into the existing concrete slab. The dowels, dipped in a liquid asphalt or grease and wrapped in aluminum foil, shall be set into the existing sidewalk slab prior to the placement of concrete. The dowels are to be level with the latitude pitch of the sidewalk and shall conform to details of these specifications.

Smooth metal dowels shall be 5/8-inch in diameter and 24 inches in length. All metal dowels shall conform to the requirements of ASTM A615 Grade 60.

201.6 Expansion Joints: At maximum intervals of 15 feet, an expansion joint shall be placed. The material for expansion joints shall be either 1/4-inch thick cork asphalt or 3/8-inch thick asphalt impregnated bonded cellular fiber, or approved equal. Expansion joints of the same material shall also be placed at points abutting existing structures.

201.7 Surface Finish: The surface finish shall be struck off, forcing coarse aggregate below mortar surface. After strike-off, the surface shall be worked and floated with a wooded, aluminum, or magnesium float followed by steel troweling. The slab shall then be broomed cross-wise with a fine hair broom. The outside edges of the slab shall be edged with a 1/4-inch radius tool. All edging lines shall be removed.

201.8 Curing: The Contractor shall use a liquid membrane-forming curing compound. The curing compound shall be similar or equal to Demicon "Cure Hard" with fugitive dye and shall meet the latest ASTM Specification C-156. Waterproof paper or plastic membrane are acceptable alternatives.

Newly constructed sidewalk surfaces shall be protected from all foot or vehicular traffic for a period of seven days. The Contractor shall have on the job, at all times, sufficient polyethylene film or waterproof paper to provide complete coverage in the event of rain.

201.9 Temperature: No concrete is to be placed on frozen base material or when air temperature is below 40°F, or at 45°F and falling, unless prior approval is given by the Engineer. In the event weather conditions may be such that concrete that is not completely cured is subject to freezing, the Contractor shall provide a minimum of a six-inch layer of hay, straw, or thermal blankets for protection. Any concrete laid during cold weather that is damaged by freezing shall be the responsibility of the Contractor and shall be replaced at his expense.

201.10 Basis of Payment: Concrete Sidewalk shall be measured and paid for at the Contract unit price per square foot as contained in the Bid Proposal, which price shall include the Base Course Underneath Sidewalks, excavation, and all other materials and all labor, tools, and equipment necessary for completion of the work.

Pedestrian Ramps shall be measured and paid for as a unit at the Contract unit price for each Pedestrian Ramp as contained in the Bid Proposal, which price shall include the Base Course Underneath Sidewalks, Excavation, Detectable Warning Strip, and all other materials and all labor, tools, and equipment necessary for completion of the work.

204.0 GRADING AND TOPSOILING

204.1 Description: This work shall consist of furnishing, placing, and shaping topsoil in areas shown on the plans where directed by the Engineer. The topsoil shall be placed to the depth stated in the Contract or specifications.

204.2 Material: The material shall conform to the requirements of Article M.13.01.1 of the Form 816.

204.3 Construction Methods: The areas on which topsoil is to be placed shall be graded to a reasonably true surface and cleaned of all stones, brickbats, and other unsuitable materials. After areas have been brought to proper subgrade and approved by the Engineer or his agent, loam shall be spread to a depth as indicated in the Contract, or to a depth of no less than four inches, with due allowance made for settlement. All stones, roots, debris, sod, weeds, and other undesirable material shall be removed from the topsoil. After shaping and grading, all trucks and other equipment shall be excluded from the topsoiled area to prevent excessive compaction. The Contractor shall perform such work as required to provide a friable surface for seed germination and plant growth prior to seeding.

During hauling and spreading operations, the Contractor shall immediately remove any material dumped or spilled on the shoulders or pavement.

It shall be the Contractor's responsibility to restore to line, grade, and surface all eroded areas with approved material and to keep topsoiled areas in acceptable condition until the completion of the construction work.

Wherever subgrade material is sand, gravel, or other previous material, and elsewhere as required by the Engineer, the Contractor shall place a four-inch layer of clay or other impervious material on the subgrade material before placing loam.

204.4 Payment: This work will be measured for payment by the number of square yards of area on which the placing of the topsoil has been completed and the work accepted.

The limits of payment shall be to the slope limits as shown on the plans. In the absence of slope limits, the maximum area of measurement shall be the area extending two feet behind the sidewalk and the area between the sidewalk and edge of pavement. No payment shall be made outside of these limits unless the disturbance was directed or approved by the Engineer. No payment shall be made for areas disturbed for staging, storage of materials, or other area disturbed for the convenience of the Contractor.

This work will be paid for at the Contract unit price per square yard for "Grading and Topsoil", which price shall include all materials, equipment, tools, labor, and work incidental thereto.

205.0 TURF ESTABLISHMENT

205.1 General: The work included in this item shall consist of providing an accepted uniform stand of established perennial turf grasses or wetland vegetation by furnishing and placing fertilizer, seed, and mulch on all areas to be treated as shown on the plans or where designated by the Engineer.

The work will also include the installation of erosion control matting of the type indicated where shown on the plans or as directed by the Engineer.

205.2 Materials: The materials for this work shall conform to the requirements of Section M.13 of the Form 816, except as noted below.

Seed mix for roadside areas shall consist of 70% Red Fescue, 20% Kentucky Blue Grass, and 10% Perennial Blue Grass or other mix for high maintenance lawn areas as approved by the Engineer.

Material certificates shall be provided for all materials supplied under this item.

205.3 Construction Methods: Construction Methods shall be those established as agronomically acceptable and feasible and which are approved by the Engineer.

1. Preparation of the Seedbed:

(a) Level areas, medians, interchanges and lawns: These areas shall be made friable and receptive for seeding by disking or by other approved methods to the satisfaction of the Engineer. In all cases the final prepared and seeded soil surface shall meet the lines and grades for such surface as shown in the plans, or as directed by the Engineer.

(b) Slope and Embankment Areas: These areas shall be made friable and receptive to seeding by approved methods which will not disrupt the line and grade of the slope surface. In no event will seeding be permitted on hard or crusted soil surface.

(c) All areas to be seeded shall be reasonably free from weeds taller than 3 inches. Removal of weed growth from the slope areas shall be by approved methods, including hand-mowing, which do not rut or scar the slope surface, or cause excessive disruption of the slope line or grade. Seeding on level areas shall not be permitted until substantially all weed growth is removed. Seeding on slope areas shall not be permitted without removal or cutting of weed growth except by written permission of the Engineer.

2. Seeding Season: The calendar dates for seeding shall be:

Spring—March 15 to June 15
Fall—August 15 to October 15

All disturbed soil areas shall be treated during the seeding seasons as follows:

(a) Areas at final grade: Seeding will be accomplished.

(b) "Out-of-season" seedings shall be performed in the same manner as "in-season" seedings. Since acceptable turf establishment is less likely, the Contractor shall be responsible for "in-season" reseeding until the turf stand conforms to this specification.

(c) During "out-of-season" periods unseeded areas shall be treated in accordance with Section 2.10, Water Pollution Control.

3. Seeding Methods: The seed mixture shall be applied by any agronomically acceptable procedure. The rate of application shall be no less than 175 pounds per acre or according

to manufacturer instructions. Fertilizer conforming to M.13.03 shall be initially applied at a rate of 320 pounds per acre during or preceding seeding. When wood fiber mulch is used, it shall be applied in a water slurry at a rate of 2,000 pounds per acre with or immediately after the application of seed, fertilizer and limestone. When the grass seeding growth has attained a height of 6 inches, the specified areas designated herein shall be mowed to a height of 3 inches. Following mowing, all seeding grass areas (mowed and un-mowed) shall receive a uniform application of fertilizer hydraulically placed at the rate of 320 pounds per acre.

4. Compaction: The Contractor shall keep all equipment and vehicular and pedestrian traffic off areas that have been seeded to prevent excessive compaction and damage to young plants. Where such compaction has occurred, the Contractor shall rework the soil to make a suitable seedbed; then re-seed and mulch such areas with the full amounts of the specified materials, at no extra expense to the State.

5. Stand of Perennial Turf Grasses: The Contractor shall provide and maintain a uniform stand of established turf grass or wetland vegetation having attained a height of 6 inches consisting of no less than 100 plants per square foot throughout the seeded areas until the entire project has been accepted.

6. Establishment: The Contractor shall keep all seeded areas free from weeds and debris, such as stones, cables, baling wire, and he shall mow at his own expense, on a one-time-only basis, all slopes 4:1 or less (flatter) and level turf established (seeded) areas to a height of 3 inches when the grass growth attains a height of 6 inches. Clean-up shall include, but not be limited to, the removal of all debris from the turf establishment operations on the shoulders, pavement, and/or elsewhere on adjacent properties publicly and privately owned.

7. Erosion Control Matting: Erosion control matting shall be installed following seeding where called for on the plans or as directed by the Engineer. Staples shall be installed as per Manufacturer's recommendations. Where two lengths of matting are joined, the end of the up-grade strip shall overlap the down-grade strip. The Contractor shall maintain and protect the areas with erosion control matting until such time as the turf grass is established. The Contractor shall replace or repair at his own expense any and all erosion control matting areas damaged by fire, water or other causes including the operation of construction equipment. No mowing will be required in the locations where erosion control matting is installed.

205.4 Method of Measurement: This work will be measured for payment by the number of square yards of surface area of accepted established perennial turf grass or wetland vegetation as specified or by the number of square yards surface area of seeding actually covered and as specified.

The limits of payment shall be to the slope limits as shown on the plans. In the absence of slope limits, the maximum area of measurement shall be the area extending two feet behind the sidewalk and the area between the sidewalk and edge of pavement. No payment shall be made outside of these limits unless the disturbance was directed or approved by the Engineer. Restoration of areas disturbed for staging, storage of materials, or other area disturbed for the convenience of the Contractor will not be measured for payment.

205.5 Basis of Payment: This work will be paid for at the contract unit price per square yard for "Turf Establishment" which price shall include all materials, mowing, maintenance, equipment, tools, labor, and work incidental thereto. Partial payment of up to 60% may be made for work completed, but not accepted.

206.0 **SEDIMENTATION CONTROL SYSTEM**

206.1 General: This item shall conform to Section 2.19 of the Form 816.

207.0 SEDIMENT CONTROL SACK

207.1 General: This work shall consist of furnishing, installing, maintaining, and removing a sedimentation control sack for control of sediment entering catch basins within the project area as directed by the Engineer or as shown on the contract drawings.

207.2 Materials: Sediment control sacks shall be Siltsack® as manufactured by SI® Geosolutions or approved equal, and shall be manufactured from a specially designed woven polypropylene geotextile.

The sediment control sack shall be manufactured to fit the opening of the catch basin or drop inlet to be protected. Sediment control sack shall have the following features: two dump straps attached at the bottom to facilitate emptying; lifting loops shall be included as an integral part of the system to be used to lift the sedimentation control sack from the basin; sediment control sack shall have a restraint cord approximately halfway up the sack to keep the sides away from the catch basin walls, this yellow cord is also a visual means of indicating when the sack should be emptied. Once the strap is covered with sediment, sediment control sack should be emptied, cleaned and placed back into the basin.

207.3 Construction Sequence: To install the sediment control sack in the catch basin, remove the grate and place the sack in the opening. Hold out approximately six inches of the sack outside the frame. This is the area of the lifting straps. Replace the grate to hold the sack in place.

When the restraint cord is no longer visible, the sediment control sack is full and should be emptied.

To remove the sediment control sack, take two pieces of 1" diameter rebar and place through the lifting loops on each side of the sack.

To empty the sediment control sack, place it where the contents will be collected. Place the rebar through the lift straps (connected to the bottom of the sack) and lift. This will turn the sedimentation control sack inside out and empty the contents. Clean out and rinse. Return the sedimentation control sack to its original shape and place back in the basin.

The sediment control sack is reusable. Once the construction cycle is complete, the sedimentation control sack shall be removed from the basin and cleaned. The sedimentation control sack shall then be provided to the Town for re-use.

207.4 Basis of Payment: Sediment control sacks shall be paid for as a unit for each sedimentation control sack provided and installed. Maintenance of the sediment control sacks and cleaning after completion of construction as described herein shall also to be included in this bid price.

213.0 EARTHWORK AND GRADING FOR SIDEWALK CONSTRUCTION

213.1 General: This item includes the excavation, formation of embankment, and regrading of project areas as required for construction of the proposed sidewalk to the lines and grades shown on the plans and as directed by the Engineer. Also included under this item is the excavation and re-grading of the snow shelf at the intersection of Hebron Avenue and House Street for the roadway widening at the northeast corner of this intersection to the lines and grades indicated on the construction plans and as directed by the Engineer.

The Contractor is to exercise caution to prevent unnecessary damage to lawns, trees, bushes, or any other existing improvements. If, in the opinion of the Engineer, existing improvements are damaged due to the carelessness of the Contractor, the same shall be repaired or replaced at the Contractor's expense.

213.2 Earthwork: The Contractor shall remove and dispose of grass, rubbish, and other objectionable materials within the limits of grading for sidewalk construction or other improvements as shown on the plans. The Contractor shall perform all excavation necessary to construct sidewalks and permanent pavement to the grades as shown on the construction plans. Excavation shall include the saw cutting, removal, and disposal of bituminous concrete and concrete sidewalks, driveways, and pavements, including curbing and tree roots, where necessary, due to the new sidewalk grade and as shown on the plans or as directed by the Engineer. Existing house lateral walks and driveways adjacent to the sidewalk shall be removed and base graded and prepared for a smooth connection. The Contractor shall remove and dispose of all excess material.

Suitable excavated material shall be re-used within the project limits as directed by the Engineer to form embankment for the sidewalks where required. Embankment formation shall be completed as described in Article 2.02.03 of the Form 816, and shall meet the proposed subgrade elevations described on the plans or directed by the Engineer. Excess earth materials shall become the property of the Contractor and shall be disposed of at no additional cost to the Town.

213.3 Grading Existing Topsoil: Upon completion of sidewalk construction, the Contractor is to grade the areas between sidewalks and curbs, if the typical section indicates a grass plot, and disturbed areas back of the sidewalk. The Contractor shall backfill and compact these areas so as to conform to the typical cross-section. The upper four inches of the backfill shall be loam or topsoil, loose and friable and free of sticks, rocks, roots, weeds, or other unsuitable material.

213.4 Lawn Restoration: This work will consist of restoring grass areas disturbed in the Contract work. All work will be in conformance with Section 205.0 Turf Establishment.

213.5 Basis of Payment: Except as noted below, all of the above-described work under the heading of EARTHWORK AND GRADING FOR SIDEWALK CONSTRUCTION including excavation, formation of embankment, and re-grading of project areas for sidewalk construction and permanent pavement installation will not be measured for payment. Rather, this work shall be included in the Contract unit price for sidewalks, permanent pavement, or other items associated with the work.

Sawcutting, removal, and disposal of existing bituminous pavement and concrete sidewalk shall be paid for at the contract unit price per square yard for "Removal of Pavement", which price shall include all labor, material, tools, and equipment incidental thereto.

214.0 BASE COURSE UNDERNEATH SIDEWALKS

214.1 Description: The Contractor shall make the necessary excavation and furnish material for base construction under sidewalks.

214.2 Material: The material used for base course construction shall conform to the requirements of Section M.02.01 of the Form 816 for broken or crushed stone. It shall consist of sound, tough, and durable stone and shall be free of thin or elongated pieces, lumps of clay, soil, loam, or vegetative matter. All material shall be approved by the Engineer prior to its use.

214.3 Construction Method: The material for the base course shall be spread upon the prepared subgrade to such depth as to give a compacted thickness of eight inches. The material shall be uniformly spread in two layers of equal depth in the entire base course excavation and each layer shall be wetted and compacted to a firm even surface with a roller weighing not less than 500 pounds or by use of pneumatic tampers or vibratory compactors.

214.4 Basis of Payment: There will be no separate payment for this item. All of the above-described work under the heading "Base Course Underneath Sidewalks" shall be included in the Contract Unit Prices for sidewalks or the item associated thereto.

215.0 PERMANENT DRIVEWAY REPAIRS

215.1 Description: The Contractor shall furnish all labor, tools, material, and equipment to replace all driveway pavement damaged due to the associated construction, as shown on the plans and as directed by the Engineer. This item shall also include the removal and disposal of existing bituminous pavement necessary for driveway replacement work.

215.2 Materials:
The base course shall be processed stone of a quality satisfactory to the Engineer.

Hot laid bituminous concrete for driveway repairs shall be Bituminous Class 2 per Section M.04 of the Form 816.

215.3 Construction Methods: Portions of the driveway or driveway aprons to be replaced shall be saw cut, and the existing pavement removed and disposed of by the Contractor. The eight (8) inches of trench immediately below the bottom of the proposed pavement shall be backfilled with processed stone and compacted in two lifts of four-inch thickness. The upper three (3) inches shall be topped by the Contractor with hot bituminous concrete or as required to match the existing pavement, and maintained at grade. The edges shall be painted with an asphalt emulsion prior to the placement of permanent pavement. Hot laid bituminous concrete shall be placed so as to give a three-inch (3) compacted surface, or a surface that has a depth equal to the existing driveway surface, whichever is greater. Compaction shall be made with a power-driven roller. The finished surface shall be free from waves or depressions.

215.4 Basis of Payment: Measurement and payment will be based on the Contract Unit Price per square yard of "Permanent Driveway Repairs" complete in place, which price shall include saw cutting, removal and disposal of existing bituminous pavement, all materials (including base materials), labor, tools, and equipment incidental thereto.

220.0 METAL BEAM RAIL TYPE RB-350

220.1 General: This item shall conform to Section 9.10 METAL BEAM RAIL, of the Form 816, modified as follows:

220.2 Materials: Weathering Steel shall be used for rail elements, terminal sections, and posts as described Article M.10.02 of the Form 816 as required to match existing metal beam rail in the project area.

228.0 TREE PROTECTION TRENCH

228.1 Description: This work includes excavation of a tree protection trench adjacent to an existing or proposed sidewalk by means of a chain-driven trenching machine with additional pruning of roots using hand methods as required. This is performed adjacent to the proposed sidewalk excavation and within the drip line of an existing tree to cleanly sever roots prior to sidewalk excavation.

The services of a licensed arborist will be required to supervise the above referenced work and shall be included in the contract unit price for tree protection trench.

228.2 Construction Methods: Tree protection trench shall be installed in advance of the intended sidewalk construction during time periods where damage to trees will be minimized, as directed by the Engineer. The work area shall generally include the length of sidewalk within the drip line of the canopy of the tree of concern. Extreme care shall be taken by the Contractor to identify and protect underground utilities within the work area, and any conflicts shall be immediately brought to the attention of the Engineer.

Where tree protection trench is called for on the plans, the Contractor shall use a chain-driven trenching apparatus to cleanly sever tree roots adjacent to the sidewalk to the full depth of the sidewalk excavation as directed by the Engineer. Additional pruning of roots using hand methods may also be required, as directed by the Engineer or licensed arborist supervising the work.

The disturbed area shall be restored to existing grades and shall be seeded per Section 205.00 of the specifications.

228.3 Payment: Tree protection trench shall be measured for payment by the number of linear feet of tree protection trench installed and accepted. This work shall be paid for at the Contract unit price for "Tree Protection Trench", which price shall include all materials, equipment, tools, labor, and work incidental thereto.

The services of a certified arborist to supervise work under this item shall not be measured separately for payment, but rather shall be included in the contract unit price for "Tree Protection Trench".

Restoration of disturbed areas shall be measured and paid for under Section 205.00 Turf Establishment.

240.0 SEGMENTAL RETAINING WALL (SITE NO. 1)

240.1 Description: This item will consist of designing, furnishing and constructing a segmental retaining wall in the location, grades, and to the dimensions and details shown on the contract drawings and in accordance with these specifications.

Segmental retaining wall (SRW) units shall be machine formed, Portland Cement concrete blocks specifically designed for retaining wall applications as manufactured by VERSA-LOK Retaining Wall of New England (603-883-3042) or approved equal.

240.2 Design:

1 - Design Computations: It is the Contractor's responsibility for the design, detailing and additional construction specifications required to construct the wall. The actual designer of the retaining wall shall be a qualified Professional Engineer licensed in the State of Connecticut and experienced in the design of SRW walls.

2 - Designer's Liability Insurance: The Designer shall secure and maintain at no direct cost to the Town, a Professional Liability Insurance Policy for errors and omissions in the minimum amount of Five Hundred Thousand Dollars (\$500,000). The designer may, at his election, obtain a policy containing a maximum One Hundred Twenty Five Thousand Dollars (\$125,000) deductible clause, but if he should obtain a policy containing such a clause, the designer shall be liable to the extent of the deductible amount. The Designer shall obtain the appropriate and proper endorsement to its Professional Liability Policy to cover the indemnification clause in this contract as the same relates to negligent acts, errors or omissions in the work performed by the Designer. The Designer shall continue this liability insurance coverage for a period of three years from the date of the acceptance of the work by the Town or for three years after the termination of the contract, whichever is earlier, subject to the continued commercial availability of such insurance.

The designer shall supply the certificate of this insurance to the Engineer prior to the start of construction of the wall. The designer's insurance company shall be licensed in the State of Connecticut.

3 - Preliminary Submissions: Prior to the start of fabrication or construction, the Contractor shall submit to the Engineer a design package, which shall include, but not be limited to the following:

a. Detailed Plans:

Plan sheets shall be approximately 24" x 36"

Stamped by a licensed Professional Engineer (Connecticut).

Full plan view of the wall drawn to scale. The plan view must reflect the horizontal alignment and offset from the horizontal control line to the face of the wall. Beginning and ending stations, all utilities, signs, lights, etc. that affect the construction along with all property lines and easement lines adjacent to the wall shall be shown.

Full elevation view of the wall drawn to scale. Elevation views should indicate the elevation at the top and bottom of walls, horizontal and vertical break points, and the location of finished grade.

Typical cross sections drawn to scale including all appurtenances. Detailed cross section should be provided at significant reinforcement transitions such as wall ends.

Details of all wall components and their connections such as the length, size and type of soil reinforcement and where any changes occur; facing details; connections; etc.

Certified test reports indicating the connection strength versus normal load relationship for the block-soil reinforcement connection to be used.

Drainage details for embankment backfill including connection to outlets shown on contract drawings.

Design parameters used along with AASHTO references.

Material designations for all materials to be used.

Detailed construction methods including a quality control plan. Construction quality control plans should include monitoring and testing frequencies (e.g, for setting batter and maintaining horizontal and vertical control). Construction restraints should also be listed in the details. Specific requirements for construction around obstructions should be included.

Details of Temporary Earth Retaining System(s) where required.

Treatment at underground utilities where required.

b. Design Computations:

Stamped by a licensed Professional Engineer (Connecticut).

Computations shall clearly refer to the applicable AASHTO provisions as stated in the Notes on the Contract Drawings.

Documentation of computer programs including all design parameters.

c. Construction Specifications:

Construction methods specific to the proprietary retaining wall chosen. These specifications should include construction limitations including vertical clearance, right-of-way limits, etc. Submittal requirements for materials such as certification, quality, and acceptance/rejection criteria should be included. Details on connection of modular units and connection of reinforcements such that assurance of uniform stress transfer should be included.

Any requirements not stated herein.

The submissions for proprietary retaining walls shall be treated as working drawings according to Section 1.05 of the Form 816 amended as follows:

a. Two sets of each submission shall be supplied to the Town

b. The Contractor shall allow 21 days for the review of each submission. If subsequent submissions are required as a result of the review process, 21 days shall be allowed for review of these submissions. No extensions in contract time will be allowed for the review of these submissions.

4 - Final Submissions: Once a proprietary retaining wall design has been reviewed and accepted by the Town, the Contractor shall submit the final plans. The final submission shall include one set of full size (approximately 24" x 36") mylar sheets and one set of full size copies.

The final submission shall be made within 14 days of acceptance by the Town. No work shall be performed on the retaining wall until the final submission has been received by the Engineer

Acceptance of the final design shall not relieve the Contractor of his responsibility under the contract for the successful completion of the work.

The actual designer of the proprietary retaining wall is responsible for the review of any shop drawings prepared for the fabrication of the wall. One set of full size copy of all approved shop drawings shall be submitted to the Engineer's permanent records.

5 - General Design Requirements:

a. All designs for proprietary walls and temporary earth retaining systems shall conform to the latest edition of the American Association of State Highway and Transportation Officials (AASHTO) Standard Specifications for Highway Bridges and later interims published except as noted otherwise herein:

b. The wall design shall follow the general dimensions of the wall envelope shown in the contract plans.

c. The top of the concrete leveling pad shall be located at or below the theoretical leveling pad elevation. The minimum wall embedment shall be two feet as measured to the top of the leveling pad or as shown on the plans.

d. If footing steps are required, they shall be kept below the minimum embedment depth. Footing steps in addition to those shown on the plans will be permitted at no additional cost to the Town.

e. The wall shall be designed to be within all property lines and easement lines shown on the contract drawings. If additional work areas are necessary for the construction of the proprietary retaining wall, the Contractor shall be responsible for obtaining the rights from the affected property owners. Copies of these rights shall be forwarded to the Town.

f. The top of the wall shall be at or above the top of the wall elevations shown on the plans. The top of the wall may be level or sloped to meet the top of the wall line noted.

g. Cast-in-place concrete will not be an acceptable replacement for areas noted by the wall envelope, except for minor grouting of pipe penetrations.

h. The mechanical wall height for the purposes of design calculations shall be from the top of the leveling pad to the top of the potential failure surface where the failure surface intercepts the ground surface.

i. The minimum length of internal soil reinforcement shall be as specified in AASHTO 5.8.1, except for the minimum eight (8.0') foot length requirement.

i. If there are specific surcharges acting on the wall, they shall also be accounted for. The minimum equivalent fluid pressure used to design the wall shall be 33 lbs./ft² per linear foot of wall.

j. The maximum allowable bearing capacity of the soil shall be assumed to be 4 ksf unless otherwise shown on the plans. If additional soils information is required by the designer, it must be obtained by the Contractor and will not be reimbursed by the Town.

k. For limit state allowable stress computations of extensible reinforcements, the combined factor of safety for construction damage and environmental/aging effects shall not be less than 1.75.

240.3

Materials: Materials shall conform to the following requirements and those not listed below shall be as prescribed within the Standard Specifications for Roads, Bridges and Incidental Construction, including supplemental specifications and applicable special provisions.

Contractor shall provide three representative samples of the SRW units for color selection by the Town.

1 – Facing Block: The facing block can be precast or drycast concrete and shall be the color specified on the plans. The block shall meet the following requirements:

a. Drycast Concrete:

The minimum compressive strength of the block shall be 4000 psi measured at 28 days. The maximum water absorption shall be less than five percent.

b. Precast Concrete: Shall conform to the requirements of Section M.03 and as follows:

The minimum compressive strength of the block shall be 4000 psi measured at 28 days.

All precast concrete components shall be air-entrained composed of portland cement, fine and coarse aggregates, admixtures and water. The air-entraining feature may be obtained by the use of either air-entraining portland cement or an approved air-entraining admixture. The entrained-air content shall be not less than four percent or more than seven percent.

2 - Geosynthetic Soil Reinforcement: The minimum strength of the geosynthetic soil reinforcement shall be based on experimental data. The Contractor shall submit to the Engineer a certified test report confirming the strength of the material when tested according to the methods specified in ASTM D5262 and extrapolated according to ASTM D2837 as outlined in AASHTO Article 5.8.7.2 of the Form 816.

3 – Metallic Soil Reinforcement: All soil reinforcement and structural connectors shall be hot dipped galvanized according to the requirements of ASTM A123 (AASHTO M 111). The minimum thickness of the galvanizing shall be based on the service life requirements as previously stated.

Steel strip reinforcement shall be hot rolled to the required shape and dimensions. The steel shall conform to AASHTO M223 (ASTM A572) Grade 65 unless otherwise specified.

Welded wire fabric reinforcement shall be shop fabricated from cold-drawn wire of the sizes and spacings shown on the plans. The wire shall conform to the requirements of ASTM A82, fabricated fabric shall conform to the requirements of ASTM A185.

4 - Metal Connectors: All metal hardware shall be hot dipped galvanized according to the requirements of ASTM A123 (AASHTO M-111). The minimum thickness of the galvanizing shall be based on the service life requirements in the AASHTO Specifications.

5 - Backfill Material: The material for backfill shall be Pervious Structure Backfill conforming to the requirements of Articles M.02.05 and M.02.06 of the Form 816.

6 - Facing Sealer: The face of all exposed drycast block shall be coated with clear Penetrating Sealer Protective Compound conforming to the requirements of Article M.03.02 of the Form 816.

240.4

Construction Methods: All construction methods for items not listed below shall be in accordance with the detailed requirements prescribed for the construction of the several contract items entering into the completed structure as specified in the Standard Specifications for Roads, Bridges, and Incidental Construction.

1 - Installation: The foundation for the structure shall be graded level for a width equal to or exceeding the length of the soil reinforcements, or as shown on the plans. If rock is encountered in the excavation, it shall be removed to provide a level area equal to or exceeding the length of the soil reinforcements, but not greater than the pay limits shown on the plans.

Prior to wall construction, the foundation, if not in rock, shall be compacted as directed by the Engineer. Any foundation soils found to be unsuitable shall be removed and replaced.

At each foundation level, an unreinforced concrete leveling pad shall be provided as shown on the plans. The leveling pad shall have nominal dimensions of 6 inch thickness and 24 inch width, and shall be cast using minimum 2,000 psi 28-day compressive strength concrete. The leveling pad shall be cast to the design elevations as shown on the plans. Allowable elevation tolerances are +0.01 foot (1/8 inch), and -0.02 foot (1/4 inch), from the design elevation.

The materials for the wall shall be handled carefully and installed in accordance with manufacturer's recommendations and specifications. Special care shall be taken in setting the bottom course of blocks to true line and grade.

All blocks above the first course shall interlock with the lower courses by means of connecting pins. Vertical joints shall be staggered with each successive course as shown on the working drawings. Vertical tolerances and horizontal alignment tolerances measured from the face line shown on the plans shall not exceed 1/2 inch when measured along a 8 foot straightedge. The overall tolerance of the wall from top to bottom shall not exceed 1/2 inch per eight feet of wall height or one inch total, whichever is the lesser, measured from the face line shown on the plans. A bond breaker shall be placed between the blocks and any adjacent cast-in-place concrete.

2 - Backfilling: Backfill placement shall closely follow erection of each course of panels. Backfill shall be placed in such a manner as to avoid any damage or disturbance to the wall materials or misalignment of the facing panels. Any wall materials which become damaged or disturbed during backfill placement shall be either removed and replaced at

the Contractor's expense or corrected, as directed by the Engineer. Any backfill material placed within the reinforced soil mass which does not meet the requirements of this specification shall be corrected or removed and replaced at the Contractor's expense.

Backfill shall be compacted to 95 percent of the maximum density as determined by AASHTO T-99, Method C or D (with oversize correction, as outlined in Note 7).

The moisture content of the backfill material prior to and during compaction shall be uniform throughout each layer. Backfill material shall have a placement moisture content less than or equal to the optimum moisture content. Backfill material with a placement moisture content in excess of the optimum moisture content shall be removed and reworked until the moisture content is uniform and acceptable throughout the entire lift. The optimum moisture content shall be determined in accordance with AASHTO T-99, Method C or D (with oversize correction, as outlined in Note 7).

If 30 percent or more of the backfill material is greater than 19 mm in size, AASHTO T-99 is not applicable. For such a material, the acceptance criterion for control of compaction shall be either a minimum of 70 percent of the relative density of the material as determined by a method specification provided by the wall supplier, based on a test compaction section, which defines the type of equipment, lift thickness, number of passes of the specified equipment, and placement moisture content.

The maximum lift thickness after compaction shall not exceed 10 inches, regardless of the vertical spacing between layers of soil reinforcements. The Contractor shall decrease this lift thickness, if necessary, to obtain the specified density. Prior to placement of the soil reinforcements, the backfill elevation at the face shall be level with the connection after compaction. From a point approximately three feet behind the back face of the panels to the free end of the soil reinforcements the backfill shall be two inches above the attachment device elevation unless otherwise shown on the plans.

Compaction within three feet of the back face of the panels shall be achieved by at least three passes of a lightweight mechanical tamper, roller or vibratory system. The specified lift thickness shall be adjusted as warranted by the type of compaction equipment actually used. Care shall be exercised in the compaction process to avoid misalignment of the panels or damage to the attachment devices. Heavy compaction equipment shall not be used to compact backfill within three feet of the wall face.

At the end of each day's operation, the Contractor shall slope the last level of backfill away from the wall facing to direct runoff of rainwater away from the wall face. The Contractor shall control and divert runoff at the ends of the wall such that erosion or washout of the wall section does not occur. In addition, the Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

3 - Face Sealer: After the wall has been erected, the entire exposed face of the wall shall be coated with Penetrating Sealer Protective Compound. The application of the sealer shall conform to the requirements Article 8.19.03 of the Form 816.

Several samples of the dry cast block shall be sealed prior to sealing the actual wall to ensure that the sealer will not discolor the block. If the sealer does discolor the block, the Contractor shall change to another approved supplier of sealer.

240.5

Method of Measurement: This work will be paid for on a lump sum basis and will not be measured for payment.

240.6 Basis of Payment: This work will be paid for at the contract lump sum for "SEGMENTAL RETAINING WALL (SITE NO. 1)", complete in place, which price shall include all work shown within the pay limits shown on the plans for the retaining wall including but not limited to the following:

1. Design, detailing, and specifications for the wall.
2. Excavation for the wall.
3. Design and Construction of temporary earth retaining systems for the support of the slope during construction.
4. Construction of the Embankment Wall, including the unreinforced concrete leveling pad.
5. The furnishing, placing and compacting of pervious structure backfill within the maximum payment lines.
6. The furnishing and placing of backfill drainage systems for the wall, including underdrain piping, excavation, and modifications of existing drainage structures as required for connection of the underdrain to the existing drainage system.
7. Any other work and materials shown on the plans for the construction of the wall.

The price shall also include all materials, equipment, tools and labor incidental thereto.

If bedrock or large boulders (greater than one cubic yard) are encountered in the excavation, the payment for it's removal will be made under the item "Structure Excavation - Rock".

241.0 SEGMENTAL RETAINING WALL (SITE NO. 2)

241.1 Description: This work shall include the furnishing and installing of a segmental retaining wall to the lines and grades shown on the plan or as directed by the Engineer. The work shall include the excavation, preparation of a level base, installation of the segmental retaining wall, backfill with select materials, and related materials required for the construction and backfill to the lines, and grades shown on the plan or as directed by the Engineer.

241.2 Materials:
Segmental retaining wall (SRW) units shall be machine formed, Portland Cement concrete blocks specifically designed for retaining wall applications as manufactured by VERSA-LOK Retaining Wall of New England (603-883-3042) or approved equal.

Contractor shall provide three representative samples of the SRW units for color selection by the Town.

Granular material for the prepared base shall conform to the requirements of Section M.02.01 of the Form 816 for broken or crushed stone.

Drainage aggregate for backfill behind the wall shall consist of $\frac{3}{4}$ " stone.

Wall materials shall conform to the applicable ASTM testing standards and manufacturer minimum specifications for the item supplied. The concrete wall units shall have a 28-day compressive strength of 3,000 psi. The units shall be interlocked with non-corrosive pins or other system approved by the Engineer.

241.3. Construction Methods: The Contractor shall excavate and prepare a suitable, level foundation to allow for construction of the wall to the line and grade shown on the plans or as directed by the Engineer.

Leveling pad shall be placed as shown on the plans with a minimum thickness of six inches. The leveling pad should extend laterally at least a distance of six inches from the toe and heel of the lower most SRW unit. Granular leveling pad material shall be compacted to provide a firm, level bearing surface on which to place the first course of units. Well-graded sand can be used to smooth the top 1/4-to 1/2-inch of the leveling pad. Compaction shall be with mechanical plate compactor as required to achieve 95 percent of maximum standard Proctor density. Sub-soils not meeting acceptable standards shall be removed and replaced with suitable soils. Over-excavated areas shall be filled and properly compacted.

SRW units and cap stones shall be installed according to manufacturer's specifications. Drainage aggregate consisting of $\frac{3}{4}$ " stone shall be installed to the dimensions indicated on the plans.

241.4 Method of Measurement: This work will be paid for on a lump sum basis and will not be measured for payment.

241.5 Basis of Payment: This work will be paid for at the contract lump sum for "SEGMENTAL RETAINING WALL (SITE NO. 2)", complete in place, which price shall include all work shown within the limits shown on the plans for the retaining wall including excavation, wall construction, base preparation, drainage aggregate backfill, and all materials, equipment, tools and labor incidental thereto.

If bedrock or large boulders (greater than one cubic yard) are encountered in the excavation, the payment for it's removal will be made under the item "Structure Excavation - Rock".

301.0 MAINTENANCE AND PROTECTION OF TRAFFIC

301.1 Description: Unless other provisions are made on the plans or in the Special Conditions, the Contractor shall keep the roadway open to traffic for the full length of the project and shall provide a sufficient number of travel lanes and pedestrian pathways to move that traffic ordinarily using the roadway. The travel lanes and pedestrian pathways shall be drained and kept reasonably smooth and in suitable condition at all times in order to provide minimum interference with traffic and consistent with proper execution of the work.

Suitable ingress and egress shall be provided at all times where required for all intersecting roads and for all abutting properties have legal access.

301.2 Construction Methods: When a scheme for maintenance of traffic that may include detours is shown on the plans or approved by the Legal Traffic Authority, this shall govern unless an alternate scheme acceptable to the Engineer is offered by the Contractor at no additional cost. If no scheme is shown on the plans or described in the Special Conditions of the Contract and the Contractor wishes to deviate from the provisions of maintaining traffic as described in this Section, the Contractor must submit, and the Engineer may approve, a schedule showing a proposed sequence of operations and a compatible method of maintaining traffic.

The Contractor is hereby alerted that the hours of operation for the delivery and installation of the pre-fabricated bridge superstructure are restricted to between 9:30 AM and 3:00 PM, Monday through Friday, or as otherwise directed by the Chief of Police (Legal Traffic Authority) as required to avoid significant traffic congestion during this operation. If a road closure/detour is required for this operation, a plan depicting the proposed detour route with signing shall be submitted to the Engineer and Chief of Police a minimum of 14 calendar days prior to the intended date of delivery.

301.3 Traffic Signs and Barricades: The Contractor will furnish signs, barricades, traffic cones, and traffic delineators to forewarn traffic of the construction. The Contractor will also provide such safety measures, pavement markings, warning devices, and signs as deemed necessary to safeguard and guide the traveling public through detours ordered by the Engineer or included in the approved scheme for maintenance of traffic. Signs and barricades will be delivered adjacent to the project and traffic cones and delineators will be provided when required, at no cost to the Town. The Contractor shall erect, maintain, move, adjust, relocate and store these signs, barricades, traffic cones, and delineators when, where, and in accordance with the "Manual on Uniform Traffic Control Devices", or as directed by the Engineer.

The use of unauthorized or unapproved signs, barricades, traffic cones, or traffic delineators will not be permitted.

The Contractor shall keep all signs in proper position and clean and legible at all times. Care shall be taken so that weeds, shrubbery, construction materials or equipment, and soil are not allowed to obscure any sign, light, or barricade. Signs that do not apply to existing conditions shall be removed or adjusted so that the legend is not visible to approaching traffic.

301.4 Snow Removal: The Contractor, when order by the Engineer, shall remove snow and take care of icy conditions on temporary, new, and existing sidewalks on any part of the right-of-way within the limits of the project.

Snow removal and correction of icy conditions other than those resulting from the Contractor's operations, and snow removal on uncompleted contracts under traffic, will remain the obligation of the Town.

301.5 Failure to Provide: Should the Contractor fail to perform any of the work required under this Section, the Town may perform, or arrange for others to perform, such work. In such cases, the Town will deduct from monies due or to become due the Contractor, all expenses connected therewith.

301.7 Basis of Payment: Maintenance and Protection of Traffic will be paid for at the Contract Lump Sum price for "Maintenance and Protection of Traffic". This price shall include all costs for labor, equipment, and services involved in the erection, maintenance, moving, adjusting, relocating and storing of signs, barricades, traffic cones, and traffic delineators furnished by the Contractor, as well as all cost of labor and equipment involved in the maintenance of traffic lanes and detours ordered or included in the approved scheme for maintenance of traffic.

NOTE: The Town of Glastonbury **CHIEF OF POLICE**, acting in the capacity of the **LEGAL TRAFFIC AUTHORITY**, shall be the sole and final authority for the Maintenance and Protection of Traffic.

302.0 TRAFFICPERSON

302.1 General: This item shall conform to Section 9.70 TRAFFICPERSON, of the Form 816.

302.3 Description: Add the following to the first paragraph of Section 9.70.01

“Trafficpersons shall consist of uniformed flaggers meeting acceptable criteria or extra duty officers of the Glastonbury Police Department. The Contractor shall provide Uniformed Flaggers meeting the requirements of this specification as required for safe traffic operations in the project area. Extra-duty police officers will be used only when specifically required by the Police Chief, as the Legal Traffic Authority, who will make this determination based on the Contractor’s proposed operations, traffic volumes, and traffic conditions.”

“All work under this item shall be paid only for the duration of the Contract as contained in the Special Conditions under ‘Time for Completion/Notice to Proceed’ and for any time extensions granted in writing by the Town. Payment for police officers required after the duration of the Contract and approved time extensions shall be made directly by the Town and such costs deducted from future payments due the Contractor.”

303.3 Basis of Payment: Replace Section 9.70.05 with the following:

“There will be no direct payment for safety garments or STOP/SLOW paddles. All costs associated with furnishing safety garments and STOP/SLOW paddles shall be considered included in the general cost of the item.

1. Uniformed Flagger: Uniformed flaggers will be paid for at the contract unit price per hour for “Trafficperson (Uniformed Flagger)” as listed in the bid proposal, which price shall include all compensation, insurance benefits, and any other cost or liability incidental to the furnishing of the trafficpersons ordered.”

2. Police Officers: The sum of money shown on the bid proposal as "Estimated Cost" for this work will be considered the bid price even though payment will be made as described below. The estimated cost figure is not to be altered in any manner by the bidder. Should the bidder alter the amount shown, the altered figures will be disregarded and the original price will be used to determine the total amount for the contract.

When the trafficperson consists of Town of Glastonbury Police Officers, the Contractor shall provide the invoices from such work to the Engineer and the Town will pay these invoices directly. Under these circumstances, the Contractor will be reimbursed only for the 5% markup on the actual cost of police services under this line item.

403.0 EARTH TRENCH EXCAVATION

403.01 General: The Contractor shall make excavations of normal depth in earth for trenches and structures; shall backfill such excavations to the extent necessary; shall furnish the necessary material and construct embankments and fills; and shall make miscellaneous earth excavations and do miscellaneous grading. All such work shall be done as indicated on the drawings and as herein specified.

The program of excavation, dewatering, sheeting and bracing shall be carried out in such manner as to eliminate all possibility of undermining or disturbing the foundations of existing structures or of work previously completed under this contract.

Excavation in general shall be in open trenches. Tunneling shall be done only to pass under obstructions such as pipes or duct or only as indicated on contract drawings, or in Special Provisions, or on written permission of the Engineer, and then only in accordance with those sections hereof which describe tunnel excavation, and subject to such further conditions as may have been described by drawings, Special Provisions, or as the Engineer may specify.

The Contractor shall make excavations in such manner and to such widths as will give suitable room for building the structures or laying and jointing the piping; shall furnish and place all sheeting, bracing, and supports; shall do all coffer damming, pumping and draining; and shall render the bottom of the excavations firm and dry and acceptable in all respects.

403.02 Trench Excavation: Where pipe is to be laid in gravel bedding or concrete cradle, the trench may be excavated by machinery to or to just below, the designated subgrade, provided that the material remaining at the bottom of the trench is no more than slightly disturbed.

Where pipe is to be laid directly on the trench bottom, the lower part of trenches in earth shall not be excavated to subgrade by machinery, but, just before the pipe is to be placed, the last of the material to be excavated shall be removed by means of hand tools to form a flat or shaped bottom, true to grade, so that the pipe will have a uniform and continuous bearing and support on firm and undisturbed material between joints except for limited areas where the use of pipe slings may have disturbed the bottom.

403.03 Depth of Trench: Trenches shall be excavated to such depths as will permit the pipe to be laid at the elevations, slopes or depths of cover indicated on the drawings, and at uniform slopes between indicated elevations.

403.04 Width of Trench: The methods and equipment used for excavation must be adapted to the conditions at the site and the dimensions of the required trench. The width of ground or street surfaces cut or disturbed shall, in general, be kept as small as practicable to accommodate the work and shall not be widened by scraping or loosening materials from the sides. Every effort shall be made to keep the sides of the trenches firm and undisturbed until backfilling has been completed and consolidated.

Width of pipe trenches shall be wide enough to provide sufficient space for shoring, for foundations, for drainage, for laying, jointing, inspecting, and backfilling of sides of pipe, or for building the required structures, and as near as feasible to the above described minimums, in order to reduce the load of backfill upon the top of the sewer; to provide lateral support for the fill and haunching on the sides of the pipe, and to insure that the pipe will not be pushed out of line while placing backfill.

The maximum permissible trench width to be paid by the Town varies with the diameter of the pipe (see table 403-1). Where the Contractor chooses not to use trench supports, the Contractor will still be paid as per maximum trench widths or actual trench width, whichever is the least.

- 403.05 Excavation for Special Foundations: Where concrete, stone or underdrain is required or ordered, excavation shall be carried down to the depth and lines required for such foundation or underdrain. If required by contract drawings or Special Provisions as part of the structure and included in the price, no additional payment for this additional excavation, as excavation, will be made. If the foundation is paid by the cubic yard or other specific item of proposal, such price for foundation shall include excavation therefore. Excavation for underdrain is included in price for underdrain.

Where the plans, Proposal or Special Provisions indicate certain foundations, they will be constructed and paid for as indicated.

Where the soil in subgrade is found to be soft, loose or freshly-filled earth, or unstable or unsuitable as a base for the proposed sewer or structure, the Engineer may, in his discretion, order it excavated to such depth and width as he may deem proper and replaced with gravel, crushed stone, concrete, plank or similar materials as he may direct.

If the excavation for foundation is made wider or deeper than required or ordered, or if excavation for concrete on sides of pipe is made wider than required or ordered, then no additional payment for the additional quantities of excavation or for additional foundation or side filling materials will be made, if being assumed that the added space was excavated for the convenience of, or by error of, the contractor.

- 403.06 Length of Trench and Space Occupied: Trenches must be constructed with a minimum of inconvenience and danger to the public and all other parties. To that end, the length of trench opened at any time, from point where ground is being broken to completed backfill and temporary surfacing, and also the amount of space in streets or public and private lands occupied by trench soil banks, equipment and supplies, shall to exceed the space or spaces considered reasonably necessary and expedient by the Engineer. In determining the length of open trench, the space for equipment, materials, supplies, etc. needed, the Engineer will consider the nature of the street or land where work is being done, depth and width of trench, types and methods of construction and equipment being used, inconvenience to the public or to private parties, possible dangers, limits or rights-of-way and other proper matters.

The Contractor must keep streets and premises near the work free from unnecessary obstructions, debris, etc. The Engineer may, at any time order all equipment, materials, surplus from excavations, debris, etc., lying outside reasonable limits of space, promptly removed; and should the Contractor fail to remove such materials within three days after notice to remove same, the Engineer may cause any part or all of such materials to be removed by such persons as he may employ, at the Contractor's expense, and may deduct the costs thereof from payment which may be or may become due to the contractor under this Contract. In any cases when public safety urgently demands it, the Engineer may cause such materials to be removed without prior notice.

Trenches shall be excavated with approximately vertical sides between the elevation of the center of the pipe and an elevation one foot above the top of the pipe.

- 403.07 Dimensions of Trenches: Trenches shall be excavated to the lines indicated on contract drawings or as described for any particular structure by any contract document. In general, room shall be allowed for installing the pipe or other structure, for making and inspecting joints in pipe, for placing and compacting fill around and on both sides of pipe, for draining and pumping as needed, for removal of unsuitable materials, and for any other purpose incidental to the fulfillment of the Contract and these specifications.
- Care must be taken to excavate to correct line, grade and width at all points.
- In general, sides of trenches must be not less than four inches from outside of barrel of all pipe eight inches or less in size, six inches from outside of barrel of pipe ten inches or larger in size, or as shown by contract drawings. Except as otherwise provided, excavation shall conform closely to the form and grade of the bottom of the pipe or foundation required. To accomplish this, the Engineer may require that no earth shall be excavated by machinery nearer than six inches to the finished subgrade, and the last six inches of excavation in earth shall be carefully removed by hand labor to the exact lines and grade required, immediately prior to laying pipe or underdrain or building bottom of structure.
- 403.08 Extent of Open Excavation: The extent of excavation open at any one time will be controlled by the conditions, but shall always be confined to the limits prescribed by the Engineer. At no time shall the extend of the open excavation go beyond two structures.
- 403.09 Trench Excavation in Fill: If pipe is to be laid in embankments or other recently filled material, the material shall first be placed to the top of the fill or to a height of at least one foot above the top of the pipe, whichever is the lesser. Particular care shall be taken to ensure maximum consolidation of material under the pipe location. The pipe trench shall be excavated as though in undisturbed material.
- 403.10 Unauthorized Excavation: If the bottom of any excavation is taken out beyond the limits indicated or prescribed, the resulting void shall be backfilled at the Contractor's expense with $\frac{3}{4}$ " crushed stone if the excavation was for a pipeline not having a concrete cradle or encasement, or with Class B concrete if the excavation was for a masonry structure.
- 403.11 Cutting of Pavement: When the trench lies within a paved area, the trench shall be cut with an approved tool. All cuts shall be made to straight lines and shall be parallel and/or perpendicular to the center line of the trench.
- 403.12 Bridging Trenches: The Contractor shall, at no cost, provide suitable and safe bridges and other crossings where required for the accommodation of travel, and to provide access to private property during construction, and shall remove said structures thereafter.
- 403.13 Obstacles: Some obstructions, obstacles, or difficulties in the path of the work anticipated, or in the performance of the work, may have been indicated by drawings, Special Provisions, or in other contract documents. The omission of any indication or mention of any obstruction, obstacle or difficulty which a reasonable and careful contractor, bidder, or estimator might have anticipated, or any question as to adequacy of such indication as given, shall not entitle the Contractor to any extra or additional compensation for any loss or expense occasioned directly or indirectly by such obstruction, etc., not to any extension of time or waiver of any requirement of the Contract and Specifications. The Contractor shall be understood to have entered into the Contract with full knowledge that in any work involving excavation, operation in public highways or adjacent to other developments, some unforeseen obstacle, difficulties, unforeseen soil or ground water conditions, etc., may be encountered, and that the

Contractor has included in the bid and contract obligations the assumptions of the risks and cost to which such obstacles, etc. may subject the bid.

The Town will make arrangements for clearance or avoidance of permanent obstruction by pipes and structures of public utilities and of public bodies, except as otherwise indicated on drawings or contract documents, where such obstruction is found in the space to be occupied by the pipe or structure to be built under the Contract. The Town will not assume the cost of temporary removal, support, protection, etc. of pipes, poles, and other structures which do not occupy the space to be occupied by the pipe or structure to be built for the Town, where removal, support, protection, etc. of such pipes, poles or structures is desired for the convenience of, or to save expense to, or to accommodate the equipment of the Contractor.

403.14 Ends of Certain Pipes to be Sealed: If any pipe, drain, culvert, connection or similar conduit is encountered and cut off or cut through incidental to the construction of the work, and if the said drain, etc. is not to continue to function or be used, the open end or ends of such pipes shall be securely and tightly closed by an adequate cover or bulkhead as directed by the Engineer. Except as a specific price for such closings was fixed in the Proposal, the cost of such covers, bulkheads, and the setting of them shall have been included in the price of prices bid for various other portions of the work in the Proposal and no additional payment will be made therefore.

In removing existing pipes or other structures, the Contractor shall use care to avoid damage to materials, and the Engineer shall include for payment only those new materials which are necessary to replace those unavoidably damaged.

The structures to which the provisions of the preceding three paragraphs shall apply include pipes, wires, and other structures which (a) are not indicated on the drawings or otherwise provided for, (b) encroach upon or are encountered near the substantially parallel to the edge of the excavation, and (c) in the opinion of the Engineer will impede progress to such an extent that satisfactory construction cannot proceed until they have been changed in location, removed (to be later restored), or replaced.

When fences interfere with the Contractor's operations, the Contractor shall remove and (unless otherwise specified) later restore them to at least as good condition as that in which they were found immediately before the work was begun, all without additional compensation. The restoration of fences shall be done as promptly as possible and not left until the end of the construction period.

403.15 Excavation Near Existing Structures: Attention is directed to the fact that there are pipes, drains, and other utilities in certain locations. Some of these have been indicated on the drawings, but no attempt has been made to show all of the services, and the completeness or accuracy of the information given is not guaranteed.

As the excavation approaches pipes, conduits, or other underground structures, digging by machinery shall be discontinued and the excavation shall be done by means of hand tools, as directed. Such manual excavation, when incidental to normal excavation, shall be included in the work to be done under items involving normal excavation.

Where determination of the exact location of a pipe or other underground structure is necessary for doing the work properly, the Contractor may be required to excavate test pits to determine such locations. When such test pits may be properly considered as incidental to other excavation, the Contractor shall receive no additional compensation, the work being understood to be included as a part of the excavation. When the

Engineer orders test pits beyond the limits of excavation considered as part of the work, such test pits shall be paid for as specified under MEASUREMENT AND PAYMENT.

- 403.16 Protection of Existing Structures: All existing pipes, poles, wires, fences, curbing, property-line markers, and other structures which the Engineer decides must be preserved in place without being temporarily or permanently relocated shall be carefully supported and protected from injury by the Contractor. Should such items be injured, they shall be restored by the Contractor, without compensation therefore, to at least as good condition as that in which they were found immediately before the work was begun.
- 403.17 Relocation and Replacement of Existing Structures: Whenever the Contractor encounters certain existing structures as described below and is so ordered in writing, the Contractor shall do the whole or such portions of the work as he may be directed, to change the location of, remove and later restore, replace such structures, or to assist the owner thereof in so doing. For all such work, the Contractor shall be paid under such items of work as may be applicable, otherwise as Extra Work.
- 403.18 Payment: Unless specified otherwise, payment for earth excavation and the disposal of surplus excavated material shall be included in the unit price or lump sum price of the item associated therewith.

TABLE 403-1
TRENCH WIDTHS

Maximum pay limits for trench widths are as follows:

Where the Contractor chooses not to use trench supports the Contractor will still be paid as per maximum trench widths.

Size Pipe Nominal Inside Diameter	Maximum Width of Trench
6"	2.5 Feet
8"	4.0 Feet
10"	4.0 Feet
12"	4.0 Feet
15"	4.0 Feet
18"	4.0 Feet
21"	4.3 Feet
24"	4.5 Feet
27"	4.8 Feet
30"	5.1 Feet
33"	5.4 Feet
36"	5.7 Feet
39"	5.9 Feet
42"	6.3 Feet

404.0 TRENCH DEWATERING

404.01 General: To ensure proper conditions at all time during construction, the Contractor shall provide and maintain ample means and devices (including spare units kept ready for immediate use in case of breakdown) with which to intercept and/or remove promptly and dispose properly of all water entering trenches and other excavations. Such excavations shall be kept dry until the structures, pipes, and appurtenances to be built therein have been completed to such extent that they will not be floated or otherwise damaged.

All water pumped or drained from the work shall be disposed of in a suitable manner without undue interference with other work, damage to pavements, other surfaces, or property. Suitable temporary pipes, flumes, or channels shall be provided for water that may flow along or across the site of the work.

404.02 Temporary Underdrains: Temporary Underdrains, if used, shall be laid in trenches beneath the grade of the structure. Trenches shall be of suitable dimensions to provide room for the chosen size of underdrain and its surrounding gravel. Underdrain pipe shall be acceptable PVC or ADS pipe of standard thickness. Sewer pipe of the quality known as "seconds" will be acceptable.

Underdrains, if used, shall be laid at an approved distance below the bottom of the normal excavation wrapped in Mirafi 140 or equal as outlined in Section 409.05 of these specifications, and entirely surrounded by graded gravel or crushed stone to prevent the admission of sand or other soil into the underdrains. The distance between the top of the bell of the underdrain pipe shall be at least three (3) inches unless otherwise permitted. The space between the underdrain and the pipe or structure shall be filled and crushed stone which shall be rammed, if necessary, and left with a surface suitable for laying the pipe or building the structure.

404.03 Drainage Wellpoint System: If required, the Contractor shall dewater the excavations by means of an efficient drainage system which will drain the soil and prevent saturated soil from flowing into the excavation. The wellpoints shall be designed especially for this type of service. The pumping unit shall be designed for use with the wellpoints and shall be capable of maintaining a high vacuum and of handling large volumes of air and water at the same time.

If required, the installation of the wellpoints and pump shall be done under the supervision of a competent representative of the manufacturer. The Contractor shall do all special work such as surrounding the wellpoints with sand or gravel or other work which is necessary for the wellpoint system to operate for the successful dewatering of the excavations.

404.04 Payment: Unless otherwise specified, payment for trench dewatering shall be included in the unit price of the item associated therewith.

405.0 BACKFILLING AND CONSOLIDATION

405.1 General: In general, and unless other material is indicated on the drawings or specified, material used for backfilling trenches and excavations around structures shall be suitable material which was removed in the course of making the construction excavations.

Frozen materials shall not be placed in the backfill nor shall backfill be placed upon frozen material. Previously frozen material shall be removed, or shall be otherwise treated as required before new backfill is placed.

405.2 Backfilling around Structures: The Contractor shall not place backfill against or on structures until they have attained sufficient strength to support the loads (including construction loads) to which they will be subjected without distortion, cracking, or other damage. As soon as practical after the structures are structurally adequate and other necessary work has been done, special leakage tests, if required, shall be made. Promptly after the completion of such tests, the backfilling shall be started and then shall proceed until its completion. The best of the excavated materials shall be used in backfilling within two feet of the structure. Unequal soil pressures shall be avoided by depositing the material evenly around the structure.

405.3 Backfilling Pipe Trenches: As soon as practicable after the pipes have been laid and the joints have acquired a suitable degree of hardness, if applicable, or the structures have been built and are structurally adequate to support the loads, including construction loads to which they will be subjected, the backfilling shall be started, and thereafter it shall proceed until its completion in accordance with pipe manufacturer recommendations.

With the exception mentioned below in this paragraph, trenches shall not be backfilled at pipe joints until after that section of the pipeline has successfully passed any specified tests required. Should the contractor wish to minimize the maintenance of lights and barricades and the obstruction of traffic, the contractor may, at his own risk, backfill the entire trench, omitting or including backfill at joints as soon as practicable after the joints have acquired a suitable degree of hardness, if applicable, and the related structures have acquired a suitable degree of strength. The contractor shall, however, be responsible for removing and later replacing such backfill at no cost should the contractor be ordered to do so in order to locate and repair or replace leaking or defective joints or pipe.

a. Materials: The nature of the materials will govern both their acceptability for backfill and the methods best suited for their placement and compaction in the backfill. The materials and methods shall both be subject to the approval and direction of the Engineer. No stone or rock fragment larger than 12 inches in greatest dimension shall be placed in the backfill nor shall large masses of backfill material be dropped into the trench in such a manner as to endanger the pipeline. If necessary, a timber grillage shall be used to break the fall of material dropped from a height of more than five feet. Pieces of bituminous pavement shall be excluded from the backfill unless their use is expressly permitted, in which case they shall be broken up as directed.

b. Ho Pac Trench Consolidation: Where the trench backfill is consolidated by the "Ho Pac" method and the depth of the trench from the road or ground surface to the top of the pipe exceeds ten feet, the trench backfill shall be placed and consolidated in two lifts of equal depth.

The approved backfill material shall be placed and compacted at a moisture content between four and eight percent (based on dry density, by weight), or with two percent of

the optimum moisture content as determined by the moisture density relationship test specified in ASTM D 1557, at the option of the Engineer. Compaction shall be by a "Ho Pac" vibratory compactor or approved equal, operating at a frequency between ten and 40 Hertz, placed directly on the backfill surface, and applied with the maximum practical force applicable by the backhoe to which it is attached. Compaction effort shall be continued until no further visible settlement occurs.

c. Miscellaneous Requirements: Whatever method of compacting backfill is used, care shall be taken that stones and lumps shall not become nested and that all voids between stones shall be completely filled with fine material. Only approved quantities of stone and rock fragments shall be used in the backfill. The Contractor shall, as part of the work done under the items involving earth excavation and rock excavation as appropriate, furnish and place all other necessary backfill material.

All voids left by the removal of sheeting shall be completely backfilled with suitable materials, thoroughly compacted.

Where required, excavated material which is acceptable to the Engineer for surfacing or pavement sub base shall be placed at the top of the backfill to such depths as may be specified elsewhere or as directed. The surface shall be brought to the required grade and stones raked out and removed.

405.4

Embankments Over Pipe: Where the top of the pipe is less than three feet below the surface of the ground, additional fill shall be placed to form an embankment to cover and protect the pipe. The top of such embankment shall not be less than three feet above the top of the pipe and not less than one foot wider than the outside diameter of the pipe, with side slopes no steeper than one and one half horizontal to vertical, or of such section as may have been indicated by drawings. Such embankments shall be made of suitable dry earth, well compacted. Embankments must be maintained to the full required dimensions during the maintenance period of the Contract, and any settlement, washout, or deficiency occurring or found during that time shall be rectified and embankments brought up to the required height, width and slopes.

In general, such embankments may be made with materials excavated on the job and not used for backfill elsewhere. Should there not be sufficient surplus material for embankments, or should it be unsuitable or inconveniently located, the Contractor shall secure and provide sufficient suitable material. In any case, where the Town has provided borrow pits from which the Contractor may obtain filling material, the Contractor must conform to the conditions for excavating and moving such material as established by acts of the Town in obtaining such rights, and by indications on drawings or in other contract documents.

Openings through embankments for the passage of water and other purposes will be provided as indicated on drawings or elsewhere, or as ordered.

Grass shall be seeded or turf placed on embankments if, where, and as provided in contract documents. In general, if grassing is not required, the Contractor may, at his option, grass embankments to facilitate his maintenance. The Engineer may order grassing where not otherwise required under the general provisions for additional work if he deems proper.

Care shall be taken that sewer and appurtenances are not damaged by equipment or methods used for making and maintaining embankments. Except as specific provisions may have been made in the Proposal for a particular contract, no payment other than

prices bid for pipe will be paid for building and maintaining embankments or securing material therefore.

- 405.5 Material for Filling and Embankments: Approved selected materials available from the excavations and not required for backfill around pipes or against structures may be used for filling and building embankments, except as otherwise specified. Material needed in addition to that available from construction operations shall be obtained from approved gravel banks or other approved deposits. The Contractor shall furnish, at no cost, all borrowed material needed on the work.

All material, whether from the excavations or from borrow, shall be of such nature that after it has been placed and properly compacted it will make a dense, stable fill. It shall not contain vegetation, masses of roots, individual roots more than 18 inches long or more than one half inch in diameter, stones over six inches in diameter, or porous matter. Organic matter shall not exceed minor quantities and shall be well distributed.

- 405.6 Preparation of Subgrade: The Contractor shall remove loam and topsoil, loose vegetable matter, stumps, large roots, etc. from areas upon which embankments will be built or material will be placed for grading. The subgrade shall be shaped as indicated on the drawings and shall be so prepared by forking, furrowing, or plowing so that the first layer of the new material placed thereon will be well bonded to it.

- 405.7 Placing and Compacting Material: After the subgrade has been prepared as hereinbefore specified, the material shall be placed thereon and built up in successive layers until it has reached the required elevation.

Layers shall not exceed 12 inches in thickness before compaction. In embankments at structures, the layers shall have a slight downward slope away from the structure. In other embankments, the layers shall be slightly dished toward the center. In general, the finer and less pervious materials shall be placed against the structures or in the center, and the coarser and more pervious materials, upon the outer parts of embankments.

Each layer of material shall be compacted by the use of approved rollers or other approved means so as to secure a dense, stable and thoroughly compacted mass. At such points as cannot be reached by mobile mechanical equipment, the materials shall be thoroughly compacted by the use of suitable power driven tampers.

Previously placed or new materials shall be moistened by sprinkling, if required, to ensure proper bond and compaction. No compacting shall be done when the material is too wet, from either rain or too great an application of water, to compact it properly. At such times, the work shall be suspended until the previously placed and new materials have dried out sufficiently to permit proper compaction.

- 405.8 Compaction Test: When, in the opinion of the Engineer, such tests are necessary, the Contractor shall have compaction density tests taken by an approved independent laboratory. Ninety five percent of the maximum density determined in accordance with AA SHOT 180 Method D shall be achieved.

- 405.9 Payment: Unless otherwise specified, payment for backfilling and consolidation shall be included in the unit price or lump sum price of the item associated therewith.

407.0 CATCH BASINS AND DROP INLETS

407.1 General: These items shall conform to Section 5.07 CATCH BASINS, MANHOLES, AND DROP INLETS of the Form 816, modified as follows.

Trench excavation, dewatering, and backfill for these items shall be according to Section 403.0 EARTH TRENCH EXCAVATION, Section 404.0 TRENCH DEWATERING, and Section 405.0 BACKFILLING AND CONSOLIDATION of these specifications.

Storm drainage manholes shall not be included under this item, but shall conform to Section 508.0 MANHOLES of these specifications.

407.2 Method of Measurement: There will be no direct measurement for trench excavation in the installation of the various drainage appurtenances.

407.3 Basis of Payment: The work under these items shall be paid for at the unit contract price each for type of catch basins and drop inlets complete in place and shall include all materials, tools, equipment, and labor necessary to complete the excavation and installation of units in conformity with the plans, or as specified.

509.0 RESET MANHOLE

509.1 General: Under this item shall be included the alteration or reconstruction of existing manholes in conformity with the lines, grades, dimensions, and details shown on the plans, or as ordered, and in accordance with the provisions of these specifications for the various materials and work which constitute the completed structure.

509.2 Construction Methods: Frames, covers and tops which are to be reset shall be removed from their present beds, the walls or sides shall be rebuilt to conform to the requirements of the new construction and the tops, frames and covers reset, or the grates or covers may be raised by extensions of suitable height approved by the Engineer.

Resetting tops, frames and covers will be measured as units. When resetting tops, frames and covers, there will be no measurement for excavation; cutting, removal and replacement of pavement; pervious material and backfill.

509.3 Payment: Reset Units will be paid for at the contract unit price each for "Reset Manhole," of the type specified, respectively, complete in place, which price shall include excavation, pervious material, backfill, cutting of pavement, removal and replacement of pavement structure, extensions, concrete masonry units, mortar, and all materials, equipment, tools and labor incidental thereto.

600.0 PRE-FABRICATED PEDESTRIAN BRIDGE

600.1 General: These specifications are for a fully engineered clear span bridge of welded steel construction (weathering steel) and shall be regarded as minimum standards for design and construction as manufactured by Pioneer Bridges of 119 40th Street NE, Fort Payne, Alabama or approved equal.

The specific style of bridge required will be a Trailblazer bridge or approved equal with the following dimensions:

Width: Inside clear width of bridge shall be 6 feet 0 inches.

Span: Center to center of bearing of bridge shall be 71 feet 0 inches.

Camber: Bridge shall be cambered to offset dead load and appear flat.

The bridge manufacturer shall have been in the business of design and fabrication of welded steel pedestrian bridges for a minimum of five years and shall provide a list of five successful bridge projects of similar construction, each of which has been in service at least three years as part of the bid response. List the location, bridge size, owner and contact reference for each bridge.

600.2 Design: Open truss bridges shall be designed by a professional engineer who is experienced in pony truss bridge design and top chord stability criteria elastic utilizing lateral restraints.

Complete design calculations and drawings signed and sealed by a professional engineer licensed in the State of Connecticut shall be submitted to the owner for approval prior to fabrication.

In addition to normal dead loads, the bridge shall be designed for the following:

UNIFORM LIVE LOAD: Pedestrian bridges shall be designed for an evenly distributed live load of 85 pounds per square foot in accordance with the AASHTO Guide Specification for the Design of Pedestrian Bridges.

VEHICLE LOAD: Bridges will also be designed to withstand a moving vehicle load which weighs 1000 pounds per foot of width (up to 10,000 pounds) of bridge. This concentrated load is in addition to a 20 pounds per square foot evenly distributed live load. The vehicle load shall be distributed such that 80% of the load is on the rear axle (per AASHTO).

WIND LOAD: All bridges shall be designed for a minimum wind load of 35 pounds per square foot (approximately 120 mph). The wind is calculated on the entire vertical surface of the bridge as if fully enclosed.

DESIGN CRITERIA: The design of the bridge shall be in accordance with the "American Institute of Steel Construction"; 13th Edition. Tubular members and their connections shall be designed per the CISC "Hollow Structural Sections Connections Manual" latest edition or the AISC Manual 13th Edition.

SEISMIC: All bridges shall be designed for seismic loads of the intensity required by local codes.

TEMPERATURE: Bridge shall be designed to accommodate a temperature differential of 120 degrees Fahrenheit. Slip pads of UHMW polyethylene shall be placed between the

smooth surface of this setting plate and the smooth bearing plate of the bridge. At least 1" clearance shall be provided between the bridge and concrete abutments.

DEFLECTION: The vertical deflection of the bridge due to pedestrian live load shall not exceed 1/400 of the span length. The maximum deflection due to vehicular loads shall not exceed 1/800 of the span length. For pedestrian comfort, the load used for the deflection check be a minimum of 500 pounds per lineal foot of bridge or the uniform load used in Section 3.2, whichever is greater. The horizontal deflection due to lateral wind load shall not exceed 1/500 of the span length.

SUBSTRUCTURE: The bridge manufacturer shall provide the Contractor with support reactions, anchor bolt locations and placement. The Contractor shall compare the support reactions provided by the bridge manufacturer to the Design Reactions shown on the contract plans for the abutments. The Contractor shall be responsible make any modifications to the design of the substructure if the loadings differ. The Contractor shall submit the support reactions, anchor bolt locations and placements, and any necessary modifications of the abutments to the Engineer for approval prior to construction of the substructure. All modifications to the substructure shall be designed, sealed, and stamped by a Professional Engineer registered in the State of Connecticut.

600.3

Materials:

All structural members shall have a minimum thickness of material of at least 3/16".

Unpainted Weathering Steel bridge shall be fabricated from ASTM A242 or ASTM A588 steel for plates and structural shapes and ASTM A606 or ASTM A847 for tubular sections. Minimum yield (Fy) shall be greater than 50,000 psi.

Wood Decking shall be No. 1 grade Southern Yellow Pine. Wood decking shall be treated to a minimum of 0.40 pounds of preservative per cubic foot of wood. The wood deck shall be designed for a 85 psf local loading condition. Floor planks shall be attached with at least two plated fasteners where planks cross supporting members. Planks shall be designed to carry a wheel footprint load per AASHTO.

Field splices shall be bolted with High Strength ASTM A325 bolts; type 3 bolts shall be used for weathering steel bridges.

Welding materials shall be in strict accordance with the American Welding Society (AWS). Structural welding code, D1.1 Filler metal as specified in 4.1 shall be used for the particular welding process required. Welders will be certified in accordance with AWS D1.1.

Anchor bolts shall conform to ASTM A449 with nuts and washers conforming to ASTM A563, Grade B. Anchor bolts, nuts, and washers shall be galvanized in conformance with ASTM A153. Anchor bolts shall be cast-in-place.

Elastomeric bearing pads shall be provided in the areas where the superstructure rests on concrete. Elastomeric bearing pads shall conform to the requirements of Section M.17.01 of the Form 816.

600.4 Fabrication and Quality Control:

Bridge fabricator shall be certified by the American Institute of Steel Construction to have the personnel, organization, experience, capability, and commitment to produce fabricated structural steel for Major Steel Bridge Structures with Fracture Critical and Sophisticated Paint Endorsements as set forth in the AISC Certification Program.

Workmanship, fabrication, and shop connections shall be in accordance with American Association of State Highway and Transportation Officials Specifications (AASHTO).

Welding operators shall be properly accredited experienced operators, each of whom shall submit satisfactory evidence of experience and skill in welding structural steel with the kind of welding to be used in the work, and who have demonstrated the ability to make uniform good welds meeting the size and type of weld required.

All welding shall utilize E70 or E80 series electrodes. The weld process used shall be Flux Core Arc Welding (FCAW) or Gas Metal Arch Welding (GMAW).

The connection of bridge end post to top chord should be a mitered joint with the exposed welds ground smooth. The connection of the floor beam in a pony truss system shall not be solely into the side of a tubular bottom chord without the use of additional stiffeners to prevent chord ovalization.

All structural elements used in the bridge shall be identified by heat number of the steel member used. Specific mill test reports and individual welder certificates shall be tracked and kept on file to be provided at the request of the owner or engineer.

The bridge design Professional Engineer shall inspect the bridge structure after fabrication and furnish a signed and sealed Conformance Report and Affidavit verifying that the bridge has been inspected by the Engineer and fabricated in accordance with the Engineer's design calculations and approved shop drawings. This inspection and report shall not be delegated to any other engineer or person. For weathering steel bridges, the report shall include a summary of computations of the corrosion index (per ASTM G101) for every heat number of structural steel used in the bridge to verify that the steel is of a weathering grade.

Each bridge shall be inspected by a Certified Welding Inspector that is qualified under the AWS QC-1 program. This inspection shall include as a minimum requirement the following: review of shop drawings, weld procedures, welder qualifications, and weld testing reports, visual inspection of welds and verification of overall dimensions and geometry of the bridge. A report shall be produced indicating the above items were reviewed and shall be signed and sealed by the CWI signifying compliance with AWS D1.1 codes.

600.5 Railings & Accessories:

All railings shall have a smooth inside surface with no protrusions or depressions. All ends of angles and tubes shall be closed and ground smooth.

Railings shall be suitable for bicycle use and shall be a minimum height of 54 inches above the floor deck.

Safety Rails: Continuous rails shall be located on the inside of the trusses. The safety rails shall conform to applicable standards for height, spacing, and other dimensions.

Toe Plate: A 5" steel channel shall be located 2" above the floor deck.

600.6 Finishes: All boldly exposed surfaces of weathering steel bridges shall be sand blasted in accordance with the Steel Structures Painting Council (SSPC) Surface Preparation Specification No. 7 "Brush Blast Cleaning".

600.7 Delivery and Erection: Hauling permits and freight charges are the responsibility of the Contractor. Unloading, splicing, bolting, and proper lifting equipment are the responsibility of the Contractor. The Contractor shall install the anchor bolts in accordance with the manufacturer's anchor bolt spacing dimensions and specifications.

The Contractor is hereby alerted that the hours of operation for the delivery and installation of the pre-fabricated bridge superstructure are restricted to between 9:30 AM and 3:00 PM, Monday through Friday, or as otherwise directed by the Chief of Police (Legal Traffic Authority) as required to avoid significant traffic congestion during this operation. If a road closure/detour is required for this operation, a plan depicting the proposed detour route with signing shall be submitted to the Engineer and Chief of Police a minimum of 14 calendar days prior to the intended date of delivery.

600.8 Warranty: The manufacturer shall warranty the pedestrian bridge against defects in material and workmanship for a period of fifteen years.

600.9 Measurement and Payment: The pedestrian bridge will be paid for at the contract lump sum price as listed in the bid proposal for "Pre-fabricated Pedestrian Bridge", which price shall include all materials, equipment, labor, and work necessary for and incidental to the design, construction, delivery, unloading, assembly, and placement of the bridge on concrete abutments as shown in the contract plans, including all railings on the superstructure.

The cost of determining support reactions of the supplied bridge, comparing these to the Design Reactions given on the Contract plans, and any analysis and design modifications to the substructure shall be included in the lump sum price for "Pre-fabricated Pedestrian Bridge".

610.0 STRUCTURE EXCAVATION

610.1 General: This item applies to the construction of abutments and footings for the proposed pedestrian bridge as indicated on the contract plans for the "House Street Pedestrian Bridge" prepared by Anchor Engineering Services, Inc. This item shall conform to Section 2.03 STRUCTURE EXCAVATION of the Form 816, with the following section(s) replaced.

610.2 Basis of Payment (Section 2.03.05): Payment for this work will be made at the Contract unit price per cubic yard for: Structure Excavation—Earth (complete) or "Structure Excavation—Rock (complete)," whichever applies, in whole or in part, which price shall include all materials, tools, and equipment; all work related to cofferdams, including their design, construction, dewatering, repair, removal of obstructions, and any required reconstruction; all labor necessary to complete the excavation in conformity with the requirements of the plans or as ordered by the Engineer; the preparation of foundations as described under Article 2.03.03 of the Form 816; all necessary filling, except as otherwise provided in the Contract; and the removal of all surplus or unsuitable material resulting from the excavations.

615.0 PROTECTION AND SUPPORT OF EXISTING UNDERGROUND CNG FACILITIES

615.1 Description: Work under this item shall consist of designing, furnishing, and placing temporary supports and temporary protection shields which will be necessary to protect the existing underground gas main during the construction of the north abutment as indicated on the contract plans for the "House Street Pedestrian Bridge" prepared by Anchor Engineering Service, Inc. The Contractor is herein made aware that construction of the proposed foundation will require excavations that will expose the adjacent active gas mains owned by Connecticut Natural Gas Corporation. The work shall be performed in accordance with these specifications.

All work shall be in conformance with "CNG General Provisions for Contractors When Excavating Over Cast Iron Gas Mains", and Connecticut Natural Gas Corporation Department Procedure (480.01) "Protection / Replacement of Exposed Gas Facilities". A copy of these documents is included as Attachment B to the contract documents.

The work pertaining to the temporary support primarily involves the support and prevention of damages which are possible during the excavation and construction of the permanent foundation under this contract. Installation of a split steel sleeve to encase the utility during construction of the abutment where the gas line passes through the limits of the abutment for a pedestrian bridge is not included in this item and is included under other items in this Contract.

The Contractor is advised that no service interruption to the gas facility resulting from Contractor operations will be allowed, except as otherwise provided for in the Special Provision "Prosecution and Progress." Extreme caution shall be exercised during all stages of construction in order to preserve the existing utilities. A Town representative shall be present at the installation of the temporary supports and protection shields.

The Contractor shall notify the Engineer prior to the start of his work and shall be responsible for all coordination with the Town and the utility. The Contractor shall allow the Engineer complete access to the work.

The Contractor is cautioned that it is his responsibility to verify locations, conditions and field dimensions of all existing features, as actual conditions may differ from information indicated on the plans or contained elsewhere in these specifications.

615.2 Materials: The materials for this work shall conform to the requirements of the Form 816 and be of satisfactory quality for the purpose intended and shall be approved by the Engineer. The material shall be intended for use in structures and shall be sound and capable of safely carrying the loads anticipated as part of the design of the protection shield.

615.3 Construction Methods: The Contractor shall prepare working drawings and computations showing his proposed method of support and protection for the utility to be supported and protected. Preparation of working drawings and computations shall conform to the requirements of Article 1.05.02 of the Form 816. The support shall safely carry all dead loads and any imposed loadings under all possible construction conditions. The utility protection shields shall safely carry any imposed loadings under all possible construction conditions. Said supports and protections shall be constructed in a manner that will not interfere with the proposed construction.

The design shall be submitted to the utility representatives for review and approval. Following approval, the design shall be submitted to the Engineer for final approval at

least two (2) weeks prior to the beginning of construction. No work will be allowed in the vicinity of any utility until the Contractor receives approval of his support method from the utility representative and the Engineer.

The Contractor shall use every effort to protect all utilities from damage of any nature which might result from carelessness or negligence in his operations. He shall be held solely and strictly responsible for any damage resulting from such carelessness and negligence.

A periodic inspection of the temporary utility support and protection shield shall be performed by the Contractor, as directed by the Engineer.

The Contractor shall support and maintain the existing utilities until the proposed foundation construction has been completed to a point where removal of the temporary supports will not cause damage to the protected utility.

When the temporary utility supports and protection shield are no longer required, they shall be removed from the site by the Contractor.

615.4 Method of Measurement: This work, being paid for on a lump sum basis, will not be measured for payment.

615.5 Basis for Payment: The work will be paid for at the contract lump sum price for "Protection and Support of Existing Underground CNG Facilities" which price shall include designing and detailing all supports and protection shields, furnishing, periodic monitoring, installing, removal, disposal, coordinating work with the utility companies, and all materials, equipment, tools and labor incidental thereto.

620.0 GRANULAR FILL

- 620.1 General: This item shall include the furnishing, placing, and compaction of granular material as a foundation for the footings for the proposed pedestrian bridge as indicated on the contract plans for the "House Street Pedestrian Bridge" prepared by Anchor Engineering Services, Inc., or as ordered by the Engineer.
- 620.2 Materials: Granular fill shall consist of ¾" crushed stone and meet the requirements of Article M.02.01 of the Form 816.
- 620.3 Construction Methods: When granular fill is used for foundation for structures or to replace rock or unsuitable material in trenches, it shall be deposited in layers not over 6 inches in depth, with each layer thoroughly compacted before the addition of other layers.
- 620.4 Method of Measurement: Granular fill will be measured in place after compaction within the payment lines shown or specified by the Engineer.
- 620.5 Basis of Payment: This work will be paid for at the contract unit price per cubic yard for "Granular Fill," complete in place, which price shall include all materials, tools, equipment and labor incidental thereto.

624.0 PERVIOUS STRUCTURE BACKFILL

624.1 General: Pervious structure backfill shall include the furnishing, placing, and compaction of pervious material adjacent to the pedestrian bridge footings and abutments for the proposed pedestrian bridge as indicated on the contract plans for the "House Street Pedestrian Bridge" prepared by Anchor Engineering Services, Inc., or as ordered by the Engineer.

624.2 Material: Pervious structure backfill shall conform to the requirements of Article M.02.05 of the Form 816.

The materials for bagged stone shall conform to the following requirements:

- (a) The crushed stone or gravel shall conform to the grading requirements of Article M.01.01 of the Form 816 for No. 3 or No. 4 coarse aggregate or a mixture of both.
- (b) The bag shall be of burlap and shall be large enough to contain one cubic foot of loosely packed granular material.

624.3 Construction Methods: Pervious structure backfill shall be placed adjacent to abutments, retaining walls, box culverts, and elsewhere as called for. It shall be placed above a plane extending on a 2 to 1 slope from the upper edge of the footing to the top of the embankment, or as shown on the plans. Where the face of undisturbed material is above or beneath this slope plane, the amount of pervious structure backfill shall be decreased or increased accordingly, if ordered by the Engineer.

In filling behind abutments, retaining walls, box culverts, or other structures, the fill is placed against undisturbed material, or against compacted embankments having a length in a direction at right angles to the abutment wall or culvert not less than twice the height of the structure against which the fill is placed. The slope of the embankment on which the pervious structure backfill is to be placed shall be plowed deeply or cut into steps before and during the placing of pervious structure backfill so both types of material will be thoroughly bonded and compacted.

Each layer of pervious structure backfill shall be spread to a thickness not exceeding 6 inches in depth after compaction and shall be thoroughly compacted as directed by the Engineer by the use of power rollers or other motorized vehicular equipment, by tamping with mechanical rammers or vibrators, or by pneumatic tampers. Any equipment not principally manufactured for compaction purposes and equipment, which is not in proper working order in all respects, shall not be used within the area described above.

Special attention shall be given to compaction in places close to walls where motorized vehicular equipment cannot reach. Within 3 feet of the back face of walls and within a greater distance at angle points of walls, each layer of pervious structure backfill shall be compacted by mechanical rammers, vibrators, or pneumatic tampers.

The dry density of each layer of pervious structure backfill formed from broken or crushed stone, broken or crushed gravel or reclaimed miscellaneous aggregate free of bituminous concrete shall have a dry density after compaction that is no less than 100 percent of the dry density for that material when tested in accordance with AASHTO T180, Method D. If a layer formed from reclaimed miscellaneous aggregate containing bituminous concrete is placed as pervious structure backfill, the wet density of this layer after compaction shall not be less than 100 percent of the wet density of that material when tested in accordance with AASHTO T180, Method D.

In this test, material retained on the ¾ inch sieve shall be replaced with material retained on the number 4 sieve, as noted as an option in the specifications for this test.

Each layer of the pervious structure backfill shall be compacted at optimum moisture content. No Subsequent layer shall be placed until the specified compaction is obtained for the pervious layer.

Where weep holes are installed, bagged stone shall be placed around the inlet end of each weep hole, to prevent movement of the pervious material into the weep hole. Approximately one cubic foot of crushed stone or gravel shall be enclosed in each of the burlap bags. All bags shall then be securely tied at the neck with cord or wire so that the enclosed material is contained loosely. The filled bags shall be stacked at the weep holes to the dimensions shown on the plans or as directed by the Engineer. The bags shall be unbroken at the time pervious material is placed around them, and bags which are broken or burst prior to or during the placing of the pervious material shall be replaced at the expense of the contractor.

624.4 Method of Measurement: Payment lines for pervious structure backfill shall coincide with the limits of the compacted pervious structure backfill as actually placed and ordered by the Engineer. There shall be no direct payment for bagged stone, but the cost thereof shall be considered as included in the cost of the work for "Pervious Structure Backfill".

624.5 Basis of Payment: Pervious structure backfill will be paid for the contract unit price per cubic yard for "Pervious Structure Backfill", complete in place.

630.0 CLASS "A" CONCRETE

630.1 General: This item applies to the construction of abutments and footings for the proposed pedestrian bridge as indicated on the contract plans for the "House Street Pedestrian Bridge" prepared by Anchor Engineering Services, Inc. This item shall conform to Section 6.01 CONCRETE FOR STRUCTURES, of the Form 816, with the following sections amended or replaced:

Section 6.01.03 - 21 – Surface Finish:

Delete "Table of Finishes" shown in Subarticle 6.01.03 - 21 and add the following:

TABLE OF FINISHES				
Component		TYPE OF FINISH		
		Float	Grout Clean Down	Rubbed
ABUTMENTS & WINGWALLS	Exposed Top Surfaces			X
	Exposed Side and Front Surfaces to 1 Foot Below Grade			X

Section 6.01.03 - 21 – Surface Finish, Rubbed Finish: Add the following:

The entire surface shall be rubbed within 24 hours after removal of forms.

630.2 Basis of Payment (Section 6.03.05): Payment for this work will be made as follows:

This material will be paid for at the contract unit price per cubic yard for "Class A Concrete", complete in place, which price shall include all materials, equipment, tools, labor and work incidental thereto, including heating, all admixtures and joint sealer.

No direct payment will be made for the work of testing the concrete in structures, any testing equipment, the instruction of its use, or for the concrete in or curing of the required test cylinders as specified, or for completion dates set in the forms; but, the cost of this work shall be considered as included in the general cost of the work. The work of transporting and testing these cylinders will be done by the Town without expense to the Contractor.

There shall be no direct payment for the cost of forming keys or construction joints, but the cost thereof shall be considered as included in the cost of the concrete items.

Where steel dowels are used, this material will be paid for under the reinforcement item. There shall be no direct payment for forming weep holes through the wall or for the pipe necessary for this purpose, but the cost thereof shall be considered as included in the general cost of the work.

There shall be no direct payment for the work of placing anchor bolts and similar materials.

632.0 CONDUIT SLEEVE

632.1 Description: This item shall consist of furnishing and installing a split steel casing pipe for the accommodation of an existing gas main within the northern abutment of the proposed pedestrian bridge as indicated on the contract plans for the "House Street Pedestrian Bridge" prepared by Anchor Engineering Services, Inc. The conduit sleeve shall be installed to the dimensions and details shown on the plans, or as directed by the Engineer and in conformity with these specifications.

632.2 Materials: The materials for this work shall conform to the following:

Casing Pipe shall consist of 6" nominal diameter schedule 40 steel pipe.

Welded studs shall be 1/2" diameter by 6" long welded studs conforming to the requirements of Section 5.09 of Form 816.

Pipe shall conform to the requirements of ASTM A153 and be galvanized after fabrication in conformance with the requirements of ASTM A123.

Link-Seal shall be as manufactured by Thunderline Corp. or approved equal. Size and type shall be as required for the gas main and pipe conduit sleeve type and sizes.

632.3 Construction Methods: This casing shall be installed in two sections at the location shown within the limits of Abutment No. 2 as shown on the plans. The Casing Pipe segments shall be held together with straps or banding prior to the placement of concrete. The Contractor shall exercise extreme care to ensure that the casing is maintained during placing and setting of the concrete.

632.4 Method of Measurement: This work, being paid for on a lump sum basis, will not be measured for payment.

632.5 Basis of Payment: This work will be paid for at the contract lump sum price for "Conduit Sleeve", complete in place, which price shall include all materials, fabrication, delivery, installation, shoring, temporary support, and all equipment, tools, labor and work incidental thereto.

640.0 DEFORMED STEEL BARS

640.1 General: This item applies to the construction of abutments and footings for the proposed pedestrian bridge as indicated on the contract plans for the "House Street Pedestrian Bridge" prepared by Anchor Engineering Services, Inc. This item shall conform to Section 6.02 REINFORCING STEEL, of the Form 816, with the following section(s) replaced:

640.2 Basis of Payment (Section 6.02.05): Payment for this work will be made as follows:

This work will be paid for at the contract unit price per pound for "Deformed Steel Bars", complete in place and accepted, including shop drawings, furnishing, fabricating and placing reinforcing steel, welding splices and all materials, equipment, tools, labor and work incidental thereto.

645.0 STRUCTURAL STEEL

645.1 General: This item applies to the construction of abutments and footings for the proposed pedestrian bridge as indicated on the contract plans for the "House Street Pedestrian Bridge" prepared by Anchor Engineering Services, Inc. This item shall conform to Section 6.03 STRUCTURAL STEEL, of the Form 816, with the following section replaced:

645.2 Basis of Payment: The structural steel and metal of the various other types covered by this section, incorporated in the completed and accepted structure, will be paid for at the contract unit price per pound (lb) for "Structural Steel".

Payment shall be for structural steel, complete in place, which price shall include furnishing, fabricating, transporting, erecting, surface preparation, painting, galvanizing and all materials, equipment, tools and labor incidental thereto.

No direct payment will be made for setting anchor bolts and anchorage material, preparing bearing areas, furnishing and placing materials under shoes and setting shoes, but the cost thereof shall be included in the general cost of the work.

Anchorage materials furnished by the Contractor for the superstructure and placed by the Contractor for the substructure will be included as part of the superstructure contract.

650.0 CONCRETE CYLINDER CURING BOX

650.1 General: This item shall conform to Section 6.12 CONCRETE CYLINDER CURING BOX, of the Form 816 with the following section(s) replaced:

650.2 Basis of Payment (Section 6.12.05): This work will be paid for at the contract price each for "Concrete Cylinder Curing Box," ordered and accepted on the project, which price shall include all materials, tools, equipment and labor incidental thereto, also all maintenance of all unit connections to operate the curing box.

660.0 DAMP-PROOFING

660.1 General: This item applies to the construction of abutments and footings for the proposed pedestrian bridge as indicated on the contract plans for the "House Street Pedestrian Bridge" prepared by Anchor Engineering Services, Inc. This item shall conform to Section 7.08 DAMP-PROOFING of the Form 816, with the following section replaced:

660.2 Basis of Payment (Section 7.08.05): This work will be paid for at the contract unit price per square yard for "Damp-proofing," complete in place, including all material, equipment, tools, labor and incidental expense.

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

To the Town of Glastonbury (hereinafter called "Town").

In compliance with your Invitation to Bid, the Bidder hereby proposed to furnish materials and/or services as per Bid Number GL-2010-53 in strict accordance with the Bid Documents, within the time set forth therein, and at the prices stated below.

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

The Bidder acknowledges receipt of the following:

Addendum #1 _____

Addendum #2 _____

Addendum #3 _____

It is the responsibility of the Bidder to check the Town's website for any Addendum before submitting the bid.

**HOUSE STREET SIDEWALKS AND PEDESTRIAN BRIDGE
 BID PROPOSAL**

BID #GL-2010-53

ITEM NO.	DESCRIPTION	QTY.	UNIT PRICE	EXTENSION
1.	Preparation of Site in accordance with Section 002.0 of the Detailed Construction Specifications	Lump Sum	\$ _____/L.S.	\$ _____
2.	Removal and Re-establishment of Existing Plantings in accordance with Section 003.0 of the Detailed Construction Specifications	Lump Sum	\$ _____/L.S.	\$ _____
3.	Permanent Pavement in accordance with Section 105.0 of the Detailed Construction Specifications	50 SY	\$ _____/S.Y.	\$ _____
4.	Bituminous Concrete Lip Curbing in accordance with Section 107.0 of the Detailed Construction Specifications	450 LF	\$ _____/L.F.	\$ _____
5.	4' Wide Concrete Sidewalk, 5" thick in accordance with Section 201.0 of the Detailed Construction Specifications	8,800 SF	\$ _____/S.F.	\$ _____
6.	4' Wide Concrete Sidewalk, 8" thick Reinforced in accordance with Section 201.0 of the Detailed Construction Specifications	80 SF	\$ _____/S.F.	\$ _____
7.	4' Wide Concrete Sidewalk, 5" thick With Process Stone Shoulders for Town Maintained Section in accordance with Section 201.0 of the Detailed Construction Specifications	1,100 SF	\$ _____/S.F.	\$ _____
8.	5' Wide Concrete Sidewalk, 5" thick in accordance with Section 201.0 of the Detailed Construction Specifications	1,000 SF	\$ _____/S.F.	\$ _____
9.	Pedestrian Ramps in accordance with Section 201.0 of the Detailed Construction Specifications	6 EACH	\$ _____/EA.	\$ _____
10.	Grading and Topsoil in accordance with Section 204.0 of the Detailed Construction Specifications	2,400 SY	\$ _____/S.Y.	\$ _____
11.	Turf Establishment in accordance with Section 205.0 of the Detailed Construction Specifications	2,400 SY	\$ _____/S.Y.	\$ _____
12.	Sedimentation Control Fence in accordance with Section 206.0 of the Detailed Construction Specifications	100 LF	\$ _____/L.F.	\$ _____

**HOUSE STREET SIDEWALKS AND PEDESTRIAN BRIDGE
 BID PROPOSAL**

BID #GL-2010-53

ITEM NO.	DESCRIPTION	QTY.	UNIT PRICE	EXTENSION
13.	Sedimentation Control Sack in accordance with Section 207.0 of the Detailed Construction Specifications	4 EACH	\$_____/EA.	\$_____
14.	Removal of Pavement in accordance with Section 213.0 of the Detailed Construction Specifications	300 SY	\$_____/S.Y.	\$_____
15.	Permanent Driveway Repairs in accordance with Section 215.0 of the Detailed Construction Specifications	200 SY	\$_____/S.Y.	\$_____
16.	Metal Beam Rail in accordance with Section 220.0 of the Detailed Construction Specifications	24 LF	\$_____/L.F.	\$_____
17.	Metal Beam Rail Terminal End Wrap in accordance with Section 220.0 of the Detailed Construction Specifications	2 EACH	\$_____/EA.	\$_____
18.	Tree Protection Trench In accordance with Section 228.0 of the Detailed Construction Specifications	50 LF	\$_____/L.F.	\$_____
19.	Segmental Retaining Wall (Site No. 1) in accordance with Section 240.0 of the Detailed Construction Specifications	Lump Sum	\$_____/L.S.	\$_____
20.	Segmental Retaining Wall (Site No. 2) in accordance with Section 241.0 of the Detailed Construction Specifications	Lump Sum	\$_____/L.S.	\$_____
21.	Maintenance and Protection of Traffic in accordance with Section 301.0 of the Detailed Construction Specifications	Lump Sum	\$_____/L.S.	\$_____
22.	Trafficperson (Police Officer) In accordance with Section 302.0 of the Detailed Construction Specifications	EST	\$10,000.00 /EST	\$ 10,000.00
23.	Trafficperson (Uniformed Flagger) in accordance with Section 302.0 of the Detailed Construction Specifications	640 HR	\$_____/HR	\$_____
24.	Convert CB to Type 'C' Catch Basin In accordance with Section 407.0 of the Detailed Construction Specifications	1 EACH	\$_____/EA.	\$_____
25.	Reset Manhole Top in accordance with Section 509.0 of the Detailed Construction Specifications	1 EACH	\$_____/EA.	\$_____

**HOUSE STREET SIDEWALKS AND PEDESTRIAN BRIDGE
 BID PROPOSAL**

BID #GL-2010-53

ITEM NO.	DESCRIPTION	QTY.	UNIT PRICE	EXTENSION
26.	Pre-fabricated Pedestrian Bridge in accordance with Section 600.0 of the Detailed Construction Specifications	Lump Sum	\$ _____/L.S.	\$ _____
27.	Structure Excavation Earth (Complete) in accordance with Section 610.0 of the Detailed Construction Specifications	68 C.Y.	\$ _____/C.Y.	\$ _____
28.	Structure Excavation Rock (Complete) in accordance with Section 610.0 of the Detailed Construction Specifications	4 C.Y.	\$ _____/C.Y.	\$ _____
29.	Protection and Support of Existing Underground CNG Facilities in accordance with Section 615.0 of the Detailed Construction Specifications	Lump Sum	\$ _____/L.S.	\$ _____
30.	Granular Fill in accordance with Section 620.0 of the Detailed Construction Specifications	28 C.Y.	\$ _____/C.Y.	\$ _____
31.	Pervious Structure Backfill in accordance with Section 624.0 of the Detailed Construction Specifications	33 C.Y.	\$ _____/C.Y.	\$ _____
32.	Class "A" Concrete in accordance with Section 630.0 of the Detailed Construction Specifications	12 C.Y.	\$ _____/C.Y.	\$ _____
33.	Conduit Sleeve in accordance with Section 632.0 of the Detailed Construction Specifications	Lump Sum	\$ _____/L.S.	\$ _____
34.	Deformed Steel Bars in accordance with Section 640.0 of the Detailed Construction Specifications	1,100 LB.	\$ _____/LB.	\$ _____
35.	Structural Steel in accordance with Section 645.0 of the Detailed Construction Specifications	70 LB.	\$ _____/LB.	\$ _____
36.	Concrete Cylinder Curing Box in accordance with Section 650.0 of the Detailed Construction Specifications	1 EACH	\$ _____/EA.	\$ _____
37.	Damp-proofing in accordance with Section 660.0 of the Detailed Construction Specifications	17 S.Y.	\$ _____/S.Y.	\$ _____

**HOUSE STREET SIDEWALKS AND PEDESTRIAN BRIDGE
BID PROPOSAL**

BID #GL-2010-53

TOTAL BID AMOUNT: \$ _____

WRITTEN BID AMOUNT: _____

TOWN OF GLASTONBURY

BID / PROPOSAL

GL #

2010-53

DATE ADVERTISED

6/29/2010

DATE / TIME DUE

**7/15/2010 at 11:00
a.m.**

NAME OF PROJECT

House Street Sidewalks and Pedestrian Bridge

It is the responsibility of the Bidder to clearly mark the outside of the bid envelope with the Bid Number, Date and Time of Bid Opening, and it also THE RESPONSIBILITY OF THE BIDDER TO CHECK THE TOWN'S WEBSITE BEFORE SUBMITTING BID FOR ADDENDUMS POSTED PRIOR TO BID OPENING.

CODE OF ETHICS:

I/We have reviewed a copy of the Town of Glastonbury's Code of Ethics and agree to submit a Consultant Acknowledgement Form if I/We are selected. Yes _____ No _____*

*Bidder is advised that effective August 1, 2003, the Town of Glastonbury cannot consider any bid or proposal where the Bidder has not agreed to the above statement.

Respectfully submitted:

Type or Print Name of Individual

Doing Business as (Trade Name)

Signature of Individual

Street Address

Title

City, State, Zip Code

Date

Telephone Number/Fax Number

E-Mail Address

SS# or TIN#

(Seal – If bid is by a Corporation)

Attest

ATTACHMENT A: PREVAILING WAGE DOCUMENTATION

Project: Construction To House Street Sidewalks And Pedestrian Bridge

**Minimum Rates and Classifications
for Heavy/Highway Construction
H 13919**

**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: PW-0922

Project Town: Glastonbury

FAP Number:

State Number:

Project: Construction To House Street Sidewalks And Pedestrian Bridge

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 7**

1) Boilermaker

\$33.79

34% + 8.96

1a) Bricklayer, Cement Masons, Cement Finishers, Plasterers, Stone Masons

\$32.43

20.54

2) Carpenters, Piledrivermen

\$29.00

17.80

2a) Diver Tenders

\$29.00

17.80

As of:

Tuesday, June 22, 2010

Project: Construction To House Street Sidewalks And Pedestrian Bridge

3) Divers	\$37.46	17.80
4) Painters: (Bridge Construction) Brush, Roller, Blasting (Sand, Water, etc.), Spray	\$39.20	14.55
4a) Painters: Brush and Roller	\$28.17	14.55
4b) Painters: Spray Only	\$31.17	14.55
4c) Painters: Steel Only	\$30.17	14.55
4d) Painters: Blast and Spray	\$31.17	14.55
4e) Painters: Tanks, Tower and Swing	\$30.17	14.55
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)	\$35.40	19.51

As of:

Tuesday, June 22, 2010

Project: Construction To House Street Sidewalks And Pedestrian Bridge

6) Ironworkers: (Ornamental, Reinforcing, Structural, and Precast Concrete Erection	\$32.75	25.08 + a
---	---------	-----------

7) Plumbers (Trade License required: (P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2) and Pipefitters (Including HVAC Work) (Trade License required: S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4 G-1, G-2, G-8, G-9)	\$36.32	21.26
--	---------	-------

----LABORERS---- - Last updated 5/10/10

8) Group 1: Laborer (Unskilled), Common or General, acetylene burner, concrete specialist	\$25.00	15.00
---	---------	-------

9) Group 2: Chain saw operators, fence and guard rail erectors, pneumatic tool operators, powdermen, air tool operator	\$25.25	15.00
--	---------	-------

10) Group 3: Pipelayers (Installation of water, storm drainage or sewage lines outside of the building line with P6, P7 license)	\$25.50	15.00
--	---------	-------

11) Group 4: Jackhammer/Pavement breaker (handheld); mason tenders (cement/concrete), catch basin builders, asphalt rakers, air track operators, block pavers and curb setters	\$25.50	15.00
--	---------	-------

12) Group 5: Toxic waste removal (non-mechanical systems)	\$27.00	15.00
---	---------	-------

Project: Construction To House Street Sidewalks And Pedestrian Bridge

13) Group 6: Blasters \$26.75 15.00

Group 7: Asbestos Removal, non-mechanical systems (does not include leaded joint pipe) \$26.00 15.00

Group 8: Traffic control signalmen \$16.00 15.00

----LABORERS (TUNNEL CONSTRUCTION, FREE AIR). Shield Drive and Liner Plate Tunnels in Free Air.---- Last updated 5/10/10----

13a) Miners, Motormen, Mucking Machine Operators, Nozzle Men, Grout Men, Shaft & Tunnel Steel & Rodmen, Shield & Erector, Arm Operator, Cable Tenders \$29.44 15.00 + a

13b) Brakemen, Trackmen \$28.58 15.00 + a

----CLEANING, CONCRETE AND CAULKING TUNNEL----Last updated 5/10/10----

14) Concrete Workers, Form Movers, and Strippers \$28.58 15.00 + a

As of:

Tuesday, June 22, 2010

Project: Construction To House Street Sidewalks And Pedestrian Bridge

15) Form Erectors	\$28.88	15.00 + a
-------------------	---------	-----------

----ROCK SHAFT LINING, CONCRETE, LINING OF SAME AND
TUNNEL IN FREE AIR:----Last updated 5/10/10----

16) Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers	\$28.58	15.00 + a
---	---------	-----------

17) Laborers Topside, Cage Tenders, Bellman	\$28.48	15.00 + a
---	---------	-----------

18) Miners	\$29.44	15.00 + a
------------	---------	-----------

----TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED
AIR: ----Last updated 5/10/10----

18a) Blaster	\$35.21	15.00 + a
--------------	---------	-----------

19) Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders	\$35.04	15.00 + a
---	---------	-----------

As of:

Tuesday, June 22, 2010

Project: Construction To House Street Sidewalks And Pedestrian Bridge

20) Change House Attendants, Powder Watchmen, Top on Iron Bolts	\$33.27	15.00 + a
---	---------	-----------

21) Mucking Machine Operator	\$35.75	15.00 + a
------------------------------	---------	-----------

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

Two axle trucks	\$27.88	14.53 + a
-----------------	---------	-----------

Three axle trucks; two axle ready mix	\$27.98	14.53 + a
---------------------------------------	---------	-----------

Three axle ready mix	\$28.03	14.53 + a
----------------------	---------	-----------

Four axle trucks, heavy duty trailer (up to 40 tons)	\$28.08	14.53 + a
--	---------	-----------

Four axle ready-mix	\$28.13	14.53 + a
---------------------	---------	-----------

As of:

Tuesday, June 22, 2010

Project: Construction To House Street Sidewalks And Pedestrian Bridge

Heavy duty trailer (40 tons and over)	\$28.33	14.53 + a
Specialized earth moving equipment other than conventional type on-the road trucks and semi-trailer (including Euclids)	\$28.13	14.53 + a

----POWER EQUIPMENT OPERATORS----

Group 1: Crane handling or erecting structural steel or stone, hoisting engineer (2 drums or over), front end loader (7 cubic yards or over), Work Boat 26 ft. & Over. (Trade License Required)	\$35.05	18.60 + a
Group 2: Cranes (100 ton rated capacity and over); Backhoe/Excavator over 2 cubic yards; Piledriver (\$3.00 premium when operator controls hammer). (Trade License Required)	\$34.73	18.60 + a
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 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	18.60 + a
Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper)	\$33.60	18.60 + a
Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Spreader; Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24" Mandrell)	\$33.01	18.60 + a

Project: Construction To House Street Sidewalks And Pedestrian Bridge

Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller.	\$33.01	18.60 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	\$32.70	18.60 + 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	18.60 + a
Group 8: Mechanic, Grease Truck Operator, Hydroblaster, Barrier Mover, Power Stone Spreader; Welder; Work Boat under 26 ft.; Transfer Machine.	\$31.96	18.60 + 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	18.60 + a
Group 10: Vibratory Hammer, Ice Machine, Diesel and Air Hammer, etc.	\$29.49	18.60 + a
Group 11: Conveyor, Earth Roller; Power Pavement Breaker (whiphammer), Robot Demolition Equipment.	\$29.49	18.60 + a
Group 12: Wellpoint Operator.	\$29.43	18.60 + a

Project: Construction To House Street Sidewalks And Pedestrian Bridge

Group 13: Compressor Battery Operator.	\$28.85	18.60 + a
Group 14: Elevator Operator; Tow Motor Operator (Solid Tire No Rough Terrain).	\$27.71	18.60 + a
Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	\$27.30	18.60 + a
Group 16: Maintenance Engineer/Oiler	\$26.65	18.60 + a
Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator.	\$30.96	18.60 + a
Group 18: Power Safety Boat; Vacuum Truck; Zim Mixer; Sweeper; (minimum for any job requiring CDL license).	\$28.54	18.60 + a

**NOTE: SEE BELOW

----LINE CONSTRUCTION----(Railroad Construction and Maintenance)----Last updated 4/17/09----

Project: Construction To House Street Sidewalks And Pedestrian Bridge

20) Lineman, Cable Splicer, Dynamite Man	\$35.65	10.70 + 6.25%
21) Heavy Equipment Operator	\$22.09	10.70 + 6.25%
22) Equipment Operator, Tractor Trailer Driver, Material Men	\$30.30	10.70 + 6.25%
23) Driver Groundmen	\$26.74	10.70 + 6.25%
----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:

Tuesday, June 22, 2010

Project: Construction To House Street Sidewalks And Pedestrian Bridge

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

Project: Construction To House Street Sidewalks And Pedestrian Bridge

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 journeyman instructing and supervising the work of each apprentice in a specific trade.

~~Connecticut General Statute Section 31-55a: Annual Adjustments to wage rates by contractors doing state work ~~

The Prevailing wage rates applicable to this project are subject to annual adjustments each July 1st for the duration of the project.

Each contractor shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.

It is the contractor's responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's website.

The annual adjustments will be posted on the Department of Labor's Web page: www.ct.gov/dol.

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:

Tuesday, June 22, 2010

Project: Construction To House Street Sidewalks And Pedestrian Bridge

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:

Tuesday, June 22, 2010

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 (including caulking),
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.

Bricklayer (Residential- Fairfield County)

- a. Paid Holiday: If an employee works on Christmas Eve until noon he shall be paid for 8 hours.

Electricians

Fairfield County: West of the Five Mile River in Norwalk

- a. \$2.00 per hour not to exceed \$14.00 per day.

Elevator Constructors: Mechanics

- a. Paid Holidays: New Year’s Day, Memorial Day, Independence Day, Labor Day, Veterans’ Day, Thanksgiving Day, Christmas Day, plus the Friday after Thanksgiving.
- b. Vacation: Employer contributes 8% of basic hourly rate for 5 years or more of service or 6% of basic hourly rate for 6 months to 5 years of service as vacation pay credit.

Glaziers

- a. Paid Holidays: Labor Day and Christmas Day.

Power Equipment Operators

(Heavy and Highway Construction & Building Construction)

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

Ironworkers

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

Laborers (Tunnel Construction)

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

Roofers

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

Sprinkler Fitters

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

Truck Drivers

(Heavy and Highway Construction & Building Construction)

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

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 Insulator

- Handle, install, apply, fabricate, distribute, prepare, alter, repair, or dismantle heat and frost insulation, including penetration and fire stopping work on all penetration fire stop systems.

Carpenter

- Assembly and installation of modular furniture/furniture systems.
[New] a. Free-standing furniture is not covered. This includes: 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.
- Applies fire stopping materials on fire resistive joint systems only.
- Installation of insulated material of all types whether blown, nailed or attached in other ways to walls, ceilings and floors of buildings.
- Installation of curtain/window walls only where attached to wood or metal studs.

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 (Revised)

- 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.

Electrician

- Installation or maintenance of telecommunication, LAN wiring or computer equipment.
- Low voltage wiring.

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

- Installs light metal sash, head sills, and 2-story aluminum storefronts.
- Installation of aluminum window walls and curtain walls is the "joint work" of the Glaziers and Ironworkers classification which requires either a blended rate or equal composite workforce.

Ironworkers

- Handling, sorting, and installation of reinforcing steel (rebar).
- Installation of aluminum window walls and curtain walls is the "joint work" of the Glaziers and Ironworkers classification which requires either a blended rate or equal composite workforce. Insulated metal and insulated composite panels are still installed by the Ironworker.
- Metal bridge rail (traffic), metal bridge handrail, and decorative security fence installation.

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.

Lead Paint Removal

- Painter 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 Rate
 1. Removal of lead paint from any surface NOT to be repainted.
 2. Where removal is on a *TOTAL* Demolition project only.

Roofers


- Preparation of surface, tear-off and/or removal of any type of roofing, and/or clean-up of any areas where a roof is to be relaid.

Sheet Metal Worker

- 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.

Truck Drivers

- Truck Drivers delivering asphalt are covered under prevailing wage while on the site and directly involved in the paving operation.
- 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 the Contract Compliance Unit, Wage and Workplace Standards Division, Connecticut Department of Labor, 200 Folly Brook Blvd, Wethersfield, CT 06 109 at (860) 263-6543.

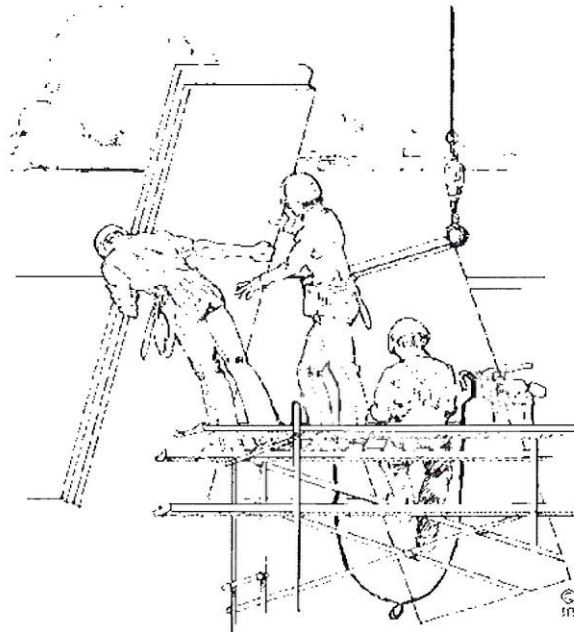
~NOTICE~

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): _____

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.

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.

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

Last Updated: April 22, 2010

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](#)

Published by the Connecticut Department of Labor, Project Management Office

ATTACHMENT B: CNG SPECIFICATIONS

**CNG GENERAL PROVISIONS FOR CONTRACTORS
WHEN EXCAVATING OVER CAST IRON GAS MAINS**

1. Vibratory rollers shall not be used on subbase materials in the vicinity of cast iron mains closer than the distance equal to the width of the roller drum from the axis of the pipe. Static-type rollers are allowed. Once subbase materials have been placed to grade, vibratory rollers are permitted for installing bituminous pavement.
2. When excavating to subgrade, the use of heavy duty bulldozers, scrapers, or other types of heavy earth-moving equipment are not allowed over cast iron gas mains. This type of equipment is limited to within 18 inches of cast iron pipe as measured from its o.d. Small lightweight dozers or tractor payload type equipment is permitted.
3. When excavating to subgrade, contractors must not allow use of heavy equipment to traverse across or over the cast iron gas main facility until the first course of base material has been installed. Compaction of the subbase material directly over the facility must be completed in the prescribed lifts without the use of heavy-duty impactors.
4. Hand probing to locate gas mains and services is required by Public Act 87-71. It is required that this procedure be practiced by all excavators prior to performing any excavation over the gas facilities. Especially susceptible to damage from road excavation are gas services and the hubs or flanges of cast iron gas mains.
5. When breaking roadway concrete, the use of a "headache ball" and impactors is not allowed.
6. Contractors are required to maintain the markout that the CNG representative has provided. Offset markers are permissible provided they are placed in an area where they are not covered or in any way encumbered from view. The contractor must maintain these marks for the duration of his work in that area.
7. When excavating a trench resulting in the crossing of a cast iron gas facility, exposure or undermining must be kept to a minimum. Contractors are responsible for providing temporary and permanent supports in these areas. Replacement of the cast iron facility at the contractor's expense can be avoided if exposure is limited as outlined in CNG Company Policy 480.01 (enclosed).
8. When an excavation parallels a cast iron facility, conflicts resulting in the replacement of the cast iron pipe can be avoided by prescribing to CNG Company Policy 930.01 (enclosed).
9. Contractors are required by State law to telephone "Call Before You Dig" prior to performing actual excavation, blasting, or demolition. The notifications to "Call Before You Dig" should be made at least 48 hours in advance.
10. When a contractor anticipates blasting to be necessary, the requirements of CNG's Blasting Policy 482.01 must be upheld (enclosed).

CONNECTICUT NATURAL GAS CORPORATION
DEPARTMENTAL PROCEDURE (480.01)
PROTECTION/REPLACEMENT OF EXPOSED GAS FACILITIES

PURPOSE

This procedure establishes Corporate policy for the protection/replacement of gas facilities when exposed.

The practice of the Corporation is to adhere to the prescriptions of appropriate sections of Title 49 of the Code of Federal Regulations, Part 192.614. Any contractor, utility company crew, builder, or excavator must adhere to the regulations.

PROCEDURE

I. DEFINITIONS

- A. Excavation - An operation for the purpose of movement or removal of earth, rock, or other materials in or on the ground, or otherwise disturbing the subsurface of the earth, by the use of powered or mechanized equipment. This includes, but is not limited to, digging, pile driving, augering, backfilling, test boring, drilling, grading, plowing-in, hammering, pulling-in, trenching, and tunneling.
- B. Damage - Includes, but is not limited to, the weakening of structure or support, penetration or destruction of the protective coating, housing, or the severance, partial or complete, of gas facilities.
- C. Gas Facility - All physical facilities which house or move gas for transportation and distribution including pipe, valves, and other appurtenances attached to the pipe.

II. NOTIFICATION

- A. A copy of this procedure is given to all agencies requesting review of their proposed construction designs.
- B. Upon receipt of outside agencies' plans, maps, and correspondence, Engineering Services reviews the project relative to the Corporation's facilities and responds to the requesting party.
- C. The excavator notifies "Call Before You Dig" (CBYD) as prescribed by Connecticut State Law, Section 16-345 of Public Act 87-71.
- D. Once excavation is started, the construction site supervisors are responsible for visiting the excavation site as outlined in Procedure #929.01 - "Monitoring of CNG Gas Facilities."

CONNECTICUT NATURAL GAS CORPORATION
DEPARTMENTAL PROCEDURE (480.01)
PROTECTION/REPLACEMENT OF EXPOSED GAS FACILITIES

III. GUIDELINES

A. General

1. The support for the gas facility either by strapping (see EXHIBITS I and III) or wooden vertical supports (see EXHIBIT II) is installed in a manner that the pipe does not move when the soil is removed from under the pipe and that undue stress is not imposed at fittings, valves, and other accessories on the pipe.
2. Trench shoring practices are not affected by the requirements outlined in this procedure.
3. An excavator is responsible for any damages that he/she inflicts upon the Corporation's facilities.
4. If the excavator/contractor is to be billed for damages or a replacement, the Distribution Supervisor documents, takes photographs of the affected facility, and immediately sends a letter (Exhibit IV) to the excavator/contractor stating that a bill will be forthcoming.
5. Any conflicts between CNG or the excavator/contractor regarding the billing for repair of the damage or the possible replacement are resolved by a Distribution Manager.

B. Crossings

1. Temporary Support - Cast Iron, Steel, Plastic

EXHIBIT I is a drawing which depicts a temporary support for a gas main that crosses a trench at any angle with an exposed pipe length of greater than six feet for cast iron or ten feet for plastic or steel (see 2b).

2. Permanent Support - Cast Iron

- a. When cast iron pipe crossing exposure is six feet or less in length, one permanent pipe support is required (see EXHIBIT II).
- b. When cast iron pipe is six inches or less in diameter and crossing exceeds six feet in length, the pipe is replaced. When this condition exists, the replacement consists of the length of exposure plus a minimum of four feet measured perpendicular from the trench wall to the pipe. The removal and replacement expense is borne by the excavator/contractor.

CONNECTICUT NATURAL GAS CORPORATION

DEPARTMENTAL PROCEDURE (480.01)

PROTECTION/REPLACEMENT OF EXPOSED GAS FACILITIES

- c. When cast iron pipe is greater than six inches in diameter and is crossed and exceeds six feet in length, two or more permanent pipe supports are required.
- d. When cast iron pipe is greater than six inches in diameter and is crossed and the exposure exceeds 12 feet in length, it is considered for possible replacement depending on site conditions.

3. Permanent Support - Steel, Plastic

A firm foundation of properly compacted backfill is the only permanent support required for plastic or steel pipe.

C. Parallel Excavation

1. Temporary Support - Cast Iron, Steel, Plastic

- a. The EXHIBIT III drawing depicts a type of temporary support for a gas main that is exposed or undermined by a parallel excavation.
- b. The policy of the Company is to replace the cast iron pipe at the excavator's/contractor's expense.
 - 1) If the relocation is not possible at the start of the project, temporary supporting may be permitted by CNG after consideration is given to the type of pipe, length of exposed pipe, service lines, and other pertinent facts.
 - 2) When temporary support is allowed, it should be done in a manner similar to EXHIBIT III. After the completion of the project, the replacement of a facility is scheduled to be replaced in accordance with Procedure #930.01 - "Replacement of Cast Iron Pipe."

Date: 3/22/07

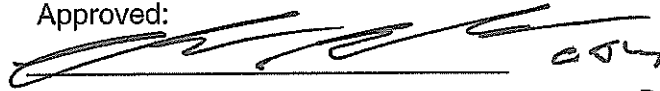
CONNECTICUT NATURAL GAS CORPORATION

DEPARTMENTAL PROCEDURE (480.01)

PROTECTION/REPLACEMENT OF EXPOSED GAS FACILITIES

2. Permanent Support - Cast Iron
 - a. After the excavation and before backfilling, if the length of exposure of a cast iron main is less than six feet, the main must be permanently supported as shown in EXHIBIT III.
 - b. If the length of exposure is greater than six feet, the pipe is replaced in compliance with Departmental Procedure #930.01. The cost of this replacement will be borne by the excavator/contractor.

Approved:



Regional Director – CNG Field Operations

3/22/07

EXHIBIT I

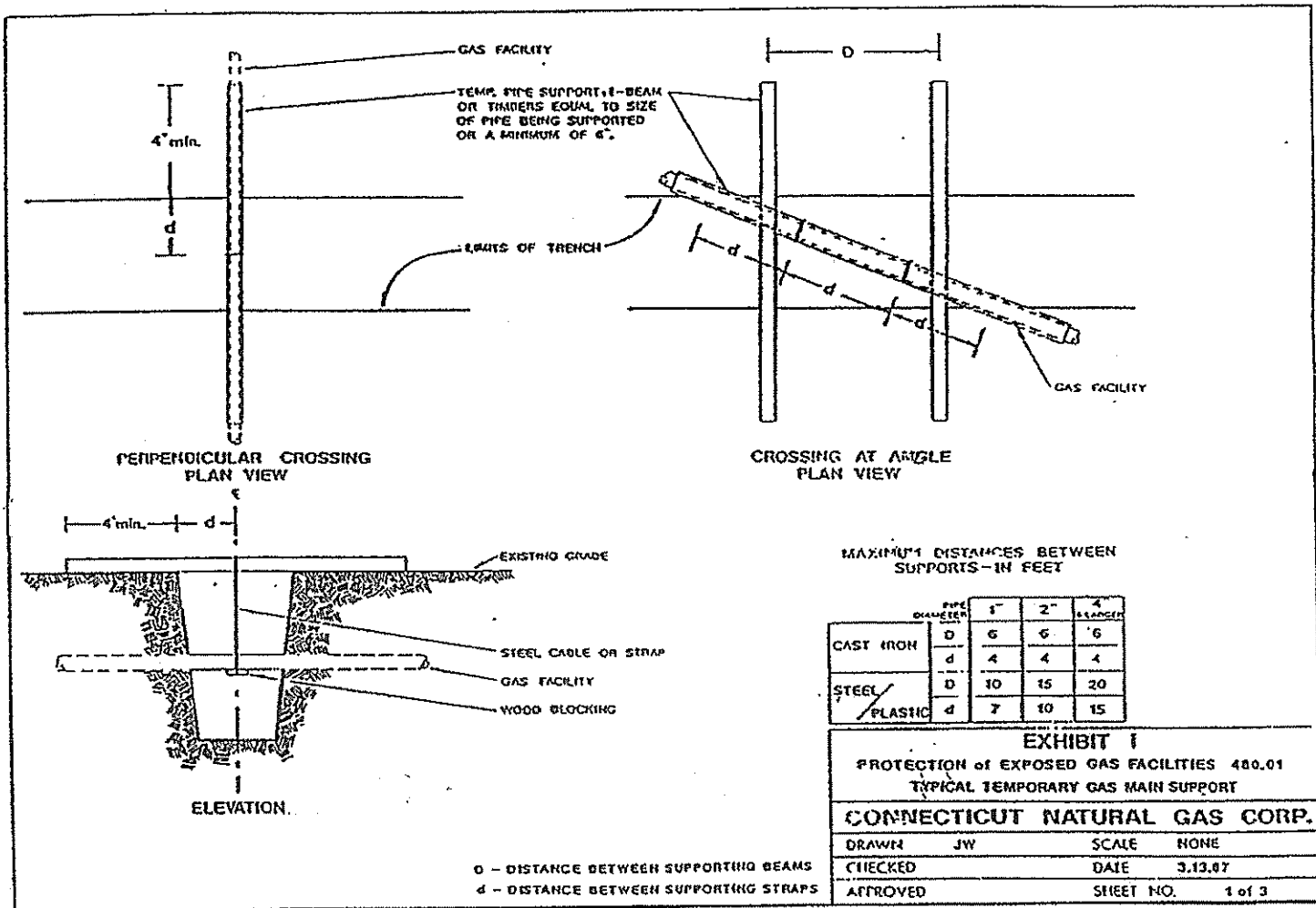
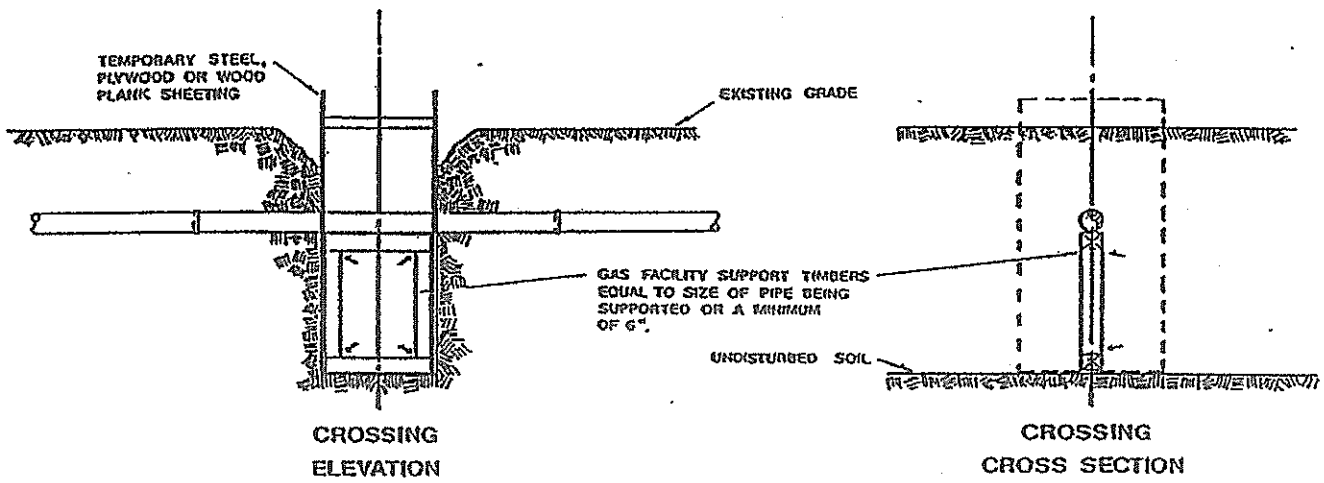


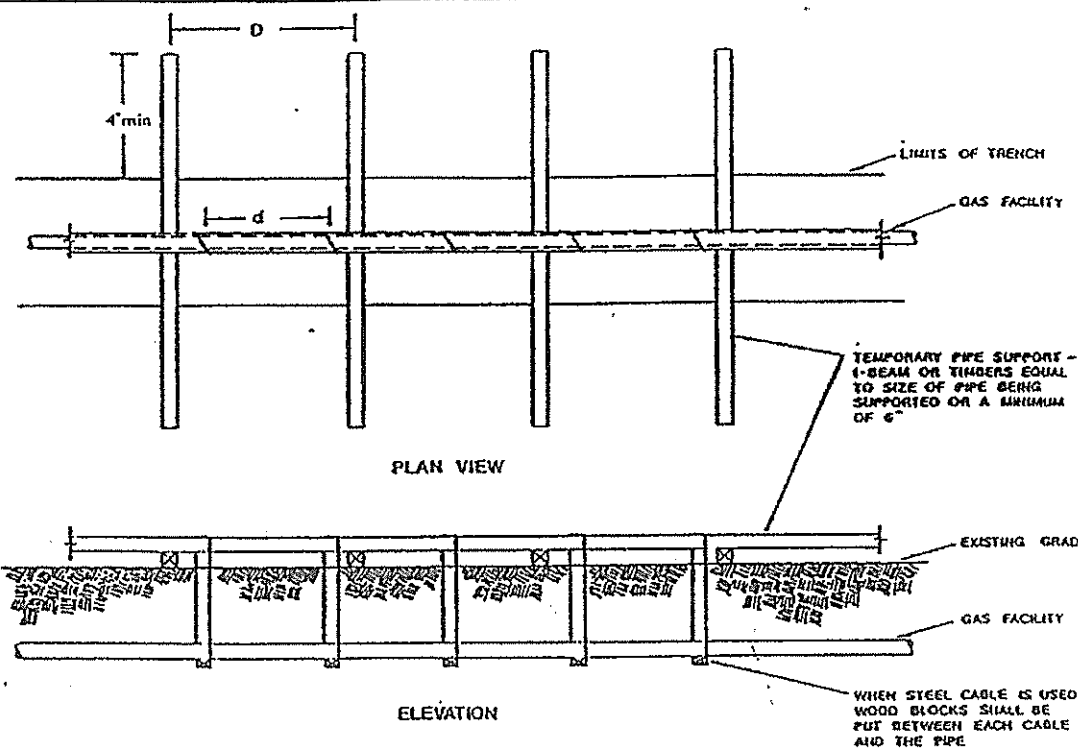
EXHIBIT II



WOOD WEDGES AS REQUIRED

EXHIBIT II			
PROTECTION of EXPOSED GAS FACILITIES 480.01			
TYPICAL PERMANENT CAST IRON GAS MAIN SUPPORT			
CONNECTICUT NATURAL GAS CORP.			
DRAWN	JW	SCALE	NONE
CHECKED		DATE	3.13.87
APPROVED		SHEET NO.	2 of 3

EXHIBIT III



MAXIMUM DISTANCES BETWEEN SUPPORTS - IN FEET

	PIPE DIAMETER	PIPE DIAMETER		
		1"	2"	4" & larger
CAST IRON	D	6	6	6
	d	4	4	4
STEEL / PLASTIC	D	10	15	20
	d	7	10	15

D - DISTANCE BETWEEN SUPPORTING BEAMS
d - DISTANCE BETWEEN SUPPORTING STRAPS

EXHIBIT III		
PROTECTION OF EXPOSED GAS FACILITIES 480.01		
TYPICAL TEMPORARY GAS MAIN SUPPORT/PARALLEL EXCAVATIONS		
CONNECTICUT NATURAL GAS CORP.		
DRAWN BY JW	SCALE	NONE
CHECKED	DATE	3.13.87
APPROVED	SHEET NO.	3 of 3

Date: 3/22/07

CONNECTICUT NATURAL GAS CORPORATION

DEPARTMENTAL PROCEDURE (480.01)

PROTECTION/REPLACEMENT OF EXPOSED GAS FACILITIES

Excavator's Name
Excavator's Address
City, State, Zip

Exhibit IV

Re:

Gentlemen:

Connecticut Natural Gas Construction Site Inspector, _____, states that as a result of your excavating operations on _____, approximately _____ feet of _____ inch cast iron pipe was exposed and/or undermined.

It is the responsibility of the excavator to exercise reasonable care in accordance with the State of Connecticut Public Act 87-71, Section 16-345-4, Responsibility of Excavators:

("a") [V] (5) Exercise reasonable care when working in proximity to the under-ground facilities of any public utility. REASONABLE CARE SHALL INCLUDE, WITHOUT LIMITATION, THE USE OF CONSTRUCTION METHODS APPROPRIATE TO ENSURE THE INTEGRITY OF EXISTING UTILITY FACILITIES AND THEIR TEMPORARY AND PERMANENT SUPPORT INCLUDING BUT NOT LIMITED TO ADEQUATE AND PROPER SHORING AND PROPER BACKFILL METHODS AND TECHNIQUES; THE SELECTION OF EQUIPMENT AND EXPLOSIVES CAPABLE OF PERFORMING THE WORK WITH THE MINIMUM REASONABLE LIKELIHOOD OF DISTURBANCE TO UNDERGROUND FACILITIES; ADEQUATE SUPERVISORY PERSONNEL TO ENSURE PROPER ACTIONS; PROPER UNDERSTANDING BY THE PERSONNEL ON THE JOB SITE OF THE AUTHORITY OF ALL PARTIES INVOLVED IN THE ACTIVITY SO THAT PROMPT ACTION CAN BE TAKEN IN THE EVENT OF UNANTICIPATED CONTACT WITH UNDERGROUND FACILITIES; ADEQUATE TRAINING OF EMPLOYEES IN EXECUTING THEIR ASSIGNMENTS TO ENSURE PROTECTION OF UTILITY FACILITIES AND THE PUBLIC; MAINTAINING NECESSARY LIAISON WITH OWNERS OF UNDERGROUND FACILITIES; SPONSORING PREPLANNING AND PRECONSTRUCTION MEETINGS AS NECESSARY AND COMPLYING WITH ALL APPLICABLE LAWS AND REGULATIONS."

The cast iron pipe appears to have been undermined to an extent that jeopardizes the integrity of the facility. As a result, replacement of the facility in the immediate vicinity of excavation may be necessary. If replacement is necessary, a bill for the replacement will be submitted to you in the near future once the work is complete.

If you have any questions regarding this matter, please contact me.

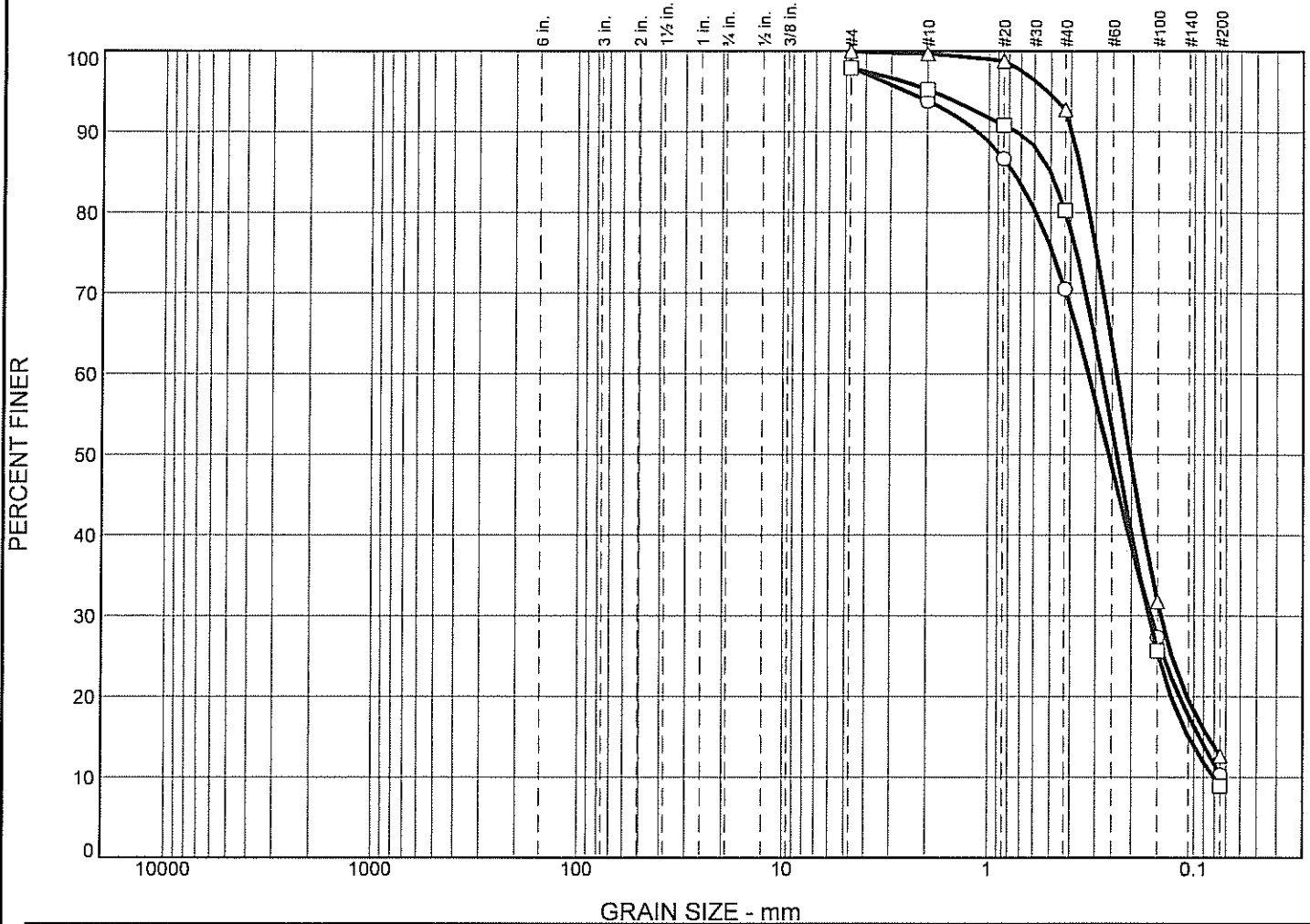
Very truly yours,

Construction Site Inspector

Refer to Procedure Memorandum #480.01

ATTACHMENT C: RETAINING WALL SOILS DATA

Particle Size Distribution Report



	% +3"		% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Fine	Coarse	Medium	Fine	Silt
○					4.2	23.3	60.2	10.3
□					2.7	14.9	71.4	8.9
△					0.3	6.9	80.2	12.6

	Colloids	LL	PL	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
○				0.7623	0.3248	0.2590	0.1616	0.0945			
□				0.5011	0.2806	0.2370	0.1653	0.1060	0.0806	1.21	3.48
△				0.3552	0.2377	0.2049	0.1445	0.0857			

	Material Description	USCS	AASHTO
○			
□			
△			

Project No. _____ **Client:** ANCHOR ENGINEERING
Project: SAMPLES DELIVERED 3/16/10
 Sample Number: #1
 Sample Number: #2
 Sample Number: #3
Date: _____ _____ _____

Remarks:

CLARENCE WELTI ASSOCIATES, INC.

Figure

GRAIN SIZE DISTRIBUTION TEST DATA

3/19/2010

Client: ANCHOR ENGINEERING

Project: SAMPLES DELIVERED 3/16/10
FROM SITE IN GLASTONBURY

Sample Number: #1

Material specification: (no specification envelope)

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 345.80
Tare Wt. = 0.00
Minus #200 from wash = 7.4%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Lower Spec. Limit, %	Upper Spec. Limit, %	Deviation From Spec., %
373.30	0.00	#4	7.50	0.00	98.0			
		#10	15.70	0.00	93.8			
		#20	26.60	0.00	86.7			
		#40	60.20	0.00	70.5			
		#100	161.20	0.00	27.4			
		#200	63.70	0.00	10.3			

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
				4.2	23.3	60.2	87.7			10.3

D10	D15	D20	D30	D50	D60	D80	D85	D90	D95
	0.0945	0.1170	0.1616	0.2590	0.3248	0.5910	0.7623	1.1346	2.5418

Fineness Modulus
1.53

GRAIN SIZE DISTRIBUTION TEST DATA

3/19/2010

Client: ANCHOR ENGINEERING

Project: SAMPLES DELIVERED 3/16/10
FROM SITE IN GLASTONBURY

Sample Number: #2

Material specification: (no specification envelope)

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 344.60
Tare Wt. = 0.00
Minus #200 from wash = 6.9%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Lower Spec. Limit, %	Upper Spec. Limit, %	Deviation From Spec., %
370.20	0.00	#4	7.80	0.00	97.9			
		#10	9.90	0.00	95.2			
		#20	16.20	0.00	90.8			
		#40	39.10	0.00	80.3			
		#100	202.30	0.00	25.6			
		#200	62.00	0.00	8.9			

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
				2.7	14.9	71.4	89.0			8.9

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
0.0806	0.1060	0.1283	0.1653	0.2370	0.2806	0.4217	0.5011	0.7345	1.9001

Fineness Modulus	C _u	C _c
1.36	3.48	1.21

GRAIN SIZE DISTRIBUTION TEST DATA

3/19/2010

Client: ANCHOR ENGINEERING

Project: SAMPLES DELIVERED 3/16/10
FROM SITE IN GLASTONBURY

Sample Number: #3

Material specification: (no specification envelope)

Sieve Test Data

Post #200 Wash Test Weights (grams): Dry Sample and Tare = 385.90
Tare Wt. = 0.00
Minus #200 from wash = 8.9%

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer	Lower Spec. Limit, %	Upper Spec. Limit, %	Deviation From Spec., %
423.70	0.00	#4	0.20	0.00	100.0			
		#10	1.20	0.00	99.7			
		#20	3.80	0.00	98.8			
		#40	25.50	0.00	92.8			
		#100	258.50	0.00	31.7			
		#200	81.00	0.00	12.6			

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
				0.3	6.9	80.2	87.4			12.6

D10	D15	D20	D30	D50	D60	D80	D85	D90	D95
	0.0857	0.1080	0.1445	0.2049	0.2377	0.3242	0.3552	0.3952	0.5203

Fineness Modulus
0.98



Accurate information you can rely on.

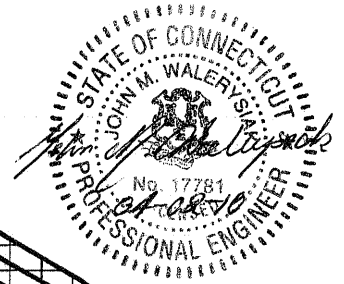
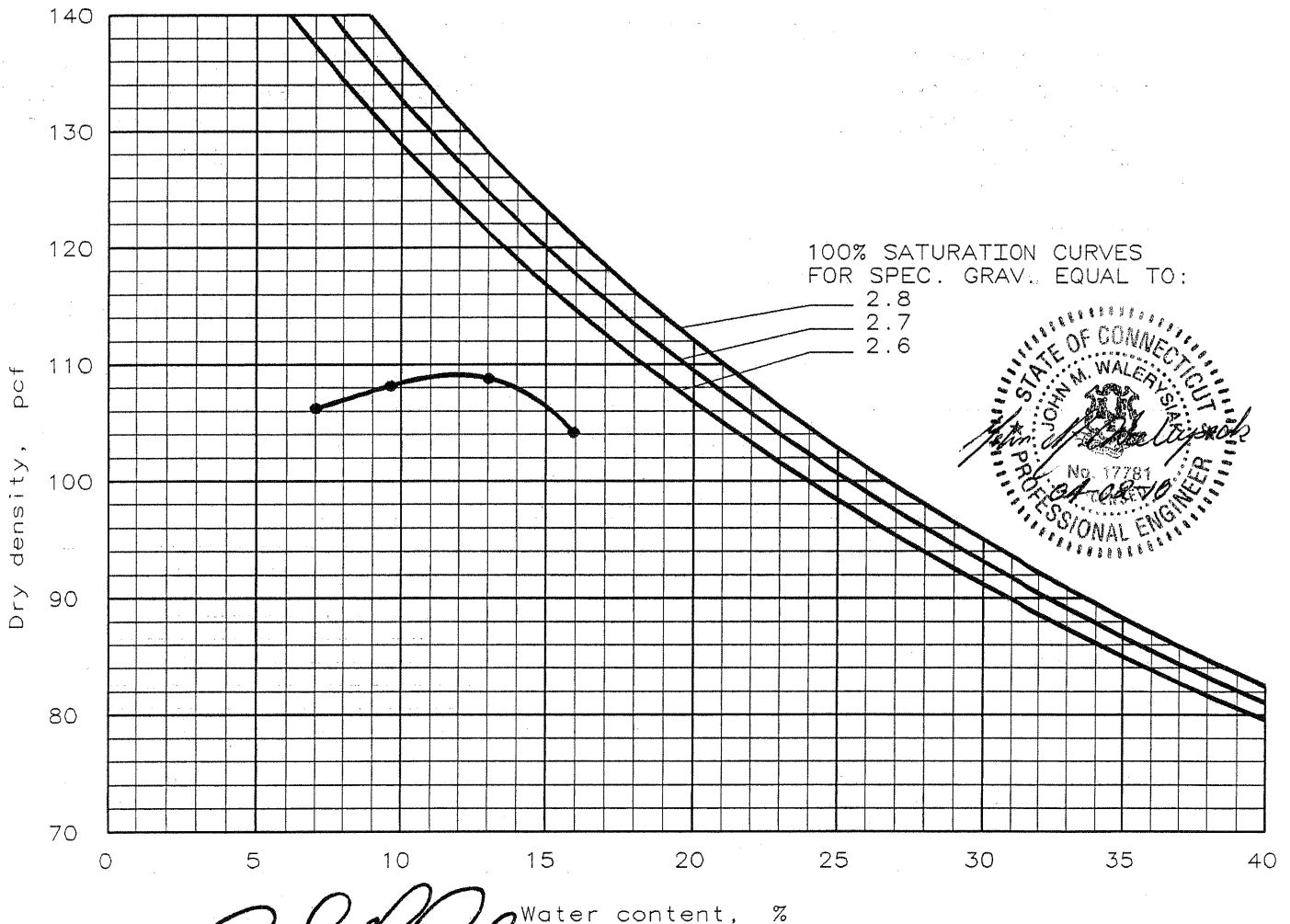
PROCTOR TEST REPORT

PROJECT: GLASTONBURY RETAINING WALL
CLIENT: CLARENCE WELTI ASSOCIATES
LAB NO.: 26674
SOURCE: ON-SITE
USE: RETAINING WALL BACKFILL
REMARKS:

REPORT NO.: 001
PROJECT NO.: 9533
DATE: 04/01/10
SAMPLED BY: CLIENT
GRADATION ASSOCIATED
WITH THIS SAMPLE: Yes

TEST METHODS: Test specification: ASTM D 1557 Procedure C, Modified
MATERIAL DESCRIPTION: DRK YLW/BRWN SAND; LTL FINES; TRACE GRVL
% > 3/4 in = 0.0%
TESTED BY: RC/DJH

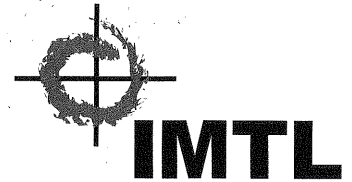
TEST RESULTS
Maximum dry density = 109.1 pcf
Optimum moisture = 11.9 %



REVIEWED BY: Carol P. Daniels 4-2-10 Water content, %

Independent Materials Testing Laboratories, Inc. T 860.747.1000 mail@imtlct.com
57 N. Washington St., P.O. Box 745, Plainville, CT 06062 F 860.747.6455 www.imtlct.com

Test reports may not be reproduced except in full with approval of IMTL. All results relate to the items tested. Test reports must not be used by client to claim product endorsement by NVLAP or any agency of the US Government.



Accurate information you can rely on.

Soil Gradation Report

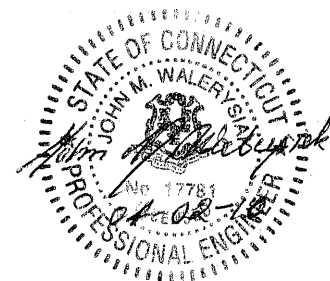
GRADATION ASTM D-422; WET WASH ASTM D-1140			
PROJECT:	GLASTONBURY RETAINING WALL	PROJECT NO.:	9533
CLIENT:	CLARENCE WELTI ASSOCIATES	REPORT NO.:	002
LAB NO.:	26674	DATE:	04/01/10
USE:	RETAINING WALL BACKFILL	SAMPLED BY:	CLIENT
SPEC A:	N/A	SOURCE:	ON-SITE

GRADATION RESULTS

SIEVE #	% PASS	SPEC A
90 mm (3-1/2")	100.0	
75 mm (3")	100.0	
63 mm (2-1/2")	100.0	
50 mm (2")	100.0	
37.5 mm (1-1/2")	100.0	
25 mm (1")	100.0	
19 mm (3/4")	100.0	
12.5 mm (1/2")	100.0	
6.3 mm (1/4")	99.3	
4.75 mm (#4)	98.8	
2.0 mm (#10)	96.4	
425 μm (#40)	83.5	
150 μm (#100)	35.9	
75 μm (#200)	12.2	

COMPLIED WITH: SPEC A: N/A
 ... AS PER GRADATION ABOVE

SOIL DESCRIPTION: DARK YELLOW/BROWN SAND; LITTLE FINES; TRACE GRAVEL
 MATERIAL CONTAINS SMALL STICKS



REVIEWED BY: Carol P. [Signature] 4-2-10
 pc: Max Welti, Clarence Welti Associates

Independent Materials Testing Laboratories, Inc. T 860.747.1000 mail@imtlct.com
 57 N. Washington St., P.O. Box 745, Plainville, CT 06062 F 860.747.6455 www.imtlct.com

Test reports may not be reproduced except in full with approval of IMTL. All results relate to the items tested. Test reports must not be used by client to claim product endorsement by NVLAP or any agency of the US Government.

ATTACHMENT D: PEDESTRIAN BRIDGE SOILS DATA



G E O D E S I G N
I N C O R P O R A T E D

*GEOTECHNICAL | CONSTRUCTION | ENVIRONMENTAL
ENGINEERS and SCIENTISTS*

April 12, 2010
File No. 3254-006.0

Mr. Timothy J. Young, P.E.
Anchor Engineering Services, Inc.
41 Sequin Drive
Glastonbury, Connecticut 06033

Re: Geotechnical Engineering Report
House Street Pedestrian Bridge
Glastonbury, Connecticut

Dear Mr. Young:

We are pleased to provide our findings and recommendations resulting from our geotechnical engineering investigation for the proposed House Street Pedestrian Bridge in Glastonbury, Connecticut.

PURPOSE AND SCOPE

GeoDesign, Inc. (GeoDesign) has completed a subsurface exploration and a limited geotechnical engineering evaluation for the proposed House Street Pedestrian Bridge in Glastonbury, Connecticut. Our geotechnical engineering services for this project included characterizing the subsurface conditions at the south abutment of the proposed bridge, performing geotechnical engineering analyses, and providing geotechnical design and construction recommendations for the project

Our services were provided in accordance with our March 2, 2010 proposal, which were based in part on drawings provided to us by your office depicting site topography (Plan Depicting Proposed Sidewalks for House Street, dated January 12, 2010). Elevations (El.) stated in this report are in feet and based on the NAVD88 datum.

SITE DESCRIPTION AND PROPOSED CONSTRUCTION

The site is located along the east side of House Street near the intersection of Nye Street and the proposed bridge will span Salmon Brook. The new bridge will be a prefabricated structure supported by concrete abutments at each end. The proposed bridge will be approximately 60 feet long and 8 feet wide with the deck at approximately El. 32 feet.



Foundation loads for the proposed bridge were not available to prepare this report. However, based on the size and nature of the structure, we anticipate the foundations will be relatively lightly loaded.

SUBSURFACE EXPLORATION AND SUBSURFACE CONDITIONS

To collect the necessary subsurface information, we originally proposed performing two geotechnical borings (i.e. one at each abutment) to explore the subsurface conditions at the site; however, the Town of Glastonbury decided to perform only one boring at the south abutment.

A geotechnical boring was completed at the south abutment on March 11, 2010. The boring was located in the field by taping and visual estimations from existing site features. The approximate boring location is shown on the Boring Location Plan in Appendix 1. The approximate ground surface elevation at the boring location (estimated from the above referenced Site Plan) is approximately El. 31.0 feet and is provided on the test boring log in Appendix 2.

Test Boring

Test boring B-1 was performed to a depth of approximately 21 feet below existing grade to explore the subsurface conditions in the area of the proposed south abutment. Representative samples were obtained by split barrel sampling procedures in general accordance with ASTM Specification D-1586. The split-barrel sampling procedure utilizes a standard 2-inch O.D. split-barrel sampler that is driven into the bottom of the boring with a 140-pound hammer falling a distance of 30 inches. The number of blows required to advance the sampler the middle 12-inches of a normal 24-inch penetration is recorded as the Standard Penetration Resistance Value (N). These "N" values provide an indication of the relative density of the material.

Soil and Bedrock

The generalized subsurface profile, as inferred from the subsurface exploration data, consists of Fill overlying Sand and Gravel over Bedrock. The following is a description of the subsurface materials encountered.

Granular Fill was encountered at the ground surface and was approximately 9 feet thick. The Fill generally consisted of very loose to loose, fine Sand with varying fractions of Gravel, Silt, and Organics. A very dense stratum of fine to coarse Sand and Gravel was encountered below the Fill, which may be underlain by Bedrock. Bedrock was inferred approximately 21 feet below existing grade or El. 11 feet by auger/split-spoon refusal.



Groundwater

Groundwater was estimated to be approximately seven (7) feet below existing grade or El. 24 during drilling, which is consistent with the level of the nearby Salmon Brook.

GEOTECHNICAL RECOMMENDATIONS

Abutment Foundations

Based on our understanding of the project and the subsurface conditions summarized above, it is our opinion that support of the proposed structure be provided by conventional spread footings. We recommend that footings bear on either undisturbed natural Sand and Gravel or compacted granular fill or crushed stone over undisturbed natural soils. Fill is not a suitable bearing material for support of foundations. Since the depth to natural Sand and Gravel at the north abutment is not known, we understand that Anchor Engineering will confirm the location of the recommended bearing materials during construction.

Based on the above, we recommended a net allowable bearing pressure of two and one-half tons per square foot (tsf) for spread footings bearing on the natural Sand and Gravel or bearing on compacted granular fill or crushed stone over undisturbed natural soils. Continuous wall footings should be at least 18 inches wide. The anticipated total settlement and differential settlement for the recommended bearing pressure is less than one-half inch.

Spread footings should bear at least 42 inches below final grade to protect against frost and should be located such that they bear below a line drawn upward and away from the near bottom edge of all new and existing construction at a slope of two horizontal to one vertical (2H:1V).

Lateral Earth Pressures

Based on the proposed layout and grading, we anticipate there will be unbalanced earth loading at the abutments and they should be designed to resist lateral earth pressures. We recommend the abutments be designed for the active earth pressure case with a minimum lateral soil pressure of 35 pounds per cubic foot (pcf) calculated based on an equivalent fluid pressure multiplied by the abutment height. Where the calculated earth pressure is less than 200 pounds per square foot (psf), the minimum earth pressure value should be increased to 200 psf to account for stresses created by compaction near the abutments. Other live or dead loads must also be considered as an additional uniform lateral pressure over the entire height of the abutment equal to 0.33 times the surcharge. These pressures



do not include hydrostatic pressures and we assume that free draining backfill materials and a horizontal backfill geometry.

CONSTRUCTION RECOMMENDATIONS

Subgrade Preparation

Subgrade preparation should be conducted in such a way as to minimize disturbance. Disturbed subgrades should be over-excavated to stable ground and replaced by compacted granular fill or crushed stone. Final subgrades shall be proof compacted with hand operated compaction equipment.

Reuse of Excavated Material

Excavated soils may not satisfy the requirements for granular fill but may be used as ordinary fill in non-load bearing areas outside of the bridge abutments. Where excavated materials will be reused on-site, they must be segregated by backfill type and stockpiled. All other unsuitable materials should be disposed of in accordance with project requirements. Reuse of any surplus excavated materials will limit the amount of off-site backfill and the amount of soil disposal required for the project.

Fill Material and Compaction

Granular fill for use below footings should be graded within the following limits:

Sieve Size	Percent finer by weight
2/3 loose lift thickness*	100%
No. 10	30 – 100
No. 40	10 – 90
No. 200	5 – 15

* 8-inches maximum

Fill materials shall consist of inorganic soil free of clay, loam, ice and snow, tree stumps, roots, and other organic matter. All backfill materials placed should be compacted to at least 95 percent of the maximum dry density as determined by the Modified Proctor Test (ASTM D-1557, Method C).

Temporary Excavation Support

An excavation of at least 9 feet deep will be required at the south abutment and, depending on the subsurface conditions encountered, an excavation deeper than 9 feet may be required for the north abutment.



Where excavation sides cannot be sloped to the ground surface in accordance with OSHA Standards a temporary earth support system will be required. The temporary earth support system and method of installation will depend on many factors. The temporary earth support system should be selected by the Contractor and designed by a Professional Engineer registered in the State of Connecticut and retained by the Contractor.

Temporary Groundwater Control

Construction dewatering may be required to construct spread footings and/or place backfill. Constructing small earth berms and grading to achieve positive drainage away from excavations are recommended to control surface water runoff. Dewatering efforts must satisfy requirements of local and state authorities. The Contractor must properly dispose of pumped groundwater in accordance with Federal, State, and Local regulations.

LIMITATIONS

This report is subject to the Limitations in Appendix 3.

Thank you for the opportunity to assist you with this project. If you have any questions please feel free to call the undersigned at 203-758-8836; (extension 133).

Sincerely,

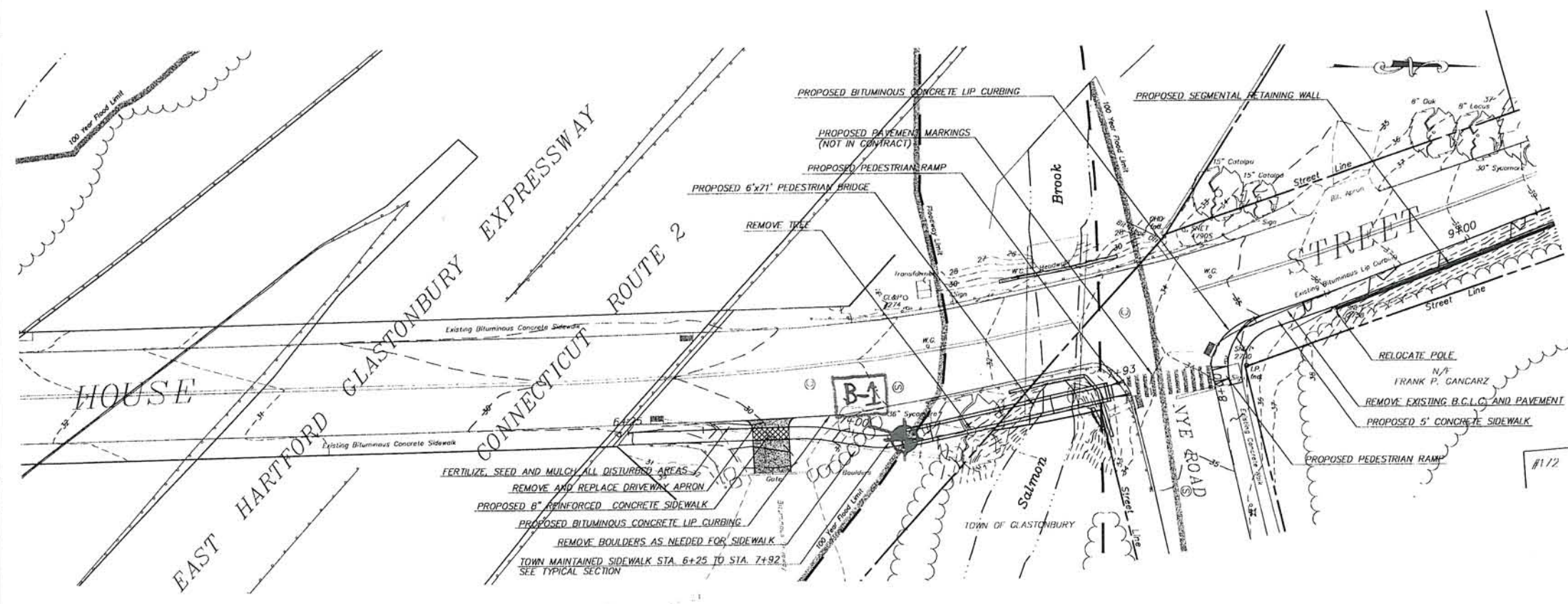
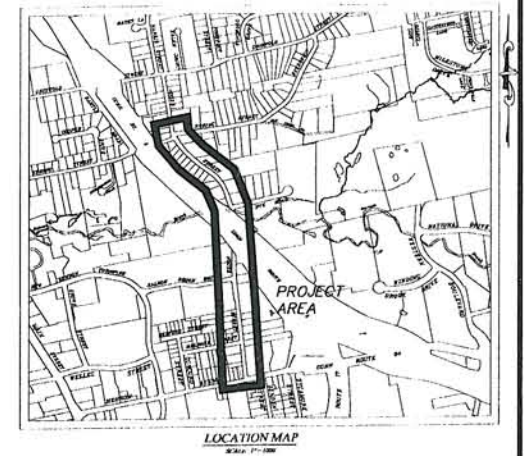
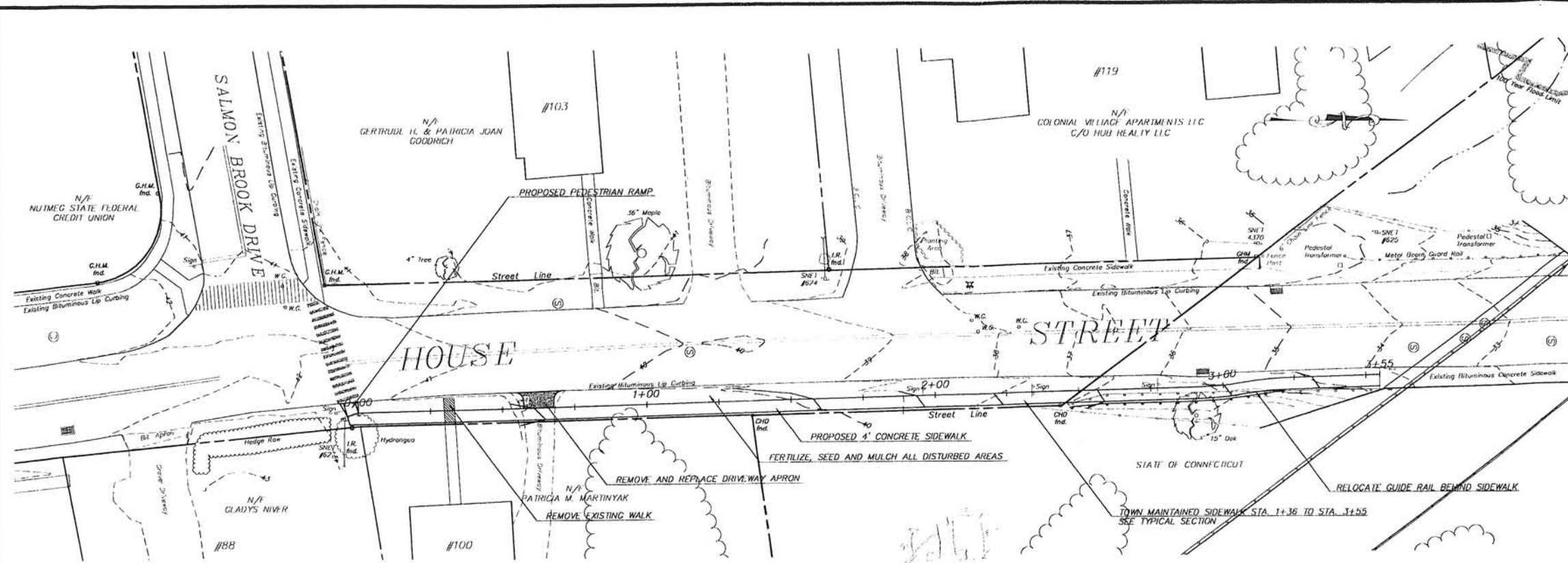
GeoDesign, Inc.

Joseph W. Kidd, P.E.
Senior Associate

Attachments: Appendix 1 Boring Location Plan
Appendix 2 Test Boring Log
Appendix 3 Limitations

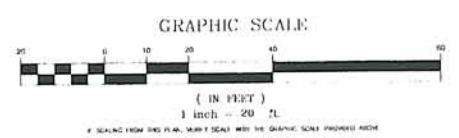
APPENDIX 1
BORING LOCATION PLAN

FILE: H:\DWG\Street House Sidewalk Phase 1 Topography USER: Saver Proj. DATE: 1/12/2010



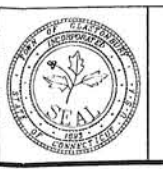
TEST BORING LOCATION

- NOTES:
1. ALL PROPERTY LINE AND RIGHT OF WAY INFORMATION DEPICTED ON THESE PLANS WERE TAKEN FROM TOWN OF GLASTONBURY ASSESSOR MAPS AND ARE TO BE CONSIDERED APPROXIMATE AND INFORMATIONAL IN NATURE, AND ARE NOT TO BE CONSTRUED AS AN ACCURATE BOUNDARY DETERMINATION.
 2. ALL UTILITY INFORMATION AND DATA SHOWN OR INDICATED IN THE CONTRACT DOCUMENTS ARE COMPILED FROM MAPS AND DATA FURNISHED BY OTHERS. ANY SUCH INFORMATION SHOULD NOT BE CONSTRUED AS ACCURATE OR COMPLETE AND THE CONTRACTOR SHALL VERIFY ALL LOCATIONS PRIOR TO CONSTRUCTION.
 3. THESE PLANS ARE NOT TO BE USED FOR THE LOCATION OF UNDERGROUND UTILITIES - Call Before You Dig CBYD (1-800-922-4445) A MINIMUM OF TWO WORKING DAYS BEFORE PERFORMING ANY EXCAVATION.
 4. ALL TREES NOT IDENTIFIED FOR REMOVAL SHALL BE TRIMMED BY A LICENSED ARBORIST AS REQUIRED TO RAISE THE CANOPY FOR ACCESS BY CONSTRUCTION EQUIPMENT AND PEDESTRIANS, AND SUCH TREES SHALL BE PROTECTED WITH ORANGE CONSTRUCTION FENCE. THIS WORK SHALL BE INCLUDED UNDER THE SITE PREPARATION PAY ITEM.
 5. INSTALLATION OF TREE PROTECTION TRENCH AND ADDITIONAL HAND PRUNING OF ROOTS DISTURBED DURING EXCAVATION SHALL BE PERFORMED BY A CT LICENSED ARBORIST.
 6. INSTALL SILT SACKS IN CATCH BASINS ADJACENT TO WORK AREA FOR PROTECTION OF INLETS FROM SEDIMENTATION.
 7. PAVEMENT MARKINGS ARE NOT INCLUDED IN THIS CONTRACT.



DRAWING ISSUE STATUS		
NO.	DESCRIPTION	DATE
1.	NOT FOR CONSTRUCTION	1-12-2010

SCALE: AS SHOWN DATE: 1-12-2010
 DRAWN BY: S.Troy
 CHECKED BY: S.M.B.
 APPROVED BY: D.A.P.
 ST. FILE:
 ALL RIGHTS RESERVED BY THE ENGINEER. NO PART OF THIS DOCUMENT IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.



**PLAN DEPICTING
 PROPOSED SIDEWALKS
 for
 HOUSE STREET
 GLASTONBURY, CONNECTICUT**

SHEET NO. **2** OF 8

APPENDIX 2
TEST BORING LOG

BORING LOG

Project Name

House Street Pedestrian Bridge
Glastonbury, Connecticut

Boring No.: **B-1**
 Page No.: **1 of 1**
 File No.: **3254-006.00**
 Checked By: **JWK**

Boring Company: New England Boring Contractors
 Foreman: Mike St. John
 GeoDesign Rep.: Jesse McIntyre
 Date Started: March 11, 2010 Date Finished: March 11, 2010
 N. Coordinate: _____ E. Coordinate: _____
 Ground Surface Elevation (feet): 31.0
 Station: _____ Offset: ft

Type:	Casing:	Sampler:	Groundwater Observations			
			Date	Depth (ft)	Elev. (ft)	Notes
H.S.A.		SS				
I.D.:	2.75 in.	1.38 in.				
Hammer Wt.:	N/A	140 lbs	3/11/10	7.5	23.5	Wet sample
Hammer Fall:	N/A	30 in.				
Rig Type:		Mobile B53				
Hammer Type:		Safety - Cathead				

Depth (ft)	Casing Blows/ft	Sample Information										Strata Description	Symbol	Sample Description	
		Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	Blows / 6 inch Interval				Coring Time (min./ft)				Moisture Content (%)
							0 - 6	6 - 12	12 - 18	18 - 24					
	1	SS	24	13	0.0	1	1	2	2				Fill		Very loose, brown fine SAND, trace Organics
	2	SS	24	14	2.0	4	3	3	3						Loose, brown fine SAND, some fine Gravel, trace Organics
5	3	SS	24	18	5.0	3	2	2	1						Loose, brown fine SAND, trace Silt
	4	SS	24	21	7.0	2	3	3	6						Loose, brown fine to medium SAND, trace Silt, trace Organics
10	5	SS	24	18	10.0	14	36	27	29				Sand & Gravel		Very dense, brown fine to coarse SAND and fine to coarse GRAVEL, little Silt
15	6	SS	18	12	15.0	27	62	97							Very dense, brown fine to coarse SAND and fine GRAVEL, trace Silt
20	7	SS	6	6	20.0	100									Very dense, brown fine to coarse SAND and fine GRAVEL, some Silt
25													Bottom of Exploration at 20.5 ft		

Remarks: Encountered auger resistance at approximately 9.5 feet below existing grade to bottom of exploration.
 Spoon refusal at approximately 15 feet below existing grade.
 Auger refusal at approximately 21 feet below existing grade.

Notes: 1) Stratification lines represent approximate boundary between material types, transitions may be gradual.
 2) Water level readings have been made at times and under conditions stated, fluctuations of groundwater may occur due to other factors than those present at the time measurements were made. AC = After coring; NR = Not Recorded.
 3) Abbreviations: A = Auger; C = Core; MC=Macrocore; D = Driven; G = Grab; PS = Piston Sample; SS = Split Spoon; SSL = 3.5 Inch ID Split Spoon; ST = Shelby Tube
 V = Vane; WOR/H = Weight of Rod/Hammer
 4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

1 - BORING LOG MC 2008-2009 BORING LOG.GPJ GEODESIGN STANDARD GDT 3/16/10

APPENDIX 3
LIMITATIONS

LIMITATIONS

Explorations

1. The analysis and recommendations submitted in this report are based in part upon the data obtained from widely spaced subsurface explorations. The nature and extent of variations between these explorations may not become evident until construction. If variations then appear evident, it will be necessary to reevaluate the recommendations of this report.
2. The generalized soil profile described in the text is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized and have been developed by interpretations of widely spaced explorations and samples; actual soil transitions are probably more erratic. For specific information, refer to the boring logs.
3. Water level readings have been made in the drill holes at times and under conditions stated on the logs. These data have been reviewed and interpretations made in the text of this report. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, temperature and other factors occurring since the time measurements were made.

Review

4. In the event that any changes in the nature, design or location of the proposed structures are planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing by GeoDesign, Inc. It is recommended that this firm be provided the opportunity for a general review of final design and specifications in order that earthwork and foundation recommendations may be properly interpreted and implemented in the design and specifications.

Uses of Report

5. This report has been prepared for the exclusive use of Anchor Engineering Services, Inc. for specific application to the proposed House Street Pedestrian Bridge in Glastonbury, Connecticut, in accordance with generally accepted soil and foundation engineering practices. No other warranty, express or implied, is made.

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT TOWN OF GLASTONBURY	PROJECT NAME PEDESTRIAN BRIDGE OVER SALMON BROOK LOCATION HOUSE STREET, GLASTONBURY, CT.
---	--	---

	AUGER	CASING	SAMPLER	CORE BAR.	OFFSET 2' RIGHT	SURFACE ELEV.	HOLE NO. B-2
TYPE	HSA		SS		LINE & STA. 7+95	GROUND WATER OBSERVATIONS	
SIZE I.D.	3.75"		1.375"		N. COORDINATE	AT 13.0 FT AFTER 0 HOURS	START DATE 6/2/10
HAMMER WT.			140 lbs		E. COORDINATE	AT FT. AFTER HOURS	FINISH DATE 6/2/10
HAMMER FALL			30"				

DEPTH	SAMPLE			A	STRATUM DESCRIPTION + REMARKS	ELEV.
	NO.	BLOWS/6"	DEPTH			
0					ASPHALT BR. FINE-MED. SAND, SOME GRAVEL, LITTLE SILT - FILL	0.2
5	1	2-2-2	5.00'-6.50'		BR. FINE-MED. SAND AND SILT, TRACE FINE GRAVEL	7.0
10	2	2-3-7	10.00'-11.50'		RED/BR. FINE-MED. SAND, SOME SILT, LITTLE GRAVEL	11.0
15	3	17-32-37	15.00'-16.50'		WEATHERED/DECOMPOSED ROCK	16.0
20	4	60	20.00'-20.25'		AUGER REFUSAL @ 20.3'	20.3
25						
30						
35						

LEGEND: COL. A:RECOVERY " SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%	DRILLER: J. BREWER INSPECTOR: <hr/> SHEET 1 OF 1 HOLE NO. B-2
--	--

ATTACHMENT E: CONSTRUCTION PLANS