<u>Bidding Documents</u>

Shelbourne Drive
Channel Restoration
Woodridge Lake Drainage Improvements

Town of Goshen, Connecticut

Issue Date: May 23, 2016

Prepared By:
Lenard Engineering, Inc.
For the
Town of Goshen

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Town of Goshen

Advertisement for Bids

The Town of Goshen, Connecticut will receive sealed bids to restore an eroded drainage channel to the west of Shelbourne Drive. Prospective bidders may contact the Public Works Department at 860-491-6029 for more information or download the Bidding Documents by visiting the Town's web site at: www.goshenct.gov. Click on the link entitled "Bids & RFPs".

ARTICLE 1 – DEFINED TERMS

1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions.

ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

2.01 Complete sets of the Bidding Documents in the number and for the deposit sum, if any, stated in the advertisement or invitation to bid may be obtained from the Town of Goshen, Office of the First Selectman, located in the Goshen Town Hall at 42A North Street, Goshen, CT during normal business hours Monday – Thursday 8:30 AM to 4:00 PM and Friday 8:30 AM to 12:00 PM. Alternately, prospective bidders may examine and download the Bidding Documents by visiting the Town's web site at: www.goshenct.gov. Click on the link entitled "Bids & RFPs".

2.02 All prospective bidders and any other party that acquires Bidding Documents from the Town shall provide the Town with the firm's name, mailing address, telephone and facsimile numbers, and e-mail address.

2.03 Complete sets of Bidding Documents shall be used in preparing Bids; Owner assumes no responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.04 Owner, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license for any other use.

2.05 There will be a non-mandatory pre-bid conference at the site at 9:00 AM on Thursday June 2, 2016.

ARTICLE 3 – QUALIFICATIONS OF BIDDERS

3.01 Owner will review the list of references, subcontractors, materials suppliers and other documents furnished with the bid to aid in determining whether the apparent successful bidder is qualified to construct the Work. In addition to the foregoing, Owner may also request documentation regarding Bidder's financial position, previous experience, present commitments, and such other data as may be necessary to induce owner into awarding the Contract.

3.02 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

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

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

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

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

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

D. Consider the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on:

(1) The cost, progress, and performance of the Work;

(2) The means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents; and

(3) Bidder's safety precautions and programs;

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

F. Become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.

G. Promptly give Owner written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Owner is acceptable to Bidder; and

H. Determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.

ARTICLE 5 – INTERPRETATIONS AND ADDENDA

5.01 All questions about the meaning or intent of the Bidding Documents are to be submitted by e-mail to Mr. Robert Valentine, First Selectman at 1stselectman@goshenct.gov. Interpretations or clarifications considered necessary by Owner in response to such questions will be issued by Addenda mailed, e-mailed, or delivered to all parties recorded by Owner as having received the Bidding Documents. Questions received less than five days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

5.02 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by Owner.

ARTICLE 6 – BID SECURITY

6.01 Bid Security is not required.

ARTICLE 7 – CONTRACT TIMES

7.01 The number of days within which, or the dates by which, the Work is to be substantially completed and ready for final payment are set forth in the Agreement.

ARTICLE 8 – LIQUIDATED DAMAGES

8.01 Provisions for liquidated damages are set forth in the Agreement.

ARTICLE 9 – SUBSTITUTE AND "OR-EQUAL" ITEMS

9.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, or those substitute or "or-equal" materials and equipment approved by Owner and identified by Addendum. The materials and equipment described in the Bidding Documents establish a standard of required type, function and quality to be met by any proposed substitute or "or-equal" item. No item of material or equipment will be considered by Owner as a substitute or "or-equal" unless written request for approval has been submitted by Bidder and has been received by Owner. The burden of proof of the merit of the proposed item is upon Bidder. Owner's decision of approval or disapproval of a proposed item will be final. If

Owner approves any proposed item, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not rely upon approvals made in any other manner.

ARTICLE 10 – SUBCONTRACTORS, SUPPLIERS AND OTHERS

10.01 Owner will review the qualifications and acceptability of major subcontractors and material suppliers prior to issuing a Notice of Award. If Owner, after investigation, has reasonable objection to any proposed subcontractor, supplier, individual, or entity, Owner may, before the Notice of Award is issued, request apparent Successful Bidder to submit a substitute, without an increase in the Bid.

10.02 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner subject to revocation of such acceptance after the Effective Date of the Agreement.

10.03 Contractor shall not be required to employ any subcontractor, supplier, individual, or entity against whom Contractor has reasonable objection.

ARTICLE 11 – PREPARATION OF BID FORM

11.01 The Bid Form is included with the Bidding Documents.

11.02 All blanks on the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each bid item, alternative, adjustment unit price item, and unit price item listed therein. In the case of optional alternatives the words "No Bid," "No Change," or "Not Applicable" may be entered.

11.03 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown.

11.04 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown.

11.05 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown.

11.06 A Bid by an individual shall show the Bidder's name and official address.

11.07 A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid Form. The official address of the joint venture shall be shown.

11.08 All names shall be printed in ink below the signatures.

11.09 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.

11.10 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.

11.11 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located, or Bidder shall covenant in writing to obtain such authority and qualification prior to award of the Contract and attach such covenant to the Bid. Bidder's state contractor license number, if any, shall also be shown on the Bid Form.

ARTICLE 12 – BASIS OF BID; COMPARISON OF BIDS

12.01 *Lump Sum Price*

A. Bidders shall submit a Lump Sum Bid price for the Work.

B. Discrepancies between prices in figures and prices in written amounts will be resolved in favor of the written amounts. Discrepancies between the indicated sum of the Schedule of Values and the written Lump Sum Bid Price will be resolved in favor of the written Lump Sum Bid Price.

ARTICLE 13 – SUBMITTAL OF BID

13.01 Bidder shall submit two complete copies of the Bid Submittal which shall include:

A. List of proposed subcontractors;

B. List of proposed suppliers;

C. List of project references;

D. Non-Collusion Affidavit

E. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such license within the time for acceptance of Bids;

13.02 Bids shall be submitted to or received in the office of the First Selectman, Goshen Town Hall, 42A North Street, Goshen, CT 06756 no later 5:00 PM on June 14, 2016. All bids shall be enclosed in a sealed package plainly marked with the name and address of the Bidder and the words "Channel Restoration – Shelbourne Drive". All bids received after that time will be rejected and returned to the Bidder unopened.

13.03 If a Bid is sent by mail or other delivery system, the sealed bid shall be enclosed in a separate package plainly marked on the outside with the notation "SEALED BID ENCLOSED". A mailed or delivered Bid shall be addressed to the First Selectman.

ARTICLE 14 – MODIFICATION AND WITHDRAWAL OF BID

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

14.02 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

ARTICLE 15 – OPENING OF BIDS

15.01 Bids will be opened at the Town Hall Conference Room, Goshen Town Hall at 5:15 PM on June 14, 2016 and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 16 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

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

ARTICLE 17 – EVALUATION OF BIDS AND AWARD OF CONTRACT

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

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

17.03 In evaluating Bids, Owner will consider whether the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form.

17.04 In evaluating Bidders, Owner will consider the qualifications of Bidders and may consider the qualifications and experience of major subcontractors and material suppliers for emulsion and aggregate.

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

17.06 If the Contract is to be awarded, Owner will award the Contract to the Bidder whose Bid is in the best interests of the Project.

ARTICLE 18 – CONTRACT SECURITY AND INSURANCE

18.01 The General Conditions set forth Owner's requirements for performance and payment bonds and insurance coverage. When the Successful Bidder delivers the executed Agreement to Owner, it shall be accompanied by such bonds and certificate(s) of insurance.

ARTICLE 19 – SIGNING OF AGREEMENT

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

ARTICLE 20 – CONNECTICUT'S PREVAILING WAGE LAW PROVISIONS

20.01 Provisions for compliance with Connecticut's prevailing wage laws are set forth in the General Conditions.

ARTICLE 21 – SALES AND USE TAXES

21.01 Provisions for applicability of sales and use taxes are set forth in the General Conditions.

ARTICLE 22 – RETAINAGE

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

Section 00410

Bid Form

Channel Restoration – Shelbourne Drive

Bid Submitted To:

Town of Goshen

Board of Selectmen

42A North Street

Goshen, CT 06756

Bid Submitted By:

Company Name: _____

Mailing Address: _____

_____

_____

Contact Person: _____

Title: _____

Telephone: _____

Facsimile: _____

e-mail: _____

To the Town of Goshen Board of Selectmen:

The undersigned Bidder submits, for your consideration, our bid for the "Channel Restoration – Shelbourne Drive". We have read the Bidding Documents, including the Instructions to Bidders, Agreement between owner and Contractor, General Conditions, and Technical Specifications. We submit the following bid in full compliance with all terms and conditions except as noted below under "Exceptions". We have enclosed the following additional items required for a responsive submission:

1. Section 00415 - List of Major Subcontractors
2. Section 00420 – List of Material Suppliers
3. Section 00425 - Non-Collusion Affidavit
4. Section 00430 – Project References
5. Evidence of authority to do business in the Connecticut; or a written covenant to obtain such license within the time for acceptance of Bids

The undersigned Bidder acknowledges receipt of the following addenda to the Bidding Documents, listed by number and date as follows:

Section 00410

Bid Form

Channel Restoration – Shelbourne Drive

Addenda No.: _____ Dated: _____

Addenda No.: _____ Dated: _____

Addenda No.: _____ Dated: _____

The Undersigned Bidder agrees to perform all Work as specified in the Bidding Documents and as further itemized in Schedule A, attached to this Bid Form, within the Contract Times listed in the Agreement for the following Total Sum Bid Price. Our Lump Sum Bid Price includes all costs necessary to furnish and install, complete and in place, ready for service, the Town of Goshen Gulley Restoration – Shelbourne Drive, including all plant, materials, supplies, electricity, machinery, equipment, tools, superintendence, labor, hauling services, overhead, profit, insurance, bonds, permits, shop drawings, design services, and other accessories and services.

Total Sum Bid Price (in figures):

_____

Total Sum Bid Price (in words):

_____ Dollars

Exceptions: _____

_____

_____

The undersigned hereby submits the foregoing bid to the Town of Goshen. We understand that we may not withdraw this bid for a period of 60 days following the date of the bid opening:

Name of Contractor Entity: _____

By: _____

Duly Authorized Signature

Print or Type Name: _____

Print or Type Title: _____

Schedule A

Schedule of Values

The Schedule of Values shall be used in making partial payments for completed work. The Schedule of Values must equal the Lump Sum Bid Price.

	ITEM	PRICE IN FIGURES
02105	Mobilization & Project Closeout	$_____
02110	Construction Staking	$_____
02115	Clearing and Grubbing	$_____
02204	Rock Excavation	$_____
02205	Handling Water	$_____
02306	Temporary Gravel Access Road	$_____
02370	Soil Erosion and Sediment Control	$_____
02550	Preformed Scour Hole	$_____
02551	Rip Rap Channel	$_____
02552	Approach Channel	$_____
02920	Turf Establishment	$_____
02949	Plantings	$_____
02971	Maintenance and Protection of Traffic	$_____

Section 00415

List of Major Subcontractors

The Bidder shall furnish a list of proposed major subcontractors, including contact information and nature of the services that each subcontractor will provide. Major subcontractors are those that will be responsible for completing 10% or more of the construction contract value: If more than three major subcontractors will be used, provide continuation sheets as necessary.

Major Subcontractor No. 1:

Name of Subcontractor: _____

Nature of Subcontracted Services: _____

Contact Name: _____

Contact Title: _____

Contact Telephone No.: _____

Address: _____

_____

Contact e-mail address (if available): _____

Major Subcontractor No. 2:

Name of Subcontractor: _____

Nature of Subcontracted Services: _____

Contact Name: _____

Contact Title: _____

Contact Telephone No.: _____

Address: _____

_____

Contact e-mail address (if available): _____

Major Subcontractor No. 3:

Name of Subcontractor: _____

Nature of Subcontracted Services: _____

Contact Name: _____

Contact Title: _____

Contact Telephone No.: _____

Address: _____

_____

Contact e-mail address (if available): _____

Section 00420

List of Material Suppliers

The Bidder shall furnish a list of all major material suppliers that for the project. If more than three material suppliers will be used, provide continuation sheets as necessary.

Material Supplier No. 1:

Name of Material Supplier: _____

Type of Material Supplied: _____

Contact Name: _____

Contact Title: _____

Contact Telephone No.: _____

Address: _____

_____

Contact e-mail address (if available): _____

Material Supplier No. 2:

Name of Material Supplier: _____

Type of Material Supplied: _____

Contact Name: _____

Contact Title: _____

Contact Telephone No.: _____

Address: _____

_____

Contact e-mail address (if available): _____

Material Supplier No. 3:

Name of Material Supplier: _____

Type of Material Supplied: _____

Contact Name: _____

Contact Title: _____

Contact Telephone No.: _____

Address: _____

_____

Contact e-mail address (if available): _____

Section 00425

Non-Collusion Affidavit

The undersigned certifies, under penalty of perjury, that to the best of his/her knowledge and belief:

1. The prices in this bid have been arrived at independently without collusion, consultations, communication, or agreement with any other bidder or competitor on any matter whosoever for the purpose of restricting competition;

2. Except as may be required by law, prices quoted in this bid have not been knowingly disclosed by the bidder, directly or indirectly, to any other bidder or competitor, nor will they be so disclosed prior to the opening of bids;

3. No attempt has been made nor will be made by the bidder to induce any other person, partnership, or corporation to submit or to refrain from submitting a bid on this project.

Principal: _____

Firm Name: _____

Mailing Address: _____

_____

_____

Telephone Number: _____

Facsimile Number: _____

Signature: _____

Date: _____

Section 00430

Project References

The Bidder shall list at least three projects completed by the Bidder within the last three years that are of similar scope and nature to the Channel Restoration – Shelbourne Drive. The Bidder may provide additional references. Provide the approximate construction quantity and cost along with contact information for at least one reference for each project.

Project Reference No. 1:

Name of Entity: _____

Brief Project Description: _____

Approximate contract value: _____

Year completed: _____

Reference name: _____

Reference Title: _____

Reference Telephone No.: _____

Reference Address: _____

_____

Reference e-mail address (if available): _____

Project Reference No. 2:

Name of Entity: _____

Brief Project Description: _____

Approximate contract value: _____

Year completed: _____

Reference name: _____

Reference Title: _____

Reference Telephone No.: _____

Reference Address: _____

_____

Reference e-mail address (if available): _____

Project Reference No. 3:

Name of Entity: _____

Brief Project Description: _____

Approximate contract value: _____

Year completed: _____

Reference name: _____

Reference Title: _____

Reference Telephone No.: _____

Reference Address: _____

_____

Reference e-mail address (if available): _____

Project Reference No. 4:

Name of Entity: _____

Brief Project Description: _____

Approximate contract value: _____

Year completed: _____

Reference name: _____

Reference Title: _____

Reference Telephone No.: _____

Reference Address: _____

_____

Reference e-mail address (if available): _____

BID BOND

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

BIDDER *(Name and Address)*:

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

OWNER *(Name and Address)*:

BID
Bid Due Date:
Description *(Project Name and Include Location)*:

BOND
Bond Number:
Date (Not earlier than Bid due date):
Penal sum _____ $ _____
(Words) (Figures)

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

BIDDER	**SURETY**
_____ (Seal)	_____ (Seal)
Bidder's Name and Corporate Seal	Surety's Name and Corporate Seal
By: _____	By: _____
Signature	Signature (Attach Power of Attorney)
_____	_____
Print Name	Print Name
_____	_____
Title	Title
Attest: _____	Attest: _____
Signature	Signature
_____	_____
Title	Title

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

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder any difference between the total amount of Bidder's Bid and the total amount of the Bid of the next lowest, responsible Bidder who submitted a responsive Bid as determined by Owner for the work required by the Contract Documents, provided that:

1.1 If there is no such next Bidder, and Owner does not abandon the Project, then Bidder and Surety shall pay to Owner the penal sum set forth on the face of this Bond, and

1.2 In no event shall Bidder's and Surety's obligation hereunder exceed the penal sum set forth on the face of this Bond.

1.3 Recovery under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.

2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.

3. This obligation shall be null and void if:

3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or

3.2 All Bids are rejected by Owner, or

3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).

4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.

6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.

7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.

8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.

9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.

10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

Section 00525

Agreement Between Owner and Contractor

THIS AGREEMENT is by and between:

The Town of Goshen (Hereinafter referred to as "Owner")	and	Contractor Name (Hereinafter referred to as "Contractor")
42A North Street Goshen, CT 06756		Address 1 Address 2

Owner and Contractor hereby, agree as follows:

ARTICLE 1 – WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows: Restore existing drainage channel west of Shelbourne Drive between lots 220 and 221and starting at the outfall of the existing 24" culvert pipe. The work includes clearing and grubbing, erosion control, excavation, dewatering, traffic control, channel construction, and site restoration and planting.

ARTICLE 2 – THE PROJECT

2.01 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as the "Channel Restoration– Shelbourne Drive".

ARTICLE 3 – ENGINEER

3.01 The Owner may, at its sole discretion, retain the services of an outside engineer (Engineer), to act as Owner's representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 *Time of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Dates for Substantial Completion and Final Payment*

The Contract Time shall commence to run on the date so ordered on the Notice to Proceed issued by the Owner. The Work will be substantially completed and ready for final payment within 45 days after the date when the Contract Times commence to run.

4.03 *Liquidated Damages*

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial loss if the Work is not completed within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed by duly executed change order. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceedings the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty), Contractor shall pay Owner $250.00 for each day that expires after the time specified in Paragraph 4.02 for Substantial Completion until the Work is substantially complete. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by Owner, Contractor shall pay Owner $250.00 for each day that expires after the time specified in Paragraph 4.02 for completion and readiness for final payment until the Work is completed and ready for final payment.

ARTICLE 5 – CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the Contract Price:

Contract Price (in figures):

_____

Contract Price (in words):

_____ Dollars

ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

A. Contractor shall submit Applications for Payment in accordance with requirements outlined in the General Conditions. Applications for Payment will indicate the amount then payable to the Contractor. Applications for Payment will be processed by Owner as provided in the General Conditions.

6.02 *Payments; Retainage*

A. Upon Final Completion, Owner shall pay the Contractor 100 percent of the Work completed, less 200 percent of Owner's estimate of the value of Work to be completed or corrected as shown on the tentative list of items to be completed or corrected attached to the certificate of Substantial Completion.

ARTICLE 7 – INTEREST

7.01 All moneys not paid when due as provided in the General Conditions shall bear interest at the rate of Zero percent per annum.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

8.01 In order to induce Owner to enter into this Agreement, Contractor makes the following representations:

A. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.

B. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Contractor is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Contractor has considered the information known to Contractor; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; and the Contract Documents, with respect to the effect of such information, observations, and documents on:

(1) The cost, progress, and performance of the Work;

(2) The means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Contract Documents; and

(3) Contractor's safety precautions and programs.

E. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.

F. Contractor has given Owner written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Owner is acceptable to Contractor.

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

ARTICLE 9 – ACCOUNTING RECORDS

9.01 Contractor shall keep such full and detailed accounts of materials incorporated and labor and equipment utilized for the Work as may be necessary for proper financial management under

this Agreement. Subject to prior written notice, Owner shall be afforded reasonable access during normal business hours to all Contractor's records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and Contractor's fee. Contractor shall preserve all such documents for a period of three years after the final payment by Owner.

ARTICLE 10 – CONTRACT DOCUMENTS

10.01 *Contents*

A. The Contract Documents consist of the following:

1. This Agreement (pages 1 to ___, inclusive).
2. Performance bond (pages _____ to _____, inclusive).
3. Payment bond (pages _____ to _____, inclusive).
4. General Conditions (pages _____ to _____, inclusive).
5. Technical Specifications as listed in the table of contents of the Project Manual.
6. Drawings consisting of _____
7. Addenda (numbers _____ to _____, inclusive).
8. Exhibits to this Agreement (enumerated as follows):
   a. Contractor's Bid (pages _____ to _____, inclusive).
   b. Documentation submitted by Contractor prior to Notice of Award (pages _____ to _____, inclusive).
   c. Notice of Award (pages ____ to ____, inclusive).
9. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
   a. Notice to Proceed (pages _____ to _____, inclusive).
   b. Work Change Directives.
   c. Change Orders.

B. The documents listed in Paragraph 10.01.A are attached to this Agreement (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 10.

D. The Contract Documents may only be amended, modified, or supplemented by duly executed change order.

ARTICLE 11 – WARRANTY

11.01 Contractor warrants all work completed under this agreement for a period of one year after the date of final acceptance by Owner. Owner's *Notice of Substantial Completion* will specify the date of final acceptance by Owner and the date of expiration for the Warranty period.

11.02 Contractor warrants the work against defects such as erosion & movement of channel materials, settlement of work area and surrounding area, and health of installed plantings. Contractor shall perform all warranty work, including, but not limited to traffic control, hauling services, construction, and final cleanup at no cost to Owner, as long as Owner issues written notification of the defect to Contractor within the warranty period. The timing of warranty work may extend beyond the warranty period if Owners agrees to such extension in writing.

11.03 Upon receipt of Owner's notice of defects and demand for warranty repairs and prior to commencement of any warranty work, Contractor shall submit a proposed repair procedure and schedule for review and concurrence by Owner.

ARTICLE 12 – MISCELLANEOUS

12.01 *Terms*

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

12.02 *Assignment of Contract*

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

12.03 *Successors and Assigns*

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

12.04 *Severability*

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

12.05 *Contractor's Certifications*

A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 11.05:

1. "corrupt practice" means the offering, giving, receiving or soliciting of any thing of value to influence the action of a public official in the bidding process or in the Contract execution;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

12.06 *Other Provisions*

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

Section 00525

Agreement Between Owner and Contractor

This Agreement will be effective on _____ (which is the Effective Date of the Agreement).

NOTE TO USER

The Effective Date of the Agreement and the dates of any Construction Performance Bond (EJCDC C-610) and Construction Payment Bond (EJCDC C-615) should be the same, if possible. In no case should the date of any bonds be earlier than the Effective Date of the Agreement.

OWNER:

The Town of Goshen

By: _____

Title: First Selectman

Attest: _____

Title: _____

Address for giving notices:

Goshen Town Hall – Office of the First Selectman

42A North Street

Goshen, CT 06756

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

CONTRACTOR:

_____

By: _____

Title: _____

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

Attest: _____

Title: _____

Address for giving notices:

_____

_____

_____

License No.: _____
(Where applicable)

NOTE TO USER: Use in those states or other jurisdictions where applicable or required.

Agent for service of process:

_____

PERFORMANCE BOND

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

CONTRACTOR (*Name and Address*):

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

OWNER (*Name and Address*):

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

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

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

CONTRACTOR AS PRINCIPAL

_____ (Seal)
Contractor's Name and Corporate Seal

By: _____
Signature

_____
Print Name

_____
Title

Attest: _____
Signature

_____
Title

SURETY

_____ (Seal)
Surety's Name and Corporate Seal

By: _____
Signature (Attach Power of Attorney)

_____
Print Name

_____
Title

Attest: _____
Signature

_____
Title

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

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

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

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

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

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

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

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

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

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

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

8. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the Work or part of the Work is located, and shall be instituted within two years after Contractor Default or within two years after Contractor ceased working or within two years after Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

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

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

11. Definitions.

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

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

PAYMENT BOND

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

CONTRACTOR (*Name and Address*):

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

OWNER (*Name and Address*):

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

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

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

CONTRACTOR AS PRINCIPAL

_____ (Seal)
Contractor's Name and Corporate Seal

By: _____
Signature

_____
Print Name

_____
Title

Attest: _____
Signature

_____
Title

SURETY

_____ (Seal)
Surety's Name and Corporate Seal

By: _____
Signature (Attach Power of Attorney)

_____
Print Name

_____
Title

Attest: _____
Signature

_____
Title

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

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

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

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

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

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

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

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

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

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

6. When a Claimant has satisfied the conditions of Paragraph 4, the Surety shall promptly and at Surety's expense take the following actions:

   6.1 Send an answer to that Claimant, with a copy to Owner, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.

   6.2 Pay or arrange for payment of any undisputed amounts.

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

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

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

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

11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Paragraph 4.1 or Paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

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

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

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

15. Definitions

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

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

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

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

Section 00700
General Conditions

ARTICLE 1 – DEFINITIONS

Whenever the following terms, or pronouns in place of them, are used, the meaning shall be as follows:

1. Additional or Deleted Work: Work which, in the judgment of the Owner, is an addition to or deduction from the work required just prior to such addition or deletion.

2. Architect or Engineer: A person, partnership, corporation or other business organization under contract with the Owner to prepare drawings and specifications, to advise the Owner to prepare drawings and specifications, to advise the Owner and, in certain cases, to perform inspections during construction.

3. Bid or Proposal: The complete and signed proposal to do the work indicated in the bidding documents for the stipulated sum set forth in the Bid and submitted in accordance with the bidding documents.

4. Bidder: A person, partnership, corporation or other business organization submitting a bid.

5. Contract Documents: The Invitation to Bid, Instructions to Bidders, Permits (if any), Bid Form, Schedule of Values, Contract Agreement, Contract Bonds, General Conditions, Wage Requirements (if any), Supplementary General Conditions, Insurance Certificates, Contract Drawings, Specifications, and Addenda.

6. Contractor: A party or parties contracting directly with the Owner to perform the work covered by the Contract Documents.

7. Equal: A material or item which, in the opinion of the Owner, is substantially the same as a specified material or item.

8. Owner: The person, partnership, corporation, municipality, or other business organization seeking the bid.

9. Calendar Day: Each day of the week

10. Contract Drawings: The Contract Drawings prepared for a specific Project.

11. Shop Drawings: Drawings, diagrams, schedules, performance charts, brochures and other documents which illustrate and define a particular item or material to be used in the work.

12. Specifications: The description and other requirements pertaining to the materials, methods and manner of performing the work.

13. Subcontractor: A person, partnership, corporation or other business organization supplying labor and/or materials for the work under agreement with the Contractor.

14. Substantial Completion: The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of the Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

15. Substitution: A replacement for a specified material or item which may or may not become the subject of a Change Order.

16. Supplementary General Conditions: Changes or additions to the General Conditions.

17. Work: The plant, labor, materials, services, supplies, equipment and other facilities and items comprising the whole of the Contract.

ARTICLE 2 – BONDS AND INSURANCE

2.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.

B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed each bond.

C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of these General Conditions, Contractor shall promptly notify Owner and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of these General Conditions.

2.02 *Licensed Sureties and Insurers*

A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided below.

2.03 *Certificates of Insurance*

A. Contractor shall deliver to Owner, certificates of insurance which Contractor is required to purchase and maintain.

B. Contractor shall furnish certificate(s) of insurance to Owner. Contractor shall not mobilize labor forces or equipment to the site or commence any work whatsoever until Owner is fully satisfied with the scope and content of the certificate(s) of insurance. Contractor's certificate of insurance shall conform to the example enclosed in Exhibit A at the rear of this section.

C. The Contractor's certificate of insurance shall contain the following language as depicted in the example enclosed in Exhibit A: *"Town of Goshen, its agents, employees, elected officials, and volunteers as additional insured for general liability. Contractor and its general liability insurer waive all rights of subrogation against the Town of Goshen arising from work on the following project: Channel Restoration – Shelbourne Drive.*

D. Failure of Owner to demand such certificates or other evidence of Contractor's full compliance with these insurance requirements or failure of Owner to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

E. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor.

F. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner in the Contract Documents.

2.04 *Contractor's Insurance*

A. Contractor shall carry the following insurance coverage with an insurance company or companies licensed in the State of Connecticut and approved by Owner. The insurance company or companies must have at least an A rating by A.M. Best Company. All policies shall provide a <u>30-day notice of cancellation</u> as well as a <u>10-day notice of any material changes</u> in the policies to the Office of the First Selectman of the Town of Goshen.

Workers Compensation

Coverage A:	Statutory	
Coverage B:	Employers Liability	
	Bodily injury by accident	$100,000 per person
	Bodily injury by disease	$100,000 per person
	Bodily injury	$500,000 aggregate

Comprehensive Commercial Liability

Bodily injury; General Limit	$2,000,000 aggregate
Products/Completed Operations	$1,000,000 aggregate
Personal and Advertising Injury	$1,000,000 aggregate
Each Occurrence	$1,000,000 aggregate
Fire Damage Limit	$100,000 aggregate
Medical Expenses	$10,000 per person

Coverage: Premises / Independent Contractors
Contractual / Completed Operations / Products
Contractual / Liability will be Broad Form
XCU (explosion/collapse/underground utilities)
Comprehensive Broad Form Liability Endorsement or Equivalent
Broad Form Property Damage Liability

Automobile Liability	Bodily Injury	$1,000,000 per person
	Property Damage	$1,000,000 per person

Coverage: All owned / non-owned / hired / borrowed
Contractual Liability to Be Limited

ARTICLE 3 – WARRANTY

3.01 The terms of the warranty are described in the agreement between Owner and Contractor.

ARTICLE 4 – HOLD HARMLESS AGREEMENT

4.01 The Contractor agrees that it will indemnify and hold harmless the Owner and its respective officers, agents and employees from any loss, costs, damages, expenses, judgments and liability whatsoever kind or nature howsoever the same may be caused resulting directly or indirectly by any negligent act or omission of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable resulting in bodily injury including sickness and death, personal injury or damage to property directly or indirectly, including the loss of use resulting there from as permitted by law, unless and to the extent caused by the Owner's negligence or its willful acts."

ARTICLE 5 – CONNECTICUT'S PREVAILING WAGE LAW PROVISIONS

5.01 *General Wage Information*

The Contractor must comply with Connecticut's Prevailing Wage Law provisions.

5.02 *Connecticut's Prevailing Wage Law Provisions*

If applicable, the Contractor must be in full compliance with Connecticut's General Statutes Section 31-53 and 31-53(a) which applies to each contract for the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration, or repair of any public works project by the State or its agents, or by any political subdivision of the State of Connecticut General Statutes, Section 31-53(g) provides monetary thresholds which must be met before the law is applicable. The Contractor should familiarize him or herself with all the aspects of the provisions under state law in order to ensure full compliance.

ARTICLE 6 – SALES AND USE TAXES

6.01 Owner is exempt from Connecticut state sales and use taxes on materials and equipment to be incorporated in the Work. Said taxes shall not be included in the Bid.

ARTICLE 7 – LIQUIDATED DAMAGES

7.01 The liquidated damages clause provided in the Agreement will be assessed for each calendar day beyond the day given for completion of the contract. The Owner may, at its discretion, waive late charges, or any portion thereof.

7.02 Should the Contractor default in the performance of any of the terms of this contract, the Owner shall be entitled to pursue all remedies provided by law, and the Contractor shall be responsible to the Owner for all resulting costs, damages and expenses, including reasonable attorneys fees and court costs or arbitration and mediation costs, if applicable.

ARTICLE 8 – PRE-CONSTRUCTION CONFERENCE

8.01 Owner will organize a preconstruction conference and notify the parties concerned. Contractor is required to attend this conference at no additional cost to the project.

ARTICLE 9 – SHOP DRAWINGS AND SUBMITTALS

9.01 The Contractor shall furnish to the Owner all shop drawings, product literature, material, test reports, etc. as required by the Contract Documents. Any cost born by the Contractor in preparing submittals shall be included in the Lump Sum Bid Price. Each submittal shall be numbered consecutively and shall be accompanied by a transmittal letter identifying the submittal.

9.02 The submittals shall be sent to Owner. Owner shall review and return the submittal to Contractor within ten calendar days. Contractor shall consider this review time and time required for possible revisions and re-submittals in his schedule.

9.03 Contractor shall submit sufficient quantities for his needs plus two copies to be retained by Owner.

9.04 Owner's approval of any shop drawing shall not release Contractor from compliance with the Contract Documents.

ARTICLE 10 – CORRELLATION OF CONTRACT DOUMENTS

10.01 The documents comprising the Contract Documents are complimentary, and what is called for by any one shall be binding as if called for by all. Where discrepancies or conflicts occur:

A. Amendments and addenda take precedence over the specifications.

B. The specifications take precedence over the plans.

C. Stated dimensions take precedence over scaled dimensions.

D. Large scale detail drawings take precedence over small-scale drawings.

E. Schedules take precedence over other data on the plans.

10.02 Neither party to the contract shall take advantage of any obvious error or apparent discrepancy in the Contract Documents. Any error or discrepancy discovered shall be given immediately in writing to the Owner, who shall make corrections and interpretations as he deems necessary.

ARTICLE 11 – CONTRACTOR'S USE OF PREMISES

11.01 Contractor shall confine his operations, including storage of apparatus, equipment and materials to municipal highway corridors in areas authorized by Owner.

11.02 Parking for Contractor's employees will be limited to an area (or areas) designated by Owner. The Contractor may be required to provide identification stickers for employees' cars.

11.03 Owner will allow Contractor to use excess space at the Goshen Fire House for Contractor's temporary construction facilities, construction equipment, or storage of materials and equipment.

ARTICLE 12 – LEGAL REQUIREMENTS

12.01 All requirements of the law are deemed inserted in this Contract and are as fully a part thereof as if actually inserted in the Contract Documents. In particular, Contractor's attention is drawn to permit requirements of State or Town governments, safety regulations, labor and wage-rate laws, and State statutes relative to preference to State citizens.

ARTICLE 13 – ERRORS AND OMMISSIONS

13.01 If the Contractor, in the course of the work, finds any discrepancy between the plans and the physical conditions of the locality, or any errors or omissions on the Contract Drawings or in the layout as given by survey points and instructions, he shall immediately inform the Owner, in writing, and the Owner shall promptly verify the same. Any work done after such discovery, until authorized, will be done at the Contractor's risk.

13.02 The fact that specific mention of any part of the work is omitted in the specifications, whether intentionally or otherwise, when the same is clearly indicated on the drawings, or is usually and customarily required to complete fully such work as is specified herein, will not entitle the Contractor to consideration in the matter of any claim for compensation, but the said work shall be installed or done the same as if called for both by the drawings and by the specifications.

13.03 All work indicated on the drawings and not mentioned in the specifications, or vice versa, and all work and material usual and necessary to make the work complete in all it parts, whether or not they are indicated on the drawings or mentioned in the specifications, shall be furnished and executed the same as if they were called for both by the drawings and by the specifications.

ARTICLE 14 – TEMPORARY SANITARY FACILITIES

14.01 Contractor shall provide, where directed, chemical toilets with toilet tissue, plus wash basins with water, soap and paper towels. Contractor shall maintain the facilities in a sanitary condition.

14.02 If women are employed in the work, provide separate, designated facilities for them of the same kind. Provide an adequate number of each kind of facility for each gender.

ARTICLE 15 – COMMENCEMENT AND COMPLETION OF THE WORK

15.01 The work shall be started upon the date given in a written Notice to Proceed issued by Owner. Contractor shall complete all work within the time limit stated in the Contract Agreement.

15.02 Should Contractor be delayed in the execution of the contract by acts of God such as fire or flood or other causes, the Contractor may submit a request for extension of contract time. To receive consideration, claims shall be filed in writing, with a full statement of the reasons thereof, within seven days of the occurrence of the delay.

ARTICLE 16 – WORK OF SEPARATE CONTRACTS

16.01 Owner reserves the right to perform work in connection with the project with its own forces or with other contractors. In such cases, Contractor shall afford Owner or other contractors reasonable opportunity for storage of materials and equipment and for the installation of their work.

16.02 Contractors working in the same vicinity shall cooperate with one another and, in case of dispute, the decision of Owner shall be complied with by all contractors involved.

16.03 Contractor shall assume liability, financial or otherwise, in connection with this contract and shall protect and save harmless Owner from any and all damages or claims that may arise because of inconvenience or delay which he may cause other contractors.

ARTICLE 17 – COORDINATION

17.01 Contractor is responsible for and shall direct the activities of his subcontractors. The subcontractors shall cooperate with one another and with other contractors working on the site. Each subcontractor shall furnish necessary information to other subcontractors and shall lay out and install his work so as to avoid delays or interferences with the work of another. The cost for changes, cutting and/or repairing made necessary by failure to observe the above requirements shall be borne by the party or parties responsible for such failure or neglect.

ARTICLE 18 – PROGRESS SCHEDULE

18.01 After signing the contract, Contractor shall promptly prepare and submit, for examination by Owner, a progress schedule. Contractor shall revise and resubmit the progress schedule if scheduled-event times change during the life of the Agreement.

ARTICLE 19 – CHANGE ORDERS

19.01 A change order is a written order to the Contractor authorizing an addition, deletion, or revision in the work within the general scope of the contract documents. The written order may result in an adjustment in the contract price or contract time.

19.02 Owner may issue a change order at any time without invalidating the contract and without notice to the sureties.

19.03 A change order is not valid unless it is signed by Owner.

19.04 A change in the contract time resulting from a change in the work will be determined by mutual agreement of Owner and Contractor.

19.05 A change in the contract price resulting from a change order will be determined by one or more of the following methods, in the order of precedence listed below:

A. By unit prices stated in the Contract Documents

B. By lump sum agreed upon by Owner and Contractor

C. On a time and materials basis, plus profit not to exceed 15% for the Prime Contractor and 5% for each subcontractor

19.06 Changes made in the Contract (whether such changes increase or decrease the work, the contract price, and/or the contract time) shall in no way annul, release, or limit the liability and surety on the bonds given by the Contractor.

19.07 In the event a change order results in an increase in the contract price, the Contractor's Performance Bond and Labor and Materials Payment Bond shall be proportionally increased. The Contractor shall within two weeks of the issuance of the change order provide written evidence to this effect.

ARTICLE 20 – CLAIMS FOR EXTRA COSTS

20.01 If Contractor claims that any instructions by drawings or other media issued after the date of the contract involve extra cost, he shall give the owner written notice prior to executing the work involved in the claim.

20.02 Written notice of the claim shall be filed with Owner within seven days of the occurrence of the event. The notice shall include the reasons for and the amount of the claim.

20.03 Except in a situation involving an emergency endangering life or property, Contractor shall not proceed with the work unless and until Owner issues a change order for the extra cost.

ARTICLE 21 – SUPERVISION

21.01 Contractor shall supervise and direct the work. Contractor will be solely responsible for the means, methods, techniques, sequences and procedures of construction. Contractor will employ and maintain on the site a qualified supervisor or superintendent who shall have been designated in writing by the Contractor as the Contractor's representative at the site. The supervisor shall have full authority to act on behalf of the Contractor and all communications given to the supervisor shall be as binding as if given to the Contractor. The supervisor shall be present on the site at all times as required to perform adequate supervision and coordination of the work.

ARTICLE 22 – EQUALS AND SUBSTITUTIONS

22.01 Equipment, materials and articles incorporated in the work are to be new unless specified otherwise. Where a particular brand is specified, it shall be regarded as the standard. Where two or more brands are specified, they shall be regarded as equals.

22.02 If Contractor wishes to substitute a material, or piece of equipment for what is specified, he shall offer the substitution(s) to Owner in writing. Contractor shall support each proposed substitution with specification data (and color samples, if applicable) to permit comparison with the specified item. Contractor shall route the substitution list through the project's architect/engineer.

22.03 No time extension will be allowed to consider any substitute. No time extension will be allowed, nor shall any responsibility be assumed by Owner when Contractor submits a request for a change whether such request is granted or denied.

22.04 No materials or supplies shall be purchased subject to a chattel mortgage or under a conditional sale or other agreement by which an interest is retained by the seller. Contractor warrants that he has a good title to all materials and supplies used in the work.

ARTICLE 23 – INSPECTIONS AND TESTS

23.01 All material and workmanship is subject to inspection, examination and test by the Owner at any time during manufacture and/or construction and at any place where manufacture and/or construction is done. Required laboratory tests will be paid for by Owner except when the test shows the work to be defective in which case Contractor shall pay for the initial test and for any subsequent tests. Notice of the time of tests to be made at the site shall be given to all interested parties.

23.02 Without additional charge, Contractor shall promptly furnish facilities, labor and materials necessary to make tests. Tests shall be as directed or referenced in the specifications.

23.03 If, before final acceptance of the work, Owner considers it necessary or advisable to examine any portion of work, Contractor shall furnish facilities, labor and materials for the examination. If the work is found to be defective or if any work has been covered without the approval or consent of Owner (whether or not it is found to be defective), Contractor shall be liable for testing costs and the costs of correction, including labor, material, services of consultants, additional supervision and administrative costs.

23.04 Inspectors employed by Owner are authorized to inspect all work done and materials furnished. In case of any dispute arising between Contractor and the Construction Inspector, the Inspector has the authority to reject material or suspend the work until the question at issue can be referred to and decided by the Engineer. The Inspector is not authorized to revoke, alter, or enlarge, any requirements of the specifications, nor to approve or accept any portion of the work, nor to issue instructions contrary to the plans and specifications. The Inspector shall in no case act as Foreman or perform other duties for Contractor, or interfere with the management of the work by Contractor.

ARTICLE 24 – ROYALTIES AND PATENTS

24.01 If Contractor wants to use any design, device, material or process covered by letters patent or copyright, he shall provide suitable legal agreement with the patentee or owner.

24.02 Contractor shall indemnify and save harmless the Owner for any costs, expenses and damages it may be obliged to pay by reason of infringement of patent at any time during or after completion of the work.

ARTICLE 25 – SURVEYS, PERMITS, AND REGULATIONS

25.01 Unless otherwise provided for, Contractor will furnish surveys necessary for the prosecution of the work. Contractor shall procure and pay for permits and licenses necessary for the prosecution of his work and the use of the completed work.

25.02 Contractor shall give all notices and comply with all laws, ordinances, rules and regulations relating to the performance of the work.

ARTICLE 26 – PROTECTION OF WORK, PROPERTY AND ACCIDENT PROTECTION

26.01 Contractor shall:

A. Take charge and care of the Work from the date Contact Time commences to run until all work is completed, made ready for final payment, and accepted (in writing) by the Owner.

B. Take every necessary precaution against injury or damage to the Work or any part thereof by the action of the elements or from any other cause whatever, whether arising from execution or from non-execution of the work.

C. Rebuild, repair, restore, and make good, at the Contractor's expense, all injuries or damages to, or any impairment of, any portion of the Work which results from any of the above causes before completion and final acceptance of the Work.

D. Continuously and adequately protect the work against damage from any cause and will protect materials and supplies furnished by him or his subcontractors, whether or not incorporated in the work, and will make good any damage unless it is directly due to errors in the Contract Documents or is caused by agents or employees of the Owner.

E. To the extent required by law, public authority, or as necessary to safeguard the health and welfare of the public, provide and maintain passageways, guard fences, lights, barricades and other related facilities.

F. Comply with applicable provisions of Federal, State, and municipal safety laws and building codes to prevent accidents or injury to persons on or adjacent to the work site. The Contractor shall also comply with the applicable provisions of the Associated General

Contractors' "Manual of Accident Prevention in Construction", the standards of the Connecticut Labor Department and OSHA.

G. Provide and maintain safeguards for the protection of workmen and the public and shall post danger signs warning against hazards such as protruding nails, well holes, elevator hatchways, scaffolding, window openings, stairways and falling materials.

H. Designate a responsible member of his organization whose duty shall be the prevention of accidents. The name and position of the designated person shall be reported to the Owner.

ARTICLE 27 – TEMPORARY UTILITIES

27.01 Unless otherwise provided for, Contractor shall arrange for and pay the cost of temporary light, heat, electric power, telephone, and water required for the completion of the work.

ARTICLE 28 – CORRECTION OF WORK BEFORE FINAL PAYMENT

28.01 Contractor shall, without expense to Owner, promptly remove materials condemned by Owner as failing to conform to the Contract Documents, whether incorporated in the work or not.

28.02 Contractor shall, without expense to Owner, promptly replace non-conforming materials with those conforming to the Contract Documents and shall bear the expense of making good the work of other contractors or subcontractor destroyed or damaged by such removal and replacements.

28.03 If Contractor, after receipt of notice from Owner, fails to remove condemned materials within the time fixed in the notice, Owner may remove and store such materials at the expense of Contractor.

28.04 Owner's removals will not affect the obligation of Contractor to replace and re-execute the work and to bear the expenses referred to above. If Owner deems it inexpedient or undesirable to correct any noncompliance portion of the work or work not done in accordance with the Contract Documents, the Contractor's compensation will be reduced by the amount Owner decides is equitable.

ARTICLE 29 – CORRECTION OF WORK AFTER FINAL PAYMENT

29.01 Final payment to Contractor shall not relieve him of responsibility for defects in material or workmanship.

29.02 Contractor shall remedy any defective work appearing within one year from the date of substantial completion or for longer periods where dictated by warranty terms greater than one year and shall pay for any damage to other work or materials caused by the defective work or its correction.

ARTICLE 30 – CUTTING, FITTING, PATCHING, AND DIGGING

30.01 Contractor shall, and shall require each of his subcontractors to, cut, fit or patch the work to make the several parts join in a manner satisfactory to the Owner and in accordance with the Contract Documents.

30.02 The primary responsibility for defective or ill-timed work shall be Contractor's but this shall not relieve the subcontractor who performed the work of his responsibility. Except with the consent of Owner, Contractor will not, nor permit any of his subcontractors to, cut or alter the work of any other contractor or subcontractor.

ARTICLE 31 – CLEANING

31.01 Contractor shall keep work zones free from accumulations of waste materials or rubbish.

31.02 At the completion of the work or at the beginning of an extended shut-down of the Work, Contractor shall remove rubbish from and about the site and all temporary structures, tools, scaffolding, surplus materials, supplies and equipment to the satisfaction of Owner. In case of dispute as to removal responsibility, Owner may remove the rubbish, etc., and charge Contractor for such removal.

31.03 Owner may withhold project acceptance if the site is not cleaned to Owner's satisfaction.

ARTICLE 32 – AUTHORITY OF THE OWNER

32.01 Contractor shall abide by the orders, directions, and requirements of Owner.

32.02 Owner will determine the quantity, quality, acceptability and fitness of the work and will, when necessary, interpret the Contract Documents and answer questions concerning the work.

32.03 Contractor shall not use plant, equipment, materials, methods, or men to which Owner objects and shall not remove plant, materials, equipment, or other facilities without the permission of Owner. Owner will confirm any oral order, direction, requirement, or determination in writing.

32.04 During the progress of the work, Contractor shall provide a competent representative and any necessary assistants on site that are satisfactory to Owner.

ARTICLE 33 – STATEMENTS OF AMOUNTS DUE

33.01 Regarding any request for payment, Owner reserves the right to require Contractor and subcontractors to submit a written, verified statement, in form satisfactory to Owner, showing amounts then due and unpaid by Contractor and subcontractors for wages to persons employed by them or for materials, equipment or supplies delivered to them.

ARTICLE 34 – OWNER'S RIGHT TO WITHHOLD PAYMENTS

34.01 Owner may withhold a portion of any payment due Contractor as may, in the judgment of the Owner, be necessary:

A. To assure payment of just claims then due to any persons supplying labor or materials for the work.

B. To protect Owner from loss due to defective work or materials not remedied.

C. To protect Owner from loss due to injury to persons or damage to the work or property of other contractors, subcontractors or others caused by the act or neglect of Contractor or any of his subcontractors.

34.02 Owner retains the right to apply any amount he deems proper to satisfy claims or to secure such protection. The application of such moneys shall be deemed payments to the account of Contractor.

ARTICLE 35 – OWNER'S RIGHT TO STOP WORK AND TERMINATE CONTRACT

35.01 Owner may, by written notice to Contractor, stop the work or terminate the contract and take possession of and complete the work. Owner has the right to stop work or terminate the contract if:

A. Contractor is adjudged as bankrupt or makes an assignment for the benefit of creditors.

B. A receiver or liquidator is appointed for Contractor or for any of his property and is not dismissed within twenty (20) days after such appointment or the proceedings in connection therewith are not stayed on appeal within the said twenty (20) days.

C. Contractor refuses or fails, after warning from Owner, to supply enough properly skilled workmen or proper materials.

D. Contractor refuses or fails to prosecute the work or any part thereof to insure its completion within the period specified (or any duly authorized extension thereof) or fails to complete the work within said period.

E. Contractor fails to make prompt payment to persons supplying labor or materials for the work.

F. Contractor fails or refuses to obey laws, ordinances or the instructions of Owner or is otherwise guilty of substantial violation of any provisions of this contract.

35.02 Contractor shall, in the event of contract termination, not be entitled to receive any further payment due him until the work is finished. The expenses to Owner resulting from completion of the work shall be deducted from any monies due the Contractor. Owner shall not be held to obtain the lowest figures for the work of completing the Contract.

35.03 If the contract is terminated, Owner may take possession of and use materials, appliances, supplies, plant and equipment on the site to complete the work.

35.04 Owner shall also have the right to terminate the contract for its convenience. In the event of such termination, Contractor shall be entitled to reasonable compensation as determined by the Owner.

ARTICLE 36 – SUBLETTING OR ASSIGNING CONTRACT

36.01 The contract or any portion thereof or the work provided for therein or the right, title, or interest of Contractor therein may not be sublet, sold, transferred, assigned or otherwise disposed of to any person, partnership, corporation or other business organization without the written consent of Owner.

ARTICLE 37 – FOREIGN MATERIALS

37.01 Contractor shall give preference to articles or materials manufactured or produced in the United States, conditions of quality and price with duty being equal.

ARTICLE 38 – STORAGE OF EQUIPMENT NOT IN CONTRACT

38.01 It is the responsibility of Contractor to provide storage for equipment not in the contract and for equipment purchased by Owner for the project if the equipment is delivered to the site when scheduled but cannot be installed because progress is behind schedule.

38.02 If adequate storage space cannot be provided on site, Owner will arrange for off-site storage and delivery to the site when the project is ready to receive the equipment. Owner will back charge the Contractor for all expenses incurred.

38.03 In either event, Contractor shall assume full responsibility for the equipment until it can be installed.

ARTICLE 39 – ARCHEOLOGICAL FINDS

39.01 During the life of this Contract, Contractor is herewith required to immediately notify the following organizations in the event that any articles, such as "charcoal", "bone", "shell", "cultural objects-fire cracked stones or stone flaking material", or any other such related items of historical significance are discovered:

A. The Owner

B. The local historical society

C. Connecticut Historical Commissioner

D. Engineer or Inspector

ARTICLE 40 – DISPUTE RESOLUTION

40.01 In the event of a dispute arising out of or relating to this Agreement or the work to be rendered hereunder, the Owner and Contractor agree to attempt to resolve such disputes in the following manner:

A. First, the parties agree to attempt to resolve such disputes through direct negotiations between the appropriate representatives of each party.

B. Second, if such negotiations are not fully successful, the parties agree to attempt to resolve any remaining dispute by formal nonbinding mediation conducted in accordance with rules and procedures to be agreed upon by the parties.

C. Third, if the dispute or any related issues remain unresolved after the parties complete the foregoing steps, the parties shall be left to their remedies at law.

EXHIBIT A

Example Certificate of Insurance

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 08/24/2015

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER

Name, address, and phone number of contractor's insurance agent

CONTACT NAME:
PHONE (A/C, No, Ext): FAX (A/C, No):
E-MAIL ADDRESS:

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A: Carrier Name (Bests Rating "A" "VII" or better)	
INSURER B:	
INSURER C:	
INSURER D:	
INSURER E:	
INSURER F:	

INSURED

Name and address of contractor

COVERAGES **CERTIFICATE NUMBER: 18448** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	GENERAL LIABILITY X COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☒ OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ☒ PRO-JECT ☐ LOC	X		Policy Number	xx/xx/xxxx	xx/xx/xxxx	EACH OCCURRENCE	1,000,000
							DAMAGE TO RENTED PREMISES (Ea occurrence)	100,000
							MED EXP (Any one person)	10,000
							PERSONAL & ADV INJURY	1,000,000
							GENERAL AGGREGATE	2,000,000
							PRODUCTS - COMP/OP AGG	2,000,000
A	AUTOMOBILE LIABILITY X ANY AUTO ☐ ALL OWNED AUTOS ☐ SCHEDULED AUTOS ☐ HIRED AUTOS ☐ NON-OWNED AUTOS			Policy Number	xx/xx/xxxx	xx/xx/xxxx	COMBINED SINGLE LIMIT (Ea accident)	1,000,000
							BODILY INJURY (Per person)	
							BODILY INJURY (Per accident)	
							PROPERTY DAMAGE (Per accident)	
A	☐ UMBRELLA LIAB ☒ OCCUR X EXCESS LIAB ☐ CLAIMS-MADE ☐ DED ☐ RETENTIONS			Policy Number	xx/xx/xxxx	xx/xx/xxxx	EACH OCCURRENCE	2,000,000
							AGGREGATE	2,000,000
A	WORKERS COMPENSATION AND EMPLOYERS LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N ☐ (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		Policy Number	xx/xx/xxxx	xx/xx/xxxx	X WC STATU-TORY LIMITS ☐ OTH-ER	
							E.L. EACH ACCIDENT	100,000
							E.L. DISEASE - EA EMPLOYEE	100,000
							E.L. DISEASE - POLICY LIMIT	500,000
	Other							

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

Town of Goshen, its agents, employees, elected officials, and volunteers as additional insured for general liability. Contractor and its general liability insurer waive all rights of subrogation against the Town of Goshen arising from work on the following project: (insert either address of specific work site or "all permit work in the town")

CERTIFICATE HOLDER

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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TECHNICAL SPECIFICATIONS

Section No.	Title
02001	General Requirements for Construction
02105	Mobilization and Project Closeout
02110	Construction Staking
02115	Clearing and Grubbing
02204	Rock Excavation
02205	Handling Water
02306	Temporary Gravel Access Road
02370	Soil Erosion and Sediment Control
02550	Preformed Scour Hole
02551	Riprap Channel
02552	Approach Channel
02920	Turf Establishment
02949	Plantings
02971	Maintenance and Protection of Traffic

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SECTION 02001
GENERAL REQUIREMENTS FOR CONSTRUCTION

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1. Bid prices for the **Shelbourne Drive Channel Restoration** project, in and for the **Town of Goshen**, shall include all costs necessary to furnish and install the work of the contract complete and in place, ready for service, including all plant, materials, supplies, electricity, machinery, equipment, tools, superintendence, labor, overhead, profit, insurance, bonds, permits, shop drawings, design services, and other accessories and services.

2. Throughout various sections of these Specifications, reference is made to **ConnDOT Form 816** (to be construed to mean State of Connecticut Department of Transportation - Standard Specifications for Roads, Bridges, and Incidental Construction Form 816 – 2004 and the State of Connecticut Department of Transportation Supplemental Specifications to the Standard Specifications for Roads, Bridges, and Incidental Construction Form 816 (July 2015), including all errata. Unless otherwise required by the individual specifications that follow, The ConnDOT **Form 816 Supplemental Specifications** supersede the **ConnDOT Form 816 Standard Specifications**. Contractor shall be familiar with these documents and maintain a copies of them on the project site at all times. For the purpose of this Contract, the words "State", "Department", and other references to the Connecticut Department of Transportation that appear in **ConnDOT Form 816** as amended and supplemented shall be construed to mean The Owner. Specific sections of **ConnDOT Form 816** as amended and supplemented which are referenced within the Contract Documents shall be considered a part of the Contract Documents. All Work of this contract shall comply with the referenced sections of **ConnDOT Form 816** unless otherwise modified within each specification.

3. In the case of a discrepancy between scaled and dimensioned measurements on the drawing, the dimensions shall govern. In the case of a discrepancy between the drawings and these specifications, the specifications shall govern. Contractor shall take no advantage of any apparent error or omission in the plans or specifications. In the event Contractor discovers such an error or omission, he shall immediately notify Engineer. Engineer will then make such corrections and interpretations as may be deemed necessary for fulfilling the intent of the Contract.

4. Prior to commencement of any work, Owner will coordinate and hold a preconstruction conference to clarify any outstanding issues and to delineate contract performance and administrative procedures. Contractor must attend this conference. All costs borne by Contractor in preparing for and attending the preconstruction conference shall be included in the Base Bid.

5. Contractor shall furnish to Owner as required, any design plans, shop drawings, working drawings, product literature, material samples, test reports, etc. (some of which may require certification by a Connecticut Licensed Professional Engineer), for all construction items and components. Any cost born by Contractor in preparing submittals shall be included in the bid prices for the applicable item. Each submittal shall be numbered consecutively and shall be submitted to Owner. Contractor shall furnish submittals far enough in advance of scheduled installation dates to provide time for review and approvals, possible revisions and resubmittals, ordering product (following approval), and delivery. Contractor shall submit sufficient copies of submittals for his needs plus one copy for the Engineer and two copies to be retained by the Owner.

6. Before, during, or following construction activities, Owner (at its own expense) may test any of the various products or materials furnished by Contractor. Contractor shall remove and replace, at no expense to Owner, any construction item that does not comply with these Contract Documents. Contractor shall provide access to any work, complete or in progress, so that Owner or its designated agents may perform tests safely and properly.

6. Contractor shall verify the location of subsurface utilities prior to commencement of construction by soliciting utility mark-out through *Call-Before-You-Dig* at 811 or 1-800-922-4455 at least 72 hours prior to commencement of any work.

END OF SECTION

SECTION 02105
MOBILIZATION AND PROJECT CLOSEOUT

PART 1 – GENERAL

1.01 Scope of Work

A. Provide all plant, materials, supplies, power, machinery, equipment, tools, superintendence, labor, overhead, profit, insurance, bonds, permits, shop drawings, design services (where required), and other services and accessories required to complete the work of this Section.

B. To complete the work of this Section, the Contractor shall:

1. Comply with ConnDOT Form 816 Supplemental Specification Section 9.75, Article 9.75.01.

1.02 Related Documents

A. The publications listed below form a part of this specification to the extent referenced. These publications are referred to in the text by the basic designation only.

Basic Designation	Document
ConnDOT Form 816	State of Connecticut Department of Transportation – Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816, 2004. And State of Connecticut Department of Transportation – Supplemental Specifications to Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816 (July 2015)

1.03 Submittals

A. Shop Drawings:

1. Not Applicable

B. Product Data:

1. Not Applicable

C. Samples:

1. Not Applicable

D. Design Drawings:

1. Not Applicable

E. Product Test Data

1. Not Applicable

F. Contractor Permits

1. Not Applicable

G. Miscellaneous Items

1. Contractor shall prepare and submit to the Engineer a construction schedule indicating the proposed sequencing of major work elements.

1.04 Project Conditions

A. Not applicable

1.05 Sequencing

A. Contractor shall follow the sequence on the construction schedule as approved by the Engineer.

PART 2 – PRODUCTS

A. Not Applicable

PART 3 - EXECUTION

A. Not Applicable

PART 4 – MEASUREMENT AND PAYMENT

4.01 Mobilization

A. Measurement: Comply with ConnDOT Form 816, Supplemental Specification Section 9.75, Article 9.75.04.

B. Payment: Comply with ConnDOT Form 816, Supplemental Specification Section 9.75, Article 9.75.05.

Payment Items:

Item Number	Item Description	Pay Unit
02105-1	Mobilization and Project Closeout	LS

END OF SECTION

SECTION 02110
CONSTRUCTION STAKING

PART 1 – GENERAL

1.01 Scope of Work

A. Provide all plant, materials, supplies, power, machinery, equipment, tools, superintendence, labor, overhead, profit, insurance, bonds, permits, shop drawings, design services (where required), and other services and accessories required to complete the work of this Section.

B. To complete the work of this Section, the Contractor shall:

1. Comply with ConnDOT Form 816 Supplemental Specification Section 9.80, Article 9.80.01.

1.02 Related Documents

A. The publications listed below form a part of this specification to the extent referenced. These publications are referred to in the text by the basic designation only.

Basic Designation	Document
ConnDOT Form 816	State of Connecticut Department of Transportation – Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816, 2004. And State of Connecticut Department of Transportation – Supplemental Specifications to Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816 (July 2015)

1.03 Submittals

A. Shop Drawings:

1. Not Applicable

B. Product Data:

1. Not Applicable

C. Samples:

1. Not Applicable

D. Design Drawings:

1. Not Applicable

E. Product Test Data

1. Not Applicable

F. Contractor Permits

1. Not Applicable

G. Miscellaneous Items

1. Not Applicable

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1.04 Project Conditions

A. Not applicable

1.05 Sequencing

A. Not applicable

PART 2 – PRODUCTS

2.01 Materials

A. Comply with ConnDOT Form 816, Supplemental Specification Section 9.80, Article 9.80.02.

PART 3 - EXECUTION

3.01 Construction Staking

A. Comply with ConnDOT Form 816, Supplemental Specification Section 9.80, Article 9.80.03.

B. Owner will provide Contractor with horizontal and vertical survey control on or in close proximity to the site.

PART 4 – MEASUREMENT AND PAYMENT

4.01 Construction Staking

B. Measurement: Owner will not measure the individual products and services described in Parts 1, 2, and 3 of this Specification for payment. The cost completing all work of this Item shall be included in the Contract Lump Sum Price for Construction Staking. At the time of each payment requisition, Owner will estimate the percentage of completion for the work of this Item, and compute the value earned to date according to the following formula:

$V = P \times S$ Where: V = Value earned to date

P = Owner's estimate of percent complete for the work of this Item

S = Contractor's Contract Lump Sum Price for the work of this Item

C. Payment: This item will be paid for at the Contract Lump Sum Price for "Construction Staking". The Contract Lump Sum Price shall include all materials, equipment, tools, and labor incidental for construction of this Item.

Payment Items:

Item Number	Item Description	Pay Unit
02110-1	Construction Staking	LS

END OF SECTION

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SECTION 02115
CLEARING AND GRUBBING

PART 1 – GENERAL

1.01 Scope of Work

A. Provide all plant, materials, supplies, power, machinery, equipment, tools, superintendence, labor, overhead, profit, insurance, bonds, permits, shop drawings, design services (where required), and other services and accessories required to complete the work of this Section.

B. To complete the work of this Section, the Contractor shall:

1. Comply with ConnDOT Form 816; Standard Specification Section 2.01, Article 2.01.01.

1.02 Related Documents

A. The publications listed below form a part of this specification to the extent referenced. These publications are referred to in the text by the basic designation only.

Basic Designation	Document
ConnDOT Form 816	State of Connecticut Department of Transportation – Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816, 2004. And State of Connecticut Department of Transportation – Supplemental Specifications to Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816 (July 2015)

1.03 Submittals

A. Shop Drawings:

1. Not Applicable

B. Product Data:

1. Not Applicable

C. Samples:

1. Not Applicable

D. Design Drawings:

1. Not Applicable

E. Product Test Data

1. Not Applicable

F. Contractor Permits

1. Not Applicable

G. Miscellaneous Items

1. Not Applicable

1.04 Project Conditions

A. Not applicable

1.05 Sequencing

A. Prior to commencement of clearing operations, meet with Owner and Engineer to review contract clearing limits and any individual trees outside of the clearing limits that are subject to protection.

1.06 Quality Assurance

A. All work of this Item shall be performed by skilled workers using proper equipment, techniques and safety precautions.

PART 2 – PRODUCTS

2.01 Clearing and Grubbing

A. No products required.

PART 3 - EXECUTION

3.01 Clearing and Grubbing

A. Comply with ConnDOT Form 816, Standard Specifications Section 2.01, Article 2.01.03, except that all stumps within the clearing limits shall be removed, regardless of whether they exist beneath proposed fill embankments. All stumps removed shall become property of Contractor and shall be properly disposed of outside the project limits.

PART 4 – MEASUREMENT AND PAYMENT

4.01 Clearing and Grubbing

A. Measurement: Owner will not measure the individual products and services described in Parts 1, 2, and 3 of this Specification for payment. The cost completing all work of this Item shall be included in the Contract Lump Sum Price for Clearing and Grubbing. At the time of each payment requisition, Owner will estimate the percentage of completion for the work of this Item, and compute the value earned to date according to the following formula:

$V = P \times S$ Where: V = Value earned to date

P = Owner's estimate of percent complete for the work of this Item

S = Contractor's Contract Lump Sum Price for the work of this Item

B. Payment: This item will be paid for at the Contract Lump Sum Price for "Clearing and Grubbing". The Contract Lump Sum Price shall include all materials, equipment, tools, and labor incidental for construction of this Item.

Payment Items:

Item Number	Item Description	Pay Unit
02115-1	Clearing and Grubbing	LS

END OF SECTION

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SECTION 02204
ROCK EXCAVATION

PART 1 – GENERAL

1.01 Scope of Work

A. Provide all plant, materials, supplies, power, machinery, equipment, tools, superintendence, labor, overhead, profit, insurance, bonds, permits, shop drawings, design services (where required), and other services and accessories required to complete the work of this Section.

B. The scope of work under this item shall include the removal and disposal of rock elements encountered within the limits of excavation that are larger than the largest size required for construction of the work of this Contract. The use of explosives is prohibited.

1.02 Related Documents

A. Not Applicable.

1.03 Submittals

A. None required.

1.04 Project Conditions

A. Contractor is advised that large rock elements may be present within the limits of excavation depicted in the Contract Drawings.

1.05 Sequencing

A. No specific requirements.

1.06 Quality Assurance

A. Rock excavation shall be performed by skilled workers using proper equipment, techniques and safety precautions.

PART 2 – PRODUCTS

2.01 Rock Excavation

A. None required

PART 3 - EXECUTION

3.01 Rock Excavation

A. If Contractor encounters rock elements within the limits of excavation that are larger than the largest size required for construction of the work of this Contract, Contractor shall confer with Engineer prior to excavation of any rock. Engineer may order Contractor to remove and dispose of the rock elements or leave them in place.

B. Contractor may disintegrate rock ordered for removal and disposal through approved means. The use of explosives to disintegrate rock is prohibited. The Contractor shall use only mechanical methods to disintegrate rock that is too large to move and load with conventional excavation equipment. Contractor may employ expansive tools or mechanical-disintegration compound

used in drilled holes, or percussion hammers to disintegrate the rock prior to removal and disposal.

C. Contractor may use disintegrated rock for construction of channel lining specified elsewhere in these Contract Documents, provided that the disintegrated rock fragments meet the shape, surface characteristics, soundness, and size requirements required for the various types of channel lining in this Contract.

D. All rock elements ordered for removal and disposal by Engineer shall become the property of Contractor and shall be properly disposed of outside the contract limits.

PART 4 – MEASUREMENT AND PAYMENT

3.01 Rock Excavation

A. Measurement – The Owner will measure for payment the actual number of cubic yards of rock excavation so ordered by Engineer, completed by Contractor, and accepted by Owner. Measurements will be taken on the rock in its in-situ form, prior to disintegration. The following items will not be measured for payment:

1. Work associated with drilling rock
2. Work and materials associated with the use of mechanical-disintegration compound.
3. Work associated with the disintegration and reuse of large rock in construction of channel lining.
4. Rock excavated (intentionally or inadvertently) outside of the excavation limits depicted in the Contract Documents.

B. Payment – The Owner will compensate Contractor at the Contract Unit Price for each cubic yard of rock excavation completed by the Contractor and accepted by the Owner. The Contract Unit Price shall include all materials, equipment, tools, and labor incidental to the excavation, disintegration, removal, and disposal of this Item.

Pay Items:

Item No.	Pay Item	Pay Unit
02204-1	Rock Excavation	CY

END OF SECTION

SECTION 02205
HANDLING WATER

PART 1 – GENERAL

1.01 Scope of Work

A. Provide all plant, materials, supplies, power, machinery, equipment, tools, superintendence, labor, overhead, profit, insurance, bonds, permits, shop drawings, design services (where required), and other services and accessories required to complete the work of this Section.

B. For the purposes of this Specification, the term "water handling" shall be understood to mean any temporary type of protective facility which complies with the water handling objectives indicated in the Contract Documents and which satisfies the condition that the permanent work of this Contract may be constructed in the dry. The control and handling of ground water, the handling of certain flood flows, protection of existing structures and any or all of the finished construction work during high water are included in the scope of work under this item.

C. To complete the work of this Section, the Contractor shall:

1. Prepare a water handling plan for the project and submit the same to Engineer for review and approval.
2. Comply with ConnDOT Form 816 Standard Specification Section 2.04, Article 2.04.01.
3. Construct and maintain temporary cofferdams, flow diversions, barriers, diversion pipes, or other such protective facilities and methods necessary to convey flood water beyond the limits of construction.
4. Construct and maintain pumping facilities and other temporary dewatering facilities so that the work of the Contract may be constructed in the dry.
5. Remove all temporary structures and facilities at the appropriate time within the approved construction sequence, but no later than completion date of the permanent work.

1.02 Related Documents

A. The publications listed below form a part of this specification to the extent referenced. These publications are referred to in the text by the basic designation only.

Basic Designation	Document
ConnDOT Form 816	State of Connecticut Department of Transportation – Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816, 2004. And State of Connecticut Department of Transportation – Supplemental Specifications to Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816 (July 2015)

1.03 Submittals

A. Shop Drawings:

1. Not Applicable

B. Product Data:

1. Submit product data for various products proposed in Contractor's approved cofferdam and water handling plan.

2. Submit product data for geotextile filter fabric to be used in the temporary pumping settling basin.

C. Samples:

1. Not Applicable

D. Design Drawings:

1. See "Miscellaneous Items" below.

E. Product Test Data

1. Not Applicable

F. Contractor Permits

1. Not Applicable

G. Miscellaneous Items

1. Contractor shall prepare and submit a water handling plan to Engineer for review and approval. The water handling plan shall be comprised of a narrative and drawings that depict the various measures that will be employed. The water handling plan shall also include a list of 24-hour emergency contacts. Unless otherwise authorized by permit or approved by Engineer, the sequence of work and water handling means and methods in Contractor's water handling plan shall reflect with the water handling and construction dewatering concepts and objectives depicted on the Contract Drawings. If Contractor's water handling plan deviates significantly from the work sequence and water handling objectives required in the Contract Documents, Owner may need to secure revised authorizations from the regulatory agencies that issued permits.

1.04 Project Conditions

1. Unless approved otherwise by Engineer and Owner, Contractor's sequence of work and water handling means and methods shall generally comply with depicted on the Contract Drawings and approved by applicable regulatory agencies. Engineer and Owner may authorize deviations at their sole discretion, provided that such deviations do not violate the terms and conditions of permits acquired by Owner for the project.

2. Contractor's water handling plan must incorporate any conditions of approval set forth in permits acquired for this project by Owner.

3. Unless authorized by permit, Contractor shall restrict unconfined in-stream activities to the period between July 1 and September 30.

4. Contractor shall make every effort to secure the work site before predicted major storms. A major storm shall be defined as a storm predicted by NOAA Weather Service with warnings of flooding, severe thunderstorms, or similarly severe weather conditions or effects.

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1.05 Sequencing

A. Contractor shall receive Engineer's approval for the project's water handling plan prior to commencement of any construction work.

B. Contractor shall construct the pre-formed scour hole, cofferdam, and bypass piping prior to commencement of channel construction.

1.06 Quality Assurance

A. All work of this Item shall be performed by skilled workers using proper equipment, techniques and safety precautions.

PART 2 – PRODUCTS

2.01 Water Handling

A. Provide products, as required to implement Contractor's approved water handling plan; Materials may include:

1. Cofferdam: To be determined and designed by Contractor.
2. Diversion Pipe: Comply with ConnDOT Form 816, Supplemental Specification Section M.08, Article M.08.01, Sub-Article 18. Use Type C corrugated polyethylene pipe.

PART 3 - EXECUTION

3.01 Water Handling

A. Contractor shall comply with ConnDOT Form 816, Standard Specification Section 1.10, as amended by ConnDOT Form 816 Supplemental Specification 1.10.

B. Contractor shall design and implement water handling measures. Contractor's water handling operations shall conform to the requirements of ConnDOT Form 816 Standard Specification Section 2.04, Article 2.04.03, excluding provisions for pouring underwater concrete.

C. Contractor shall investigate and verify existing stream conditions and design the necessary protection and facilities to accommodate the general work sequence and water handling features and objectives included in the Contract Documents. Prior to commencement of construction, Contractor shall render and submit a water handling plan to Engineer for review and approval. The plan shall include a written narrative and drawings as necessary to depict details of the plan and methods that Contractor proposes to use for handling water. Engineer's review and approval of Contractor's water handling plan shall not relieve Contractor of any responsibility for the safety and protection of workers, the work site, or downstream life and property.

D. Construct diversion measures (cofferdam and bypass pipe) that are designed to convey the two-year flood (14 CFS). Unless otherwise approved by Engineer, the elevation assigned for the crest of the cofferdam and the size and type of conduit used for flow diversions shall comply with information and instructions contained in the Contract Documents. All temporary structures or facilities shall be safely designed for applicable loadings, extended to sufficient depth, and be of such dimensions and water-tightness so as to assure construction of the permanent work in the

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dry. These temporary measures shall be sized and placed so as not to interfere with proper performance of the work and to permit excavation for permanent work to the limits shown on the Contract Drawings. Interior dimensions shall provide sufficient clearance for construction and inspection of forms. Movement or failures of the temporary water handling facilities, or any portions thereof, which prevent proper completion of the permanent work, shall be corrected at Contractor's the sole expense.

E. Contractor shall follow the approved water handling plan, unless a deviation is authorized or ordered in writing by Engineer.

F. In the event that excessive precipitation is predicted, work within the stream channel shall be further protected by removing any materials or objects from the area which are not self-restrained or anchored.

G. If a flood occurs, provide a representative at the site until flooding subsides to levels less than the capacity of the water handling measures in place at the time.

PART 4 – MEASUREMENT AND PAYMENT

4.01 Water Handling

A. Measurement: Owner will not measure the individual products and services described in Parts 1, 2, and 3 of this Specification for payment. The cost completing all work of this Item shall be included in the Contract Lump Sum Price for Water Handling. At the time of each payment requisition, Owner will estimate the percentage of completion for the work of this Item, and compute the value earned to date according to the following formula:

$V = P \times S$ Where: V = Value earned to date

P = Owner's estimate of percent complete for the work of this Item

S = Contractor's Contract Lump Sum Price for the work of this Item

B. Payment: This item will be paid for at the Contract Lump Sum Price for "Handling Water". The Contract Lump Sum Price shall include all materials, equipment, tools, and labor incidental for construction of this Item.

Payment Items:

Item Number	Item Description	Pay Unit
02205-1	Handling Water	LS

END OF SECTION

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SECTION 02306
TEMPORARY GRAVEL ACCESS ROAD

PART 1 – GENERAL

1.01 Scope of Work

A. Provide all plant, materials, supplies, power, machinery, equipment, tools, superintendence, labor, overhead, profit, insurance, bonds, permits, shop drawings, design services (where required), and other services and accessories required to complete the work of this Section.

B. To complete the scope of work of this Section, Contractor shall:

1. Remove and dispose of forest litter, topsoil, and other organic materials within the footprint of the Temporary Gravel Access Road.
2. Remove and stack guide rail as necessary for use of the Temporary Gravel Access Road.
3. Furnish, place, and compact gravel for use as a temporary access road.
4. Maintain the temporary gravel access road until it is no longer needed for construction access.
5. Remove and dispose of gravel to a depth of four inches below finished grade.
6. Reset guide rail following completion of turf establishment and plantings.

1.02 Related Documents

A. The publications listed below form a part of this specification to the extent referenced. These publications are referred to in the text by the basic designation only.

Basic Designation	Document
ConnDOT Form 816	State of Connecticut Department of Transportation – Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816, 2004. And State of Connecticut Department of Transportation – Supplemental Specifications to Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816 (July 2015)

1.03 Submittals

Contractor shall submit the following items to Engineer for review and approval:

A. Shop Drawings:

1. None required.

B. Product Data:

1. None required.

C. Samples:

1. None required.

D. Product Test Data:

1. Sieve analysis, as prepared and certified by a qualified material testing laboratory, for gravel used in formation of the Temporary Gravel Access Road

E. Contract Permits:

1. Copies of any supplemental permits received by Contractor for this project.

F. Miscellaneous Items:

1. Not applicable.

1.04 Project Conditions

A. Contractor is advised of the lack of space available on-site for material stockpiles.

1.05 Sequencing

A. Contractor shall construct the Temporary Gravel Access Road early in the construction sequence. The road shall remain in service and maintained by Contractor until commencement of Turf Establishment in the area of the road.

1.06 Quality Assurance

A. All work of this Item shall be performed by skilled workers using proper equipment, techniques and safety precautions.

PART 2 – PRODUCTS

2.01 Temporary Gravel Access Road

A. Processed aggregate used in construction of the Temporary Gravel Access Road shall conform to the requirements of ConnDOT Form 816, Standard Specification Section M.05, Article M.05.01, Sub-Articles M.05.01-1, M.05.01-2, and M.05.01-3.

PART 3 - EXECUTION

3.01 Temporary Gravel Access Road

A. Contractor shall remove the metal beam guide rail along Shelbourne Drive where necessary to accommodate site ingress and egress and for construction of the work of this project. Contractor shall stack metal beam guiderail components on a suitable, off-road area within the Contract Limits. If a suitable area is not available within the project limits, Owner will provide a storage area within two miles of the project site.

B. Contractor shall excavate forest litter, topsoil, and other organics within the footprint of the Temporary Gravel Access Road to a minimum depth of six inches. Excavated material shall become property of Contractor and shall be properly disposed of outside the project limits. Excavated topsoil may be reused to complete the work of this project provided that it meets the requirements of Section 02920 of these Specifications.

C. Contractor shall furnish, place, and compact processed aggregate on the prepared subgrade to serve as a temporary access road. Contractor shall grade the road as necessary to result in a

smooth, traversable surface. The Temporary Gravel Access Road shall be placed in the location, and constructed to the cross section depicted on the Contract Drawings. Placement and compaction of processed aggregate shall conform to the requirements of ConnDOT Form 816, Standard Specification Section 3.05, Article 3.05.03.

D. Contractor shall maintain the Temporary Gravel Access Road throughout the duration of its use on the project. Contractor's maintenance responsibilities and activities shall conform to the requirements of ConnDOT Form 816, Standard Specification Section 3.05, Article 3.05.03.

E. When the Temporary Gravel Access Road is no longer needed, Contractor shall remove the processed aggregate to a depth of four inches below the finished grade of adjacent terrain. All removed processed aggregate shall become the property of Contractor and shall be properly disposed of outside the Contract Limits.

F. When vehicular access to the project site is no longer needed, Contractor shall retrieve metal beam guide rail components from storage and reset the components in the same location from which they were removed.

PART 4 – MEASUREMENT AND PAYMENT

4.01 Temporary Gravel Access Road

A. Measurement –The various products and services described in Parts 1, 2, and 3 of this specification as they relate to the work of this Item will not be measured for payment. All costs associated with the work of this Item shall be included in the Contract Unit Price per linear foot of "Temporary Gravel Access Road", including the cost of supplemental gravel required for maintenance and the removal and resetting of metal beam guide rail. The Owner will measure for payment the actual number of linear feet of "Temporary Gravel Access Road" completed by Contractor and accepted by Owner. Measurements will be taken along the centerline of the Temporary Gravel Access Road.

B. Payment – This item shall be paid for at the Contract Unit Price per linear foot of "Temporary Gravel Access Road". The Contract Unit Price shall include all materials, equipment, tools, and labor incidental to the installation, maintenance, removal, and disposal of the Item.

Pay Items:

Item No.	Pay Item	Pay Unit
02306-1	Temporary Gravel Access Road	LF

END OF SECTION

SECTION 02370
SOIL EROSION AND SEDIMENT CONTROL

PART 1 – GENERAL

1.01 Scope of Work

A. Provide all plant, materials, supplies, power, machinery, equipment, tools, superintendence, labor, overhead, profit, insurance, bonds, permits, shop drawings, design services (where required), and other services and accessories required to complete the work of this Section.

B. To complete the scope of work of this Section, Contractor shall:

1. Comply with provisions of the project's approved Soil Erosion and Sediment Control Plan.
2. Comply with ConnDOT Form 816 Standard Specification 2.10, Article 2.10.01.
3. Furnish and install various soil erosion and sediment control measures in accordance with this Specification and the project's approved Soil Erosion and Sediment Control Plan.
4. Remove and dispose of soil erosion and sediment control measures in accordance with this Specification and the project's approved Soil Erosion and Sediment Control Plan.

1.02 Related Documents

A. The publications listed below form a part of this specification to the extent referenced. These publications are referred to in the text by the basic designation only.

Basic Designation	Document
ConnDOT Form 816	State of Connecticut Department of Transportation – Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816, 2004. And State of Connecticut Department of Transportation – Supplemental Specifications to Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816 (July 2015)
CT Guidelines	2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended
ConnDOT QPL	Qualified Product List for Connecticut Department of Transportation Projects, June 2015 – Report No. CT-211-00-15-1

1.03 Submittals

Contractor shall submit the following items to Engineer for review and approval:

A. Shop Drawings:

1. None required.

B. Product Data:

1. Separation fabric used in formation of the Construction Entrance

2. Geotextile filter fabric used in the pumping settling basin.
3. Geotextile silt fence.

C. Samples:

1. None required.

D. Product Test Data:

1. Sieve analysis for stone used in formation of the Construction Entrance as prepared and certified by a qualified material testing laboratory.

E. Contract Permits:

1. Copies of any supplemental permits received by Contractor for this project.

F. Miscellaneous Items:

1. Not applicable.

1.04 Project Conditions

A. Contractor is advised that runoff from the project site enters a wetland immediately downstream of the construction limits and that the project site falls within the watershed of Woodridge Lake. Accordingly, it is imperative that Contractor properly implement, monitor, and maintain soil erosion and sediment control measures for this project.

B. The pumping settling basin may be used for discharge dewatering wastewater at rates less than or equal to 28 gallons per minute. Contractor to confer with Engineer for direction if pumping rates are anticipated to exceed 28 gallons per minute.

1.05 Sequencing

A. Owner has received approval of the project's soil erosion and sediment control plan from the Town of Goshen Inland Wetlands and Watercourses Commission. This plan was tailored to a specific construction sequence. Contractor shall follow the plan's construction sequence unless authorized otherwise by Engineer. If Contractor desires to alter the project's construction sequence to accommodate his or her preferred means and methods of construction, Contractor shall propose and submit a written alternate plan for construction sequence and associated soil erosion and sediment control measures to Engineer for review and approval. Contractor is advised that Owner may need to apply for and receive amended permit(s) for any substantial deviations proposed by Contractor and that the amendment process may cause a delay. Contractor is not entitled to compensation for such a delay.

1.06 Quality Assurance

A. Contractor shall monitor the condition and performance of the project's soil erosion and sediment control measures at least weekly and after each rainfall that equals or exceeds ½ inch in any 24-hour period. Contractor shall promptly repair any erosion control measures damaged by construction activities or flooding conditions.

PART 2 – PRODUCTS

2.01 Water Pollution Control (Soil Erosion)

A. Contractor shall provide all materials necessary to fulfill his or her responsibilities as listed in Part 3 - Item 3.1 of this Specification.

2.02 Construction Entrance

A. Geotextile used in the formation of the Construction Entrance shall conform to the requirements of ConnDOT Form 816 Supplemental Specification Section M.08 Article M.08.01, Sub-Article 19 and shall be listed in the ConnDOT QPL. The fabric shall also meet the requirements for a medium survivability separation fabric as defined in the ConnDOT QPL.

B. Stone used in formation of the Construction Entrance shall conform to the requirements of ConnDOT Form 816 Standard Specification Material Section M.01, Article M.01.01 – Gradation No. 3.

2.03 Pumping Settling Basin

C. Geotextile Filter Fabric used in formation of the pumping settling basin shall conform to the requirements of ConnDOT Form 816 Supplemental Specification Section M.08 Article M.08.01, Sub-Article 19 and shall be listed in the ConnDOT QPL. The fabric shall meet the requirements for Class A Subsurface Geotextile as defined in the ConnDOT QPL.

2.04 Geotextile Silt Fence

A. Geotextile silt fencing used in formation of the combined geotextile silt fence / hay bale barriers and any additional sedimentation control systems so ordered by Engineer or proposed by Contractor shall conform to the requirements of ConnDOT Form 816 Standard Specification Section 2.19, Article 2.19.2 and shall be listed as a sediment control geotextile in the ConnDOT QPL.

2.05 Hay Bale Barrier

A. Hay bales used in formation of hay bale barriers and combined geotextile silt fence / hay bale barriers shall conform to the requirements of ConnDOT Form 816 Standard Specification Section 2.18, Article 2.18.2.

PART 3 - EXECUTION

3.01 Water Pollution Control (Soil Erosion)

A. Comply with ConnDOT Form 816 Standard Specification Section 2.10.03. Throughout the duration of Contract Time, Contractor shall:

1. Render proactive efforts to minimize erosion of the site and migration of sediment into downstream wetlands and waterbodies and adjacent properties.
2. Protect work-in-process from erosion and sedimentation so as to comply with the intent of this Specification and the project's approved Soil Erosion and Sediment Control Plan.

3. Furnish the necessary materials and equipment to provide for early stabilization and/or corrective measures in the event that areas within the Contract Limits suffer damage from erosion.
4. Expeditiously repair or replace damaged or deteriorated soil erosion and sediment control measures.
5. Maintain soil erosion and sediment control measures in accordance with this specification and the project's approved Soil Erosion and Sediment Control Plan. Maintenance activities include, but are not limited to the following:
   a. Construction Entrance: Monitor performance of the Construction Entrance daily and top dress with clean stone as required to maintain effectiveness. Sweep pavement daily to remove any soil tracked onto Shelbourne Drive by construction vehicles.
   b. Pumping Settling Basin: Monitor sediment levels within the settling basin daily. Remove sediment when the capacity of the settling basin has been reduced by 10%. Replace the fabric if damaged or when its permeability has been compromised by clogging.
   c. Geotextile Silt Fence: Monitor all silt fences weekly and after any precipitation events that equal or exceed ½ inch in any 24-hour period. Remove accumulated sediment when levels reach 25% of the effective barrier height. Repair or replace geotextile silt fence immediately upon discovery of damage or deterioration.
   d. Hay Bale Barrier: Monitor all hay bale barriers weekly and after any precipitation events that equal or exceed ½ inch in any 24-hour period. Remove accumulated sediment when levels reach 25% of the effective barrier height. Repair or replace hay bales immediately upon discovery of damage or deterioration.
   e. Erosion Control Matting: Repair or replace erosion control matting damaged by wind or flowing water.

3.02 Construction Entrance

A. Excavate forest litter, topsoil, and other organics to a minimum depth of six inches. Excavated material shall become property of Contractor and shall be properly disposed of outside the project limits.

B. Furnish and install separation fabric on the prepared subgrade, covering the entire footprint of the construction entrance. Lap all joints at least 12 inches or in accordance with the manufacturer's recommendations, whichever is greater.

C. Furnish and place stone, covering the entire footprint of the construction entrance, to the depth required in the Contract Drawings. Grade as necessary to result in a smooth, traversable surface.

D. When the Construction Entrance is no longer needed, remove the stone and separation fabric and refill the resulting excavation with common borrow fill up to the proposed topsoil subgrade. Removed materials shall become the property of Contractor and shall be properly disposed of outside the project limits.

3.03 Pumping Settling Basin

A. Upon completion of pre-formed scour-hole construction but prior to commencement of excavation for channel construction, line the preformed scour hole with filter fabric. Use the lined pre-formed scour hole as a pumping settling basin for discharge of dewatering wastewater throughout the duration of channel construction. Apply weight or anchor the fabric to the preformed scour hole to avoid damage from wind or flowing water.

B. Upon completion of channel construction and removal of the temporary flow diversion, remove and dispose of accumulated sediments and the filter fabric. Removed materials shall become the property of Contractor and shall be properly disposed of outside the project limits.

3.04 Geotextile Silt Fence

A. Furnish and install geotextile silt fencing as part of a combined geotextile silt fence / hay bale barrier as shown in the Contract Drawings or in other locations so ordered by Engineer. Installation shall conform to the requirements of ConnDOT Standard Specification Section 2.19, Article 2.19.03.

B. Remove and dispose of geotextile silt fencing in accordance with the project's approved Soil Erosion and Sediment Control Plan. All removed materials shall become the property of Contractor and shall be properly disposed of outside the Contract Limits.

3.05 Hay Bale Barrier

A. Furnish and install hay bale barriers as part of a combined geotextile silt fence / hay bale barrier and at the outlet of diversion piping as shown in the Contract Drawings or in other locations so ordered by Engineer. Installation shall conform to the requirements of ConnDOT Standard Specification Section 2.18, Article 2.18.03.

B. Remove and dispose of hay bale barriers in accordance with the project's approved Soil Erosion and Sediment Control Plan. All removed materials shall become the property of Contractor and shall be properly disposed of outside the Contract Limits.

PART 4 – MEASUREMENT AND PAYMENT

4.01 Water Pollution Control (Soil Erosion)

A. Measurement: The various responsibilities, products and services described in Parts 1, 2, and 3 of this specification, as they relate to the work of this Item will not be measured for payment. All costs associated with the work of this Item shall be included in the Contract Lump Sum Price for Water Pollution Control (Soil Erosion). At the time of each payment requisition, Owner will estimate the percentage of completion for the work of this Item, and compute the value earned to date according to the following formula:

$V = P \times S$ Where: V = Value earned to date

P = Owner's estimate of percent complete for the work of this Item

S = Contractor's Contract Lump Sum Price for the work of this Item

B. Payment: This item shall be paid for at the Contract Lump Sum Price for "Water Pollution Control (Soil Erosion)". The Contract Unit Price shall include all materials, equipment, tools, and labor incidental to construction of this Item.

4.02 Construction Entrance

A. Measurement –The various products and services described in Parts 1, 2, and 3 of this specification, as they relate to the work if this Item, will not be measured for payment. Also, maintenance, supplemental stone, and daily sweeping of the adjacent roadway will not be measured for payment. All costs associated with the work of this Item shall be included in the Contract Unit Price per square yard of Construction Entrance. This item will be measured for payment based on the actual number of square yards of Construction Entrance completed by Contractor and accepted by Owner.

B. Payment – This item shall be paid for at the Contract Unit Price per square yard of "Construction Entrance". The Contract Unit Price shall include all materials, equipment, tools, and labor incidental to the installation, replacement, removal, and disposal of the Item.

4.03 Pumping Settling Basin

A. Measurement: The various products and services described in Parts 1, 2, and 3 of this specification as they relate to the work if this Item will not be measured for payment. All costs associated with the work of this Item shall be included in the Contract Lump Sum Price for Pumping Settling Basin. At the time of each payment requisition, Owner will estimate the percentage of completion for the work of this Item, and compute the value earned to date according to the following formula:

$V = P \times S$ Where: V = Value earned to date

P = Owner's estimate of percent complete for the work of this Item

S = Contractor's Contract Lump Sum Price for the work of this Item

B. Payment: This item shall be paid for at the Contract Lump Sum Price for "Pumping Settling Basin". The Contract Unit Price shall include all materials, equipment, tools, and labor incidental to the installation, replacement, removal, and disposal of the Item.

4.04 Geotextile Silt Fence

A. Measurement – The work of this Item will be measured for payment by the actual number of linear feet of Geotextile Silt Fence installed by Contractor and accepted by Owner. Measurement shall be made along the centerline of the system. Replacement systems will not be measured for payment.

B. Payment – The Owner will compensate Contractor at the Contract Unit Price for each linear foot of Geotextile Silt Fence completed by the Contractor and accepted by the Owner. The Contract Unit Price shall include all materials, equipment, tools, and labor incidental to the installation, replacement, removal, and disposal of the Item. The Contract Unit Price shall exclude the cost of maintenance and the periodic removal and disposal of accumulated sediment.

4.05 Hay Bale Barrier

A. Measurement – The work of this Item will be measured for payment by the actual number of linear feet of Hay Bale Barrier installed by Contractor and accepted by Owner. Measurement shall be made along the centerline of the system. Replacement systems will not be measured for payment.

B. Payment – The Owner will compensate Contractor at the Contract Unit Price for each linear foot of Hay Bale Barrier completed by the Contractor and accepted by the Owner. The Contract Unit Price shall include all materials, equipment, tools, and labor incidental to the installation, replacement, removal, and disposal of the Item. The Contract Unit Price shall exclude the cost of maintenance and the periodic removal and disposal of accumulated sediment.

Pay Items:

Item No.	Pay Item	Pay Unit
02370-1	Water Pollution Control (Soil Erosion)	LS
02370-2	Construction Entrance	SY
02370-3	Pumping Settling Basin	LS
02370-4	Geotextile Silt Fence	LF
02370-5	Hay Bale Barrier	LF

END OF SECTION

SECTION 02550
PREFORMED SCOUR HOLE

PART 1 – GENERAL

1.01 Scope of Work

A. Provide all plant, materials, supplies, power, machinery, equipment, tools, superintendence, labor, overhead, profit, insurance, bonds, permits, shop drawings, design services (where required), and other services and accessories required to furnish and install the work of this Section, complete and in place.

B. The work of this Section includes the following items:

1. Excavate to the lines and grades required to form subgrade for the pre-formed scour hole.
2. Furnish and place gravel bedding layer.
3. Furnish and place riprap as required.
4. Furnish embankment material and construct earthen embankments adjacent to the pre-formed scour hole.

1.02 Related Documents

The publications listed below form a part of this specification to the extent referenced. These publications are referred to in the text by the basic designation only.

Basic Designation	Document
ConnDOT Form 816	State of Connecticut Department of Transportation – Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816, 2004. And State of Connecticut Department of Transportation – Supplemental Specifications to Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816 (July 2015)

1.03 Submittals

A. Shop Drawings

1. None Required

B. Product Data

Procure and Submit product data for the following items:

1. None required.

C. Samples

Prior to shipments to the site, Engineer to review samples of the following items at the source of supply for the following items:

1. Riprap

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2. Bank Run Gravel Bedding
3. Embankment Material

Note: Engineer will review the foregoing products for general compliance with the material specifications stipulated in Section 2 below. Engineer's approval of samples made available for inspection at the source of supply shall not relieve Contractor of the responsibility to furnish and place materials that comply with the requirements of this Specification.

D. Design Plans

1. None required

E. Product Test Data:

Submit product test data to Engineer for the following items. All tests shall be conducted by a qualified material testing laboratory and sealed by a licensed professional engineer in the State of Connecticut.

1. Gradation tests for:
   a. Bank Run Gravel
   b. Embankment Material
2. Proctor Analyses:

   Testing protocols shall conform to the requirements of AASHTO T 180, Method D. Provide Modified Proctor Test results for:

   a. Bank Run Gravel
   b. Embankment Material.

F. Contractor Permits

1. Submit copies of Contractor-acquired permits (if any) to the Engineer.

G. Miscellaneous Items

Prepare and submit the following miscellaneous items to the Engineer:

1. Identify the name and address of the source of supply for Riprap.
2. Identify the name and address of the source of supply for Bank Run Gravel.
3. Identify the name and address of the source of supply for Embankment Material.

1.04 Project Conditions

A. Contractor is advised of the lack of space available on-site for material stockpiles.

1.05 Sequencing

A. Contractor is responsible for selecting the sequence of work. The sequence of work shall generally follow the sequence outlined in the projects approved Soil Erosion and Sediment

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Control Plan, unless Contractor receives written approval for an alternate sequence from the regulatory agencies that originally authorized or permitted the project.

B. Contractor shall construct this item early in the construction sequence so that it may serve as a temporary pumping settling basin during construction of channel improvements.

1.06 Quality Assurance

A. All work of this Item shall be performed by skilled workers using proper equipment, techniques and safety precautions.

PART 2 – PRODUCTS

2.01 Preformed Scour Hole:

A. Bank Run Gravel Bedding used beneath the scour hole lining shall conform to the requirements of ConnDOT Form 816 Standard Specification Section M.02, Article M.02.06 - Grading C.

B. Intermediate Riprap used to form the lining of the preformed scour hole shall conform to the requirements of ConnDOT Form 816 Standard Specification Section M.12, Article M.12.02. Contractor may re-use on site rock to supplement the quantity required provided that the rock conforms to the requirements of this paragraph.

C. Embankment Material used in formation of impervious earthen embankments adjacent to the preformed scour hole shall be furnished by the Contractor from approved sources. The earthen embankment material shall consist of clean earth, free of vegetation, masses of roots, and other deleterious material, and shall be substantially free from loam or other organic matter. The earth embankment material shall, upon compaction, form a solid, stable embankment. The embankment material shall be hardpan, glacial till or other similar material having at least 25 percent passing a No. 200 sieve, and shall not contain stones larger than six inches in the least dimension.

PART 3 – EXECUTION

3.01 Preformed Scour Hole

A. Strip forest litter, topsoil, and other deleterious material from the limits of excavation prior to commencement of scour-hole subgrade formation. Topsoil may be reused to complete the work of this project provided that it meets the requirements of Section 02920 of these Specifications. All unsuitable materials, forest litter, and surplus topsoil shall become the property of Contractor and shall be properly disposed of outside the project limits.

B. Excavation, excluding rock excavation, as required to form subgrade for the preformed scour hole shall conform to the requirements of ConnDOT Form 816, Standard Specification Section 2.02, Article 2.02.03. Contractor shall form subgrade to the lines and grades required on the Contract Drawings. The elevation of finished subgrade shall not vary from elevations depicted in the Contract Drawings by more than +/-0.1 foot at any given location within the scour hole. Contractor may re-use surplus inorganic earthen materials to form the earthen embankments adjacent to the pre-formed scour hole, provided that the soil conforms to the requirements for

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Embankment Material as stipulated in Section 2 above. All unsuitable or surplus topsoil and inorganic soil not used to construct the work of this Item or other Items of the Contract shall become property of Contractor and shall be properly disposed of outside the project limits.

C. Contractor shall furnish and place Bank Run Gravel bedding to support the preformed scour hole lining. Bank Run Gravel bedding shall be constructed to the cross-section, lines and grades depicted on the Contract Drawings. Placement of Bank Run Gravel bedding shall conform to the requirements of ConnDOT Form 816, Standard Specification Section 2.02, Article 2.02.03, Sub-Article 6 – Compaction. The elevation of the finished surface of the gravel bedding shall not vary from the lines and grades depicted on the Contract Drawings by more than 0.1 foot at any given location in the preformed scour hole.

D. Contractor shall furnish and place riprap to line the preformed scour hole. Riprap shall be constructed to the cross-section, lines, and grades depicted on the Contract Drawings. Placement of riprap shall conform to the requirements of ConnDOT Form 816, Standard Specification 7.03, Article 7.03.03.

E. Contractor shall furnish and construct earthen embankments along the channel where required on the Contract Drawings. The constructed embankments shall meet the cross sections, lines, and grades depicted on the Contract Drawings. Placement of embankment material shall conform to the requirements of ConnDOT Form 816, Standard Specification Section 2.02, Article 2.02.03, Sub-Article 6 – Compaction.

PART 4 – MEASUREMENT AND PAYMENT

4.01 Preformed Scour Hole

A. Measurement: The various products and services described in Parts 1, 2, and 3 of this specification, as they relate to the work of this Item, will not be measured individually for payment. All costs associated with the work of this Item shall be included in the Contract Lump Sum Price for "Preformed Scour Hole". At the time of each payment requisition, Owner will estimate the percentage of completion for the work of this Item, and compute the value earned to date according to the following formula:

$V = P \times S$ Where: V = Value earned to date

P = Owner's estimate of percent complete for the work of this Item

S = Contractor's Lump Sum Price for the work of this Item

B. Payment: This item shall be paid for at the Contract Lump Sum Price for "Preformed Scour Hole". The Contract Unit Price shall include all materials, equipment, tools, and labor incidental to construction of this Item.

Pay Items:

Item No.	Pay Item	Pay Unit
02551-1	Preformed Scour Hole	LS

END OF SECTION

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SECTION 02551
RIPRAP CHANNEL

PART 1 – GENERAL

1.01 Scope of Work

A. Provide all plant, materials, supplies, power, machinery, equipment, tools, superintendence, labor, overhead, profit, insurance, bonds, permits, shop drawings, design services (where required), and other services and accessories required to furnish and install the work of this Section, complete and in place.

B. The work of this Section includes the following items:

1. Excavate to form the required subgrade for the channel floor and banks.
2. Furnish and place Borrow Material where needed to form the subgrade.
3. Furnish and place the Gravel bedding layer.
4. Furnish and place Modified Riprap bedding layer
5. Furnish and place the Standard Riprap channel lining.
6. Furnish and place Embankment Material to construct earthen embankments adjacent to the riprap-lined channel where required.

1.02 Related Documents

The publications listed below form a part of this specification to the extent referenced. These publications are referred to in the text by the basic designation only.

Basic Designation	Document
ConnDOT Form 816	State of Connecticut Department of Transportation – Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816, 2004. And State of Connecticut Department of Transportation – Supplemental Specifications to Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816 (July 2015)

1.03 Submittals

A. Shop Drawings

1. None Required

B. Product Data

Procure and Submit product data for the following items:

1. None required.

C. Samples

Prior to shipments to the site, Engineer to review samples of the following items at the source of supply for the following items:

1. Borrow Material
2. Gravel Bedding
3. Modified Riprap
4. Standard Riprap
5. Embankment Material

Note: Engineer will review the foregoing products for general compliance with the material specifications stipulated in Section 2 below. Engineer's approval of samples made available for inspection at the source of supply shall not relieve Contractor of the responsibility to furnish and place materials that comply with the requirements of this Specification.

D. Design Plans

1. None required

E. Product Test Data:

Submit product test data to the Engineer for the following items. All tests shall be conducted by a qualified material testing laboratory and sealed by a licensed professional engineer in the State of Connecticut.

1. Gradation test for:
   a. Gravel Bedding
   b. Embankment Material
   c. Borrow Material
2. Proctor Analysis:
   a. Testing protocols shall conform to the requirements of AASHTO T 180, Method D. Provide Modified Proctor Test results for:
      1) Gravel Bedding
      2) Embankment Material.

F. Contractor Permits

1. Submit copies of Contractor-acquired permits (if any) to the Engineer.

G. Miscellaneous Items

Prepare and submit the following miscellaneous items to the Engineer:

1. Identify the name and address of the source of supply for Riprap.
2. Identify the name and address of the source of supply for Gravel Bedding.
3. Identify the name and address of the source of supply for Embankment Material.
4. Identify the name and address of the source of supply for Borrow Material.

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1.04 Project Conditions

A. Contractor is advised of the lack of space available on-site for material stockpiles.

1.05 Sequencing

A. Contractor is responsible for selecting the sequence of work. The sequence of work shall generally follow the sequence outlined in the project's approved Soil Erosion and Sediment Control Plan, unless Contractor receives written approval for an alternate sequence from the regulatory agencies that originally authorized or permitted the project.

B. Contractor shall not begin construction of this item until the preformed scour hole is constructed and retrofitted to serve as a temporary pumping settling basin.

1.06 Quality Assurance

A. All work of this Item shall be performed by skilled workers using proper equipment, techniques and safety precautions.

PART 2 – PRODUCTS

2.01 Riprap Channel

A. Imported common fill (Borrow Material) used in formation of the channel subgrade shall conform to the requirements of ConnDOT Form 816 Standard Specification Section 2.07, Article 2.07.02.

B. Gravel Bedding shall conform to the requirements of ConnDOT Form 816 Standard Specification Section M.02, Article M.02.06 - Grading C.

C. Modified Riprap Bedding shall conform to the requirements of ConnDOT Form 816 Standard Specification Section M.12, Article M.12.02. Contractor may re-use on-site rock to supplement the quantity required provided that the rock conforms to the requirements of this paragraph.

D. Standard-size Riprap used to construct the channel lining shall conform to the requirements of ConnDOT Form 816 Standard Specification Section M.12, Article M.12.02. Contractor may re-use on-site rock to supplement the quantity required provided that the rock conforms to the requirements of this paragraph.

E. Embankment Material used in formation of impervious earthen embankments shall be furnished by the Contractor from approved sources. The earthen embankment material shall consist of clean earth, free of vegetation, masses of roots, and other deleterious material, and shall be substantially free from loam or other organic matter. The earth embankment material shall, upon compaction, form a solid, stable embankment. The embankment material shall be hardpan, glacial till or other similar material having at least 25 percent passing a No. 200 sieve, and shall not contain stones larger than six inches in the least dimension.

PART 3 – EXECUTION

3.01 Riprap Channel

A. Contractor shall strip forest litter, topsoil, and other deleterious material from the limits of excavation prior to commencement of channel excavation. Topsoil may be reused to complete the work of this project provided that it meets the requirements of Section 02920 of these Specifications. All unsuitable materials, forest litter, and surplus topsoil shall become the property of Contractor and shall be properly disposed of outside the project limits.

B. Excavation, excluding rock excavation, as required to form the subgrade of the Riprap Channel shall conform to the requirements of ConnDOT Form 816, Standard Specification Section 2.02, Article 2.02.03. Contractor shall fill voids and hollows below subgrade elevation with material cut from other areas of the channel. In the event that the volume or quality of cut material is insufficient to meet fill demands for subgrade construction, Contractor shall furnish and place Borrow Material. The subgrade shall be constructed to the cross section, lines, and grades depicted in the Contract Drawings. All unsuitable and surplus material not used in formation of the subgrade or earthen embankments shall become property of Contractor and shall be properly disposed of outside the project limits.

C. Gravel Bedding used in support of riprap channel lining shall be constructed to the cross-section, lines, and grades depicted on the Contract Drawings. Placement of Gravel Bedding shall conform to the requirements of ConnDOT Form 816, Standard Specification Section 2.02, Article 2.02.03, Sub-Article 6 – Compaction.

D. Modified Riprap Bedding used in support of riprap channel lining shall be constructed to the cross-section, lines, and grades depicted on the Contract Drawings.

E. Construction of the Riprap Channel lining shall conform to the requirements of ConnDOT Form 816 Standard Specification 7.03, Article 7.03.03.

F. All unsuitable materials, forest litter, and surplus topsoil generated by construction of this item shall become the property of Contractor and shall be properly disposed of outside the project limits.

G. Construction of earthen embankments along the Riprap Channel shall meet the cross sections, lines, and grades depicted on the Contract Drawings. Placement of embankment material shall conform to the requirements of ConnDOT Form 816, Standard Specification Section 2.02, Article 2.02.03, Sub-article 6 – Compaction.

PART 4 – MEASUREMENT AND PAYMENT

4.01 Riprap Channel

A. Measurement: The various products and services described in Parts 1, 2, and 3 of this specification, as they relate the work of this Item will not be measured individually for payment. The cost of all these items shall be included in the Contract Unit Price for "Riprap Channel". This Item will be measured by the actual number of linear feet of "Riprap Channel" completed by the

Contractor and accepted by the Owner. Measurements shall be taken along the centerline of the channel.

B. Payment: This Item shall be paid for at the Contract Unit Price per linear foot of "Riprap Channel". The Contract Unit Price shall include all materials, equipment, tools, and labor incidental to construction of this Item.

Pay Items:

Item No.	Pay Item	Pay Unit
02551-1	Riprap Channel	LF

END OF SECTION

SECTION 02552
APPROACH CHANNEL

PART 1 – GENERAL

1.01 Scope of Work

A. Provide all plant, materials, supplies, power, machinery, equipment, tools, superintendence, labor, overhead, profit, insurance, bonds, permits, shop drawings, design services (where required), and other services and accessories required to furnish and install the work of this Section, complete and in place.

B. The work of this Section includes the following items:

1. Excavate to form the required subgrade for the channel floor and banks. Excavation shall include the removal of large outlet-protection stones at the culvert outfall.
2. Furnish and place Borrow Material where needed to form the subgrade.
3. Furnish and place the Gravel Bedding layer.
4. Furnish and place the Standard Riprap channel lining channel.
5. Furnish and place Embankment Material to construct earthen embankments adjacent to the Approach Channel where required.

1.02 Related Documents

The publications listed below form a part of this specification to the extent referenced. These publications are referred to in the text by the basic designation only.

Basic Designation	Document
ConnDOT Form 816	State of Connecticut Department of Transportation – Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816, 2004. And State of Connecticut Department of Transportation – Supplemental Specifications to Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816 (July 2015)

A. Shop Drawings

1. None Required

B. Product Data

Procure and Submit product data for the following items:

1. None required.

C. Samples

Prior to shipments to the site, Engineer to review samples of the following items at the source of supply for the following items:

1. Borrow Material

2. Gravel Bedding
3. Modified Riprap
4. Standard Riprap
5. Embankment Material

Note: Engineer will review the foregoing products for general compliance with the material specifications stipulated in Section 2 below. Engineer's approval of samples made available for inspection at the source of supply shall not relieve Contractor of the responsibility to furnish and place materials that comply with the requirements of this Specification.

D. Design Plans

1. None required

E. Product Test Data:

Submit product test data to the Engineer for the following items. All tests shall be conducted by a qualified material testing laboratory and sealed by a licensed professional engineer in the State of Connecticut.

1. Gradation test for:
   a. Gravel Bedding
   b. Embankment Material
   c. Borrow Material
2. Proctor Analysis:
   a. Testing protocols shall conform to the requirements of AASHTO T 180, Method D. Provide Modified Proctor Test results for:
      1) Bank Run Gravel
      2) Embankment Material.

F. Contractor Permits

1. Submit copies of Contractor-acquired permits (if any) to the Engineer.

G. Miscellaneous Items

Prepare and submit the following miscellaneous items to the Engineer:

1. Identify the name and address of the source of supply for Borrow Material.
2. Identify the name and address of the source of supply for Gravel Bedding.
3. Identify the name and address of the source of supply for Riprap.
4. Identify the name and address of the source of supply for Embankment Material.

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1.04 Project Conditions

A. Contractor is advised of the lack of space available on-site for material stockpiles.

1.05 Sequencing

A. Contractor is responsible for selecting the sequence of work. The sequence of work shall generally follow the sequence outlined in the projects approved Soil Erosion and Sediment Control Plan, unless Contractor receives written approval for an alternate sequence from the regulatory agencies that originally authorized or permitted the project.

1.06 Quality Assurance

A. All work of this Item shall be performed by skilled workers using proper equipment, techniques and safety precautions.

PART 2 – PRODUCTS

2.01 Approach Channel

A. Imported common fill (Borrow Material) used in formation of the channel subgrade shall conform to the requirements of ConnDOT Form 816 Standard Specification Section 2.07, Article 2.07.02.

B. Gravel Bedding shall conform to the requirements of ConnDOT Form 816 Standard Specification Section M.02, Article M.02.06 - Grading C.

C. Modified Riprap Bedding shall conform to the requirements of ConnDOT Form 816 Standard Specification Section M.12, Article M.12.02. Contractor may re-use on-site rock to supplement the quantity required provided that the rock conforms to the requirements of this paragraph.

D. Standard-size Riprap used to construct the channel lining shall conform to the requirements of ConnDOT Form 816 Standard Specification Section M.12, Article M.12.02. Contractor may re-use on-site rock to supplement the quantity required provided that the rock conforms to the requirements of this paragraph.

E. Embankment Material used in formation of impervious earthen embankments shall be furnished by the Contractor from approved sources. The earthen embankment material shall consist of clean earth, free of vegetation, masses of roots, and other deleterious material, and shall be substantially free from loam or other organic matter. The earth embankment material shall, upon compaction, form a solid, stable embankment. The embankment material shall be hardpan, glacial till or other similar material having at least 25 percent passing a No. 200 sieve, and shall not contain stones larger than six inches in the least dimension.

PART 3 – EXECUTION

3.01 Approach Channel

A. Contractor shall remove existing outlet-protection stones at the culvert outfall and strip forest litter, topsoil, and other deleterious material from the limits of excavation prior to commencement of channel excavation. Topsoil may be reused to complete the work of this

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project provided that it meets the requirements of Section 02920 of these Specifications. All unsuitable materials, forest litter, and surplus topsoil shall become the property of Contractor and shall be properly disposed of outside the project limits.

B. Excavation, excluding rock excavation, as required to form the subgrade of the Approach Channel shall conform to the requirements of ConnDOT Form 816, Standard Specification Section 2.02, Article 2.02.03. Contractor shall fill voids and hollows below subgrade elevation with material cut from other areas of the channel. In the event that the volume or quality of cut material is insufficient to meet fill demands for subgrade construction, Contractor shall furnish and place Borrow Material. The subgrade shall be constructed to the cross section, lines, and grades depicted in the Contract Drawings. All unsuitable and surplus material not used in formation of the subgrade or earthen embankments shall become property of Contractor and shall be properly disposed of outside the project limits.

C. Gravel Bedding used in support of riprap shall be constructed to the cross-section, lines, and grades depicted on the Contract Drawings. Placement of Gravel Bedding shall conform to the requirements of ConnDOT Form 816, Standard Specification Section 2.02, Article 2.02.03, Sub-Article 6 – Compaction.

D. Modified Riprap Bedding used in support of riprap channel lining shall be constructed to the cross-section, lines, and grades depicted on the Contract Drawings.

E. Construction of the Standard Riprap Approach Channel lining shall conform to the requirements of ConnDOT Form 816 Standard Specification 7.03, Article 7.03.03.

F. Construction of earthen embankments along the Riprap Channel shall meet the cross sections, lines, and grades depicted on the Contract Drawings. Placement of embankment material shall conform to the requirements of ConnDOT Form 816, Standard Specification Section 2.02, Article 2.02.03, Sub-article 6 – Compaction.

PART 4 – MEASUREMENT AND PAYMENT

4.01 Approach Channel

A. Measurement: The various products and services described in Parts 1, 2, and 3 of this specification, as they relate the work of this Item will not be measured individually for payment. The cost of all these items shall be included in the Contract Unit Price for "Approach Channel". This Item will be measured by the actual number of linear feet of "Approach Channel" completed by the Contractor and accepted by the Owner. Measurements shall be taken along the centerline of the channel.

B. Payment: This Item shall be paid for at the Contract Unit Price per linear foot of "Approach Channel". The Contract Unit Price shall include all materials, equipment, tools, and labor incidental to construction of this Item.

SECTION 02552
APPROACH CHANNEL

Pay Items:

Item No.	Pay Item	Pay Unit
02552-1	Approach Channel	LF

END OF SECTION

SECTION 02920
TURF ESTABLISHMENT

PART 1 – GENERAL

1.01 Scope of Work

A. Provide all plant, materials, supplies, power, machinery, equipment, tools, superintendence, labor, overhead, profit, insurance, bonds, permits, shop drawings, design services (where required), and other services and accessories required to complete the work of this Section.

B. To complete the scope of work of this Section, Contractor shall:

1. Furnish and place topsoil in all areas scheduled for Turf Establishment and where designated by Engineer.
2. Furnish and spread fertilizer and agricultural ground dolomitic limestone in all areas scheduled for Turf Establishment and where designated by Engineer.
3. Furnish and spread grass seed in all areas scheduled for Turf Establishment and where designated by Engineer.
4. Furnish and spread mulch in all areas scheduled for Turf Establishment (except for areas scheduled to receive erosion control matting) and where designated by Engineer.
5. Furnish and install erosion control matting where directed on the Contract Drawings and where designated by Engineer.
6. Establish an accepted, uniform stand of established perennial turf grasses in all areas scheduled for Turf Establishment and where designated by Engineer.

1.02 Related Documents

A. The publications listed below form a part of this specification to the extent referenced. These publications are referred to in the text by the basic designation only.

Basic Designation	Document
ConnDOT Form 816	State of Connecticut Department of Transportation – Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816, 2004. And State of Connecticut Department of Transportation – Supplemental Specifications to Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816 (July 2015)
ConnDOT QPL	Qualified Product List for Connecticut Department of Transportation Projects, June 2015 – Report No. CT-211-00-15-1

1.03 Submittals

Contractor shall submit the following items to Engineer for review and approval:

A. Shop Drawings:

1. None required.

B. Product Data:

1. Agricultural ground dolomitic limestone
2. Fertilizer
3. Grass seed
4. Mulch
5. Erosion control matting

C. Samples:

1. None required.

D. Product Test Data:

1. Topsoil

E. Contract Permits:

1. Copies of any supplemental permits received by Contractor for this project.

F. Miscellaneous Items:

1. Not applicable.

1.04 Project Conditions

A. Contractor is advised of the lack of space available on-site for material stockpiles.

1.05 Sequencing

A. Contractor is responsible for selecting the sequence of work. The sequence of work shall generally follow the sequence outlined in the projects approved Soil Erosion and Sediment Control Plan, unless Contractor receives written approval for an alternate sequence from the regulatory agencies that originally authorized or permitted the project.

1.06 Quality Assurance

A. All work of this Item shall be performed by skilled workers using proper equipment, techniques and safety precautions.

PART 2 – PRODUCTS

2.01 Turf Establishment

A. Topsoil shall conform to the requirements of ConnDOT 816 Supplemental Specification Section M.13 Article M.13.01.

B. Agricultural ground dolomitic limestone shall conform to the requirements of ConnDOT 816 Standard Specification Section M.13 Article M.13.02.

C. Fertilizer shall conform to the requirements of ConnDOT 816 Standard Specification Section M.13 Article M.13.03 as amended by ConnDOT Form 816 Supplemental Specification Section M.13 Article M.13.03.

D. Grass seed shall conform to the requirements of ConnDOT 816 Supplemental Specification Section M.13 Article M.13.04 Sub-Article (a).

E. Mulch shall conform to the requirements of ConnDOT 816 Standard Specification Section M.13 Article M.13.05, except that wood chips shall not be used.

2.02 Erosion Control Matting

A. Erosion Control Matting used to stabilize and protect newly-seeded areas shall conform to the requirements of ConnDOT Form 816 Standard Specification M.13 and shall be listed in the ConnDOT QPL. The Erosion Control Matting shall also conform to the requirements for a Class 1 – Type C Erosion Control Matting as defined in the ConnDOT QPL.

PART 3 - EXECUTION

3.01 Turf Establishment

A. Contractor shall furnish and place topsoil in all areas scheduled for Turf Establishment and where designated by Engineer. Placement of topsoil shall conform to the requirements of ConnDOT Form 816 Standard Specification Section 9.44 Article 9.44.03.

B. Contractor shall establish turf in all areas scheduled for Turf Establishment and where designated by Engineer. Turf establishment operations, including seedbed preparation, the furnishing and spreading of fertilizer, limestone, grass seed, and mulch shall conform to the requirements of ConnDOT Form 816 Standard Specification Section 9.50 Article 9.50.03 Sub Articles 1-3. Hay mulch, if used, shall be spread uniformly by hand or machine, resulting in 80%-95% coverage of the seed bed. Hay mulch shall be applied at a rate of 100 lbs. per 1000 square feet and shall be sufficiently anchored to the satisfaction of Engineer.

C. Contractor's responsibilities regarding turf establishment shall conform to the requirements of ConnDOT Form 816 Standard Specification Section 9.50 Article 9.50.03 Sub-Articles 4-6.

3.02 Erosion Control Matting:

A. Contractor shall furnish and install erosion control matting in areas designated on the Contract Drawings and where so designated by Engineer. Installation operations shall conform to the requirements of ConnDOT Form 816 Standard Specification Section 9.50, Article 9.50.03 Sub-Article 7.

PART 4 – MEASUREMENT AND PAYMENT

4.01 Turf Establishment

A. Measurement: The various responsibilities, products and services described in Parts 1, 2, and 3 of this specification, as they relate to the work of this Item, will not be measured for payment. All costs associated with the work of this Item shall be included in the Contract Lump Sum Price for "Turf Establishment". The work of this item will be measured for payment by the actual number of square yards of "Turf Establishment" completed by Contractor and accepted by Owner.

B. Payment: This Item shall be paid for at the Contract Unit Price for "Turf Establishment". The Contract Unit Price shall include all materials, equipment, tools, and labor incidental to construction of this Item.

4.06 Erosion Control Matting

A. Measurement – The work of this Item will be measured for payment by the actual number of square yards of Erosion Control Matting installed by Contractor and accepted by Owner. Replacement matting will not be measured for payment.

B. Payment – This Item shall be paid for at the Contract Unit Price for "Erosion Control Matting". The Contract Unit Price shall include all materials, equipment, tools, and labor incidental for construction of this Item.

Pay Items:

Item No.	Pay Item	Pay Unit
02920-1	Turf Establishment	SY
02920-2	Erosion Control Matting	SY

END OF SECTION

SECTION 02949
PLANTINGS

PART 1 – GENERAL

1.01 SCOPE OF WORK

A. Provide all plant, materials, supplies, power, machinery, equipment, tools, superintendence, labor, overhead, profit, insurance, bonds, permits, shop drawings, design services (where required), and other services and accessories required to furnish and install the work of this Section, complete and in place.

B. The work of this Section includes the following items:

1. Layout, furnishing, planting, and mulching of plantings of the types and sizes indicated on the Contract Drawings.
2. Care of the living plants.
3. Replacement of dead and unsatisfactory plants or materials before expiration of the warranty period.

1.02 RELATED DOCUMENTS

The publications listed below form a part of this specification to the extent referenced. These publications are referred to in the text by the basic designation only.

Basic Designation	Document
ConnDOT Form 816	State of Connecticut Department of Transportation – Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816, 2004. And State of Connecticut Department of Transportation – Supplemental Specifications to Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816 (July 2015)

1.03 SUBMITTALS

A. Shop Drawings

1. None Required

B. Product Data

Procure and Submit product data for the following items:

1. Name and address of all plant-life sources
2. Soil amendment material
3. Mulch

C. Samples

1. None required.

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D. Design Plans

1. None required.

E. Product Test Data:

1. None required.

F. Contractor Permits

1. Submit copies of Contractor-acquired permits (if any) to the Engineer.

G. Miscellaneous Items

1. None required.

1.04 PROJECT CONDITIONS

A. Contractor is advised of the lack of space available on-site for material stockpiles or staging of construction materials.

1.05 SEQUENCING

A. Contractor is responsible for selecting the sequence of work. The sequence of work shall generally follow the sequence outlined in the projects approved Soil Erosion and Sediment Control Plan, unless Contractor receives written approval for an alternate sequence from the regulatory agencies that originally authorized or permitted the project.

1.06 QUALITY ASSURANCE

A. All work of this Item shall be performed by skilled workers using proper equipment, techniques and safety precautions.

PART 2 – PRODUCTS

2.01 Picea Glauca (White Spruce):

A. Furnish Picea Glauca (White Spruce) in the quantities and sizes indicated in the Contract Drawings). All plant life, materials, supplies, and amenities shall conform to the requirements of Section 2.05 below entitled "Plant Materials".

2.02 Pinus Strobus (White Pine):

A. Furnish Picea Giaula (White Spruce) in the quantities and sizes indicated in the Contract Drawings). All plant life, materials, supplies, and amenities shall conform to the requirements of Section 2.05 below entitled "Plant Materials".

2.03 Plant Materials

A. Planting Soil shall conform to the requirements of ConnDOT Form 816 Supplemental Specification Section M.13, Article M.13.01 Sub-Article 1.

B. Agricultural Ground Dolomitic Limestone shall conform to the requirements of ConnDOT Form 816 Standard Specification Section M.13 - Article M.13.02.

C. Fertilizer shall conform to the requirements of ConnDOT Form 816 Standard Specification Section M.13 - Article 13.03 as amended by ConnDOT Form 816 Supplemental Specification Section M.13 – Article 13.03.

D. Mulch Materials for trees shall be washed round stone and shall conform to the grading requirements for No. 8 stone as specified in ConnDOT Form 816 Standard Specification Section M.01 Article M.01.01.

E. Compost shall conform to the requirements of ConnDOT Form 816 Standard Specification Section M.13 - Article M.13.06 as amended by ConnDOT Form 816 Supplemental Specification Section M.13 – Article M.13.06.

F. Plant Materials shall conform to the requirements of ConnDOT Form 816 Standard Specification Section M.13 - Article M.13.07.

PART 3 – EXECUTION

3.01 Picea Glauca (White Spruce):

A. Contractor shall plant Picea Glauca (White Spruce) in the locations indicated in the Contract Drawings. Contractor's operations, maintenance activities, and warranty responsibilities regarding plantings shall conform to the requirements of Section 3.05 below entitled "Planting Construction Methods, Maintenance Responsibilities, and Establishment Period".

3.02 Pinus Strobus (White Pine):

A. Contractor shall plant Pinus Strobus (White Pine) in the locations indicated in the Contract Drawings. Contractor's operations, maintenance activities, and warranty responsibilities regarding plantings shall conform to the requirements of Section 3.05 below entitled "Planting Construction Methods, Maintenance Responsibilities, and Establishment Period".

3.03 Planting Construction Methods, Maintenance Responsibilities, and Establishment Period

A. Contractor's construction methods, maintenance responsibilities, and establishment period for all plantings shall conform to the requirements of ConnDOT Standard Specification Section 9.49 Article 9.49.03, as amended by ConnDOT Supplemental Specification 9.49 and as modified or amended herein.

B. Contractor shall restrict plantings to allowable planting seasons, unless authorized otherwise by Engineer. Planting season shall conform to the requirements of ConnDOT Form 816 Standard Specification Section 9.49 - Article 9.49.03 Sub-Article 1.

C. Contractor shall adequately protect all plantings from time of receipt to time of planting. Protection practices shall conform to the requirements of ConnDOT Form 816 Standard Specification Section 9.49 - Article 9.49.03 Sub-Article 2.

D. Contractor shall be responsible for accurately laying out the location of all plantings in accordance with planting positions depicted in the Contract Drawings.

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E. Contractor shall excavate all planting beds and pits. Excavation work shall conform to the requirements of ConnDOT Form 816 Standard Specification Section 9.49 - Article 9.49.03 Sub-Article 4, except that application of a post-emergent aqueous spray treatment will not be required.

F. Contractor shall properly size the pits for all plantings. Pit excavation size shall conform to the requirements of ConnDOT Form 816 Supplemental Specification Section 9.49 Article 2.49.03 Sub-Article 5.

G. Contractor shall remove any rock or underground obstruction to the depth necessary for planting as specified, unless other locations are authorized by Engineer.

H. Contractor shall prepare and place backfill for all plantings. Backfill shall conform to the requirements of ConnDOT Form 816 Supplemental Specification Section 9.49 Article 2.49.03 Sub-Article 7.

I. Contractor shall properly set all plants. Setting methods shall conform to the requirements of ConnDOT Form 816 Supplemental Specification Section 9.49 Article 2.49.03 Sub-Article 8.

J. Contractor shall fertilize all plantings. Tree and plug fertilization methods and application rates shall conform to the requirements of ConnDOT Form 816 Standard Specification Section 9.49 Article 2.49.03 Sub-Article 9, except that the area of fertilization for plugs shall be limited to the rock void in which the plug has been planted.

K. Contractor is responsible for watering all plantings upon setting and at appropriate intervals thereafter. Watering quantity shall conform to the requirements of ConnDOT Form 816 Supplemental Specification Section 9.49 Article 2.49.03 Sub-Article 10. Watering frequency shall be as determined by Engineer.

L. Contractor shall properly stake each tree. Staking of plugs is not required. Staking methods shall conform to the requirements of ConnDOT Form 816 Standard Specification Section 9.49 Article 2.49.03 Sub-Article 11.

M. Wrapping of trunks will not be required.

N. Contractor shall be responsible for pruning of plants. All pruning practices and methods shall conform to the requirements of ConnDOT Form 816 Standard Specification Section 9.49 Article 2.49.03 Sub-Article 13.

O. Contractor may spray plantings with an antidessicant, subject to approval by Engineer. All spraying activities and methods shall conform to the requirements of ConnDOT Form 816 Standard Specification Section 9.49 Article 2.49.03 Sub-Article 14.

P. Contractor shall mulch all tree plantings. Mulching practices and methods shall conform to the requirements of ConnDOT Form 816 Standard Specification Section 9.49 Article 2.49.03 Sub-Article 15.

Q. Contractor shall repair any grass areas damaged during the progress of Contractor's planting and plant maintenance activities. All grass repair responsibilities and methods shall conform to the requirements of ConnDOT Form 816 Standard Specification Section 9.49 Article 2.49.03 Sub-Article 16.

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R. Contractor shall remain responsible for the care and health of all plantings throughout the Establishment Period. The Establishment Period for this project shall conform to the requirements of ConnDOT Form 816 Supplemental Specification Section 9.49 Article 2.49.03 Sub-Article 17.

PART 4 – MEASUREMENT AND PAYMENT

4.01 Picea Gluaca (White Spruce):

A. Measurement: The various products and services described in Parts 1, 2, and 3 of this specification, as they relate to the work if this Item, will not be measured for payment. All costs associated with the work of this Item shall be included in the Contract Unit Price for each "Picea Giaula". The work of this Item will be measured for payment by the actual number of "Picea Giaula" planted by Contractor and accepted by Owner.

B. Payment: This Item shall be paid for at the Contract Unit Price for each Picea Giaula planted by Contractor and accepted by Owner. The Contract Unit Price shall include all materials, equipment, tools, and labor incidental to construction of this Item.

4.02 Pinus Strobus (White Pine):

A. Measurement: The various products and services described in Parts 1, 2, and 3 of this specification, as they relate to the work if this Item, will not be measured for payment. All costs associated with the work of this Item shall be included in the Contract Unit Price for each "Pinus Strobus". The work of this Item will be measured for payment by the actual number of "Pinus Strobus" planted by Contractor and accepted by Owner.

B. Payment: This Item shall be paid for at the Contract Unit Price for each Picea Giaula planted by Contractor and accepted by Owner. The Contract Unit Price shall include all materials, equipment, tools, and labor incidental to construction of this Item.

Pay Items:

Item No.	Pay Item	Pay Unit
02949-1	Picea Glauca	EA
02949-2	Pinus Strobus	EA

END OF SECTION

SECTION 02971
MAINTENANCE & PROTECTION OF TRAFFIC

PART 1 – GENERAL

1.01 Scope of Work

A. Provide all mobilization, plant, materials, supplies, power, machinery, equipment, tools, superintendence, labor, overhead, profit, insurance, bonds, permits, shop drawings, design services (where required), and other services and accessories required to complete the work of this Section.

B. To complete the work of this Section, the Contractor shall implement intermittent temporary traffic controls during equipment and material deliveries.

1.02 Related Documents

A. The publications listed below form a part of this specification to the extent referenced. These publications are referred to in the text by the basic designation only.

Basic Designation	Document
ConnDOT Form 816	State of Connecticut Department of Transportation – Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816, 2004. And State of Connecticut Department of Transportation – Supplemental Specifications to Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816 (July 2015)
MUTCD	Manual of Uniform Traffic Control Devices, 2009, including Revisions 1 and 2, as published by the United States Department of Transportation – Federal Highway Administration

1.03 Submittals

A. Shop Drawings:

1. Not Applicable

B. Product Data:

1. Not Applicable

C. Samples:

1. Not Applicable

D. Design Drawings:

1. Not Applicable

E. Product Test Data

1. Not Applicable

F. Contractor Permits

1. Not Applicable.

G. Miscellaneous Items

Prepare and submit the following miscellaneous items to the Engineer:

1. If requested by the Engineer, the Contractor shall submit material certificates for all traffic control devices.

1.04 Project Conditions

A. The Contractor shall stake out each sign and contact Call-Before-You-Dig prior to installation.

1.05 Sequencing

A. Notify the controlling traffic authority prior to road closure that will exceed 10 minutes.

1.06 Quality Assurance

A. All work of this Item shall be performed by skilled workers using proper equipment, techniques and safety precautions.

PART 2 – PRODUCTS

2.01 Maintenance & Protection of Traffic

A. Each Flagger shall be equipped with the following:

1) Garments (including high-visibility headgear) so as to be readily distinguishable as a Flagger in accordance with Standard 6E-2 of the MUTCD.

2) Stop/Slow paddle that is at least 18 inches in width with letters at least six inches high, mounted on a handle of sufficient length so that the bottom of the sign will be six feet above the ground. Paddle signs shall conform to Standard 6E-3 of the MUTCD and catalog number 387-80-9950 of the Connecticut Department of Transportation's Catalog of Signs.

3) Radio equipment to facilitate effective communication between Flaggers, if necessary

B. Traffic cones shall comply with ConnDOT Form 816 Standard Specification Section 9.77, as amended by ConnDOT Form 816 Supplemental Specification Section 9.77, Article 9.77.02.

PART 3 - EXECUTION

3.01 Maintenance & Protection of Traffic

A. Contractor shall maintain two-way traffic on Shelbourne Drive at all times, except as allowed in the following paragraph.

B. Contractor may interrupt the flow of traffic on Shelbourne Drive from time to time for the purpose of maneuvering construction vehicles into and out of the site. Contractor may temporarily alter the two-way flow of traffic on Shelbourne Drive from time to time for the purpose of loading and unloading of construction equipment. Contractor's operations shall not cause unnecessary inconvenience to motorists and pedestrians.

C. When large trucks entering or exiting the site require the entire road for turning movements, Contractor shall provide two Flaggers on Shelbourne Drive, one on each side of the turning vehicle. Each Flagger shall be equipped as required in Part 2 of this Specification. The Flaggers shall suspend vehicular and pedestrian traffic on Shelbourne Drive throughout the duration of the turning movement and shall not allow normal vehicular or pedestrian movements to resume until the subject construction vehicle moves completely off the pavement or has fully completed its turn onto Shelbourne Drive.

D. During operations to load and unload construction equipment on Shelbourne Drive, Contractor shall establish a one-way alternating traffic pattern on the roadway. Contractor shall expedite loading and unloading operations so as to minimize the duration of altered traffic flow. Throughout the duration of all alternating one-way traffic patterns, Contractor shall:

1) Provide two Flaggers on Shelbourne Drive, one on each side of the obstructed area. Each Flagger shall be equipped as required in Part 2 of this Specification. The Flaggers shall work in concert to establish a safe, alternating one-way flow of vehicular traffic through the obstructed area. The Flaggers shall also ensure the safe passage of pedestrians through the obstructed area.

2) Furnish and place 10 traffic cones, five on each side of the obstruction, to guide motorists and pedestrians through the obstructed area. The cone pattern shall provide a 40-foot buffer and 100-foot long tapers on each end of the obstruction.

E. Contractor shall not park or otherwise stage any construction machinery, storage containers, stockpiles, or large construction vehicles on Shelbourne Drive.

F. Contractor's workers and small service trucks will be allowed to park along the westerly edge of Shelbourne Drive in vicinity of the project site. All such vehicles should be parked as far as possible off the pavement and in a manner that avoids damage to established lawns or plantings.

G. Complete stoppage of vehicular or pedestrian traffic on Shelbourne Drive for more than 10 minutes is prohibited unless otherwise authorized by the controlling traffic authority.

PART 4 – MEASUREMENT AND PAYMENT

4.01 Maintenance & Protection of Traffic

A. Measurement: The Owner will not measure the individual products and services described in Parts 1, 2, and 3 of this Specification for payment. The cost of completing all work of this Item shall be included in the *Contract Lump Sum Price* for "Maintenance and Protection of Traffic". At the time of each payment requisition, The Owner will estimate the percentage of completion for the work of this Item, and compute the value earned to date according to the following formula:

$V = P \times S$ Where: V = Value earned to date

P = Owner's estimate of percent complete for the work of this Item

S = Contractor's Contract Lump Sum Price for the work of this Item

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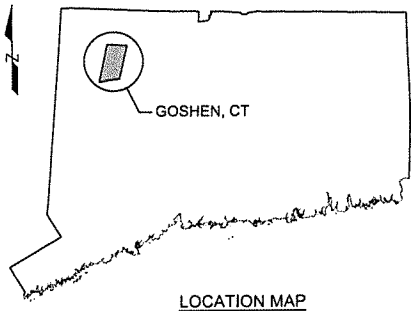
B. Payment: This Item will be paid for at the Contract Lump Sum Price for "Maintenance and Protection of Traffic". The Contract Lump Sum Price shall include all materials, equipment, tools, and labor incidental for construction of this Item.

Payment Items:

Item Number	Item Description	Pay Unit
02110-1	Maintenance and Protection of Traffic	LS

END OF SECTION

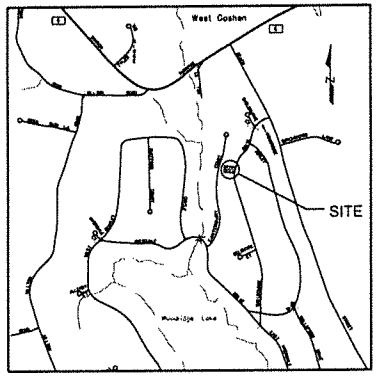


LOCATION MAP

SHELBOURNE DRIVE CHANNEL RESTORATION

TOWN OF GOSHEN

RELEASE FOR PERMITS JANUARY 28, 2016
REVISED: APRIL 18, 2016 - CHANNEL LINING DETAILS
MAY 10, 2016 - EXISTING PROPANE TANK



VICINITY MAP
SCALE: 1"= 1000'

ENGINEER OF RECORD

LENARD ENGINEERING, INC.
140 WILLOW STREET, SUITE #8
WINSTED, CT 06098
TEL: 860-379-6669
ATTN. DAVID N. BATTISTA, P.E.
e-mail: battista@lenard-eng.com

SURVEYOR

BERKSHIRE ENGINEERING, INC.
143 BANTAM LAKE ROAD
BANTAM, CT 06750
TEL: 860-567-8007
ATTN. STEPHEN R. LATOUR, P.L.S.
e-mail: berkshiresrl.com

SOIL SCIENTIST

GEORGE MALIA
CERTIFIED SOIL SCIENTIST
636 BEACH STREET
GOSHEN, CT 06756
TEL: 860-491-3361.
e-mail: gtmalia@msn.com

GENERAL NOTES

1. Contractor shall contact Call-Before-You-Dig at 811 or 800-922-4455 for utility demarcation at least 72 hours prior to commencement of any excavation work.

2. Boundary, topographic, subsurface utilities, and wetland limit features depicted on these Contract Drawings were taken from a map entitled Easement / Topographic Map, Prepared for Town of Goshen, Canterbury Court and Shelbourne Drive; Goshen, CT by Berkshire Engineering & Surveying, LLC, dated September 11, 2015.

3. Location of house footprint, well, driveway, fill limits, and sanitary sewer connection on Lot 221 were scaled from a plan entitled Site Plan Prepared for Luan Marika, Lot 221 Woodridge Lake, Shelbourne Drive; Goshen, CT, dated September 25, 2014 by Berkshire Engineering, LLC. This residence was under construction during the design process for the subject project.

4. Wetland limits depicted on these Contract Drawings were flagged by George T. Malia, Jr., Certified Soil Scientist in 2015.

BOARD OF SELECTMAN

ROBERT P. VALENTINE, FIRST SELECTMAN
STEVE ROMANO
DEXTER KINSELLA

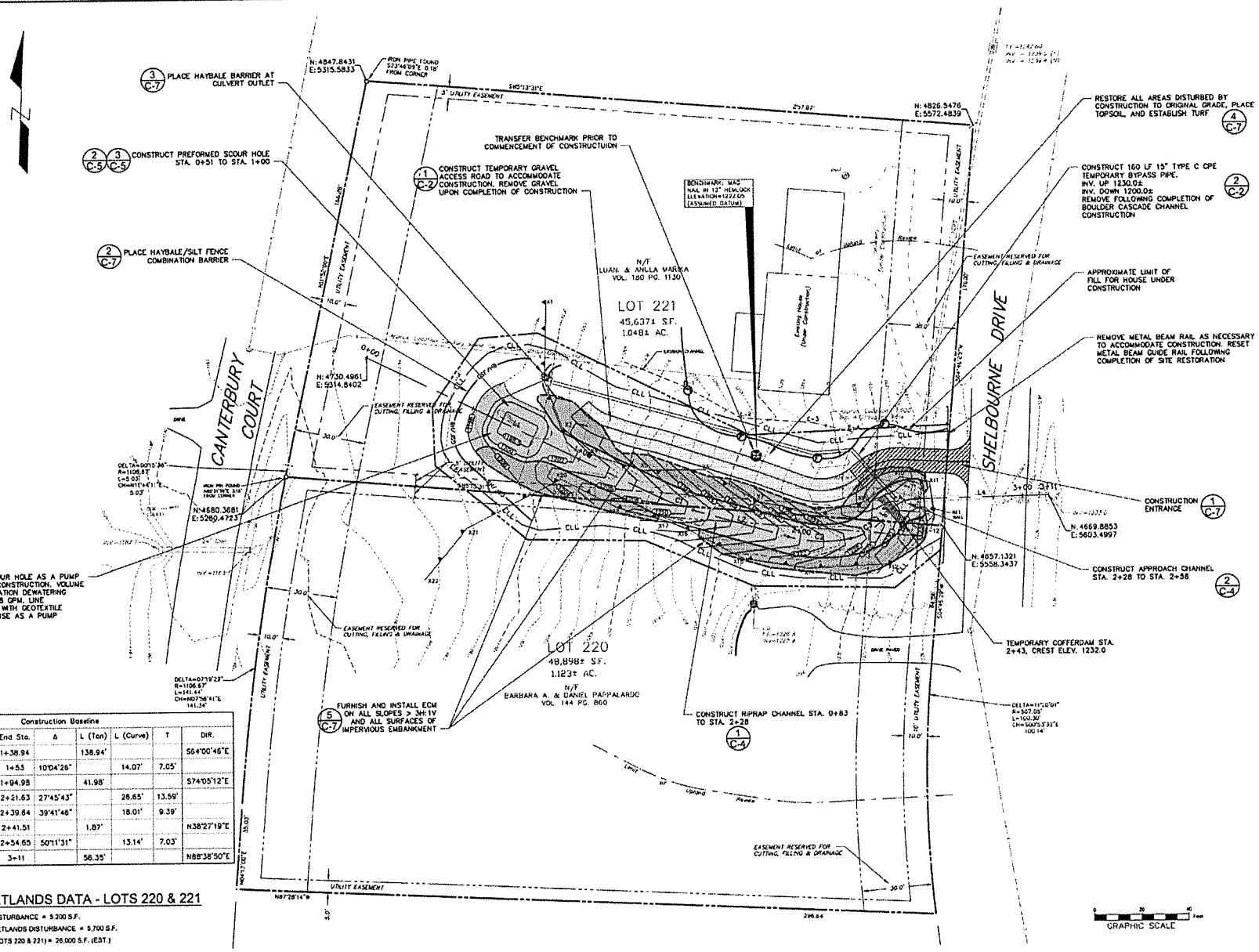
DESIGN DATA	
Hydrologic Method	Rational Method
Peak Discharge Rate	30 CFS
Recurrence Interval	~ 32 Years
Stone Sizing Method	Design of Roadside Channels with Flexible Linings Hydraulic Engineering Circular No. 15, 3rd Edition Federal Highway Administration

LEGEND

EXISTING		PROPOSED
	PROPERTY LINE	
	CONTOUR LINE	100
	SPOT ELEVATION	100.25
	WATER SUPPLY WELL	PROPOSED WELL
	WETLANDS BOUNDARY	
	HAYBALE BARRIER	HB
	SILT FENCE	SF
	COMBINED SILT FENCE HAYBALE BARRIER	SF/HB
	FENCE	
	GUIDE RAILING	
	STORM SEWER	
	SANITARY LINE	S
	EASEMENT	
	CLEARING LIMIT	CLL
	FILL LIMIT	

LIST OF DRAWINGS

COVER
C-1 PLAN
C-2 CHANNEL PROFILE AND DETAILS
C-3 SECTIONS
C-4 RIPRAP CHANNEL DETAILS
C-5 PREFORMED SCOUR HOLE DETAILS
C-6 SOIL EROSION CONTROL PLAN NARRATIVE
C-7 MISCELLANEOUS DETAILS
L-1 PLANTING PLAN



Construction Baseline								
Number	Radius	Beg. Sta.	End Sta.	Δ	L (Tan)	L (Curve)	T	DIR.
L1		0+00	1+38.94		138.94'			S64°00'46"E
C1	80.00	1+38.94	1+53	10°04'26"		14.07'	7.05'	
L2		1+53	1+94.98		41.98'			S74°05'12"E
C2	55.00	1+94.98	2+21.63	27°45'43"		26.65'	13.59'	
C3	26.00	2+21.63	2+39.64	39°41'46"		18.01'	9.39'	
L3		2+39.64	2+41.51		1.87'			N38°27'19"E
C4	15.00	2+41.51	2+54.65	50°11'31"		13.14'	7.03'	
L4		2+54.65	3+11		56.35'			N88°38'50"E

PROJECT WETLANDS DATA - LOTS 220 & 221

REGULATED WETLAND DISTURBANCE = 5,200 S.F.

UPLAND REVIEW NON-WETLANDS DISTURBANCE = 5,700 S.F.

TOTAL WETLAND AREA (LOTS 220 & 221) = 26,000 S.F. (EST.)

Designed By: DMB
Drawn By: JCS
Checked By: DMB

Drawing date: January 28, 2016 Release for Permits

Rev.	Date	Revision	By
1	04/18/16	Revised Living Screen	JCS
2	05/16/16	Est. Property Line	JCS

PLAN

SHELBOURNE DRIVE CHANNEL RESTORATION

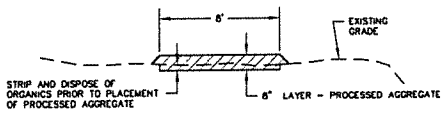
PREPARED FOR

TOWN OF GOSHEN

Lenard Engineering, Inc.
Civil, Environmental and Hydrogeological Consultants
2210 Main Street 140 Water Street 19 Mobile Drive
Chester, CT 06412 Norwalk, CT 06854 Wappingers Falls, NY 12590
(860) 526-3102 (203) 373-8069 (845) 221-7900

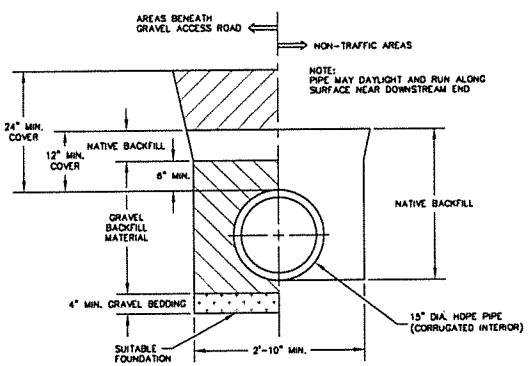
Drawing #: C-1

Job #: 15-128



1 / C-2 TEMPORARY GRAVEL ACCESS ROAD

SCALE: 1"= 4'



2 / C-2 TEMPORARY TRENCH DETAIL - TEMPORARY BYPASS PIPE

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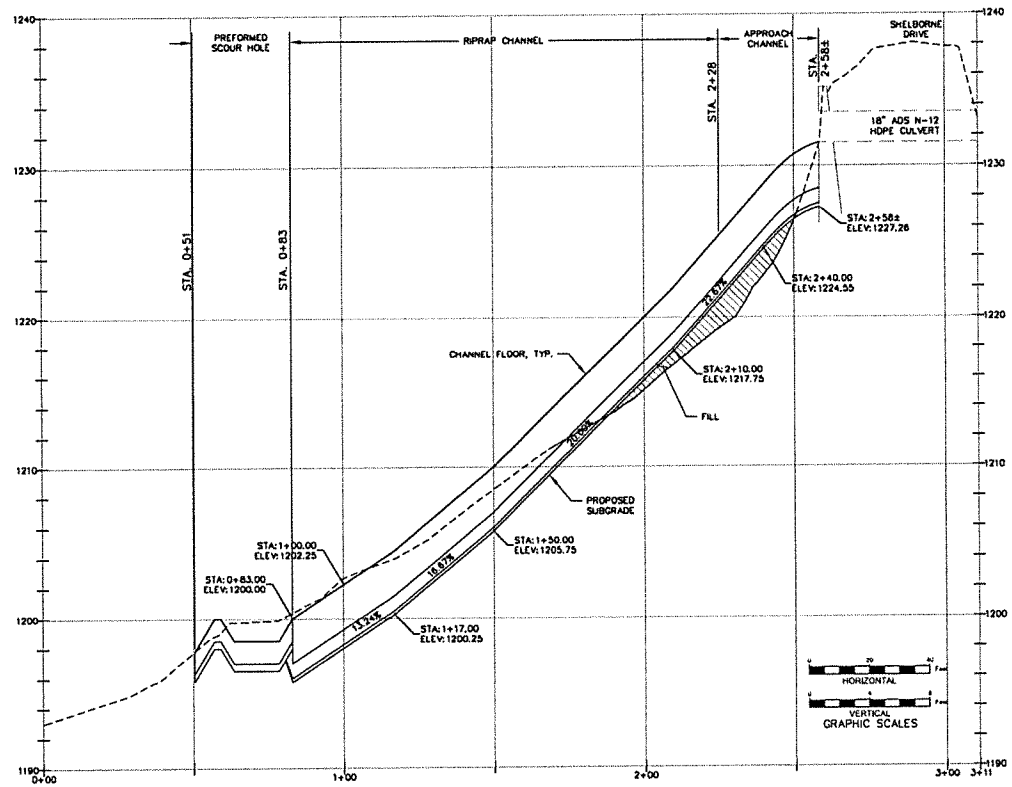


Designed By: DKB
Drawn By: LS
Checked By: DKB

Drawing date: January 28, 2016 Release for Permits

Rev.	Date	Revision	By
1	04/11/16	Channel Lining Details	
2	05/10/16	Ex. Property Line	

CHANNEL PROFILE AND DETAILS

SHELBOURNE DRIVE CHANNEL RESTORATION

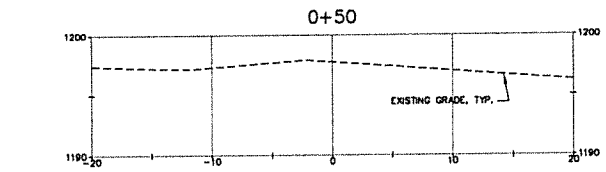
PREPARED FOR

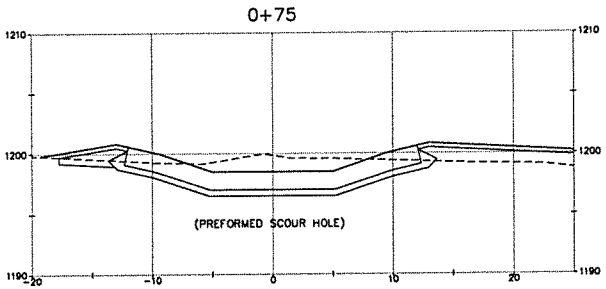
TOWN OF GOSHEN

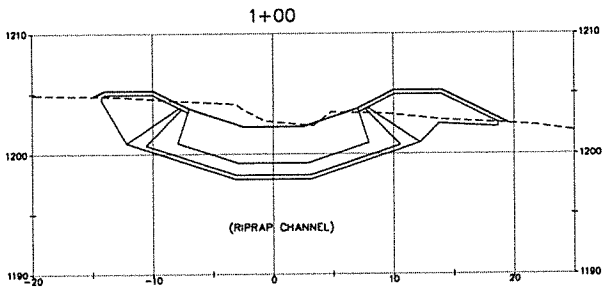
Lenard Engineering, Inc.
Civil, Environmental and Hydrogeological Consultants
2710 Main Street
P.O. Box 1000
(845) 858-3100
140 Willow Street
Chester, CT
(860) 379-8868
19 Mulberry Street
Middletown, CT
(203) 721-7500

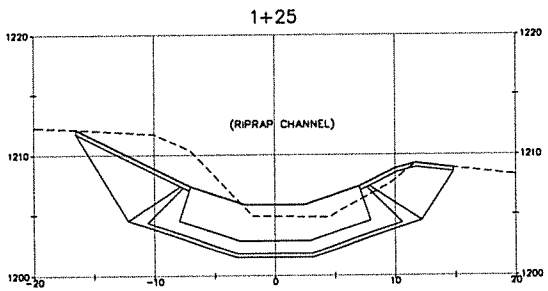
Drawing #: C-2

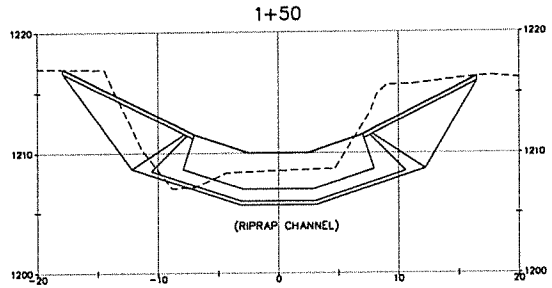
Job #: 15-128

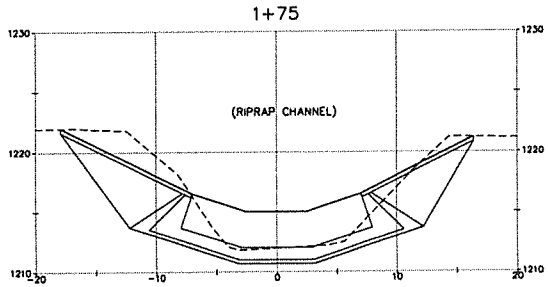


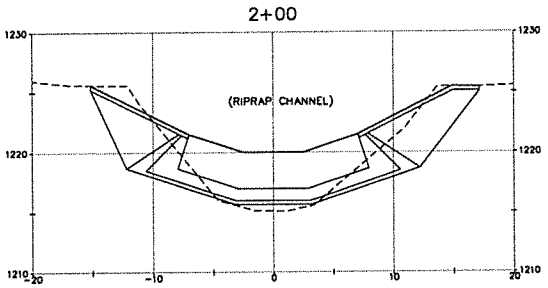


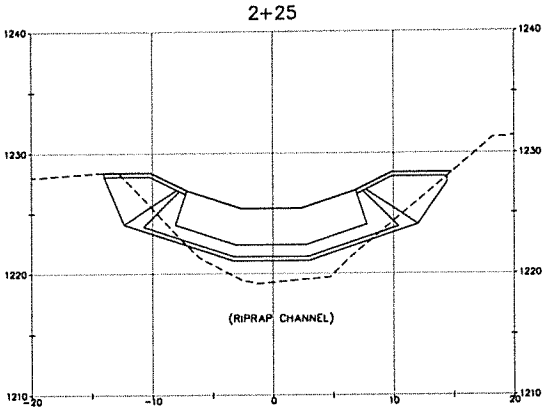


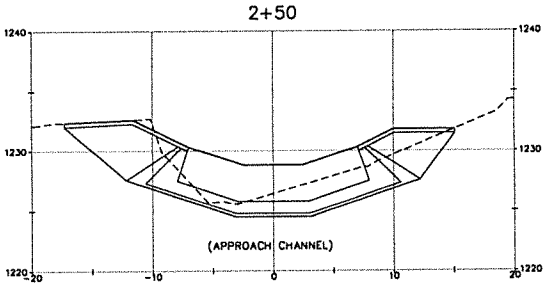












Designed By: DKB
Drawn By: LS
Checked By: DKB

Drawing date: January 28, 2016 Release for Permits

Rev.	Date	Revision	By
1	04/15/16	Channel Liner Details	
2	05/10/16	Ch. Channel Liner	

SECTIONS

SHELBOURNE DRIVE CHANNEL RESTORATION

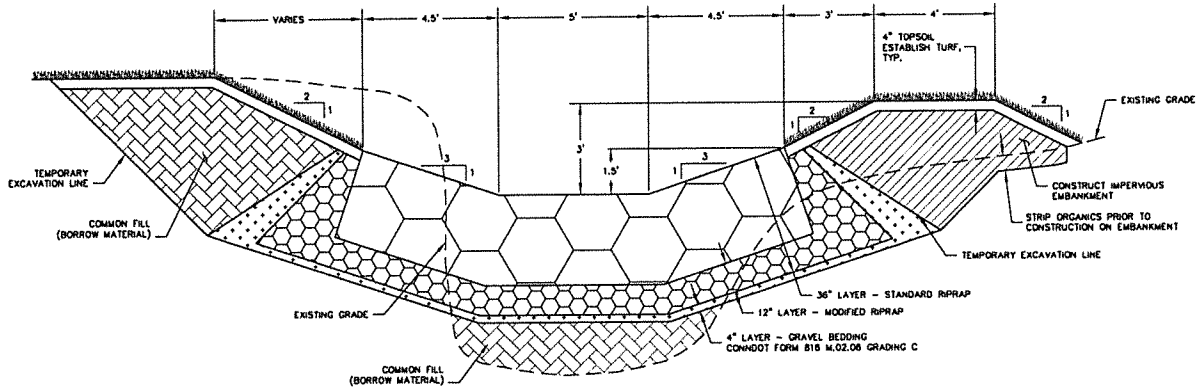
PREPARED FOR

TOWN OF GOSHEN

Lenard Engineering, Inc.
Civil, Environmental and Hydrogeological Consultants
2770 Main Street
Stratford, CT
(203) 378-4669
140 Milbank Drive
Blue Hill, ME
(207) 374-7400

Drawing #: C-3

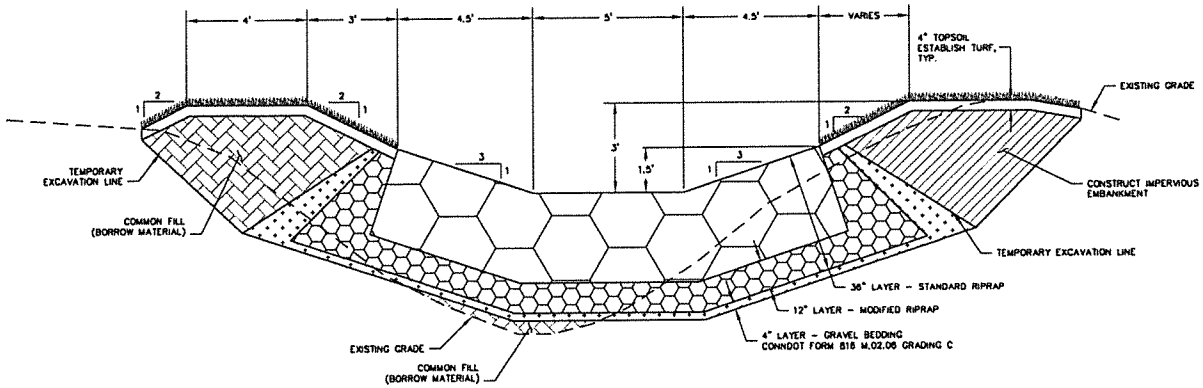
Job #: 15-128



1 / C-4 TYPICAL SECTION - RIPRAP CHANNEL
STA. 0+83 TO STA. 2+28

SCALE: 1"= 2'

GRAPHIC SCALE



2 / C-4 TYPICAL SECTION - APPROACH CHANNEL

SCALE: 1"= 2'

GRAPHIC SCALE

Designed By: DMB
Drawn By: LS
Checked By: DMB

Drawing date: January 28, 2016 Release for Permits

Rev.	Date	Change Long Details	By
1	8/10/16	Revision	
2	10/10/16	E.A. Preserve Tech	

RIPRAP CHANNEL DETAILS

SHELBOURNE DRIVE CHANNEL RESTORATION

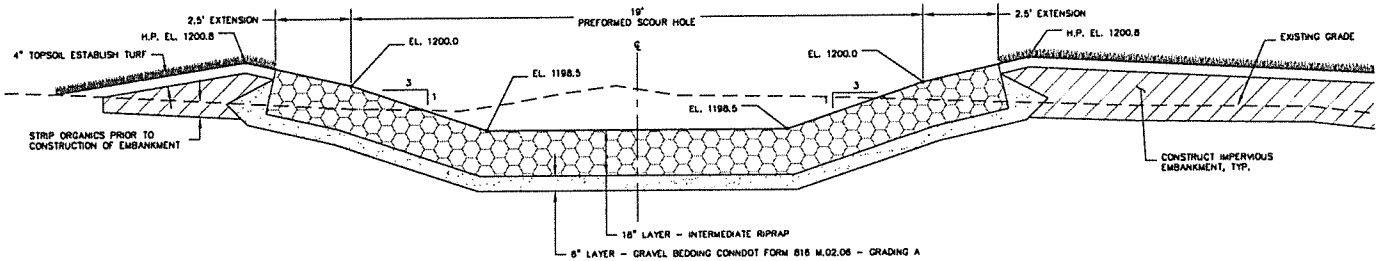
PREPARED FOR

TOWN OF GOSHEN

Lenard Engineering, Inc.
Civil, Environmental and Hydrogeological Consultants
2710 Main Street 140 Miller Street 19 Mallard Drive
Glastonbury, CT Meriden, CT Oxford, CT
(860) 633-3100 (203) 379-8849 (203) 271-7600

Drawing #: C-4

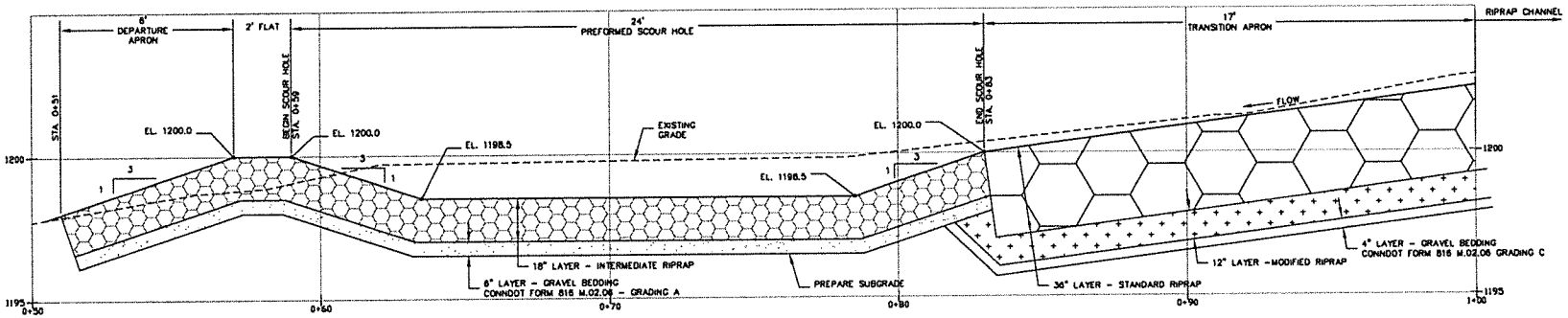
Job #: 15-126



1 C-5 TRANSVERSE SECTION THROUGH PREFORMED SCOUR HOLE

SCALE: 1"= 2'

GRAPHIC SCALE



2 C-5 LONGITUDINAL SECTION THROUGH PREFORMED SCOUR HOLE

SCALE: 1"= 2'

GRAPHIC SCALE

Designed By: DHB

Drawn By: LJS

Checked By: DHB

Drawing date: January 28, 2016 Release for Permits

Rev.	Date	Revision	By
1	04/18/16	Channel Lining Details	
2	06/10/16	E.S. Proposed Trees	

PREFORMED SCOUR HOLE DETAILS

SHELBOURNE DRIVE CHANNEL RESTORATION

PREPARED FOR

TOWN OF GOSHEN

Lenard Engineering, Inc.
Civil, Environmental and Hydrogeological Consultants
2210 Main Street, Glastonbury, CT (860) 633-3102
140 Milton Street, Norwalk, CT (203) 979-9889
19 Mabelle Drive, Auburn, ME (207) 777-7000

Drawing #: C-5

Job #: 15-128

SOIL EROSION AND SEDIMENT CONTROL PLAN NARRATIVE

1. INTRODUCTION AND PERMIT COMPLIANCE

This narrative describes the minimum measures required to control soil erosion during and after construction of the sitework shown on this plan. The soil erosion and sediment control measures shown on this plan are designed in accordance with a document entitled "Connecticut Guidelines for Soil Erosion and Sediment Control" as published by the Connecticut Council on Soil and Water Conservation in 2002. Contractor may be required to implement additional measures to prevent site erosion and sedimentation of downstream waterways.

Contractor is required to obtain copies of, and comply with the conditions of all permits for this project, including but not limited to:

- Permit to conduct wetland activities as issued by the Town of Goshen Inland Wetlands and Watercourses Commission
- Municipal approval of the project's Soil Erosion and Sediment Control Plan
- State and Federal permits, as may be required

Contractor's activities and operations include all site work and work incidental to the project including, but not limited to haul roads, waste and disposal areas, staging areas, and field offices. If any activities require approvals above and beyond those already accounted for by the Owner's permits, Contractor shall apply for and obtain such permits prior to conducting those operations. If incidental work such as haul roads, waste and disposal areas, staging areas, and field offices are not shown on the plans, and require additional erosion control, Contractor shall provide such controls.

2. PROJECT DESCRIPTION AND SITE CHARACTERISTICS

The Owner (Town of Goshen) intends to stabilize a severely-eroded, high-gradient gulley located along the common property line between Assessor's Lots 220 and 221 on Shelbourne Drive in Goshen. The gulley's 14.3-acre drainage area is entirely developed as a single-family residential neighborhood on one-acre lots and is approximately 20% impervious. The gulley originates on the westerly edge of Shelbourne Drive at a local sag point. Discharges from the westerly roadway gutter, a storm sewer, and a 24" diameter cross culvert converge at this location. The gulley has been eroding for many years, perhaps since construction of Shelbourne Drive in the late 1960's or early 1970's.

The subject gulley is approximately 200 feet long, 20 to 30 feet wide at the top, and is roughly 10 feet deep along much of its length. A home and driveway exist close to the south edge of the gulley on Lot 220. A new home and driveway are under construction immediately north of the gulley on Lot 221. The side slopes of the gulley are excessively steep and actively eroding. The gulley's presence will eventually endanger improved property on both adjacent lots.

Discharge from the gulley flows into a wetland on the east side of Canterbury Court. From there, discharge flows under Canterbury Court in a culvert and then on to the Marshepaug River, which discharges into Woodridge Lake.

Owner proposes to stabilize the gulley by constructing a riprap-lined channel within the existing, eroded gulley. Owner will also construct a riprap-lined preformed scour hole at the bottom. The proposed improvements will have a project footprint of nearly 1/3 acre, and will result in approximately 5,200 square feet of direct impact to regulatory wetlands.

3. CONSTRUCTION SEQUENCING

Contractor (not selected at the time of design) will ultimately decide on the means and methods required to build the work and on the specific sequence of construction. For the purpose of this erosion control narrative, the Engineer has developed the following sequence. Owner shall seek modifications to the municipal soil erosion and sediment control plan approval for this project if the selected contractor's construction sequence deviates substantially from the sequence described herein.

Notes:

1) Contractor is advised of extremely tight working conditions. There is little, if any, room for stockpiles or staging areas on site. Contractor may stockpile any materials that will be reused on the project at an offsite stockpile area provided by the Owner. Also, materials imported to the site for construction will have to be placed immediately upon delivery due to lack of stockpile area.

2) The Time to Substantial Completion is estimated at six weeks. Following certification of Substantial Completion by Engineer, Contractor will be allowed two additional weeks to complete any punch list items and bring the project to Final Completion.

STEP 1 - SITE PREPARATION (Estimated Duration: 1.5 Weeks)

A. Clear trees but do not grub stumps.

B. Construct perimeter erosion control barriers.

C. Construct cofferdam and temporary bypass pipe to divert storm water around the gulley.

D. Grub stumps.

E. Construct the temporary gravel access roads where indicated on the Contract Drawings.

STEP 2 - CONSTRUCT PREFORMED SCOUR HOLE (Estimated Duration: 0.5 Week)

A. Construct the riprap-lined preformed scour hole from Sta. 0+50 to Sta. 1+00. Cover the surface of the preformed scour hole with geotextile filter fabric. This will allow the scour hole to serve as a pumping settling basin during the construction process.

B. Grade areas downstream and adjacent to the preformed scour hole to proposed subgrade elevations. Place topsoil on these areas and rake to a smooth contour that matches final proposed grades. Add soil amendments, seed, mulch, and install erosion-control matting over the newly seeded area. Water the seed bed if required by climate conditions.

STEP 3 - CONSTRUCT RIPRAP CHANNEL (Estimated Duration: 2.5 Weeks)

A. Commence with excavation required for construction of the riprap-lined channel. If ground water is encountered, set up one or more sumps and dewatering pumps to remove groundwater from the excavation. Discharge the dewatering wastewater into the pumping settling basin. If Contractor expects a discharge rate greater than 20 GPM, then consult with Engineer for instructions to enhance the volume of the pumping settling basin.

B. Construct channel subgrade to the elevations and shape specified in the Contract Drawings. Such construction will require excavation and removal of soil in the lower half of the new channel and placement of fill in the upper half of the new channel. Soil removed from the lower reach may be used as fill in the upper reach, if suitable and subject to approval by Engineer.

C. Construct the riprap-lined channel starting at Sta. 0+83 and proceed upstream.

D. Shape areas of the channel bank above riprap to proposed subgrade elevations. Place topsoil over these areas and rake to a smooth contour that matches final proposed grades. Add soil amendments, seed, mulch, and install erosion control matting over all newly seeded areas steeper than 3H:1V. Water the seed bed if required by climate conditions.

STEP 4 - CLEANUP AND FINAL STABILIZATION (Estimated Duration: 1.5 Weeks)

A. Remove accumulated sediment and filter fabric lining from the pumping settling basin.

B. Remove any accumulated sediment from, and repair any damage to, perimeter erosion control measures.

C. Remove the cofferdam or other diversionary structure at the upstream end of the project. Direct runoff into the newly constructed channel.

D. Remove the temporary bypass pipe. Backfill the trench and restore the surface to original subgrade.

E. Remove gravel used in the temporary access road(s). Restore the surface to original subgrade.

F. Place topsoil over all areas disturbed by construction. Rake topsoil to a smooth contour that matches final proposed grades. Add soil amendments, seed, mulch, and install erosion control matting over the newly seeded area. Water the seed bed if required by climate conditions.

G. Plant trees.

H. Install any required supplemental erosion control barriers to protect newly-restored surface areas.

I. Contractor, Owner, Engineer, and appropriate municipal land-use official(s) to meet on site to review progress of the work and to confirm that the work is Substantially Complete.

STEP 5 - FINAL COMPLETION (Estimated Duration: 2 Weeks)

A. Contractor to complete punch list items and bring the project to Final Completion.

STEP 6 - REMOVE PERIMETER AND SUPPLEMENTAL EROSION CONTROL BARRIERS

A. Following establishment of a sound, durable stand of turf, Contractor shall return to the site to remove perimeter and supplemental erosion control barriers. Depending on time of year and growing conditions, this work may occur well after Final Completion of the work.

4. RESPONSIBILITY

4.1 RESPONSIBILITIES OF OWNER/PERMITEE

The Owner/Permitee is:

Town of Goshen
c/o Robert Valentine, First Selectman
42A North Street
Goshen, CT 06756
Tel: 860-491-2308 Ext. 221

The Owner/Permitee shall:

A. Provide Contractor with copies of land-use permits that Owner has acquired

B. Inform all parties involved with construction of the objectives and requirements of this Soil Erosion and Sediment Control Plan.

4.2 RESPONSIBILITIES OF CONTRACTOR

Contractor has not been selected at the time of permit application. However, this narrative will be part of the project's construction drawings which, in turn, will become part of the contract between Owner and Contractor. Contractor shall:

A. Provide Owner, Engineer, and the municipality with 24-hour phone numbers in the event of an emergency at the site.

B. Comply with all permit requirements.

C. Install, monitor, and maintain the soil erosion and sediment control measures as shown on this plan.

D. Provide additional soil erosion and sediment control measures required by Engineer, Owner, or Municipal land-use staff as may be required to prevent erosion of the site and to protect adjacent waterways from sedimentation.

5. PRECONSTRUCTION CONFERENCE

Owner will initiate a preconstruction conference with the Owner (Permittee), Contractor, Engineer, and the appropriate municipal land-use official(s) to coordinate project requirements. At this meeting, stakeholders will review Contractor's responsibilities regarding soil erosion and sediment control.

6. DESCRIPTION AND MAINTENANCE OF EROSION CONTROL MEASURES

6.1 TEMPORARY STABILIZATION MEASURES

Hay Bale Barrier:
Install hay bale barriers where required by the Contract Drawings or as ordered by Engineer or Town land-use official. Embed the haybale barriers into the ground, pack them tightly together, and firmly stake them, as shown on the details. Remove sediment once levels have reached 1/4 of the effective bale-height. Repair and/or replace the haybales immediately, if damaged or deteriorated.

Geotextile Silt Fence:
Install geotextile silt fence where required by the Contract Drawings or as ordered by Engineer or Town land-use official. Embed the barrier into the ground and firmly stake it as shown on the details. Remove sediment once levels have reached 1/4 the effective fence height. Repair and/or replace the barrier immediately if damaged or deteriorated.

Geotextile Silt Fence / Hay Bale Combination Barrier:
Install a combined silt fence / hay bale barrier where required by the Contract Drawings or as ordered by Engineer or Town land use official. Embed the barrier into the ground and firmly stake it as shown on the details. Remove sediment once levels have reached 1/4 the effective fence height. Repair and/or replace the barrier immediately if damaged or deteriorated.

Stockpiling or Storage of Excavated Materials:
Space for stockpiles is severely limited within the Contract Limit Line. Owner will provide an offsite location for Contractor's stockpiles. Contractor shall surround any small on-site stockpiles hay bale barrier or geotextile silt fence to prevent transportation of sediment.

Erosion Control Matting:
Install erosion control matting on all areas steeper than 3H:1V. The Contractor shall select a fabric from the Connecticut Department of Transportation's *Approved Product List*. The fabric shall meet the requirements for *Class 2 - Type C Erosion Control Matting*. The fabric shall be installed in accordance with the manufacturers instructions and guidelines. The Contractor shall maintain the fabric until a stand of grass is established and accepted by Owner.

Dust Control:
Take precautions to prevent dust from becoming a nuisance to abutting property owners. Broom off pavements adjoining the excavation on a daily basis. Cover and/or keep all earth stockpiles moist at all times. Use calcium chloride to control dust over certain areas of the site, as directed by the Engineer or shown on the plans. Calcium chloride shall conform to ASTM D-98, Type I. The Contractor shall maintain and inspect, on a daily basis, the adequacy of dust control measures and correct any deficiencies immediately.

Tree Protection:
The Contract Drawings contain a Clearing Limit Line. Contractor may remove any and all trees and other types of vegetation located within the Clearing Limit Line that may be required to construct the project. The Owner intends for all trees and vegetation located outside the established Clearing Limit Line to remain. Contractor shall take special care to avoid damaging trees and vegetation outside the Contract Limit Line. As an additional protection, Contractor shall provide snow fencing, board fencing, or cord fencing around trees or groups of trees located outside of the Clearing Limit Line that may be particularly susceptible to damage. Contractor shall be responsible for selecting and installing the protection measures most appropriate for the conditions present. Contractor shall repair and/or replace tree protection measures immediately if damaged during construction.

6.2 PERMANENT STABILIZATION MEASURES

Implement these stabilization measures in accordance with the construction sequence described in Section 3 above.

Turf Establishment:
Contractor is responsible for establishing turf in all areas so indicated on the Contract Drawings. Immediately following rough grading activities, bring all disturbed areas to final grade with four inches of topsoil. Topsoil shall be free of large stones and roots and other deleterious materials such as wood, pieces of pavement, metals, trash, etc. and shall be of such quality as to readily promote germination of grass seed. Prior to seeding, lime and fertilize according to soil test or, at a minimum, apply lime at a rate of 100 lbs /1000 sq. ft. and 10-10-10 fertilizer at a rate of 6 lbs /1000 sq. ft. Work lime and fertilizer into soil. Apply the following seed mix at the rate of 5 LBS per 1,000 square feet:

SEED TYPE	Percent of Mix
Creeping Red Fescue	30%
Spartan II Hard Fescue	30%
Fiesta 4 Perennial Rye Grass	20%
Azay Sheeps Fescue	20%
Total:	100%

Immediately after seeding operations, cover the seeded with hay or straw mulch at a rate of 100 lbs /1000 sq. ft. Mulch must be free of weeds and coarse matter. Spread mulch by hand or by mulch blower. On slopes flatter than 3H:1V, mulch anchoring is required by machine-drawn anchoring device along contour, or by tracking with a bulldozer (cleats parallel to contour). Following placement of mulch, Contractor shall cover all sloping areas (steeper than 3H:1V) with Erosion Control Matting.

Landscape Plantings:
Furnish and install shrubs of the types, sizes, quantities, and distribution as indicated in the Contract Documents.

6.3 PERMANENT STRUCTURAL MEASURES

Riprap-Lined Channel and Preformed Scour Hole:
Construct the riprap-lined channel and preformed scour hole as indicated on the Contract Drawings. Keep the channel free of debris and accumulated sediment until the site is stabilized with vegetation.

6.4 OTHER CONTROLS

Waste Disposal:
Provide an adequate number of covered waste containers to ensure that no litter, debris, building materials, or similar materials are discharged to wetlands or watercourses. Instruct subcontractors to use the containers for waste material. Empty the containers promptly when full.

Construction Entrance:
Place clean washed stone (CONNDOT No.3 stone) at the site entrance to the length, width and depth indicated on the plans and details to help remove mud and/or clods of soil from construction vehicles exiting from the site. Add stone as necessary to maintain adequate serviceability.

Pavement Maintenance:
Contractor shall sweep paved roadways adjacent to the site on a routine basis to prevent tracking of mud onto public roadways and washing of mud into waterways. If Contractor's schedule for cleaning the pavement is found to be inadequate by Owner, Engineer, or the municipality, Contractor shall increase the frequency of pavement sweeping at no additional cost to Owner.

Cleaning of Stormwater Structures:
Clean any accumulated sediment from the preformed scour hole upon completion of the project.

7. DEWATERING AND WATER HANDLING

Contractor is responsible for developing and implementing site-specific water handling and excavation dewatering plans for this project. These plans shall incorporate the basic cofferdam, diversion pipe, and settling basin requirements cited below and shall be subject to review and approval by Engineer. These plans shall be designed to avoid pollution of downstream wetlands and watercourses and to avoid injury to life and property.

Cofferdam and Diversion Piping:
Construct a cofferdam and temporary diversion pipe where indicated on the Contract Drawings. The cofferdam shall be placed so as to capture runoff entering the channel from gutter flow, a local storm sewer, and a cross culvert. Bury the diversion pipe where required to meet grade and to provide cover in areas where the pipe crosses the temporary access road. The pipe may daylight and run along the surface of the ground near the lower end of its run in areas where the pipe runs along the ground surface, the pipe shall be anchored against movement and protected from vehicular damage. Inspect the pipe periodically to make sure it is not clogged or crushed. Remove the pipe upon completion of channel construction, back fill any excavations and restore the ground surface to its original subgrade elevation.

Construction Dewatering:
Contractor shall employ means, methods, and equipment necessary to maintain excavation in a dry condition. The work will require construction installation of well points and pumping of groundwater. Given the steep nature of the site, well points and pumping facilities may have to be relocated from time to time in order to remain effective.

Temporary Pumping Settling Basin:
Contractor to construct the riprap-lined preformed scour hole early in the sequence of work so that it may serve as a temporary pumping settling basin during construction of the upstream channel. Cover the completed scour hole with geotextile filter fabric while it is being used as a pumping settling basin. Weigh the fabric down with stones. The Contractor shall select a fabric from the Connecticut Department of Transportation's *Approved Product List*. The fabric shall meet the requirements for *Class A - Subsurface Drainage Geotextile*. The fabric shall be installed in accordance with the manufacturer's instructions and guidelines. Remove sediment once levels reach 10 percent of the basin volume. Remove and replace fabric if its usefulness becomes compromised by damage or clogging.

8. GENERAL CONDITIONS

8.1 If erosion control measures are damaged by construction vehicles, acts of vandalism, or severe weather conditions, Contractor shall immediately remove sediment in the vicinity of the erosion control measures and repair these measures to a functional condition.

8.2 If, during or after construction, it becomes apparent that existing erosion control measures are inadequate of controlling erosion, Owner, or Engineer, municipal land-use agents may require additional control measures including, but not limited to; hay bales, silt fence, sediment basins, or mechanically anchored mulch.

8.3 Refueling of equipment or machinery within 25 feet of any wetland or watercourse is prohibited.

8.4 No construction shall proceed until a written proposal of methods to prevent construction debris or other deleterious materials from entering wetlands and watercourses has been submitted by Contractor and approved by the Owner. Waste materials shall be collected and disposed of in an environmentally safe manner in accordance with all applicable local, state, and federal laws and regulations. Owner may order Contractor to cease such activity temporarily if, in the judgement of Owner, wind or storm conditions threaten to cause the deposit of such materials into a wetland or watercourse.

8.5 No materials resulting from construction activities shall be placed in, or allowed to contribute to the degradation of, an adjacent wetland or watercourse. Disposal of any material shall be in accordance with Connecticut General Statutes, including, but not limited to, Sections 22a-207 through 22a-209.

8.6 Fording of streams with equipment is prohibited, except as specifically allowed by Owner's permits. Where frequent equipment travel on stream banks and beds is necessary, place washed stone to minimize erosion, scour, and turbidity, provided no significant grade change will be required for any haul road or temporary structure placed in wetlands or watercourses. Unless the above activities are specifically authorized by Owner's permits, the Contractor shall acquire permits for such activities before commencement of the work.

8.7 Contractor shall submit a project specific construction sequence narrative, water handling plan, excavation dewatering plan, and flood contingency in writing to Owner prior to commencement of any construction in a waterway.

8.8 Conduct work within or adjacent to watercourses during periods of low flow, whenever possible. Owner will remain aware of flow conditions during the conduct of such work, and shall cease such activity to cease should flow conditions threaten to cause excessive erosion, siltation or turbidity. Contractor shall make every effort to secure the work site before predicted major storms. A major storm shall be defined as a storm predicted by NOAA Weather Service with warnings of flooding, severe thunderstorms, or similarly severe weather conditions or effects.

8.9 Stabilize all temporary fill to prevent erosion and to prevent sediment or other particulate matter from rendering a wetland or watercourse. Restore and revegetate all areas affected by temporary fills to their original contours or as directed by Owner. Confirm the extent of temporary fill or excavation to that area necessary to perform the work, as approved by Owner.

8.10 Dumping of oil, chemicals or other deleterious materials on the ground is forbidden. Contractor shall provide a means of catching, retaining, and properly disposing of drained oil, removed oil filters, or other deleterious material. All spills of such materials shall be reported immediately by Contractor to the Connecticut Department of Energy and Environmental Protection.

8.11 Application of herbicides or pesticides within 25 feet of any wetland or watercourse is prohibited. All herbicide and pesticides must be applied by a Connecticut licensed applicator. Contractor shall submit to Owner the proposed applicator's name and license number, and must receive Owner's approval of the proposed applicator, before any herbicides or pesticides are applied.

8.12 During spawning seasons, discharges and construction activities in spawning areas of State Waters shall be restricted so as not to disturb or inhibit aquatic species which are indigenous to the waters.

Designed By: DKB
Drawn By: JLS
Checked By: DKB

Drawing date: January 28, 2016 Release for Permits

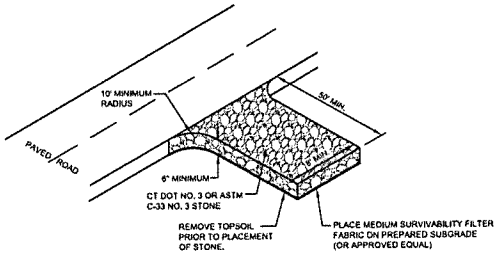
Rev.	Date	Revision	By
1	04/18/16	Owner Living Details	JLS
2	05/10/16	E.C. Prepared Town	JLS

SOIL EROSION CONTROL PLAN NARRATIVE
SHELBOURNE DRIVE CHANNEL RESTORATION
PREPARED FOR
TOWN OF GOSHEN

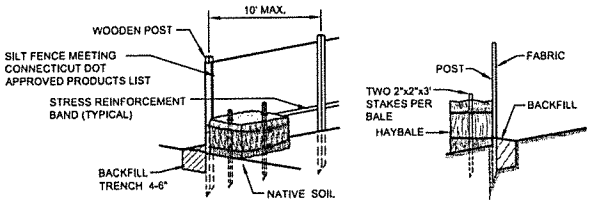
Lenard Engineering, Inc.
Civil, Environmental and Hydrogeological Consultants
2910 Main Street, Glastonbury, CT (860) 528-3100
140 Milne Street, Westfield, CT (860) 379-8669
19 Mobile Drive, Auburn, MA (508) 721-7600

Drawing #: C-6

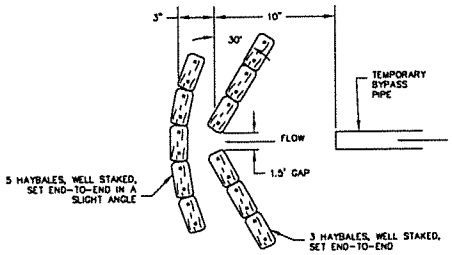
Job #: 15-128



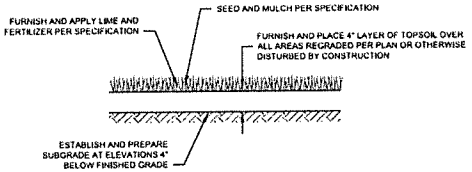
1/C-7 CONSTRUCTION ENTRANCE DETAIL
NOT TO SCALE



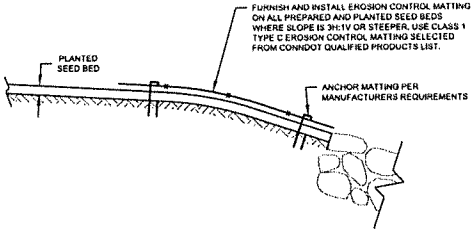
2/C-7 SILT FENCE/HAYBALE COMBINATION BARRIER
NOT TO SCALE



3/C-7 HAYBALE BARRIER AT BYPASS PIPE OUTLET
SCALE: 1"= 5'



4/C-7 TURF ESTABLISHMENT
NOT TO SCALE



5/C-7 EROSION CONTROL MATTING
NOT TO SCALE

Designed By: DKB
Drawn By: LS
Checked By: DKB

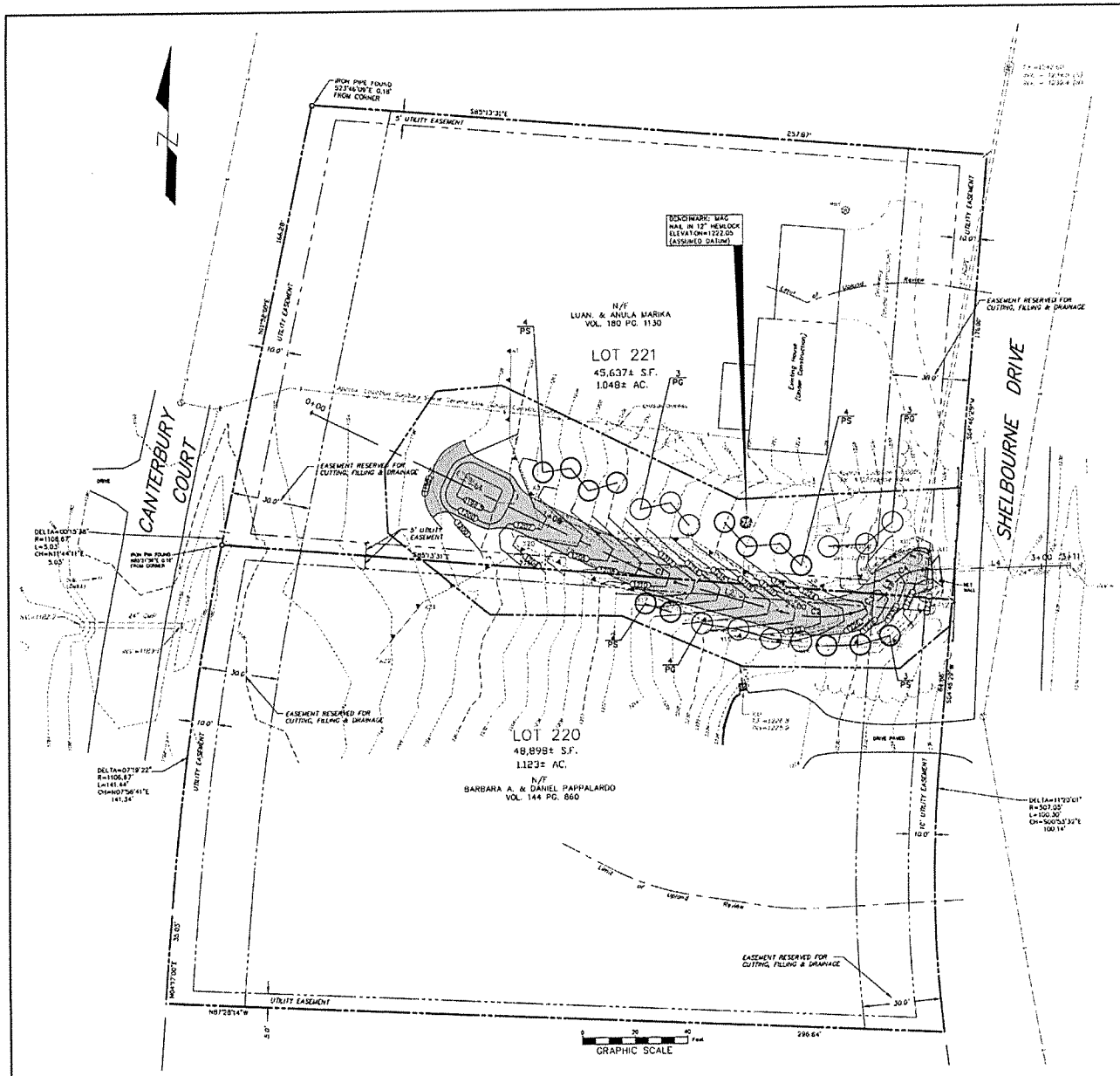
Drawing date: January 28, 2016 Release for Permits

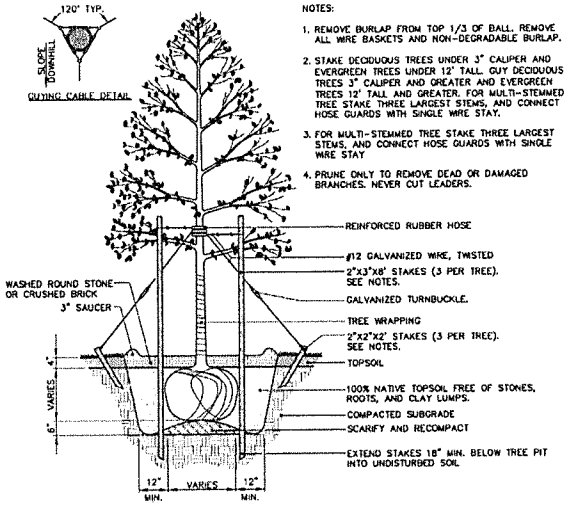
Rev.	Date	Revision	By
1	04/18/16	Channel Lining Details	LS

MISCELLANEOUS DETAILS
SHELBOURNE DRIVE CHANNEL RESTORATION
PREPARED FOR
TOWN OF GOSHEN

Lenard Engineering, Inc.
Civil, Environmental and Hydrogeological Consultants
270 Main Street, Oxfordburg, CT (860) 538-3100
140 Milton Street, Bristol, CT (860) 589-8669
19 Midstate Drive, Auburn, MA (508) 721-7600

Drawing #: C-7
Job #: 15-128





NOTES:

1. REMOVE BURLAP FROM TOP 1/3 OF BALL. REMOVE ALL WIRE BASKETS AND NON-DEGRADABLE BURLAP.
2. STAKE DECIDUOUS TREES UNDER 3" CALIPER AND EVERGREEN TREES UNDER 12' TALL. GUY DECIDUOUS TREES 3" CALIPER AND GREATER AND EVERGREEN TREES 12' TALL AND GREATER. FOR MULTI-STEMMED TREE STAKE THREE LARGEST STEMS, AND CONNECT HOSE GUARDS WITH SINGLE WIRE STAY.
3. FOR MULTI-STEMMED TREE STAKE THREE LARGEST STEMS, AND CONNECT HOSE GUARDS WITH SINGLE WIRE STAY
4. PRUNE ONLY TO REMOVE DEAD OR DAMAGED BRANCHES. NEVER CUT LEADERS.

TREE PLANTING

NOT TO SCALE

Plant Schedule				
Symbol	Common Name	Botanical Name	Quantity	Size
PG	White Spruce	Picea Glauca	10	6'-7' HT
PS	White Pine	Pinus Strobus	13	6'-7' HT

Designed By: DMB
Drawn By: JS
Checked By: DMB

Drawing date: January 28, 2016 Release for Permits

Rev.	Date	Revision	By
1	04/28/16	Drained Living Grates	KS
2	05/10/16	Ex. Preserve Tree	KS

PLANTING PLAN

SHELBOURNE DRIVE CHANNEL RESTORATION

PREPARED FOR

TOWN OF GOSHEN

Lenard Engineering, Inc.
Civil, Environmental and Hydrogeological Consultants
2210 Main Street, Glastonbury, CT (860) 633-3102
140 Water Street, Westfield, CT (860) 379-8883
19 Millstone Drive, Auburn, MA (508) 721-7600

Drawing #: L-1

Job #: 15-128