TOWN OF GLASTONBURY
ENGINEERING DIVISION
PW-1803

CONTRACT DOCUMENTS

FOR

SLOCOMB POND DAM REMOVAL

BID # GL-2021-02

ADVERTISED ON: JULY 15, 2020

BID DUE DATE: AUGUST 5, 2020

TOWN OF GLASTONBURY

INVITATION TO BID

BID #	ITEM	DATE & TIME REQUIRED
GL-2021-02	**Slocomb Pond Dam Removal**	August 5, 2020 at 11:00 A.M.

The Town of Glastonbury will receive on-line bids for the removal of the Slocomb Pond Dam (CT DEEP ID#5425) located at 68 Matson Hill Road in Glastonbury CT. Bidders wishing to submit a bid proposal for this solicitation are directed to respond online through a secure e-Procurement portal. Responses can be submitted at the following link: https://glastonbury-ct.bonfirehub.com/login, under the bid title "GL-2021-02 – Slocomb Pond Dam Removal".

Bidders will be required to create a Bonfire profile before submitting their bid. Step-by-step instructions on how to register as a vendor are available at this website:

https://support.gobonfire.com/hc/enus/articles/360011135513-Vendor-Registration

Due to the bid collection being performed through a secure online platform, multiple copies of the bid are not required. Please upload one copy of ALL required bid documentation. Including a copy of the required bid bond. Bidders shall be required to mail the original bid bond to the Town of Glastonbury, Purchasing Department immediately following the bid opening at the following address:

Town of Glastonbury
Purchasing Department
P O Box 6523
Glastonbury, CT 06033-6523

All bids will be publicly opened and read aloud. No late bids will be accepted. The Town reserves the right to waive informalities or reject any or all bids when said action is deemed to be in the best interests of the Town.

Bid Forms, Plans, and Specifications may be obtained at no cost from the Town's website at www.glastonbury-ct.gov or the State's website at www.das.state.ct.us.

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

The Town of Glastonbury is an Affirmative Action/Equal Opportunity Employer. Minority / Women / Disadvantaged Business Enterprises are encouraged to bid.

Mary F. Visone
Purchasing Agent

TABLE OF CONTENTS **SECTION**

1. Bidders submitting a response for this solicitation are directed to respond online through a secure e-Procurement portal. Bids can be submitted at the following link: https://glastonbury-ct.bonfirehub.com/login under the BID title **"GL-2021-02- Slocomb Pond Dam Removal"**. Bidders will be required to create a Bonfire profile before submitting their bid. Step-by-step instructions on how to register as a vendor are available at this website: https://support.gobonfire.com/hc/en-us/articles/360011135513-Vendor-Registration.

   Bidders will be required to upload their bid response in the following file located in the Bonfire bid portal:

   - Bid Response & Related Documents

2. Whenever it is deemed to be in the best interest of the Town, the Town Manager, Purchasing Agent or designated representative shall waive informalities in any and all bids. The right is reserved to reject any bid when such action is deemed to be in the best interest of the Town of Glastonbury.

3. The basis of award will be based on the total of the base bid plus the sum of any alternate(s) accepted by the Owner of the lowest qualified, responsible and responsive bidder meeting the specifications herein. The bid total cost shall be arrived at by the mathematical calculation of the unit price multiplied times the number of units specified for each line item, and the total sum of all line items in the bid. In the event that the Town finds computational errors in a respondent's bid proposal, the bid total cost shall be recalculated by the Town based on the unit prices contained in the bid proposal.

4. Bids will be carefully evaluated as to conformance with stated specifications.

5. Specifications must be submitted complete in every detail and, when requested, samples shall be provided. If a bid involves any exception from stated specifications, they must be clearly noted as exceptions, underlined, and attached to the bid.

6. The Bid Documents contain the provisions required for the requested item. Information obtained from an officer, agent, or employee of the Town or any other person shall not affect the risks or obligations assumed by the Bidder or relieve him/her from fulfilling any of the conditions of the bid.

7. Each Bidder is held responsible for the examination and/or to have acquainted themselves with any conditions at the job site which would affect their work before submitting a bid. Failure to meet this criteria shall not relieve the Bidder of the responsibility of completing the bid without extra cost to the Town of Glastonbury.

8. Any bid may be withdrawn prior to the above-scheduled time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified shall not be considered. No Bidder may withdraw a bid within sixty (60) days after the actual date of the opening thereof. Should there be reasons why a bid cannot be awarded within the specified period, the time may be extended by mutual agreement between the Town and the Bidder.

9. Each electronic bid submission must be accompanied by a copy of the bid bond payable to the Town for ten percent (10%) of the total amount of the bid. Original bid bonds from all respondents must be mailed to the attention of the Purchasing Agent immediately following the virtual bid opening at the following address: Town of Glastonbury, PO Box 6523, Glastonbury, CT 06033-6523, Attn: Mary F. Visone, Purchasing Agent. The bid bond of the successful Bidder will be retained until the payment bond and performance bond have been executed and approved, after which it will be returned.

10. A 100% Performance and a 100% Payment bond are required of the successful bidder. This bond shall cover all aspects of the specification and shall be delivered to the Purchasing Agent prior to the issuance of a purchase order. The Performance and Payment Bond will be returned upon the delivery and acceptance of the bid items.

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

12. Bidder agrees to comply with all of the latest Federal and State Safety Standards and Regulations and certifies that all work required in this bid will conform to and comply with said standards and regulations. Bidder further agrees to indemnify and hold harmless the Town for all damages assessed against the Town as a result of Bidder's failure to comply with said standards and/or regulations.

13. All correspondence regarding any purchase made by the Town of Glastonbury shall reference the Town's purchase order number. Each shipping container shall clearly indicate both Town purchase order number and item number.

14. Bidder is required to review the Town of Glastonbury Code of Ethics adopted July 8, 2003 and effective August 1, 2003 and revised October 29, 2013 and effective November 28, 2013. Bidder shall acknowledge that they have reviewed the document in the area provided on the bid/proposal response page (BP). The selected Bidder will also be required to complete and sign an Acknowledgement Form prior to award. The Code of Ethics and the Acknowledgement Form can be accessed at the Town of Glastonbury website at **www.glastonbury-ct.gov**. Upon entering the website scroll down to click on **Bids & Proposals Icon** which will bring you to the links for the **Code of Ethics** and the **Acknowledgement Form**.

15. **Non-Resident Contractors:** (if applicable)
Upon award the Town is required to report names of nonresident (out of state) Contractors to the State of Connecticut, Department of Revenue Services (DRS) to ensure that Employment Taxes and other applicable taxes are being paid by Contractors. **A single surety bond for 5% of the entire contract price is required to be filed with DRS by any unverified nonresident prime or general contractor (if awarded) where the contract price for the project is $250,000 or more.** The contractor will be required to promptly furnish to the Town a copy of the **Form AU-968 - Certificate of Compliance** issued by the State of Connecticut, DRS. See State of Connecticut **Notice SN 2012 (2).**

16. Bidder shall include on a sheet(s) attached to its proposal a complete disclosure of all past and pending mediation, arbitration and litigation cases that the bidder or its principals (regardless of their place of employment) have been involved in for the most recent five years. Please include a statement of the issues in dispute and their resolution. Acceptability of Bidder based upon this disclosure shall lie solely with the Town.

17. Bidder or its principals, regardless of their place of employment, shall not have been convicted of, nor entered any plea of guilty, or nolo contendere, or otherwise have been found civilly liable or criminally responsible for any criminal offense or civil action. Bidder shall not be in violation of any State or local ethics standards or other offenses arising out of the submission of bids or proposals, or performance of work on public works projects or contracts.

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

19. **State Prevailing Wage Rates:**

Respondents shall comply with State Statutes concerning Employment and Labor Practices, if applicable, and Section 31-53 of the Connecticut General Statutes, as amended (Prevailing Wages). Wage Rate Determination for this project from the State of Connecticut is included in the Bid Documents. Certified payrolls for site labor shall be submitted weekly to the Town's Representative or his designee on the correct State of Connecticut form (see RFP). The Town reserves the right to, without prior notice, audit payroll checks given to workers on site in order to ascertain that wages and fringe benefits are being paid as required by the State of Connecticut. Please make special note of the State requirement to adjust wage and fringe benefit rates on each July 1st following the original published rates.

NOTE that respondent is to include in its proposal all costs required by such annual increases in the PREVAILING RATES. NO escalation clauses are to be included in the respondent's proposal and NO escalation clauses will be in the Contract Agreement. Respondent is to anticipate any future increases and include these costs in the proposal response.

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

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

OSHA SAFETY AND HEALTH CERTIFICATION

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

20. Each bid shall also include a description of three similar (3) projects completed by the bidder with references to demonstrate successful experience with similar projects. Please provide project name, contact information and contract value.

21. **Compliance with Town Ordinance Prohibiting Natural Gas Waste & Oil Waste From Natural Gas Extraction Activities or Oil Extraction Activities:** If this bid is for the construction, repair or maintenance of Town owned and/or maintained roads or real property within the Town related to either (a) the purchase or acquisition of materials by the Town to be used to construct, repair or maintain any Town owned and/or maintained road or real property within the Town or (b) the performance of services for the Town to construct, repair or maintain any Town owned and/or maintained road or real property within the Town, the Bidder shall provide the following signed statement to the Town in its bid response, which shall be a certification under penalty of perjury by the Bidder: **(Bidder is asked to include this statement on a separate piece of paper with their bid response.)**

*"The undersigned Bidder, _____, hereby submits a bid for materials, equipment and/or services for the Town of Glastonbury. The bid is for bid documents titled **"Slocomb Pond Dam Removal GL-2021-02".** The undersigned Bidder hereby certifies under penalty of perjury that in connection with the bid and, if it is awarded the purchase order or contract by the Town, in connection with any purchase order or contract: (1) no materials containing natural gas waste or oil waste from natural gas extraction activities or oil extraction activities shall be provided to the Town or shall be used in providing any services to the Town by the undersigned Bidder or any contractor, sub-contractor or agent of the undersigned Bidder; (b) nor will the undersigned Bidder or any contractor, subcontractor or agent of the undersigned Bidder apply any natural gas waste or oil waste from natural gas extraction activities or oil extraction activities to any publicly owned and/or maintained road or real property within the Town of Glastonbury in performing its obligations under the purchase order or contract. The undersigned Bidder hereby agrees and acknowledges that this requirement shall be a term of the purchase order or contract, if it awarded the purchase order or contract by the Town, and any breach of this provision shall be a breach of the purchase order or contract."*

IMPORTANT:

- Failure to comply with general rules may result in disqualification of the Bidder.
- Municipal projects are exempt from Federal Excise Taxes, as well as, State of Connecticut Sales, Use and Service Taxes and should not be include in the Bidder's proposal.

NOTE: Any technical questions regarding this bid shall be made in writing (email acceptable) and directed to Stephen M. Braun, P.E., Assistant Town Engineer, 2155 Main Street, PO Box 6523, Glastonbury, CT 06033; stephen.braun@glastonbury-ct.gov . Telephone (860) 652-7743 between the hours of 8:00 a.m. – 4:30 p.m. For administrative questions concerning this bid/proposal, please contact Mary F. Visone, Purchasing Agent, at (860) 652-7588 or email the Purchasing Department at purchasing@glastonbury-ct.gov. All questions, answers, and/or addenda, as applicable, will be posted on the Town's website at www.glastonbury-ct.gov (Upon entering the website scroll down to click on Bids & Proposals Icon, then scroll down page to see the active bid table. You must click the Bid Title to view all bid details and document links). The request must be received at least three (3) business days prior to the advertised response deadline**. It is the respondent's responsibility to check the website for addenda prior to submission of any bid/proposal.**

01.00 WORKMANSHIP, MATERIALS AND EMPLOYEES

01.01 Wherever in this contract the word "Engineer" is used, it shall be understood as referring to the Town Engineer acting through any assistants duly authorized.

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

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

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

02.00 SUPERINTENDENT

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

03.00 PRECONSTRUCTION MEETING

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

04.00 PERMITS

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

04.02 A local wetland permit has been obtained by the Town for this project which is included in Attachment B. All work associated with compliance with these permits shall be included in the Contractor's bid for the various items associated with the project.

04.03 Permits from the CT DEEP Dam Safety Unit and Army Corps of Engineers General Permit are pending with those agencies and will be furnished to the successful bidder prior to award. The Town has incorporated all known conditions of these permits into the bid documents to the extent possible. Any additional work required by the actual permits upon issuance that is not identified in the contract documents will be reviewed with the contractor and incorporated into the contract as extra work under a change order.

05.00 PROPERTY ACCESS

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

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

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

06.00 PROTECTION OF THE PUBLIC AND OF WORK AND PROPERTY

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

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

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

07.00 EXISTING IMPROVEMENTS

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

a. Property within and adjacent to the project area such as shrubs, walks, driveways, fences, etc.

b. Utility mains, ducts, poles, and services. The Contractor is hereby notified that utilities, if/where shown on the plans, are at approximate locations. These locations are subject to possible errors in the source of information and errors in transcription. The Contractor shall make certain of the exact location of all mains, ducts, poles, and services prior to excavation.

08.00 SEPARATE CONTRACTS

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

09.00 INSPECTION OF WORK

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

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

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

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

10.00 RIGHT TO INCREASE OR DECREASE WORK

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

11.00 RIGHT OF ENGINEER TO STOP WORK FOR WEATHER CONDITIONS

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

12.00 CONTRACTOR TO BE RESPONSIBLE FOR IMPERFECT WORK OR MATERIALS

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

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

13.01 If, in the opinion of the Engineer, the Contractor is not proceeding with the work at a sufficient rate of progress so as to finish in the time specified, or has abandoned said work, or is not complying with the terms and stipulations or the Contract and

specifications, the Engineer may serve notice on the Contractor to adopt such methods as will ensure the completion of the work in the time specified.

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

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

14.00 DEDUCTIONS FOR UNCORRECTED WORK

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

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

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

15.00 CLEANING UP

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

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

16.00 ROYALTIES AND PATENTS

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

01.00 NOTICE TO CONTRACTOR

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

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

02.00 COMMUNICATIONS

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

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

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

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

03.00 PARTIAL USE OF IMPROVEMENTS

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

a. The use of such sections of the work shall not materially impede the completion of the remainder of the work by the Contractor.

b. The Contractor shall not be responsible for any damages or maintenance costs due directly to the use of such sections.

c. The use of such sections shall in no way relieve the Contractor of his liability due to having used defective materials or to poor workmanship.

d. The period of guarantee shall not begin until the date of the final acceptance of all work required under this Contract.

04.00 INSURANCE

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

a. Worker's Compensation Insurance:

- Statutory Coverage
- Employer's Liability
- $1,000,000 each accident/$1,000,000 disease-policy limit/$1,000,000 disease each employee
- A Waiver of Subrogation shall be provided in favor of the Town of Glastonbury and its employees and agents.

b. Commercial General Liability:

- Including Premises and Operations, Products and Completed Operations, Personal and Advertising Injury, Contractual Liability and Independent Contractors
- Limits of Liability for Bodily Injury and Property Damage
  Each Occurrence: $1,000,000
  Aggregate: $2,000,000
  (The Aggregate Limit shall apply separately to each job.)
- A Waiver of Subrogation shall be provided in favor of the Town of Glastonbury and its employees and agents.

c. Automobile Insurance:

- Including all owned, hired, borrowed, and non-owned vehicle
- Limit of Liability for Bodily Injury and Property Damage
  Per Accident: $1,000,000
- A Waiver of Subrogation shall be provided in favor of the Town of Glastonbury and its employees and agents.

d. Umbrella of Excess Liability:

- State in the Remarks Section that coverage is follow form.
- Limit of Liability Each Occurrence $1,000,000
  Aggregate $1,000,000

e. Owner's and Contractor's Protective Liability Insurance:

With respect to the Contractor's Project operations and also those of its subcontractors, the Contractor shall carry, for and on behalf of the Town of Glastonbury, insurance which shall provide coverage of at least $1,000,000 for each accident or occurrence resulting in damages from (1) bodily injury to or death of persons and/or (2) injury to or destruction of property. Subject to that limit per accident or occurrence, the policy shall provide an aggregate coverage of at least $2,000,000 for all pertinent damages arising during the policy period

04.02 The Bidder shall direct its Insurer to provide a Certificate of Insurance to the Town before any work is performed. The Contractor shall be responsible to notify the Town 60 days in advance with written notice of cancellation or non-renewal. The Certificate shall evidence all required coverage. The Bidder shall provide the Town copies of any such insurance policies upon request.

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

05.00 WORK BY OTHERS

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

06.00 CONTRACTOR'S WORK AND STORAGE AREA

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

07.00 DISPOSAL AREA

07.01 The Tryon Street Bulky Waste Facility will be available to the Contractor, at no charge, for disposal of materials that are accepted at that facility. Waste disposal guidelines for the Bulky Waste facility are published on the Town web site at the address shown below. Each bidder shall have reviewed and understand these guidelines prior to submitting a bid for the project.

https://www.glastonbury-ct.gov/home/showdocument?id=28043

Acceptable materials generally include such materials as brush, stumps, demolition materials, and excess excavated earth materials. Unacceptable materials generally include such items as carpet, appliances, upholstered furniture; hazardous wastes such as pesticides, oil based paints and thinners; or other wastes as designated by the State Department of Environmental Protection. Demolition material cannot contain asbestos or other hazardous materials.

The Contractor shall obtain a disposal area for all other unsuitable or surplus materials at no cost to the Town.

08.00 DUST CONTROL

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

09.00 MAINTENANCE / GUARANTEE PERIOD

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

10.00 PROTECTION OF EXISTING UTILITIES

10.01 Prior to opening an excavation, effort shall be made to determine whether underground installations, (i.e., sewer, water, fuel, electric lines, etc.) will be encountered and, if so, where such underground installations are located. Before starting any excavation, the Contractor shall submit to the Engineer plans or details showing the proposed method the Contractor will use to support and protect all existing utilities during construction. The furnishing of such plans and details shall not serve to relieve the Contractor of any responsibility for the proper conduct of the work.

10.02 When the excavation approaches the estimated location of such an installation, the exact location shall be determined by careful probing or hand digging, and when it is uncovered, proper supports shall be provided for the existing installation. Utility companies shall be contacted and advised of proposed work prior to the start of actual excavation.

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

11.00 TIME FOR COMPLETION/NOTICE TO PROCEED

11.01 The work under this Contract shall commence on the date ordered by the Engineer in the Notice to Proceed. After the work has begun, it shall continue in an orderly fashion such that all contract work is completed within sixty (60) calendar days of the commencement date indicated in the Notice to Proceed.

Within five (5) business days after the date of the Notice of Award, the Contractor must provide the appropriate bond and insurance certificates to the Town Purchasing Agent and must be issued a Notice to Proceed and Purchase Order for the Project prior to initiating any work.

11.02 Environmental Permits require that all unconfined in-stream work for dam removal and stair construction be conducted between June 1 and September 30. As such, the successful bidder should plan to start work immediately and complete all in-stream work within this time-frame.

11.03 When the Contract time is stated on a calendar-day basis, that time shall be the number of consecutive calendar days contained in the Contract period, excluding the time period from each December 1 through the following March 31 (the "winter shutdown period"). The time will be computed as herein provided on a consecutive-day basis, including all Saturdays, Sundays, holidays, and non-work days from April 1 through November 30 of each included year. Time will not be charged for days in the winter shutdown period. If the Engineer so approves, the Contractor may work on certain tasks of the Project during the winter shutdown period with no charge being made against the Contract time. **If work during winter shut down is approved by the Town, approval may be granted with the condition that work under the items Trafficperson (Municipal Police Officer) or Trafficperson (Uniformed Flagger) will not be measured for payment, at the discretion of the Town.**

12.00 LIQUIDATED DAMAGES

12.01 Liquidated damages will not apply to this contract.

13.00 SCHEDULE OF DRAWINGS

13.01 The Contractor is hereby alerted that the plan set entitled "Slocomb Pond Dam Removal Project CT DEEP ID #5425 Town of Glastonbury, Hartford County Connecticut Prepared by Princeton Hydro date 6/12/2020" including 10 sheets along with one sheet entitled "Princeton Hydro Site Stair Details – Roaring Brook Dam Removal prepared by Fuss & O'Neill dated 11/13/2019" is to be considered part of these specifications.

14.00 CHANGES IN THE WORK

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

15.00 LAYOUT OF WORK

15.01 The Contractor is responsible to provide stake-out of the work in accordance with the plans and specification. The Contractor shall protect all stakes from damage or destruction and shall be responsible to assure that the grade stakes have not been altered prior to actual construction.

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

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

17.00 PROSECUTION AND PROGRESS

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

17.02 ALLOWABLE HOURS OF OPERATION (WORK PERIOD): All other contract work shall be performed Monday through Friday during the hours of 7:00 AM and 4:30 PM. Work on weekends or during time periods other than those described above will not be permitted. No work will be allowed on designated Town Holidays unless permission is granted by the Town.

18.00 EXTRA WORK

18.01 Extra work beyond the scope of work identified in the Contract Drawings shall not be undertaken without explicit Town approval. In the event of disputes concerning Town determinations of what constitutes extra work and/or the monetary value of said work, procedures for resolution as outlined for said circumstances in the State of Connecticut Department of Transportation Standard Specifications for Roads Bridges and Incidental Construction form 817 shall govern. Under no circumstances will it be permissible for the Contractor to cease or slow overall project progress work due to disagreements of this nature.

19.00 SUBMITTALS AND MATERIALS TESTING

19.01 The Contractor is alerted to the need for submittals and material testing as identified in the Technical Specifications.

TOWN OF GLASTONBURY			
BID / PROPOSAL	**#GL-2021-02**		
DATE ADVERTISED	**07/15/2020**	**DATE / TIME DUE**	**08/05/2020 at 11:00 A.M.**
NAME OF PROJECT	**Slocomb Pond Dam Removal**		

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

The Bidder acknowledges receipt of the following Addenda:

Addendum #1 _____ (Initial & Date)

Addendum #2 _____ (Initial & Date)

Addendum #3 _____ (Initial & Date)

OTHER ITEMS REQUIRED WITH SUBMISSION OF BID PROPOSAL:

The following bid checklist describes items required for inclusion with the above-referenced bid proposal package. It is provided for the convenience of the bidders and, therefore, should not be assumed to be a complete list.

_____ 1. Included a copy of the Bid Bond with the electronic bid submission as per Section 10 of the Information for Bidders. Original Bid Bond to be mailed immediately following the virtual bid opening.

_____ 2. Included Disclosure of Past and Pending Mediation, Arbitration, and Litigation cases against the Bidder or its Principals as per Section 16 of the Information for Bidders.

_____ 3. Included Qualifications Statement as per Section 20 of the Information for Bidders.

_____ 4. Provided certification for Compliance with Town Ordinance Prohibiting Natural Gas Waste & Oil Waste From Natural Gas Extraction Activities or Oil Extraction Activities as per Section 21 of the Information for Bidders

_____ 5. Checked Town web site for Addenda and acknowledged Addenda on page BP-1.

_____ 6. Acknowledged Code of Ethics on page BP-3.

BIDDER NAME:_____

BIDDER NAME:_____

LINE NO.	ITEM DESCRIPTION	UNIT	QTY	UNIT PRICE	EXT
1	CONSTRUCTION LAYOUT AS PER SECTION 017300	L.S	1		
2	HIGH VISIBILITY SAFETY FENCE AS PER SECTION 015633	L.F.	500		
3	TREE PROTECTION AS PER SECTION 015633	L.F.	50		
4	MOBILIZATION/DEMOBILIZATION AS PER SECTION 017113	L.S	1		
5	NOTCH/SAWCUT DAM AS PER SECTION 024119	L.S	1		
6	SPILLWAY REMOVAL (CONCRETE AND ROCK RUBBLE) AS PER SECTION 024119	L.S	1		
7	RETAINING WALL PARTIAL REMOVAL AS PER SECTION 024119	L.S	1		
8	REPOINTING OF EXISTING STONE MASONRY AS PER SECTION 040140	L.S	1		
9	SELECTIVE SHRUB REMOVAL AND TRIMMING AS PER SECTION 311300	L.S	1		
10	TREE REMOVAL AS PER SECTION 311300	EACH	2		
11	EXCAVATION OF IMPOUNDED SEDIMENT AS PER SECTION 312316	L.S	1		
12	HAULING AND PLACEMENT OF IMPOUNDED SEDIMENT ONSITE AS PER SECTION 312316	L.S	1		
13	HAULING AND PLACEMENT OF SOIL ONSITE AS PER SECTION 312316	L.S	1		
14	REUSE OF ROCK-RUBBLE SPILLWAY STONE AS PER SECTION 312316	L.S	1		
15	EXCAVATION AND DISPOSAL OF EXISTING SINKHOLE FILL AS PER SECTION 312316	L.S	1		
16	COMPACTED GRANULAR FILL AS PER SECTION 312316	C.Y.	20		
17	FLOWABLE FILL AS PER SECTION 312323.33	C.Y.	6		
18	CONSTRUCTION ENTRANCE AS PER SECTION 312500	L.S	1		

BIDDER NAME:_____

LINE NO.	ITEM DESCRIPTION	UNIT	QTY	UNIT PRICE	EXT
19	ROCK ACCESS RAMP AS PER SECTION 312500	L.S	1		
20	COMPOSITE MATS AS PER SECTION 312500	L.S	1		
21	STRAW WATTLE AS PER SECTION 312500	L.F.	595		
22	COMPOST FILTER SOCK AS PER SECTION 312500	L.F.	105		
23	PAVEMENT RESTORATION AS PER SECTION 321216	S.Y.	660		
24	TOPSOIL AS PER SECTION 329200	C.Y.	240		
25	STRAW MULCH AS PER SECTION 329200	S.Y.	2160		
26	FLOODPLAIN SEED MIX AS PER SECTION 329200	LBS.	8		
27	LAWN SEED MIX AS PER SECTION 329200	LBS.	55		
28	WATERWAY GRADING AS PER SECTION 354300	L.S	1		
29	ORNAMENTAL METAL FENCE WITH MOW STRIP AS PER SECTION 323119	L.F.	515		

TOTAL BASE BID AMOUNT: $_____
(Numeric)

WRITTEN TOTAL BASE BID AMOUNT:_____

ADD ALTERNATE:

30	ADD ALTERNATE 1: CONSTRUCTION OF CONCRETE STAIRWAY AS PER SECTION 033000	L.S.	1		

BIDDER NAME:_____

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

CODE OF ETHICS:
I/We have reviewed a copy of the Town of Glastonbury's Code of Ethics and agree to submit a Consultant Acknowledgement Form if I/We are selected. Yes_____ No_____*

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

Respectfully submitted:

Type or Print Name of Individual	**Doing Business as (Trade Name)**
Signature of Individual	**Street Address**
Title	**City, State, Zip Code**
Date	**Telephone Number/Fax Number**
E-Mail Address	**SS# or TIN#**

(Seal – If bid is by a Corporation)

Attest

TECHNICAL SPECIFICATIONS

SECTION DESCRIPTION **PAGE#**

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Project information.
2. Work covered by Contract Documents.
3. Access to site.
4. Work restrictions.
5. Specification and drawing conventions.

1.2 PROJECT INFORMATION

A. Project Identification: **Slocomb Pond Dam Removal Project.**

B. Definitions: All references to "Project Location," "Property Owner," "Project Sponsor," "Project Engineer," and "Project Representatives" in this document shall be as defined below:

1. Project Location: Slocomb Pond Dam is located on Roaring Brook and is situated on the Eastern edge of the Matson Hill Road Open Space park in Glastonbury, CT.
2. Property Owner/Sponsor: Town of Glastonbury, 2155 Main Street, Glastonbury, CT 06033.
3. Project Engineer: Princeton Hydro, PC, 931 Main Street, Suite 2, South Glastonbury, Connecticut 06073.
4. Project Representatives:
   a. Property Owner and Sponsor Representative: Mr. Daniel A. Pennington, P.E., Glastonbury Town Engineer.
   b. Project Engineer: Ms. Laura A.S. Wildman, P.E., Princeton Hydro, PC, 931 Main Street, Suite 2, South Glastonbury, Connecticut 06073.

C. Project Contacts:

5. Property Owner and Sponsor Representative: Mr. Daniel A. Pennington, P.E., Glastonbury Town Engineer.
6. Project Engineer: Laura AS Wildman Princeton Hydro, PC, 931 Main Street, Suite 2, South Glastonbury, Connecticut 06073.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of the Project is defined by the Contract Documents and consists of the following:

1. The proposed project is funded by the Property Owner and Sponsor.
2. The proposed project includes the removal of the concrete Ambursen (buttress) spillway and minimal regrading of the channel, partial removal and stabilization in place of the rock-rubble spillway with minor safety improvements, selective excavation of upstream impounded sediment and relocation of impounded sediment on site, construction of a cast-in-place concrete stairway and associated soil excavation, installation of specified ornamental wrought-iron fencing, safety repairs to former factory inlet and retaining walls, as needed, and re-establishment of all disturbed areas, as needed.
3. Specific details on the construction/installation can be found in the attached plans (Appendix B).

B. Type of Contract

1. Work in this specification related to the proposed stairway construction will be included as an alternate, and its inclusion in the project will be dependent on overall project budget. If not included the ornamental fence installation will need to be extended along the retaining wall where the stairway would have been constructed.

1.4 ACCESS TO SITE

A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.

B. Use of Site: Limit use of Project site to areas identified within the Limit of Disturbance indicated on the attached construction plans. Do not disturb portions of Project site beyond areas in which the Work is indicated.
   1. Limits: Confine construction operations to areas within the Limit of Disturbance as shown on Sheet 5 of 10 of the designplans.
   2. Vehicle Parking: Construction personnel shall park in areas which will not obstruct travel on Matson Hill Road and/or access to the private driveways.
   3. The parking lot for the Matson Hill Road Open Space park shall be closed to the public and will serve as the access point for construction. All staging areas are shown on the plans included in Appendix B.

1.5 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations.
   1. Comply with limitations on use of public streets and other requirements of authorities having jurisdiction.
   2. Comply with Connecticut Department of Energy and Environmental Protection limitations on in-stream construction work to protect fishery resources.
   3. Comply with Connecticut Department of Energy and Environmental Protection limitations on tree cutting activities due to the potential presence of Northern long-eared bats.
   4. Comply with all local, state, and federal permit conditions for this project.

B. On-Site Work Hours: Limit work within the project limits to normal business working hours of 7:00 a.m. to 6:00 p.m., Monday through Friday, except as otherwise approved by the Property Owner or Authorized Project Representative.
   1. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others.

C. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption with Owner.
   1. Notify the Project Representatives not less than two (2) days in advance of proposed disruptive operations.
   2. Obtain permission from the Project Representative before proceeding with disruptive operations.

D. The project site encompasses structures associated with the historic Slocomb Mill Complex and remnants of the State of Connecticut Archaeological site 54-121, the J.T. Slocomb Industrial Site. No work deviating from the project plans and specifications shall occur that alters, disturbs, or otherwise impacts these resources, unless approved by the Project Engineer.

1.6 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
   1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
   2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

PART 2 - PRODUCTS (Not Used)
PART 3 - EXECUTION (Not Used)
PART 4 – MEASUREMENTS AND PAYMENTS (Not Used)

END OF SECTION 011000

SECTION 012500 – SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

1.2 SUBMITTALS

A. Substitution Requests: Submit copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
   a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
   b. Coordination information, including a list of changes or modifications needed to other parts of the Work, which will be necessary to accommodate proposed substitution.
   c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable specification section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
   d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
   e. Samples, where applicable or requested.
   f. Certificates and qualification data, where applicable or requested.
   g. List of similar installations for completed projects with project names and addresses and names and addresses of Engineers and owners.
   h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
   i. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
   j. Cost information, including a proposal of change, if any, in the Contract Sum.
   k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
   l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

2. Engineer's Action: If necessary, Project Engineer will request additional information or documentation for evaluation within seven (7) days of receipt of a request for substitution. Project Engineer will notify Contractor of acceptance or rejection of proposed substitution within seven (7) days of receipt of request, or seven (7) days of receipt of additional information or documentation, whichever is later.
    a. Forms of Acceptance: Change Order, Construction Change Directive, or Project Engineer's Supplemental Instructions for minor changes in the Work.
    b. Use product specified if Project Engineer does not issue a decision on use of a proposed substitution within time allocated.

1.3 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage qualified testing agency to perform compatibility tests recommended by manufacturers.

1.4 PROCEDURES

A. Coordination: Modify or adjust affected work as necessary to integrate work of the approved substitutions.

B. Approval: All substitution must be approved by the Project Engineer, Property Owner's Contract Manager.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately upon discovery of need for change, but not later than seven (7) days prior to time required for preparation and review of related submittals.
    1. Conditions: Project Engineer will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Project Engineer will return requests without action, except to record noncompliance with these requirements:
        a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
        b. Substitution request is fully documented and properly submitted.
        c. Requested substitution will not adversely affect Contractor's construction schedule.
        d. Requested substitution has received necessary approvals of authorities having jurisdiction.
        e. Requested substitution is compatible with other portions of the Work.
        f. Requested substitution has been coordinated with other portions of the Work.
        g. Requested substitution provides specified warranty.
        h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Shall be approved by Engineer.

PART 3 - EXECUTION (Not Used)

PART 4 – MEASUREMENTS AND PAYMENTS (Not Used)

END OF SECTION 012500

SECTION 013223 – SURVEY AND LAYOUT DATA

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
   1. Construction layout.
   2. Field surveying.
   3. As-built survey.

1.2 DEFINITIONS

A. As-built survey: The survey shall be completed once proposed conditions have been achieved.
B. Construction layout: This survey shall include the surveying and marking of existing features to remain, proposed features and the limit of disturbance.
C. Field Surveying: This surveying is the checking of grades and locations throughout the construction operations.

1.3 INFORMATIONAL SUBMITTALS

A. The project engineer shall provide a digital copy of the basemap with benchmarks to the contractor for use in site layout.

1.4 QUALITY ASSURANCE

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

PART 2 - PRODUCTS – (Not Needed)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning site work, investigate and verify the existence and location of underground utilities and other construction affecting the Work.
   1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations. Immediately report to Project Engineer and remedy any unsatisfactory conditions.
   1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
      a. Description of the Work.
      b. List of detrimental conditions, including substrates.
      c. List of unacceptable installation tolerances.
      d. Recommended corrections.
   2. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to the Project Representative that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of the Contractor, submit a request for information to Project Engineer.

3.3 CONSTRUCTION LAYOUT

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

B. General: Engage land surveyor or qualified personnel to lay out the Work using accepted surveying practices.

1. Establish benchmarks and control points to set lines and levels at each level as needed to locate each element of Project.
2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
3. Inform installers of lines and levels to which they must comply.
4. Check the location, level and plumb of every major element as the Work progresses.
5. Notify Project Engineer when deviations from existing and proposed conditions occur.

C. Site Improvements: Locate and lay out site improvements, including proposed stairway, grading, and fill and topsoil placement.

D. Tree Removal Site Walk: The contractor, property owner representative and onsite engineer shall walk all areas where tree removal is necessary to specifically identify trees to be saved and trees to be removed for access and the channel realignment.

3.4 FIELD SURVEY

A. This shall include all interim survey performed by the contractor or licensed surveyor to check elevations, location, and configuration in comparison to the design plans.

1. If discrepancy is encountered the contractor shall notify the Project Engineer promptly.

3.5 AS-BUILT SURVEY

A. This survey shall be completed by a licensed surveyor employed by the Town of Glastonbury.

1. The survey shall include any and all structures which have been removed and/or installed as part of the project.
2. Cross-sections through the newly constructed or otherwise disturbed channel including but not limited to
   a. Eight (8) cross sections, equating to one (1) every 45 feet, covering the full extent of proposed work in the vicinity of the former spillway. Cross sections should include, at minimum, one (1) immediately downstream of the former spillway,

one (1) at the location of the former spillway, and one (1) immediately upstream of the former spillway.

b. Two (2) cross sections in the vicinity of the cast-in-place concrete stairway.

3. Longitudinal profile of the newly constructed channel.
4. Topographic survey of the disposal areas.

B. This survey shall be completed within one (1) month of the project being considered substantially complete.

C. The surveyed information shall be provided to the engineer in AutoCAD file.

PART 4 MEASUREMENTS AND PAYMENT

4.1 METHOD OF MEASUREMENT

Prices shall include all materials, labor, equipment and all else necessary to complete the work. Payment schedule shall be based on the percentage of total contract work completed per the contract price.

4.2 BASIS OF PAYMENT

Payment will be made under:

Pay Item	Pay Unit
CONSTRUCTION LAYOUT	LUMP SUM

END OF SECTION 017300

SECTION 015633 – TEMPORARY SECURITY BARRIERS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Temporary High Visibility Fence installed along the West perimeter of the work area to separate the work area from Matson Hill Road, and at the existing pedestrian trail entrance at the South-East corner of work area.
2. Temporary Tree Protection to be installed around the trunks of trees.

PART 2 - PRODUCTS

A. Materials for High Visibility Fence shall comply with the following:

1. Detail C on Sheet 8 of 10 of the design plans.
2. The fence shall be a minimum of four (4) feet high with stakes installed at eight (8) foot on center.
3. The fence shall be constructed of UV stabilized high visibility orange polyethylene safety fence.

B. Materials for Temporary Tree Protection Fence shall comply with the following:

1. Detail I on Sheet 8 of 10 of the design plans.
2. The fence shall be a minimum of four (4) feet high.
3. The fence shall be adapted from wood snow fencing, high visibility fence or approved equivalent.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine fencing and traffic barrier for defects and problems that might affect performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install Temporary High Visibility Fence in accordance with Detail C on Sheet 8 of 10 along the West perimeter of the work area to separate the work area from Matson Hill Road, and at the existing pedestrian trail entrance at the South-East corner of work area.

B. Install Temporary Tree Protection in accordance with Detail I on Sheet 8 of 10 and as deemed necessary by Project Engineer in the field.

3.3 REPAIRS

C. Repair fencing and traffic barrier as necessary throughout construction period and as requested by Project Engineer.

PART 4 – MEASUREMENTS AND PAYMENTS

4.1 METHOD OF MEASUREMENT

Prices shall include all materials, labor, equipment and all else necessary to complete the work. Payment schedule shall be based on the percentage of total contract work completed per the contract price.

4.2 BASIS OF PAYMENT

Payment will be made under:

Pay Item	Pay Unit
HIGH VISIBILTY SAFETY FENCE	LINEAR FEET
TREE PROTECTION	LINEAR FEET

END OF SECTION 015633

SECTION 015719 – ENVIRONMENTAL PROTECTION

PART 1 – GENERAL

1.1 SUMMARY

A. This section covers the furnishing of all labor, materials, and equipment to perform all work required for the protection of the environment during construction operations except for those measures otherwise set forth in these specifications.

1.2 QUALITY ASSURANCE - GENERAL

A. For the purpose of this specification, "environmental protection" is defined as the retention of the environment in its natural state to the greatest possible extent during project construction and the restoration of the natural appearance following project completion. Environmental protection requires consideration of air, water, and land, and involves noise, solid waste-management and management of radiant energy and radioactive materials, as well as other pollutants. In order to prevent and provide for the abatement and control of any environmental pollution arising from the construction activities in the performance of this contract, the Contractor and his subcontractors shall comply with all applicable Federal, State and local laws and regulation concerning environmental pollution control and abatement. The contractor and his subcontractors shall also comply with any existing environmental permits. The contractor shall also adhere to the "Best Management Practices for Protection of the Environment" set forth on Sheet 9 of 10 of the design plans.

B. The project site encompasses structures associated with the historic Slocomb Mill Complex and remnants of the State of Connecticut Archaeological site 54-121, the J.T. Slocomb Industrial Site. No work deviating from the project plans and specifications shall occur that alters, disturbs, or otherwise impacts these resources, unless approved by the Project Engineer.

C. Compliance with the provisions of this section by subcontractors will be the responsibility of the Contractor.

D. At the pre-construction conference, the Contractor will meet with the Project Representatives to develop mutual understandings relative to compliance with this provision and administration of the environmental program.

1.5 PROTECTION OF LAND RESOURCES

A. The land resources with the project boundaries shall be preserved in their present condition or be restored to a condition after completion of construction which will appear to be natural and not distract from the appearance of the project. The Contractor shall confine the construction activities to limits of disturbance defined by the plans. Care shall be taken during construction to avoid and protect, as necessary, structures associated with the historic Slocomb Mill Complex that are not slated for removal or alteration.

1.6 PROTECTION OF WATER RESOURCES

A. The Contractor shall not pollute waterways with any harmful materials. The Contractor shall comply with all applicable Federal, State, County and Municipal laws concerning pollution of waterways.

B. The Contractor shall monitor weather forecasts. Prior to any event that may cause erosion or sedimentation or flooding, the Contractor shall further stabilize the site as needed and move equipment and materials to upland areas. During such events, the Contractor shall adhere to the "Emergency Operation/Flood Contingency Plan During Construction" set forth on Sheet 9 of 10 of the design plans.

1.7 DISPOSAL OF WASTE MATERIALS

A. Contractor shall provide for proper disposal or recycling of all materials generated by the site demolition. Owner shall receive any proceeds from sale or recycling of recycled materials. Prior to payment for any waste disposal, the contractor shall provide certifications as required by the CTDEEP indicating the receiving facility for the material and the method of disposal. In the event that there is no relevant CTDEEP regulation governing disposal and/or recycling of the material, Contractor shall supply at a minimum documentation indicating the location of the facility where disposal occurred, name of the hauling company and date that the material was delivered. If the material was considered "hazardous material', a copy of the hazardous material bill of lading shall be provided.

1.8 DUST CONTROL

A. The Contractor shall be required to maintain all work areas within the project boundaries free from dust which would cause a hazard or nuisance to others. Dust control shall be performed as the work proceeds and whenever a dust nuisance or hazard occurs. No separate or direct payment will be made for dust control and the cost thereof shall be considered incidental to, and included in, the contract. The Contractor will bear all costs associated with any damages resulting from any dust nuisance and agrees to hold the Town of Glastonbury harmless in any related action.

PART 2 – MATERIALS (NOT USED)
PART 3 – EXECUTION (NOT USED)
PART 4 - MEASUREMENT AND PAYMENT (Not Used)

END OF SECTION – 015719

SECTION 017113 – MOBILIZATION/DEMOBILIZATION

PART 1 – GENERAL

1.1 SUMMARY

A. The work shall consist of the mobilization of the Contractor's forces and equipment necessary for performing the work required under the Contract:
   1. It shall include transportation of personnel, equipment, and operating supplies to the site; establishment of necessary facilities at the site; and other preparatory work at the site.
   2. It shall include the construction staging and stockpiling areas for equipment and materials.
   3. It shall include all equipment and material transport.
   4. It shall include construction layout by the contractor for verification of construction quantities.
   5. It shall include transportation and demobilization of personnel, and equipment off the site at the conclusion of the project.

1.2 REFERENCES

A. SECTION 017700 – CLOSEOUT PROCEDURES
B. Connecticut Department of Transportation Standard Specifications – latest revision – Section 1.08.05.

1.3 SUBMITTALS

A. Health and Safety Plan prepared for work on the site. Items should include but not be limited to the following:
   1. Compliance with all affected federal, state, and local environmental, safety and health requirements applicable to the scope of work.
   2. Compliance with all current OSHA regulations, requirements, and training.
   3. Designated a safety representative and/or alternate personal to be onsite during construction to oversee all safety matters.
   4. Summary of the responsibilities of the contractor and subcontractors hired by the contractor.
   5. All personnel should be trained in construction safety policies, regulations, and procedures for the project prior to start of work.
   6. The employees and subcontractors are being informed of all known hazardous materials.
   7. Individual contractors or subcontractor competent in performing construction work.
   8. Detailed direction to the nearest hospitals and/or emergency facilities.
   9. First Aid Kit shall be maintained onsite at all times.
   10. Fire extinguisher should be provided and properly maintained near the job site.
   11. Implementation of the project-specific plan.
B. Survey verification performed by the contractor or an approved subcontractor.
C. Shop drawings and/or material specifications as required or as otherwise identified in these Specifications.
D. Disposal manifests: Submit copy of receipts issued by an approved facility, licensed to accept materials, for waste disposal.

PART 2 – MATERIALS

2.1 REQUIREMENTS

A. Contractor cannot commence construction work without prior review and approval of the required submittals by the Project Engineer.

B. Contractor to provide Project Engineer and Owner submittal requirements specified under:

1. SECTION 013223 – SURVEY AND LAYOUT DATA
2. SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION
3. SECTION 015719 - ENVIRONMENTAL PROTECTION
4. SECTION 017700 – CLOSEOUT PROCEDURES
5. SECTION 024113 – SELECTIVE STRUCTURE DEMOLITION/REMOVAL
6. SECTION 033000 – CAST IN PLACE CONCRETE
7. SECTION 040140 – REPOINTING OF STONE MASONRY WALL
8. SECTION 311300 – SELECTIVE TREE REMOVAL
9. SECTION 312316 – EXCAVATION
10. SECTION 312323.33 – FLOWABLE FILL
11. SECTION 312500 - SOIL EROSION AND SEDIMENT CONTROL
12. SECTION 321216 – ASPHALT PAVING
13. SECTION 323119 – ORNAMENTAL METAL FENCE
14. SECTION 329200 – TURF AND GRASSES

C. Demobilization requires the Contractor to complete the procedures laid out under SECTION 017700 – CLOSEOUT PROCEDURES.

PART 3 – EXECUTION

3.1 SURVEY VERIFICATION

D. Locations of all above ground and subsurface utilities, structures, inverts, and grades should be field-verified by the Contractor prior to construction.

E. Any discrepancies should be immediately reported to the Project Engineer. No work shall commence until further direction from Project Engineer.

3.2 IN STREAM WORK

A. Work is to be conducted during low flow periods. The dam impounds no water during normal flows and dewatering efforts are not anticipated to be necessary. A majority of the proposed work shall be conducted outside of normal stream flow.

B. Work is to be conducted outside of fish migration periods and during the time period authorized by the Connecticut Division of Energy and Environmental Protection Fisheries Department for in-stream construction work (June 1st-September 30th).

3.3 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

3.6 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.

1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

PART 4 – MEASUREMENT AND PAYMENT

4.1 METHOD OF MEASUREMENT

Prices shall include all materials, labor, equipment and all else necessary to complete the work. Payment schedule shall be based on the percentage of total contract work completed per the contract price.

4.2 BASIS OF PAYMENT

Payment will be made under:

Pay Item	Pay Unit
MOBILIZATION/DEMOBILIZATION	LUMP SUM

END OF SECTION - 017113

SECTION 017700 – CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
   1. Final completion procedures.
   2. Warranties.
   3. Final cleaning.

1.2 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining final completion and site demobilization, complete the following:
   1. Submit a final Application for Payment.
   2. Engineer of Record to inspect the site and prepare an of Engineer's Substantial Completion inspection list of items to be completed. Machinery should still be onsite, capable of performing any unfinished tasks.
   3. Submit copy of Engineer's Substantial Completion inspection list of items to be completed. The list shall state that each item has been completed or otherwise resolved for acceptance.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Project Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements.
   1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
   2. Work will only be considered complete once the Engineer has confirmed completion of all the task on the Engineer's Substantial Completion inspection list and consented to demobilization from the site.

C. Contractor to provide photo-documentation of completed work, and ensure that no damage has been done to any existing structure, park features, and/or facilities.

1.3 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
   1. Organize items by major element, including categories.

1.4 WARRANTY

A. All warranties from the manufacturers must be transferred to the property owner.
B. All work performed is subject to a 1-year Contractor’s warranty of workmanship and materials.
C. Disclaimers and Limitations: Manufacturer’s disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products.
D. Related Damages and Losses: When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted work.

E. Reinstatement of Warranty: When Work covered by the warranty has failed and been corrected, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment of depreciation.

F. Replacement of Cost: On determination that Work covered by warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through part of its useful service life.

PART 2 - PRODUCTS – (Not Used)

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:

a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.

b. Remove tools, construction equipment, machinery, and surplus material from Project site.

PART 4 – MEASUREMENT AND PAYMENT (Not Used)

END OF SECTION 017700

SECTION 024113 – SELECTIVE STRUCTURE DEMOLITION/REMOVAL

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Dam sawcut and notching
2. Removal of the Concrete Spillway
3. Partial removal of the Rock-Rubble Spillway as shown on the design plans
4. Partial removal of the downstream Concrete Retaining Wall at the proposed staircase location.

1.2 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and relocated on-site.

B. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

C. Removal and Replacement: Existing items to be temporarily relocated and stored during the construction, and then reinstalled to pre-condition conditions prior to demobilization.

1.3 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor. Historic stone from dam and retaining wall demolition to remain onsite and be reused where possible unless it cannot be sorted out from attached concrete.

1.4 INFORMATIONAL SUBMITTALS

A. Location of proposed disposal facilities and the disposal facility requirements.

1.5 CLOSEOUT SUBMITTALS

A. Landfill Records: Indicate receipt and acceptance of wastes by a landfill facility licensed to accept wastes.

1.6 FIELD CONDITIONS

A. Notify Project Engineer of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

B. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

1. If suspected hazardous materials are encountered, do not disturb; immediately notify Project Engineer and Owner. Hazardous materials will be removed by Owner under a separate contract.

PART 2 - PRODUCTS

2.1 PEFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with Federal, State, and local notification requirements, regulations, and permit conditions before beginning selective demolition. Comply with hauling and disposal requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

3.2 PREPARATION

A. Existing Services/Systems to Remain: Maintain existing services/systems and protect them against damage.
   1. Comply with requirements for existing services/systems interruptions specified within these specifications.

B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
   1. Provide protection to ensure safe passage of people around selective demolition area.
   2. Protect road, driveways, outlet structures, pipes, utilities, and existing features that are to remain or that are exposed during construction operation, including structures associated with the historic Slocomb Mill Complex and remnants of the State of Connecticut Archaeological site 54-121, the J.T. Slocomb Industrial Site.

C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction/structures being demolished or adjacent structures.
   1. Strengthen or add new supports when required during progress of selective demolition.
   2. Protect all structures that are to remain in place.

3.3 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required and as indicated on the plan. Use methods required to complete the Work within limitations of governing regulations.

B. Removal: Remove materials indicated on the plans; Relocate materials on-site or dispose of materials at an approved disposal facility as specified on the plans.

C. Existing Items to Remain: Protect construction/structures indicated to remain against damage and soiling during selective demolition. When permitted by Project Engineer, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

3.4 SELECTIVE DEMOLITION, STRUCTURES

A. The concrete Ambursen Spillway is to be sawcut at the left-most (West) buttress and the spillway is to be removed within the extents of the existing channel using pneumatic hammer or similar means. The western buttress and abutment are to be protected from damage. The Contractor shall excavate impounded sediment along the East (river right) bank of existing upstream channel as shown on the design plans and according to the specifications in Section 312316 before proceeding with the demolition of the remainder of the Ambursen spillway.

B. The Rock-Rubble Spillway shall be partially removed to create a 3:1 slope from elevation 172’ as shown on the design plans. Selected 18-24+ inch stones to be reused to fill existing gaps in base of masonry stone retaining wall and as toe protection, as shown in the design plans. The Rock-Rubble Spillway is a structure associated with the historic Slocomb Mill Complex. No work deviating from the project plans and specifications shall occur that alters, disturbs, or otherwise impacts this structure.

C. Approximately 70 linear feet of the concrete and stone masonry retaining wall shall be removed at the location indicated on the design plans prior to the construction of the public river access stairway. Retaining wall stones are to be set aside to be reused as stone facing on the inner side walls of the proposed staircase. Facing stones are to be carefully selected to provide visual congruency with the existing retaining wall to remain.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose at a regulated facility.
   1. Do not allow demolished materials to accumulate on-site.
   2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off Owner's property and legally disposed of them, unless otherwise directed by the Engineer.

3.6 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began. Document with photographs.

PART 4 - MEASUREMENT AND PAYMENT

4.1 METHOD OF MEASUREMENT

Prices shall include all materials, labor, equipment and all else necessary to complete the work. Payment schedule shall be based on the percentage of total contract work completed per the contract price.

4.2 BASIS OF PAYMENT

Payment will be made under:

Pay Item	Pay Unit
NOTCH/SAWCUT DAM	LUMP SUM
SPILLWAY REMOVAL (CONCRETE AND ROCK-RUBBLE)	LUMP SUM
RETAINING WALL REMOVAL	LUMP SUM

END OF SECTION 024119

SECTION 033000 – CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:
   1. Stairway to provide public access to Roaring Brook

1.2 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.
   1. Indicate amounts of mixing water to be withheld for later addition at Project site.

C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.

D. Formwork Shop Drawings: Prepared by or under the supervision of a qualified professional engineer detailing fabrication, assembly, and support of formwork.

E. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements referenced in ACI 301:
   1. Aggregates: Include service record data indicating absence of deleterious expansion of concrete due to alkali aggregate reactivity.

PART 2 - PRODUCTS

2.1 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for concrete with a compressive strength of 3,000 psi, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
   1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.

2.2 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to ASTM A615 Grade 60 and CRSI's "Manual of Standard Practice". Reinforcement to be detailed in accordance with ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures."

PART 3 - EXECUTION

3.1 FORMWORK

A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads. Formwork must ensure that no concrete is released into the river.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

3.2 REMOVING AND REUSING FORMS

A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations and curing and protection operations need to be maintained.

B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.

C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Engineer.

3.3 STEEL REINFORCEMENT

A. General: Comply with the Notes shown on the “Site Stair Details” plan by Fuss & O’Neil and CRSI's "Manual of Standard Practice" for placing reinforcement.

1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

3.4 CONCRETE PLACEMENT

A. Concrete placement to comply with the Notes shown on the “Site Stair Details” plan by Fuss & O’Neil .

B. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.

C. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Engineer.

D. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.

1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

E. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.

F. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

1. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

G. Hot-Weather Placement: Comply with ACI 301 and as follows:

1. Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.

2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

H. Stones salvaged from the retaining wall partial demolition outlined in Section 024113 (Selective Structure Demolition) shall be used as facing for the inner walls of the proposed stairway. Placement of stones to comply with the Notes shown on the "Site Stair Details" plan by Fuss & O'Neil.

1. Stone facing shall be mortared in place following the placement and curing of the concrete footing, and prior to the pouring of the stem wall concrete.

3.5 CONCRETE PROTECTING AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.

1. Cure concrete according to ACI 308.1.

3.6 FIELD QUALITY CONTROL

A. Testing and Inspecting: Engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.

B. Inspections:

1. Steel reinforcement placement.
2. Steel reinforcement welding.
3. Verification of use of required design mixture.
4. Concrete placement, including conveying and depositing.
5. Curing procedures and maintenance of curing temperature.
6. Verification of concrete strength before removal of shores and forms from beams and slabs.

C. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed.

PART 4 – MEASUREMENT AND PAYMENT

4.1 METHOD OF MEASUREMENT

Prices shall include all materials, labor, equipment and all else necessary to complete the work. Payment schedule shall be based on the percentage of total contract work completed per the contract price.

4.2 BASIS OF PAYMENT

Payment will be made under:

Pay Item	Pay Unit
CONSTRUCTION OF CONCRETE STAIRWAY	LUMP SUM

NOTE: Payment for this lump sum item will include all necessary excavation, loading, hauling and on site placement of soil material.

END OF SECTION 033000

SECTION 040140 – REPOINTING OF STONE MASONRY WALL

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes the following work to be completed at the locations shown on Sheet 10 of 10 of the design plans, or as directed by the Engineer:
   1. Removal of joint sealant in all exterior masonry joints.
   2. Removal of all prior Portland cement replacement mortar, including pointing and reconstruction.
   3. Raking out of all unsound mortar from all exterior stone joints.
   4. Removal of mortar excess from stone faces.
   5. Repointing of all exterior stone joints.

1.2 QUALITY ASSURANCE

A. Work must be performed by a firm having not less than 5 years successful experience in comparable masonry restoration projects and employing personnel skilled in the restoration process and operations indicated.

1.3 SUBMITTALS

A. Product Data: Submit manufacturer's technical data for each product indicated including recommendations for their application and use. Include test reports and certifications substantiating that products comply with requirements.

1.4 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to site in manufacturer's original and unopened containers and packaging, bearing labels as to type and names of products and manufacturers.

B. Protect grout, mortar and other materials from deterioration by moisture and temperature. Store in a dry location or in waterproof containers. Keep containers tightly closed and away from open flames. Protect liquid components from freezing. Comply with manufacturer's recommendations for minimum and maximum temperature requirements for storage.

C. Comply with the manufacturers written specifications and recommendations for mixing, application, and curing of repointing mortars and patching materials.

1.5 PROJECT CONDITIONS

A. Do not perform any masonry application unless air temperatures are between 40 degrees Fahrenheit and 85 degrees Fahrenheit and will remain so for at least 48 hours after completion of work or provide proper protection.

B. Provide sun, wind and rain protection.

PART 2 – PRODUCTS

2.1 MORTAR MATERIALS

A. Portland cement shall be Type 6 (white) cement meeting the material requirements of Subsection 701-01 of the Standard Specifications, except that the maximum permissible alkali content shall be 0.60 percent. All Portland cement used for this item shall be supplied by the same manufacturer.

B. Hydrated lime shall meet the requirements of ASTM C 207, Type SA. All hydrated lime used for this item shall be supplied by the same manufacturer.

C. Masonry sand shall be obtained from a natural local source, and graded per ASTM C 144. The sand shall be free of impurities such as salts, organic impurities, and other deleterious materials in accordance with ASTM C 144. The Contractor shall provide a sample of the masonry sand to the Engineer for approval prior to commencing work.

D. Water: Clean, free of oils, acids, alkalis and organic matter

E. Existing stones shall be used where possible. New stones shall match or replicate the existing masonry and native stone as closely as possible in kind, sizes, quality, color, texture, and finish. All stones shall be clean and free from structural defects. Samples of the new stone shall be submitted to the Engineer for approval.

2.2 MORTAR MIX

A. Pointing mortar shall consist of 1 part Portland cement, 2 parts lime, and 8 parts sand. Dry ingredients shall be measured by volume and thoroughly mixed prior to the addition of any water. Add sufficient water to the dry ingredients to produce a mortar that retains its form when hand-squeezed and released. Mix for approximately 5 minutes. Allow this mortar to stand covered for not less than 1 hour nor more than 1 ½ hours for prehydration. Add additional water in small portions until a stiff, but workable consistency is reached. The use of pigments or other mortar additives will not be permitted. Mortar shall be used within 30 minutes of final mixing. Retempering of mortar will not be permitted.

PART 3 – EXECUTION

3.1 PREPARATION

A. Protect elements surrounding work of this section from damage or disfiguration.
B. Immediately remove stains, efflorescence, or other excess resulting from work of this section.
C. Divert flow from area of work
D. Provide temporary support where necessary to prevent displacement of stone during repointing and until mortar has achieved sufficient strength.

3.2 REPOINTING OF EXISTING STONE MASONRY

A. General: Cleaning and repointing work shall be performed by skilled masons. Work shall be supervised by a lead mason with a minimum of five years masonry restoration experience. The Contractor shall provide the Engineer with specific documentation of lead mason's experience.
B. Joint Raking
    1. All existing pointing mortar shall be removed to a minimum uniform depth of 2 inches or 2.5 times the joint width, whichever is greater. Any loose or disintegrated mortar beyond this minimum depth shall also be removed as ordered by the Engineer.
    2. Removal of mortar from joints shall be accomplished using hand tools and small pneumatically powered chisels, unless otherwise indicated. All tools shall be subject to approval by the Engineer prior to commencing work. If, in the opinion of the Engineer, the Contractor's methods of mortar removal are found to be damaging to the masonry, work shall be stopped until acceptable corrective action is taken.
    3. Remove mortar from masonry surfaces within raked-out joints to expose masonry for contact with pointing mortar. Brush, vacuum or flush joints to remove dirt and loose debris.
    4. Do not spall edges of masonry units or widen joints. Replace any masonry units which become damaged.
C. Joint Pointing
    1. Rinse masonry joint surfaces with water to remove any dust and mortar particles. Time application of rinsing so that, at time of pointing, excess water has evaporated or run off, and joint surfaces are damp but free of standing water.
    2. Apply first layer of pointing mortar to areas where existing mortar was removed to depths greater than surrounding areas, compacting mortar to fill all voids. Once a uniform joint depth is attained, the joint shall be filled by applying mortar in layers not greater than ½ inch. Compact each layer thoroughly and allow to become thumbprint-hard before applying next layer. Take care not to spread mortar over edges onto exposed masonry surfaces.
    4. When the final layer of mortar is thumbprint hard, tool joints to match original appearance of joints, unless otherwise indicated. Remove excess mortar from edge of joint by brushing.
    5. Cure mortar by maintaining in a damp condition for not less than 72 hours.
D. Final Cleaning
    1. After mortar has fully hardened thoroughly clean exposed masonry surfaces of excess mortar and foreign matter using stiff nylon or bristle brushes and clean water, spray applied at low pressure.
    2. Use of metal scrapers or brushes will not be permitted.
    3. Use of acid or alkali cleaning agents will not be permitted.

PART 4 – MEASUREMENT AND PAYMENT

4.1 METHOD OF MEASUREMENT

Prices shall include all materials, labor, equipment and all else necessary to complete the work. Payment schedule shall be based on the percentage of total contract work completed per the contract price.

4.2 BASIS OF PAYMENT

Payment will be made under:

Pay Item	Pay Unit
REPOINTING OF EXISTING MASONRY	LUMP SUM

END OF SECTION 040140

SECTION 311300 – SELECTIVE TREE & SHRUB REMOVAL

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Tree Removal.
2. Trimming existing vegetation.

1.2 DEFINITIONS

A. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.3 MATERIAL OWNERSHIP

A. Except as indicated to be stockpiled or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.4 SUBMITTALS

A. Existing Conditions: Documentation of existing trees and plantings to ensure preconstruction conditions are not misconstrued as damage caused by site construction.

1. Use sufficiently detailed photographs that adhere to the standards of Section 013233: Photographic Documentation.

1.5 PROJECT CONDITIONS

A. Utility Locator Service: Notify Connecticut Call Before You Dig System at 1-800-922-4455 for areas where Project is located before site clearing.

B. Do not commence site clearing operations until temporary erosion- and sedimentation-control measures are in place.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction.

B. The project shall be first staked out by a surveyor prior to selective clearing. Contractor shall locate and clearly identify trees, shrubs, and other vegetation to remain. Flag each tree trunk at 54 inches above the ground. The Project Engineer and Owner shall jointly review the flagging prior to tree protection and any removal.

3.2 TREE AND PLANT PROTECTION

A. General: Protect trees and plants remaining on-site according to requirements in Section 015633: Temporary Security Barriers. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Engineer.

3.3 TREE AND SHRUB REMOVAL AND TRIMMING

A. To minimize potential disturbance to Northern long eared bats, tree cutting activities are prohibited during the time period specified by the Connecticut Division of Energy and Environmental Protection (April 1st - August 31st).

B. Remove trees to allow construction of the proposed dam removal design.

1. Remove trees to allow construction access over West (river left) bank. Remove only the trees and brush within the limits of disturbance as determined during the tree removal site walk and as necessary to perform proposed work.
2. Removal of mature trees is to be avoided
3. Do not remove trees, shrubs, and other vegetation indicated to remain.
4. Grind down and remove remaining roots, obstructions, and debris to final grade as directed by engineer.
5. Fill in any voids created by the root wad removal.
6. Chip removed tree branches and spread onsite as directed by site engineer.
7. Removal of any additional existing shrubs, vines, brush, and trees shall be at the direction and approval of the site engineer.

C. Tree and Shrub Trimming

1. Prune existing trees, shrubs, vines, and brush within the project limits and as directed by Project Engineer to provide site access and to avoid machine damage.

D. Remove trees to permit construction of proposed staircase and installation of wrought-iron ornamental fence.

1. Remove single tree specified on the design plans to permit construction of the proposed public-river-access staircase
2. Remove trees and brush as necessary to perform ornamental fence installation. Remove only the trees and brush within the limits of disturbance as determined during the tree removal site walk and as necessary to perform proposed work.
3. Removal of mature trees is to be avoided
4. Do not remove trees, shrubs, and other vegetation indicated to remain.
5. Grind down and remove remaining roots, obstructions, and debris to final grade as directed by engineer.
6. Fill in any voids created by the root wad removal.
7. Chip removed tree branches and spread onsite as directed by site engineer.
8. Removal of any additional existing shrubs, vines, brush, and trees shall be at the direction and approval of the site engineer.

3.4 DISPOSAL

1. Removed trees, shrubs, vines and brush shall be chipped and spread onsite as directed by site engineer.

PART 4 - MEASUREMENTS AND PAYMENTS

4.1 METHOD OF MEASUREMENT

Prices shall include all materials, labor, equipment and all else necessary to complete the work. Payment schedule shall be based on the percentage of total contract work completed per the contract price.

4.2 BASIS OF PAYMENT

Payment will be made under:

Pay Item	Pay Unit
TREE REMOVAL	EACH
SELECTIVE SHRUB REMOVAL AND TRIMMING	LUMP SUM

END OF SECTION 311300

SECTION 312316 – EXCAVATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Impounded sediment removal from river right bank as shown on plans, upstream of dam.
2. Hauling and placement of sediment at designated on-site locations.
3. Reuse of stone from Rock-rubble spillway to fill hole in and stabilize toe of downstream river left retaining wall.
4. Excavation of soil for stairway construction.
5. Hauling and placement of soil at designated on-site location.
6. Excavate and dispose of existing rock fill in sinkhole
7. Fill sinkhole with granular compacted fill as necessary
8. Cap all exposed areas with clean topsoil; top areas with seed and mulch.

1.2 DEFINITIONS

A. Backfill: Soil material used to fill an excavation.

1. Backfill shall be compacted to a density not less than 95% of maximum density.

B. Excavation of Sediment: Removal of sediment impounded by the dam from location indicated on plans.

C. Excavation of Soil: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

D. Exposed Area Cap: All impounded sediment and soil that has been relocated onsite shall be covered/capped in accordance to regulatory requirements; Impounded sediment exposed and 7left in place following proposed excavation shall also be covered/capped.

E. Impounded Sediment: This is material that remains behind the dam and includes silt, sand, and fine gravel.

F. Structures: Buildings, footings, foundations, retaining walls, slabs, or other man-made stationary features constructed above or below the ground surface.

G. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, fill, or topsoil materials.

H. Utilities: On-site underground pipes, conduits, ducts, and cables.

1.3 PROJECT CONDITIONS

A. Utility Locator Service: Notify CT Call Before You Dig System at 1-800-922-4455 for area where Project is located before beginning earth moving operations.

B. Do not commence earth-moving operations until temporary erosion and sedimentation-control measures are in place.

C. Construction activities may not allow sediment from the project area to mobilize downstream.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Backfill: Existing soil taken from stairway excavation to be used for backfill in sinkhole behind retaining wall repair assuming soil material is compacted to 95 percent dry unit weight according to ASTM D 698 and the optimum moisture content is achieved (within 2 percent). If the Contractor is unable to ensure proper compaction or moisture content of the soils, then acceptable backfill must be imported upon approval by the Project Engineer.

B. Impounded Sediment: This is material that has settled behind the dam and includes clay, silt, sand, and fine gravel.

C. Exposed Area Cap: All exposed sediment and soils, including the area of impounded sediment and soil excavation and the disposal areas identified on Sheet 5 of 10 of the design plans, shall be capped with certified clean topsoil, seed and mulch. All exposed areas shall have 4 inches of topsoil placed over the entire surface area. The topsoil shall be free of pesticide residue, contaminates, and harmful and hazardous materials in accordance with the topsoil specifications in Section 329200. The topsoil should be topped with seed and mulch.

1. Excess existing soil excavated from the proposed stairway location may be used as topsoil following the completion of backfill activities associated with the stairway construction.

D. Rock-Rubble Spillway Stone: Existing 18-24 inch stone from Rock-Rubble Spillway to be reused to stabilize the toe of, and to fill existing gaps in base of masonry stone retaining wall.

E. Compacted Granular Fill: If the existing soil taken from the stairway excavation is not of sufficient volume to fill the sinkhole behind the retaining wall repair, imported compacted granular fill may be added to achieve grade. The compacted granular fill shall be well graded, free from stones larger than 2 inches, and no more than twenty percent (20%) of material passing the No. 200 sieve. The Contractor shall be responsible for all quality control testing and shall submit a sample of the compacted granular fill to the engineer for approval before placement.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth-moving operations. Follow the guidelines in Section 013233 – Photographic Documentation, to document conditions prior to initiating work.

B. Protect and maintain erosion and sedimentation controls during earth moving operations.

C. Conduct excavation of impounded sediment during low stream flow conditions.

3.2 DEWATERING (IF NECESSARY)

A. Prevent surface water and ground water from entering staircase excavation area and from ponding on prepared subgrades.

B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.

1. Reroute surface water runoff away from staircase excavation area using compost filter sock as per plans and in Section 312500. Do not allow water to accumulate in excavations.

3.3 EXCAVATION, GENERAL

A. Excavate impounded sediment along the East (river right) bank of existing channel upstream of dam as shown on the design plans.

1. Excavation and Water Control must be conducted in such a way to avoid mobilizing sediment downstream.
2. After excavation, no steep erodible slopes should be present in the channel bottom or on the banks.
3. Final grades shall be approved by Engineer of Record in field.

B. Excavate existing 4-6 inch rock fill from the sinkhole along the masonry wall adjacent to the concrete spillway. The concrete block at the base of the sinkhole is to remain.

3.4 EXCAVATION FOR STRUCTURES

A. Excavate to elevations and dimensions indicated on the "Site Stair Details" plan by Fuss & O'Neil within a tolerance of plus or minus 1 inch (25 mm). If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork.
   1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.

B. Excavation of soil for proposed stairway shall precede demolition of the stone retaining wall for the stairway.

3.5 EXCAVATION AND STORAGE

A. All excavated soils and sediment shall be staged and ultimately relocated and stabilized on-site. The Contractor is responsible for confirming the final stock pile locations with the Engineer. The Contractor shall implement all actions necessary to prevent the erosion of temporary stockpiles of the stored soil.

3.6 FINAL DISPOSAL

A. All excavated material shall be disposed of on-site in the areas designated on Sheet 5 of 10 the design plans or otherwise approved by the engineer and regulatory agencies. Impounded sediment shall be disposed of first in the area downstream of the Rock-Rubble Spillway. Excess excavated sediment can be placed in the upland disposal area. All excess soil from the staircase excavation to be placed in the upland disposal area.

B. All disposal areas shall be capped with topsoil, seed & mulch in accordance with the design plans.

C. All material imported to the site for the capping shall be certified clean.

3.7 STORAGE OF SOIL MATERIALS

A. Temporary stockpiles of excavated material to be placed, graded, and shaped to drain surface water.
   1. Stockpile soil materials away from edge of excavations and flowing water. Do not store within drip line of remaining trees.

3.8 BACKFILL

A. Place and compact backfill in excavations promptly, but not before completing the following:
   1. Removing trash and debris.
   2. Removing temporary shoring, bracing, and sheeting.

B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.9 SOIL FILL

A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.

B. Place soil fill on subgrades free of mud, frost, snow, or ice.

3.10 SOIL MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.
   1. Do not place concrete, backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
   2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.11 COMPACTION OF SOIL BACKFILLS AND COMPACTED GRANULAR FILL

A. Place backfill and fill soil materials in layers not more than 12 inches in loose depth for material compacted by heavy compaction equipment.

B. Place backfill and compacted granular fill materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.

C. Compact Dense Grade Aggregate (DGA) to not less than the following percentages of maximum dry unit weight according to ASTM D 698:

1. Under structures, building slabs, steps, and pavements, scarify and recompact top 12 inches (300 mm) of existing subgrade and each layer of backfill or fill soil material at 95 percent.
2. Under walkways, scarify and recompact top 6 inches (150 mm) below subgrade and compact each layer of backfill or fill soil material at 92 percent.
3. Under turf or unpaved areas, scarify and recompact top 6 inches (150 mm) below subgrade and compact each layer of backfill or fill soil material at 85 percent.
4. For utility trenches, compact each layer of initial and final backfill soil material at 85 percent.

3.12 GRADING

A. General: Grade areas as directed on the plans.

1. Provide a smooth transition between adjacent existing grades and new grades.
2. Uneven surfaces that create microtopography are acceptable in the adjacent floodplain and sediment placement areas, as determined by engineer in the field.

3.13 TURBIDITY AND SEDIMENT CONTROL

B. See also Section 312500 for Soil Erosion and Sediment Control.

C. All construction activities are to be conducted in such a way such that no sediment from the project area is conveyed downstream.

D. Channel excavation should occur following all dewatering protocols. In-stream sediment barriers, such as a turbidity curtain, should be used if water control measures are not enough to prevent sediment from mobilizing.

PART 4 - MEASUREMENT AND PAYMENT

4.1 METHOD OF MEASUREMENT

Prices shall include all materials, labor, equipment and all else necessary to complete the work. Payment schedule shall be based on the percentage of total contract work completed per the contract price.

4.2 BASIS OF PAYMENT

Payment will be made under:

Pay Item	Pay Unit
EXCAVATION OF IMPOUNDED SEDIMENT	LUMP SUM
HAULING AND PLACEMENT OF IMPOUNDED SEDIMENT ONSITE	LUMP SUM
HAULING AND PLACEMENT OF SOIL ONSITE	LUMP SUM
REUSE OF ROCK-RUBBLE SPILLWAY STONE	LUMP SUM
EXCAVATION AND DISPOSAL OF EXISTING SINKHOLE FILL	LUMP SUM
COMPACTED GRANULAR FILL	CUBIC YARDS

NOTE: All excavation work related to CONSTRUCTION OF CONCRETE STAIRWAY will not be paid for separately. Rather this work is included in the pay item for CONSTRUCTION OF CONCRETE STAIRWAY under SECTION 033000.

END OF SECTION 312316

SECTION 312323.33 – FLOWABLE FILL

PART 1 – GENERAL

1.1 SUMMARY

A. Contractor shall furnish and place controlled low strength material (CLSM) backfill bedding (flowable fill product) where shown as shown on Sheet 10 of the Engineering Plans. Prior to installation of flowable fill products, the mix design shall be submitted to the design engineer for approval. No changes shall be made in the amounts or sources of the approved mix ingredients without written approval by the design engineer.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cement: Portland Cement, ASTM C150, Type I or approved equivalent.

B. Fly Ash: ASTM C618, Type C or F

C. Aggregates:

1. Grade aggregates according to procedures of ASTM C136.
2. Fine aggregate: shall conform to the grading and quality requirements of ASTM C33.

C. Water: clean, fresh, and potable

E. Admixtures:

1. Chemical admixtures that do not contain calcium chloride and conform to ASTM C494/C494M for concrete may be used in the CLSM mix.
2. All chemical admixtures shall be compatible with the cement and all other admixtures in the batch.

PART 3 – EXECUTION

3.1 PREPARATION

A. Before placing the flowable fill, complete and inspect the formwork installation on the channel side of the hole in the masonry wall. Move existing boulders as necessary to install formwork. Formwork should be installed such that there is no release of flowable fill product into the waterway.

3.2 PLACEMENT

A. General:

1. Ensure flowable fill fills all cavities required to be filled.
2. Flowable shall be placed in sinkhole until it reaches a height of at least 6 inches above the height of the existing hole in the masonry wall
3. Handle flowable fill from mixer to place of final deposit in chutes, carts, buggies, conveyors, pumps or crane buckets.
4. Do not deliver flowable fill by a method with a free fall of more than 3 feet.
5. Take every possible precaution to prevent separation or loss of ingredients while transporting flowable fill.

B. Retempering: Do not add water to the flowable fill once it has left the ready-mix plant.

C. Cold-Weather Operations:

1. Comply with the recommendations of ACI 306R.
2. Recommended Protective Measures:
   a. Heating materials.
   b. Providing insulating blankets and windbreaks.
   c. Use heated enclosures.
3. Do not use frozen materials or materials containing ice or snow.
4. Do not place on frozen subgrade.

D. Hot-Weather Operations:

1. Comply with the recommendations of ACI 305R.
2. Recommended Protective Measures:

a. Cooling materials.
b. Placement during cooler hours of the day.
c. Providing shading and windbreaks.

PART 4 – MEASUREMENT AND PAYMENT

4.1 METHOD OF MEASUREMENT

Prices shall include all materials, labor, equipment and all else necessary to complete the work. Payment schedule shall be based on the percentage of total contract work completed per the contract price.

4.2 BASIS OF PAYMENT

Payment will be made under:

Pay Item	Pay Unit
FLOWABLE FILL	CUBIC YARDS

END OF SECTION 312323.33

SECTION 312500 - SOIL EROSION AND SEDIMENT CONTROL

PART 1 – GENERAL

1.1 DESCRIPTION

A. Section Includes:

1. Construction Entrance
2. Construction Access Way
3. Rock Access Ramp
4. Turbidity Curtain Installation
5. Compost Filter Sock
6. Straw Wattle, as necessary
7. Dust Control
8. As well as the construction and maintenance of any additional various temporary soil erosion and sediment control measures, including relocating them as required for stage construction.

1.2 SUBMITTALS

A. Flood Contingency Plan: The Contractor shall submit a plan detailing protective measures to be taken prior to a weather event that may cause erosion, sedimentation, or flooding. The Plan shall adhere to the "Emergency Operation/Flood Contingency Plan During Construction" set forth on Sheet 9 of 10 of the design plans.

PART 2 – PRODUCTS

2.1 MATERIAL

A. All materials shall be as specified on the contract drawings and by the project permits.

B. Materials shall include but are not limited to:

1. Construction Entrance material
2. Composite Mats, Dura-Base Advanced Composite Mat System or approved equivalent, to serve as Construction Access Way across existing lawn
3. Rock Access Ramp on downslope of West (river left) bank to be constructed as necessary per Sheet 8 of 10 on the design plans; Ramp to utilize 6-12 inch material.
4. Turbidity Curtain
5. Compost Filter Sock to be used as surface runoff diversion berm around staircase construction area.
6. Straw Wattle materials

PART 3 – EXECUTION

3.1 CONSTRUCTION REQUIREMENTS

A. Construction of construction entrance, straw wattles, and dust control shall be in conformance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control and the Soil Erosion and Sediment Control (SESC) Plans and Details.

B. All soil erosion and sediment control devices shall be constructed prior to any work at the site. During the length of the entire project, the Contractor shall be responsible for maintaining all soil erosion and sediment control devices in an efficient workable condition.

C. Any disturbed areas that are left unimproved for a period of more than 30 days and not subjected to construction traffic shall immediately receive a temporary seeding and straw mulch. If the season prohibits temporary seeding, the disturbed area shall be mulched and tacked in accordance with the state Standards.

E. Immediately following initial disturbance or rough grading, all critical areas (steep slopes, sandy soils, and wet conditions) subject to erosion should be temporarily seeded and mulched.

G. The stockpiles shall be stabilized in accordance with the SESC plans. All stockpile bases shall have a silt fence properly entrenched at the toe of slope.

H. Temporary soil erosion and sediment control measures shall be used to correct conditions that develop during construction that were not foreseen during design and may include construction work outside of the project limits.

I. If the contractor is not in compliance with soil erosion and sediment control provisions, corrective actions shall be taken immediately. The Owner's authorized representative may suspend the work, wholly or in part, until such time as the contractor is fully in compliance. All corrective and remedial work required to bring the contractor into compliance shall be performed at no cost to the owner.

J. Temporary soil erosion and sediment control measures shall be removed when necessary to allow for the installation of permanent control features or as permanent controls become functional. Before acceptance of the project, all items used for temporary soil erosion and sediment control shall be removed unless the owner directs that specific items remain in place.

3.2 LIMITATIONS OF OPERATIONS

A. Clearing and grubbing operations shall be so scheduled and performed such that grading, and mulching, seeding and other permanent pollution control features can follow immediately thereafter according to the approved progress schedule. Should seasonal limitations make such coordination unrealistic, additional temporary soil erosion and sediment control measures shall be required between successive construction stages, as directed.

B. The amount of surface area of erodible earth material exposed at one time by clearing and grubbing, excavation, borrow or fill operations, without stabilization, shall be minimized to the greatest extent practicable and limited to areas actively being graded.

3.3 DUST CONTROL MEASURES

A. Dust Control. The contractor shall employ construction methods and means that keep flying dust to the minimum and shall provide for the laying of water or other dust control materials on the project and on roads, streets and other areas immediately adjacent to the project limits, wherever traffic or buildings that are occupied or in use, are affected by such dust caused by his hauling or other construction operations. The materials and methods used for dust control are subject to approval and shall be as directed.

3.4 SOIL EROSION AND SEDIMENT CONTROL MEASURES

A. Soil erosion and sediment control measures shall be maintained during the construction season as well as during winter months and other times when the project is closed down, throughout the life of the project, to ensure that the measures function properly. Soil erosion and sediment controls shall be immediately inspected after each rain and any corrective work shall immediately be performed to return the soil erosion and sediment control measures to proper function, as directed. Riprap stones, coarse aggregate, silt fence, or straw wattles damaged due to washouts or siltation shall be replaced as directed.

B. The Contractor shall monitor weather forecasts. Prior to any event that may cause erosion or sedimentation or flooding, the Contractor shall further stabilize the site as needed and move equipment and materials to upland areas. During such events, the Contractor shall adhere to the "Emergency Operation/Flood Contingency Plan During Construction" set forth on Sheet 9 of 10 of the design plans.

3.5 DISPOSAL OF EXCESS WASTE MATERIALS

A. Remove excess material and dispose of same on a site located off the Owner's property.

B. Material from Rock Access Ramp on downslope of West (river left) bank shall be buried on site or added to the channel to increase flowpath complexity as directed by the Engineer. Excess material may be disposed of off site.

3.6 CLEANUP

A. The work area should be restored to the pre-construction conditions and to the satisfaction of the Owner.

PART 4 – MEASUREMENT AND PAYMENT

4.1 METHOD OF MEASUREMENT

Prices shall include all materials, labor, equipment and all else necessary to complete the work. Payment schedule shall be based on the percentage of total contract work completed per the contract price.

4.2 BASIS OF PAYMENT

Payment will be made under:

Pay Item	Pay Unit
CONSTRUCTION ENTRANCE	LUMP SUM
ROCK ACCESS RAMP	LUMP SUM
COMPOSITE MATS	LUMP SUM
STRAW WATTLE	LINEAR FEET
COMPOST FILTER SOCK	LINEAR FEET

END OF SECTION - 312500

SECTION 321216 – ASPHALT PAVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Pavement Restoration, as needed if damaged

1.2 DEFINITION

A. Hot-Mix Asphalt Paving Terminology: Refer to ASTM D 8 for definitions of terms.
B. Base Course: Bituminous stabilized base course in accordance with Connecticut Department of Transportation standards.
C. Asphalt Surface: Bituminous concrete surface course in accordance with Connecticut Department of Transportation standards.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include technical data and tested physical and performance properties.
   1. Job-Mix Designs: Certification, by authorities having jurisdiction, of approval of each job mix proposed for the Work.
   2. Job-Mix Designs: For each job mix proposed for the Work.
B. Material Certificates: For each paving material, from manufacturer.
C. Material Test Reports: For each paving material.

PART 2 - PRODUCTS

2.1 AGGREGATES

A. General: Use materials and gradations that have performed satisfactorily in previous installations.
B. Coarse Aggregate: ASTM D 692, sound; angular crushed stone, crushed gravel, or cured, crushed blast-furnace slag.
C. Fine Aggregate: AASHTO M 29, sharp-edged natural sand or sand prepared from stone, gravel, cured blast-furnace slag, or combinations thereof.
   1. For hot-mix asphalt, limit natural sand to a maximum of 20 percent by weight of the total aggregate mass.

2.2 MIXES

A. Hot-Mix Asphalt: Dense, hot-laid, hot-mix asphalt plant mixes approved by Township of Roxbury and designed according to procedures in AI MS-2, "Mix Design Methods for Asphalt Concrete and Other Hot-Mix Types."
   1. Provide mixes with a history of satisfactory performance in geographical area where Project is located.
   2. Provide mixes complying with composition, grading, and tolerance requirements in ASTM D 3515.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that subgrade is dry and in suitable condition to begin paving.
B. Proceed with paving only after unsatisfactory conditions have been corrected.
C. Verify that utilities, traffic loop detectors, and other items requiring a cut and installation beneath the asphalt surface have been completed and that asphalt surface has been repaired flush with adjacent asphalt.

3.2 PATCHING

A. Hot-Mix Asphalt Pavement: Saw cut perimeter of patch and excavate existing pavement section to sound base. Excavate rectangular or trapezoidal patches, extending 12 inches (300 mm) into adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Remove excavated material. Recompact existing unbound-aggregate base course to form new subgrade.

B. Tack Coat: Apply uniformly to vertical surfaces abutting or projecting into new, hot-mix asphalt paving at a rate of 0.05 to 0.15 gal./sq. yd.
   1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
   2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

C. Patching: Fill excavated pavements with hot-mix asphalt base mix for full thickness of patch and, while still hot, compact flush with adjacent surface.

3.3 HOT-MIX ASPHALT PLACING

A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand to areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.
   1. Place hot-mix asphalt base course in number of lifts and thicknesses indicated.
   2. Place hot-mix asphalt surface course in single lift.
   3. Spread mix at minimum temperature of 250 deg F (121 deg C).
   4. Begin applying mix along centerline of crown for crowned sections and on high side of one-way slopes unless otherwise indicated.
   5. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.

B. Promptly correct surface irregularities in paving course. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

3.4 COMPACTION

A. General: Compact hot-mix paving with hot, hand tampers or with vibratory-plate compactors
   1. Complete compaction before mix temperature cools to 185 deg F (85 deg C).

B. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.

C. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.

D. Protection: Do not permit vehicular traffic on pavement until it has cooled and hardened.

E. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.5 INSTALLATION TOLERANCES

A. Pavement Thickness: Compact each course to produce the thickness indicated within the following tolerances:
   1. Base Course: Plus or minus 4 inches.
   2. Surface Course: Plus 2 inches.

B. Pavement Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot (3-m) straightedge applied transversely or longitudinally to paved areas:

3.6 DISPOSAL

A. Except for material indicated to be recycled, remove excavated materials from Project site and legally dispose of them in an EPA-approved landfill.

1. Do not allow milled materials to accumulate on-site.

PART 4 - MEASUREMENT AND PAYMENT

4.1 METHOD OF MEASUREMENT

Prices shall include all materials, labor, equipment and all else necessary to complete the work. Payment schedule shall be based on the percentage of total contract work completed per the contract price.

4.2 BASIS OF PAYMENT

Payment will be made under:

Pay Item	Pay Unit
PAVEMENT RESTORATION	SQUARE YARDS

END OF SECTION 321216

SECTION 321500 – AGGREGATE SURFACING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Installation of stone dust Mow Strip for Ornamental Fence

1.2 RELATED SECTIONS:

A. Section 323119 – "Ornamental Metal Fence"

1.3 SUBMITTALS

A. Submit certified sieve analysis for all materials specified in this Section

1.4 QUALITY ASSURANCE

A. Material Standards: as defined in State of Connecticut, Department of Transportation Standard Specifications – Form 816-2004.

PART 2 - PRODUCTS

2.1 STONEDUST

A. Native blue-grey crushed trap rock conforming to Form 816-2004, Article M.01.01 Gradation: "dust".

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that the subgrade is true to line and grade, and compacted to the required density. Subgrade surface to be smooth, free of irregularities, depressions, or unsuitable material which cannot compact to will become impervious.

3.2 INSTALLATION

A. Spread and compact stone dust to achieve the depth (4 inches) and width (12 inches) as detailed after final compaction. The material shall be wetted and rolled to a firm, even surface, level with the adjacent grade (turf). Fence shall be centered on stone dust with stone dust extending from fence to retaining wall.

B. Provide additional material, re-compact and sprinkle on subsequent days as necessary to thoroughly bond the surface.

C. Edge turf by hand to form neat, true lines.

3.3 PROTECTION

A. Maintain proper drainage to prevent washouts and flooding. Protect from damage and make repairs as required.

PART 4 - – MEASUREMENTS AND PAYMENTS (Not Used)

END OF SECTION 321500

SECTION 323119 – ORNAMENTAL METAL FENCE

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Installation of Ornamental Metal Fence as shown in engineering plan set, along retaining wall.
2. Installation of stone dust Mow Strip as shown in engineering plan set.

1.2 WORK INCLUDED:

A. The contractor shall provide all labor, materials and appurtenances necessary for installation of the welded ornamental steel fence system defined herein including the stone dust mow strip as shown on the plans and described in these specifications.

1.3 SYSTEM DESCRIPTION

A. The manufacturer shall supply a total fence system of (specify Montage Plus® standard picket space or Montage Plus® Pool, Pet & Play® 3" air space) ***Welded and Rackable*** (ATF – All Terrain Flexibility) Ornamental Steel (for standard picket space, specify Classic™, Majestic™, Genesis™, or Warrior™; for 3" air space, specify Classic™, Majestic™, or Genesis™) design. The system shall include all components (i.e., panels, posts, gates and hardware) required.

1.4 QUALITY ASSURANCE

A. The contractor shall provide laborers and supervisors who are thoroughly familiar with the type of construction involved and materials and techniques specified.

1.5 REFERENCES

A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process.
B. ASTM B117 - Practice for Operating Salt-Spray (Fog) Apparatus.
C. ASTM D523 - Test Method for Specular Gloss
D. ASTM D714 - Test Method for Evaluating Degree of Blistering in Paint.
E. ASTM D822 - Practice for Conducting Tests on Paint and Related Coatings and Materials using Filtered Open-Flame Carbon-Arc Light and Water Exposure Apparatus.
F. ASTM D1654 - Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments.
G. ASTM D2244 - Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates.
H. ASTM D2794 - Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
I. ASTM D3359 - Test Method for Measuring Adhesion by Tape Test.
J. ASTM F2408 – Ornamental Fences Employing Galvanized Steel Tubular Pickets.

1.6 SUBMITTALS

A. The manufacturer's literature shall be submitted prior to purchase and installation.

1.7 PRODUCT HANDLING AND STORAGE

A. Upon receipt at the job site, all materials shall be checked to ensure that no damage occurred during shipping or handling. Materials shall be stored in such a manner to ensure proper ventilation and drainage, and to protect against damage, weather, vandalism and theft.

1.8 PRODUCT WARRANTY

A. All structural fence components (i.e. rails, pickets, and posts) shall be warranted within specified limitations, by the manufacturer for a period of 20 years from date of original purchase. Warranty shall cover any defects in material finish, including cracking, peeling, chipping, blistering or corroding.

B. Reimbursement for labor necessary to restore or replace components that have been found to be defective under the terms of manufactures warranty shall be guaranteed for five (5) years from date of original purchase.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. The fence system shall conform to (specify Montage Plus standard picket space or Montage Plus Pool, Pet & Play 3" air space) Welded and Rackable (ATF – All Terrain Flexibility) Ornamental Steel, (for standard picket space, specify Classic, Majestic, Genesis or Warrior; for 3" air space, specify Classic, Majestic, or Genesis) design, (specify extended picket or flush) bottom rail treatment, (specify 2-Rail, 3-Rail or 3-Rail with Double Rings) style manufactured by Ameristar Fence Products, Inc., in Tulsa, Oklahoma.

2.2 MATERIAL

A. Steel material for fence panels and posts shall conform to the requirements of ASTM A653/A653M, with a minimum yield strength of 45,000 psi (310 MPa) and a minimum zinc (hot-dip galvanized) coating weight of 0.60 oz/ft2 (184 g/m2), Coating Designation G-60.

B. Material for pickets shall be 3/4" square x 18 Ga. tubing. The rails shall be steel channel, 1.5" x 1.4375" x 14 Ga. Picket holes in the rail shall be spaced (specify 4.675" o.c. for standard picket space or 3.500" o.c. for 3" air space). Fence posts and gate posts shall meet the minimum size requirements of Table 1.

2.3 FABRICATION

A. Pickets, rails and posts shall be pre-cut to specified lengths. Rails shall be pre-punched to accept pickets.

B. Pickets shall be inserted into the pre-punched holes in the rails and shall be aligned to standard spacing using a specially calibrated alignment fixture. The aligned pickets and rails shall be joined at each picket-to-rail intersection by Ameristar's proprietary fusion welding process, thus completing the rigid panel assembly (Note: The process produces a virtually seamless, spatter-free good-neighbor appearance, equally attractive from either side of the panel).

C. The manufactured panels and posts shall be subjected to an inline electrode position coating (E-Coat) process consisting of a multi-stage pretreatment/wash, followed by a duplex application of an epoxy primer and an acrylic topcoat. The minimum cumulative coating thickness of epoxy and acrylic shall be 2 mils (0.058 mm). The color shall be (specify Black or Bronze). The coated panels and posts shall be capable of meeting the performance requirements for each quality characteristic shown in Table 2 (Note: The requirements in Table 2 meet or exceed the coating performance criteria of ASTM F2408).

D. The manufactured fence system shall be capable of meeting the vertical load, horizontal load, and infill performance requirements for Commercial weight fences under ASTM F2408.

E. Gates with an out to out leaf dimension less than and including 72 inches shall be fabricated using Montage Plus ornamental panel material and 1-3/4" sq. x 14ga. gate ends. Gate leafs greater than 72 inches shall be fabricated using ForeRunner rails, 17 gauge pickets, intermediate uprights, gussets and 1-3/4" sq. x 14ga. gate ends. All rail and upright intersections shall be joined by welding. All picket and rail intersections shall also be joined by welding.

2.4 MOW STRIP

A. Conform to Section 321500 "Aggregate Surfacing" for Stone Dust Walk Material

PART 3 - EXECUTION

3.1 PREPARATION

A. All new installation shall be laid out by the contractor in accordance with the construction plans.

3.2 INSTALLATION

A. Fence post shall be spaced according to Table 3, plus or minus ¼". For installations that must be raked to follow sloping grades, the post spacing dimension must be measured along the grade. Fence panels shall be attached to posts with brackets supplied by the manufacturer. Posts shall be set in concrete footers having a minimum depth of 36" (Note: In some cases, local restrictions of freezing weather conditions may require a greater depth). The "Earthwork" and "Concrete" sections of this specification shall govern material requirements for the concrete footer. Posts setting by other methods such as plated posts or grouted core-

drilled footers are permissible only if shown by engineering analysis to be sufficient in strength for the intended application.

3.3 FENCE INSTALLATION MAINTENANCE

A. When cutting/drilling rails or posts adhere to the following steps to seal the exposed steel surfaces; 1) Remove all metal shavings from cut area. 2) Apply zinc-rich primer to thoroughly cover cut edge and/or drilled hole; let dry. 3) Apply 2 coats of custom finish paint matching fence color. Failure to seal exposed surfaces per steps 1-3 above will negate warranty. Ameristar spray cans or paint pens shall be used to prime and finish exposed surfaces; it is recommended that paint pens be used to prevent overspray. Use of non-Ameristar parts or components will negate the manufactures' warranty.

3.4 GATE INSTALLATION

A. Gate posts shall be spaced according to the manufacturers' gate drawings, dependent on standard out-to-out gate leaf dimensions and gate hardware selected. Type and quantity of gate hinges shall be based on the application; weight, height, and number of gate cycles. The manufacturers' gate drawings shall identify the necessary gate hardware required for the application. Gate hardware shall be provided by the manufacture of the gate and shall be installed per manufacturer's recommendations.

3.5 CLEANING

A. The contractor shall clean the jobsite of excess materials; post-hole excavations shall be scattered uniformly away from posts.

PART 4 - MEASUREMENTS AND PAYMENTS

4.1 METHOD OF MEASUREMENT

Prices shall include all materials, labor, equipment and all else necessary to complete the ornamental fence including all work associated with the stone dust mow strip. Payment schedule shall be based on the percentage of total contract work completed per the contract price.

4.2 BASIS OF PAYMENT

Payment will be made under:

Pay Item	Pay Unit
ORNAMENTAL METAL FENCE WITH MOW STRIP	LF

Table 1 – Minimum Sizes for Montage Plus Posts		
Fence Posts	Panel Height	
2-1/2" x 16 Ga.	Up to & Including 6' Height	
Gate Leaf	Gate Height	
	Up to & Including 4'	Over 4' Up to & Including 6'
Up to 4'	2-1/2" x 14 Ga.	3" x 12 Ga.
4'1" to 6'	3" x 12 Ga.	3" x 12 Ga.
6'1" to 8'	3" x 12 Ga.	4" x 12 Ga.

Table 2 – Coating Performance Requirements		
Quality Characteristics	ASTM Test Method	Performance Requirements
Adhesion	D3359 – Method B	Adhesion (Retention of Coating) over 90% of test area (Tape and knife test).
Corrosion Resistance	B117, D714 & D1654	Corrosion Resistance over 1,500 hours (Scribed per D1654; failure mode is accumulation of 1/8" coating loss from scribe or medium #8 blisters).
Impact Resistance	D2794	Impact Resistance over 60 inch lb. (Forward impact using 0.625" ball).
Weathering Resistance	D822 D2244, D523 (60˚ Method)	Weathering Resistance over 1,000 hours (Failure mode is 60% loss of gloss or color variance of more than 3 delta-E color units).

Table 3 – Montage Plus – Post Spacing By Bracket Type						
Span	For CLASSIC, GENESIS, MAJESTIC, & WARRIOR 8' Nominal (91.95" Rail)					
Post Size	2-1/2"	2-1/2"	2-1/2"	3"	2-1/2"	3"
Bracket Type	Montage Plus Universal (BB112)	Montage Plus Line Blvd. (BB114)	Montage Plus Flat Mount (BB111)		Montage Plus Swivel (BB113)*	
Post Settings ± 1/4" O.C.	95"	95"	95"	95-1/2"	*95"	*95-1/2"
*Note: When using BB113 swivel brackets on either or both ends of a panel installation, care must be taken to ensure the spacing between post and adjoining pickets meets applicable codes. This will require trimming one or both ends of the panel.						

END OF SECTION 323119

SECTION 329200 – TURF AND GRASSES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Topsoil Disposal Areas
   2. Floodplain Seed Mix
   3. Lawn Seed Mix
   4. Straw Mulch

1.2 DEFINITIONS

A. Finish Grade: Elevation of finished surface of planting soil.

B. Site restoration shall include any grading necessary to prepare a seed bed in any area not specified to be stabilized via another method. This shall include topsoil, seed, and grading.

C. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or top surface of a fill or backfill before planting soil is placed.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.
   1. Certification of each seed mixture for grass seed mix as well as any temporary or permanent stabilization seed mixes. Include identification of source and name and telephone number of supplier.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws, as applicable. These materials shall be stored and handled in a manner not to introduce moisture to the contents prior to installation.

B. Bulk Materials:
   1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
   2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.

1.5 PROJECT CONDITIONS

A. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 TOPSOIL

A. Topsoil is defined in State of Connecticut, Department of Transportation Standard Specifications - Section M13.01

2.2 LAWN SEED

A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.

2.3 FLOODPLAIN SEED

A. Floodplain Seed Mix: Fresh, clean, dry, new-crop seed complying with AOSA's "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances; Ernst Conservation Seed Floodplain Mix as specified on Sheet 8 of 9 of the design plans or an approved equivalent.

2.3 MULCHES

A. Straw Mulch: Provide air-dry, clean, mildew-and-seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to be planted for compliance with requirements and other conditions affecting performance.
   1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
   2. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.
   3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
   4. Uniformly moisten excessively dry soil that is not workable and which is too dusty.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Project Engineer and replace with new planting soil.

3.2 PREPARATION

A. Limit subgrade preparation to areas to be planted.

B. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 6 inches.
   1. Spread planting soil to a depth of 4 inches but not less than required to meet finish grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.

C. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus ½ inch of finish elevation. Rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the immediate future.

D. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

3.3 LAWN and FLOODPLAIN SEEDING

A. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.
   1. Do not use wet seed or seed that is moldy or otherwise damaged.
   2. Do not seed against existing trees. Limit extent of seed to outside edge of planting saucer.
   3. Optimum seeding time: Between March 1 – May 15 and August 15 – October 15.

B. Rake seed lightly into top 1/8 inch of soil, roll lightly, and water with fine spray.

C. Protect seeded areas beyond 12 feet from the top of bank with straw mulch. Spread uniformly at a minimum rate of 2 tons/acre to form a continuous blanket. Spread by hand, blower, or other suitable equipment.

3.4 CLEANUP AND PROTECTION

A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.

C. Remove nondegradable erosion-control measures after grass establishment period.

PART 4 - MEASUREMENTS AND PAYMENTS

4.1 METHOD OF MEASUREMENT

Prices shall include all materials, labor, equipment and all else necessary to complete the work. Payment schedule shall be based on the percentage of total contract work completed per the contract price.

4.2 BASIS OF PAYMENT

Payment will be made under:

Pay Item	Pay Unit
TOPSOIL	CUBIC YARDS
STRAW MULCH	SQUARE YARD
FLOODPLAIN SEED MIX	POUNDS OF PURE LIVE SEED
LAWN SEED MIX	POUNDS OF PURE LIVE SEED

END OF SECTION 329200

SECTION 354300 – WATERWAY GRADING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Grading of the channel within the footprint of the dam and as depicted on the plans.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 PREPARATION

A. Full vertical and horizontal extent of the Ambursen spillway and concrete foundation to be removed. Riverbed to be excavated to a maximum elevation of 162' to ensure that the full vertical extent of the spillway foundation has been removed, and then regraded to the final grades shown on the plans. The riverbed in the footprint of the removed spillway is to be regraded according to the design plans using in situ river gravels and cobbles.

B. The elevations and alignment of the graded channel may differ slightly as shown on plans based on field conditions, which may have changed since the time of survey.

C. Adjustments from proposed grades shall be approved by engineer in field.

D. Material from Rock Access Ramp on downslope of West (river left) bank may be added to the channel to increase flowpath complexity as directed by the Engineer. Contractor shall refer to the disposal measures outlined in Section 312500 – Soil Erosion and Sediment Control.

PART 4 – MEASUREMENT AND PAYMENT

4.1 METHOD OF MEASUREMENT

Prices shall include all materials, labor, equipment and all else necessary to complete the work. Payment schedule shall be based on the percentage of total contract work completed per the contract price.

4.2 BASIS OF PAYMENT

Payment will be made under:

Pay Item	Pay Unit
WATERWAY GRADING	LUMP SUM

END OF SECTION 354300

ATTACHMENT A:
STATE WAGE RATES

ATTACHMENT B:
ENVIRONMENTAL PERMITS

APPROVED WETLANDS PERMIT MOTION

MOVED, that the Inland Wetlands and Watercourses Agency issues an inland wetlands and watercourses permit to the Town of Glastonbury for an outdoor staircase down to Roaring Brook and stabilization of an eroding/failing masonry retaining wall immediately downstream of the existing dam at the Town's Slocomb Pond Open Space at 68 Matson Hill Road, in accordance with the submitted application materials (including plans entitled "Slocomb Pond Dam Removal Project" on file in the Office of Community Development and in compliance with the following conditions:

1. The "Overview" plan sheet (sheet no. 2 of 10 of set of plans) shall be revised to rename it the "Overview of Existing Conditions" sheet.

2. Installation of soil erosion and sedimentation control and stabilization measures shall be the Permittee's responsibility. Once installed these measures shall then be inspected by the Environmental Planner prior to land disturbance activities. Afterwards it then shall be the Permittee's responsibility to inspect these control measures during, and immediately following, substantial storm events and maintain and/or replace the control measures, when needed, on a regular basis until the site is vegetatively stabilized. Hay bales shall be replaced every 60 days. The Environmental Planner is hereby authorized to require additional soil erosion and sediment controls and stabilization measures to address situations that arise on the site.

3. The Permittee shall be fully responsible for damages caused by all activities undertaken pursuant to this permit that may have a detrimental effect on wetlands and/or watercourses, and all such activities that cause erosion and sedimentation problems.

4. Appropriate contingency measures (e.g. cease work and temporarily protect vulnerable, exposed soil areas along the brook, especially the lower elevations subject to erosion from elevated brook flows) shall be taken for forecasted rainstorm events of two (2) inches or greater in advance of such events.

5. These assigned conditions of approval shall be boldly noted on all subsequent revised site plans, including, but not limited to, the construction plans devised for bidding purposes.

****

ATTACHMENT C1:
DAM REMOVAL CONSTRUCTION PLANS
BY PRINCETON HYDRO

SLOCOMB POND
DAM REMOVAL PROJECT
(CT DEEP ID #5425)
TOWN OF GLASTONBURY
HARTFORD COUNTY, CONNECTICUT

GENERAL NOTES:

1. THE APPROVAL AND USE OF THESE PLANS ARE FOR THE PROJECT APPLICANT AS DEPICTED ON THIS SHEET. THIS PLAN IS NOT TO BE UTILIZED IN THE PREPARATION OF ANY OTHER PROJECTS.

2. AS FIELD CONDITIONS MAY REQUIRE MODIFICATIONS TO PROPOSED TOPOGRAPHIC ELEVATIONS AND FACILITY LOCATIONS, THESE PLANS ARE NOT TO BE UTILIZED AS AS-BUILTS.

3. THESE PLANS ARE NOT TO BE UTILIZED FOR CONSTRUCTION, UNTIL ALL REQUIRED LOCAL, STATE, AND FEDERAL PERMITS ARE OBTAINED.

4. PROPOSED CONSTRUCTION MUST BE SUPERVISED BY A PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF CONNECTICUT OR BY A QUALIFIED ENGINEERING TECHNICIAN OR GEOMORPHOLOGIST UNDER RESPONSIBLE CHARGE OF THE PROFESSIONAL ENGINEER, AS PROVIDED FOR IN THE TECHNICAL SPECIFICATIONS.

CONSTRUCTION NOTES:

1. ALL MATERIALS SHALL CONFORM TO THE LATEST AMERICAN STANDARDS FOR TESTING AND MATERIALS SPECIFICATIONS (ASTM).

2. UTILITIES SHALL BE LOCATED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

3. NECESSARY PRECAUTIONS SHALL BE TAKEN BY THE CONTRACTOR TO PROTECT EXISTING SERVICES AND MAINS. ANY DAMAGE TO EXISTING SERVICES OR MAINS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S OWN EXPENSE.

4. EXCAVATIONS AND STOCKPILES IN NO WAY SHALL HAVE SLOPES STEEPER THAN 2:1.

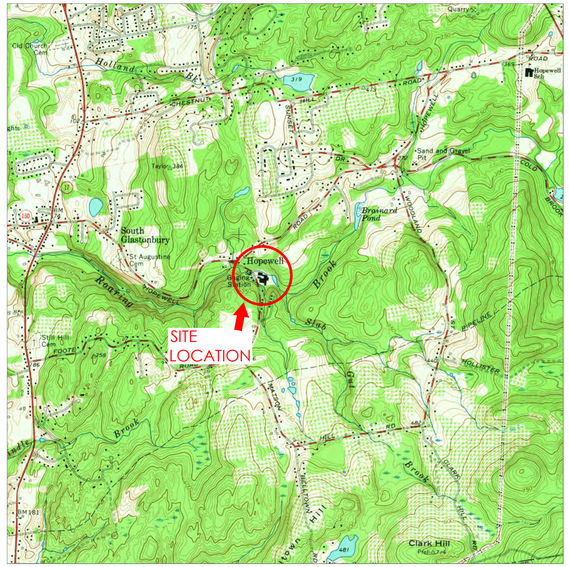
5. THE CONTRACTOR SHALL NOTE THAT IN THE CASE OF A DISCREPANCY BETWEEN THE SCALED AND THE FIGURED DIMENSIONS SHOWN ON THESE PLANS, THE FIGURED DIMENSIONS SHALL APPLY.

6. IT SHALL BE DISTINCTLY UNDERSTOOD THAT FAILURE TO MENTION SPECIFICALLY ANY WORK THAT WOULD NORMALLY BE REQUIRED TO COMPLETE THE PROJECT, SHALL NOT RELIEVE THE CONTRACTOR'S RESPONSIBILITY TO PERFORM THAT WORK.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR AND REPLACEMENT OF ROADS, CURBS, FENCES, SIGNS, STRUCTURES, VEGETATION, IRRIGATION, LANDSCAPING COMPONENTS, AND ANY OTHER PROPERTY ITEMS THAT ARE REMOVED OR DAMAGED FOR THE PURPOSES OF THE PROJECT LOGISTICS AND ACCIDENTS.

CONSTRUCTION SAFETY AND SECURITY:

1. ALL CONSTRUCTION SHALL ADHERE TO OSHA STANDARDS AND REGULATIONS.



A PROJECT VICINITY
SCALE: 1" = 2000'

B ORTHOPHOTOGRAPHY
SCALE: 1" = 2000'

PROJECT APPLICANT
TOWN OF GLASTONBURY
ATTN: DANIEL A PENNINGTON, P.E.
2155 MAIN STREET
GLASTONBURY, CT 06033

PROJECT ENGINEER
PRINCETON HYDRO
931 MAIN STREET, SUITE 2
SOUTH GLASTONBURY, CT 06073

SHEET LIST TABLE

SHEET NUMBER	SHEET TITLE
1	TITLE SHEET
2	OVERVIEW
3	EXISTING CONDITIONS
4	PROPOSED CONDITIONS
5	CONSTRUCTION SEQUENCE AND EROSION & SEDIMENT CONTROL
6	PROFILE AND DAM CROSS SECTIONS
7	CROSS SECTIONS
8	CONSTRUCTION AND EROSION & SEDIMENT CONTROL DETAILS
9	CONSTRUCTION NOTES
10	CONSTRUCTION DETAIL - STONE MASONRY WALL REPAIR

CALL BEFORE YOU DIG!
CONNECTICUT LAW REQUIRES
2 FULL WORKING DAYS NOTICE
PRIOR TO CONSTRUCTION - STOP CALL
CALL BEFORE YOU DIG, INC.
REFERENCE CONNECTICUT SECTION 1:
SECTION 16-345-1 THROUGH 16-345-7
1-800-922-4455

PROJECT NOTES

1. HORIZONTAL DATUM IS CONNECTICUT STATE PLANE NAD83, FEET. VERTICAL DATUM BASED ON NAVD88, FEET.
2. SURVEY OBTAINED FROM "IMPROVEMENT LOCATION PLAN DEPICTING LAND OF TOWN OF GLASTONBURY "SLOCOMB OPEN SPACE PARK"" DATED AUGUST 2019 PROVIDED BY TOWN OF GLASTONBURY.
3. WETLAND DELINEATION COMPLETED BY MARTIN BROGIE, INC. ON AUGUST 20, 2019.
4. ALL DRAWING SCALES ACCURATE WHEN PRINTED ON 24" BY 36" PAPER.

DATE	DESCRIPTION
06/12/2020	UPDATED IN RESPONSE TO COMMENTS FROM LOCAL REGULATORY AGENCY

REVISIONS

STATE OF CONNECTICUT CERTIFICATE OF REGISTRATION NO.: 0001188

LAURA A.S. WILDMAN
Professional Engineer
CT Lic. No. 18596
JUNE 12, 2020
DATE

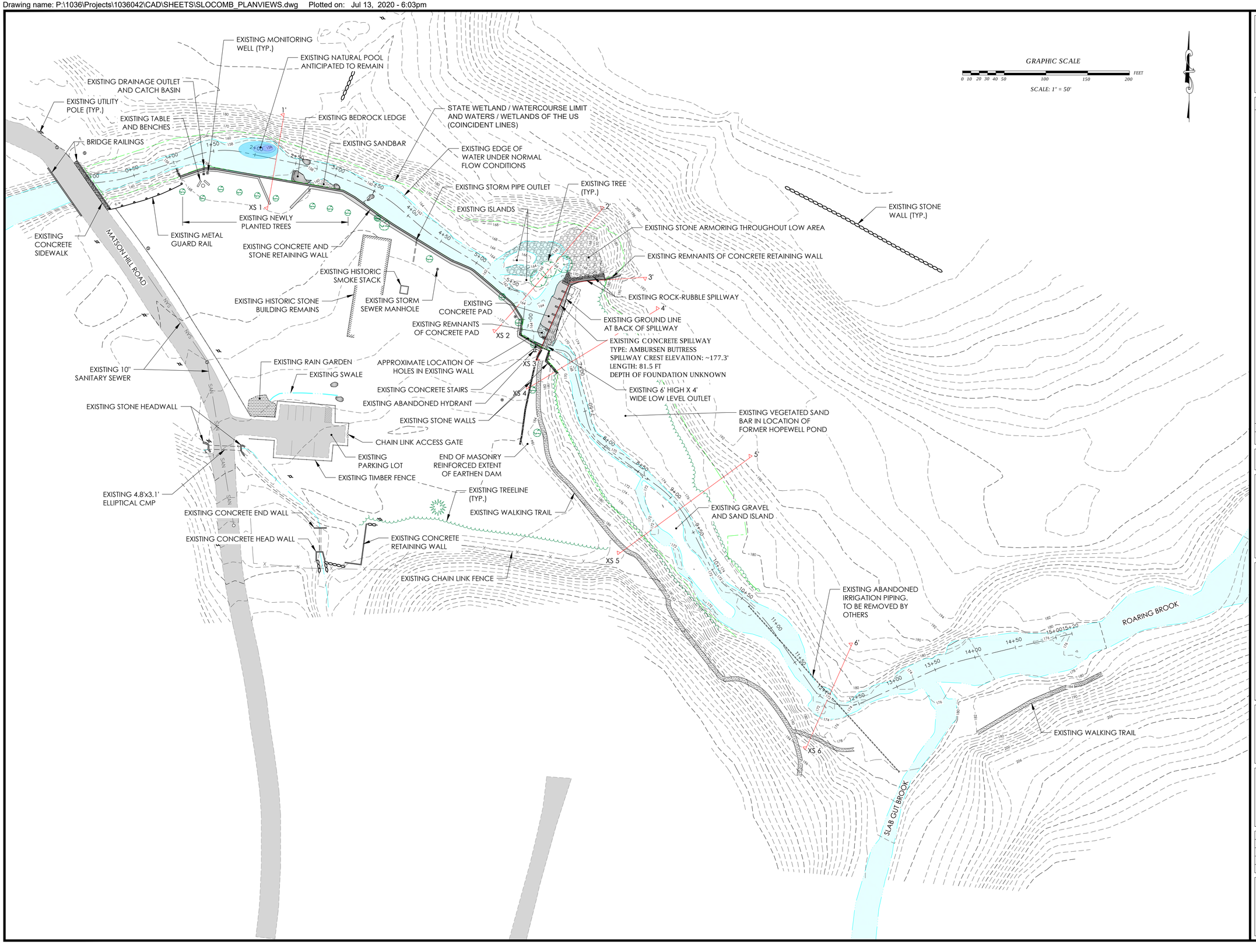
PRINCETON HYDRO
SCIENCE ENGINEERING DESIGN
1108 OLD YORK RD, SUITE 1
RINGOES, NEW JERSEY 08551
PHONE: 908.237.5660
PRINCETONHYDRO.COM

PROJECT NAME/LOCATION:
SLOCOMB POND DAM REMOVAL
(CT DEEP ID #5425)
TOWN OF GLASTONBURY
HARTFORD COUNTY, CONNECTICUT

DRAWING NAME:
TITLE SHEET

DATE:	06/12/2020
PROJECT NO.:	1036.042
SCALE:	AS SHOWN
DRAWN BY:	JD, ML
CHECKED BY:	LW, PW

SHEET NO.
1 OF 10



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REVISIONS

STATE OF CONNECTICUT CERTIFICATE OF REGISTRATION NO.: 0001188

LAURA A.S. WILDMAN
Professional Engineer
CT LIC. NO. 18596
PE LICENSED PROFESSIONAL ENGINEER
JUNE 12, 2020
DATE

PRINCETON HYDRO
SCIENCE ENGINEERING DESIGN
1108 OLD YORK RD, SUITE 1
RINGOES, NEW JERSEY 08551
PHONE: 908.237.5660
PRINCETONHYDRO.COM

PROJECT NAME/LOCATION:

SLOCOMB POND DAM REMOVAL
(CT DEEP ID #5425)
TOWN OF GLASTONBURY
HARTFORD COUNTY, CONNECTICUT

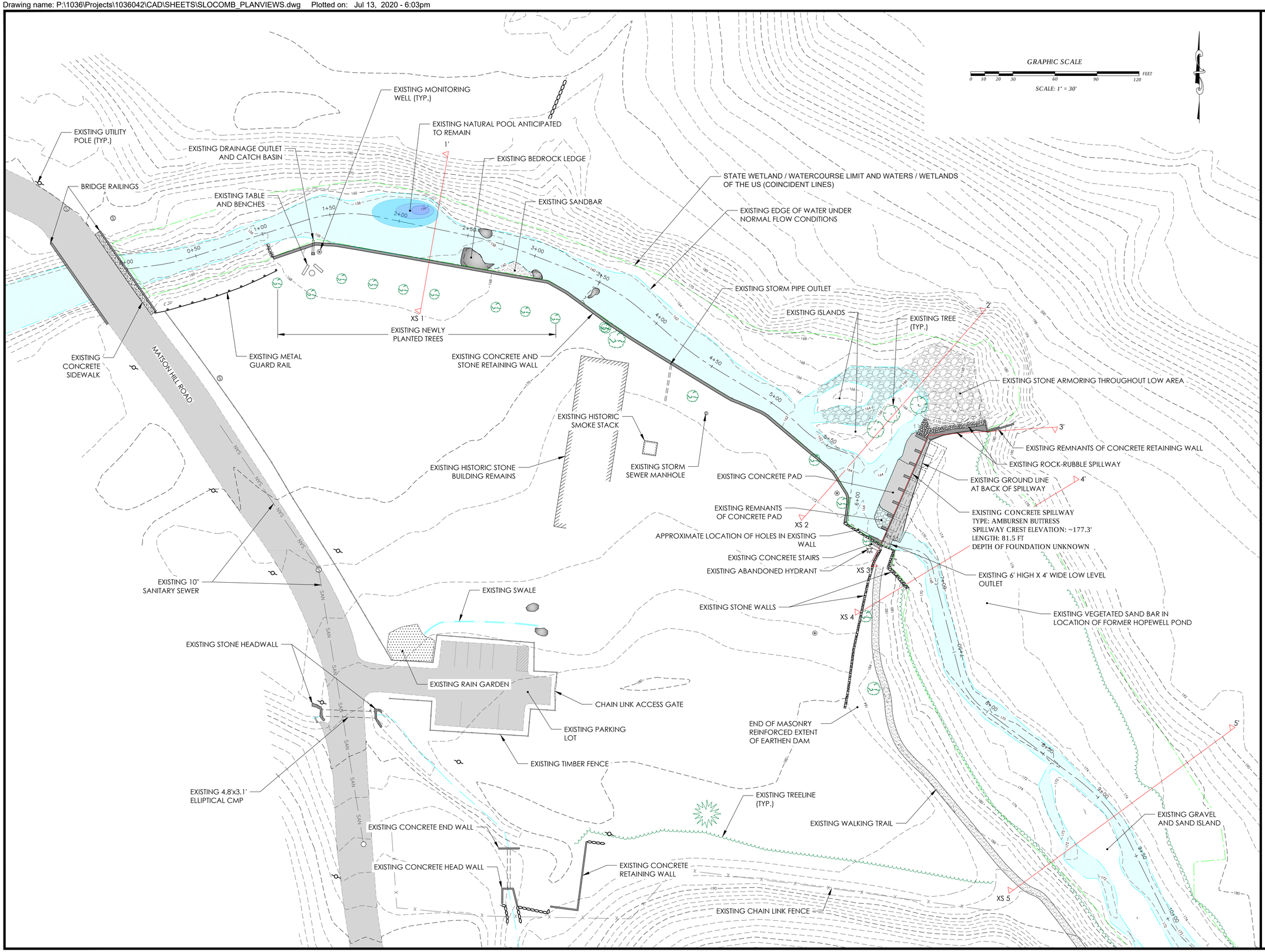
DRAWING NAME:

OVERVIEW OF EXISTING CONDITIONS

DATE:	06/12/2020
PROJECT NO.:	1036.042
SCALE:	1" = 50'
DRAWN BY:	JD, ML
CHECKED BY:	LW, PW

SHEET NO.

2 OF 10



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SECTION 16-345-1 THROUGH 16-345-7
1-800-922-4455

PROJECT NOTES

1. HORIZONTAL DATUM IS CONNECTICUT STATE PLANE NAD83, FEET. VERTICAL DATUM BASED ON NAVD88, FEET.
2. SURVEY OBTAINED FROM "IMPROVEMENT LOCATION PLAN DEPICTING LAND OF TOWN OF GLASTONBURY "SLOCOMB OPEN SPACE PARK"" DATED AUGUST 2019 PROVIDED BY TOWN OF GLASTONBURY.
3. WETLAND DELINEATION COMPLETED BY MARTIN BROGIE, INC. ON AUGUST 20, 2019.
4. ALL DRAWING SCALES ACCURATE WHEN PRINTED ON 24" BY 36" PAPER.

DATE	DESCRIPTION
06/12/2020	UPDATED IN RESPONSE TO COMMENTS FROM LOCAL REGULATORY AGENCY

REVISIONS

STATE OF CONNECTICUT CERTIFICATE OF REGISTRATION NO.: 0001188

LAURA A.S. WILDMAN
Professional Engineer
CT Lic. No. 18396
JUNE 12, 2020
DATE

PRINCETON HYDRO
SCIENCE ENGINEERING DESIGN
1108 OLD YORK RD, SUITE 1
RINGOES, NEW JERSEY 08551
PHONE: 908.237.5660
PRINCETONHYDRO.COM

PROJECT NAME/LOCATION:

SLOCOMB POND DAM REMOVAL
(CT DEEP ID #5425)
TOWN OF GLASTONBURY
HARTFORD COUNTY, CONNECTICUT

DRAWING NAME:

EXISTING CONDITIONS

DATE:	06/12/2020
PROJECT NO.:	1036.042
SCALE:	1" = 30'
DRAWN BY:	JD, ML
CHECKED BY:	LW, PW

SHEET NO.

3 OF 10

GRAPHIC SCALE
0 10 20 30 60 90 120 FEET
SCALE: 1" = 30'

COEXISTENT CONNECTICUT STATE WETLAND/WETLANDS OF THE U.S. LINE

TREE TO BE REMOVED PRIOR TO STAIRCASE CONSTRUCTION

70 LF OF CONCRETE RETAINING WALL TO BE REMOVED AND CONCRETE STAIRCASE TO BE CONSTRUCTED PER DETAIL

PROPOSED 48" FENCING INSTALLED 6 INCHES FROM RETAINING WALL ON MOW STRIP (TYP.)

MOW STRIP TO BE 12 INCHES WIDE AND 4 INCHES DEEP OF TRAPROCK STONEDUST. TOP OF MOW STRIP TO BE INSTALLED EVEN WITH FINAL SOIL GRADE

PORTION OF IMPOUNDED SEDIMENT TO BE DEPOSITED IN THIS AREA TO ELIMINATE FALL HAZARD AT ROCK-RUBBLE SPILLWAY. TO BE COVERED WITH 4" TOPSOIL AND MULCHED AND SEEDED.

EXISTING REMNANTS OF CONCRETE RETAINING WALL TO REMAIN

PORTION OF EXISTING ROCK-RUBBLE SPILLWAY TO REMAIN

ROCK- RUBBLE SPILLWAY TO BE CHISELED AT 3:1 SLOPE FROM ELEVATION OF 172'

EXISTING CONCRETE PADS TO BE REMOVED

EXISTING CONCRETE AMBURSEN SPILLWAY TO BE REMOVED TO FULL HORIZONTAL AND VERTICAL EXTENT. RIVERBED TO BE EXCAVATED A MINIMUM OF 2 FT BELOW FOUNDATION. RIVERBED TO BE GRADED WITH IN SITU RIVER GRAVELS.

RIVER LEFT BUTTRESS TO BE SAWCUT AND REMAIN

ANTICIPATED EDGE OF WATER

BANK COMPRISED OF UNCONSOLIDATED SEDIMENT TO BE EXCAVATED AND GRADED AS GRADUAL TERRACE TO EXISTING GROUND (SEE SHEET 7, DETAIL F). EXCAVATED MATERIAL TO BE DEPOSITED IN DESIGNATED AREAS (SEE SHEET 5). GRADED BANK TO BE COVERED WITH 4" TOPSOIL AND SEEDED

STONE FROM LOW AREA TO BE USED TO FILL EXISTING HOLE IN WALL. SEE SHEET 10, DETAIL K FOR ADDITIONAL REPAIRS TO EXISTING STONE MASONRY WALLS

EXISTING STAIRS TO REMAIN

EXISTING STONE WALLS TO REMAIN

RIVER CENTERLINE FOLLOWING DAM REMOVAL

PROPOSED CONTOUR (TYP.)

XS 1 XS 2 XS 3 XS 4 XS 5 1' 2' 3' 4' 5'

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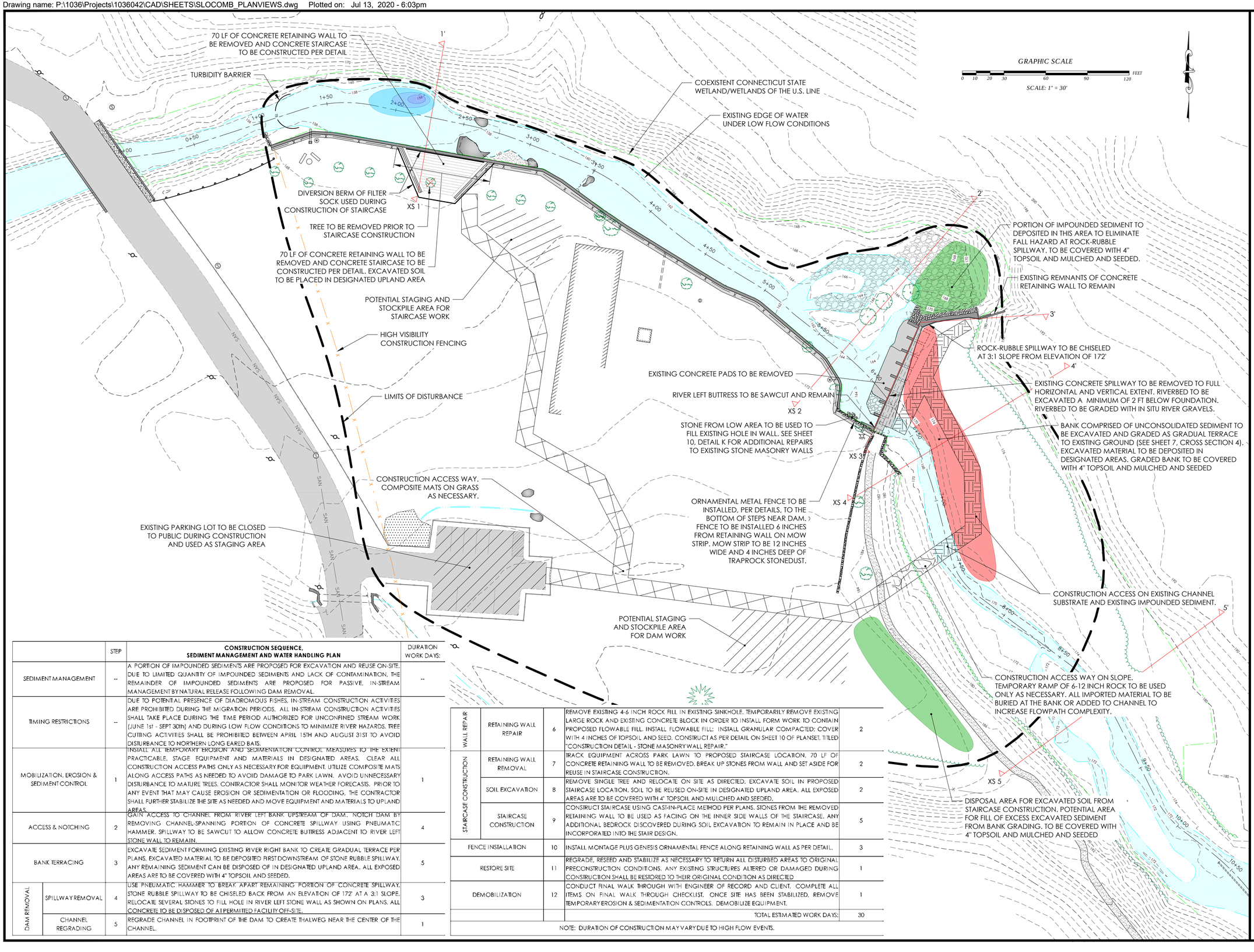

		STEP	CONSTRUCTION SEQUENCE, SEDIMENT MANAGEMENT AND WATER HANDLING PLAN	DURATION WORK DAYS:
SEDIMENT MANAGEMENT		--	A PORTION OF IMPOUNDED SEDIMENTS ARE PROPOSED FOR EXCAVATION AND REUSE ON-SITE. DUE TO LIMITED QUANTITY OF IMPOUNDED SEDIMENTS AND LACK OF CONTAMINATION, THE REMAINDER OF IMPOUNDED SEDIMENTS ARE PROPOSED FOR PASSIVE, IN-STREAM MANAGEMENT BY NATURAL RELEASE FOLLOWING DAM REMOVAL.	--
TIMING RESTRICTIONS		--	DUE TO POTENTIAL PRESENCE OF DIADROMOUS FISHES, IN-STREAM CONSTRUCTION ACTIVITIES ARE PROHIBITED DURING THE MIGRATION PERIODS. ALL IN-STREAM CONSTRUCTION ACTIVITIES SHALL TAKE PLACE DURING THE TIME PERIOD AUTHORIZED FOR UNCONFINED STREAM WORK (JUNE 1st - SEPT 30th) AND DURING LOW FLOW CONDITIONS TO MINIMIZE RIVER HAZARDS. TREE CUTTING ACTIVITIES SHALL BE PROHIBITED BETWEEN APRIL 15TH AND AUGUST 31ST TO AVOID DISTURBANCE TO NORTHERN LONG EARED BATS.	
MOBILIZATION, EROSION & SEDIMENT CONTROL		1	INSTALL ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES TO THE EXTENT PRACTICABLE. STAGE EQUIPMENT AND MATERIALS IN DESIGNATED AREAS. CLEAR ALL CONSTRUCTION ACCESS PATHS ONLY AS NECESSARY FOR EQUIPMENT. UTILIZE COMPOSITE MATS ALONG ACCESS PATHS AS NEEDED TO AVOID DAMAGE TO PARK LAWN. AVOID UNNECESSARY DISTURBANCE TO MATURE TREES. CONTRACTOR SHALL MONITOR WEATHER FORECASTS. PRIOR TO ANY EVENT THAT MAY CAUSE EROSION OR SEDIMENTATION OR FLOODING, THE CONTRACTOR SHALL FURTHER STABILIZE THE SITE AS NEEDED AND MOVE EQUIPMENT AND MATERIALS TO UPLAND AREAS.	1
ACCESS & NOTCHING		2	GAIN ACCESS TO CHANNEL FROM RIVER LEFT BANK UPSTREAM OF DAM. NOTCH DAM BY REMOVING CHANNEL-SPANNING PORTION OF CONCRETE SPILLWAY USING PNEUMATIC HAMMER. SPILLWAY TO BE SAWCUT TO ALLOW CONCRETE BUTTRESS ADJACENT TO RIVER LEFT STONE WALL TO REMAIN.	4
BANK TERRACING		3	EXCAVATE SEDIMENT FORMING EXISTING RIVER RIGHT BANK TO CREATE GRADUAL TERRACE PER PLANS. EXCAVATED MATERIAL TO BE DEPOSITED FIRST DOWNSTREAM OF STONE RUBBLE SPILLWAY. ANY REMAINING SEDIMENT CAN BE DISPOSED OF IN DESIGNATED UPLAND AREA. ALL EXPOSED AREAS ARE TO BE COVERED WITH 4" TOPSOIL AND SEEDED.	5
DAM REMOVAL	SPILLWAY REMOVAL	4	USE PNEUMATIC HAMMER TO BREAK APART REMAINING PORTION OF CONCRETE SPILLWAY. STONE RUBBLE SPILLWAY TO BE CHISELED BACK FROM AN ELEVATION OF 172' AT A 3:1 SLOPE. RELOCATE SEVERAL STONES TO FILL HOLE IN RIVER LEFT STONE WALL AS SHOWN ON PLANS. ALL CONCRETE TO BE DISPOSED OF AT PERMITTED FACILITY OFF-SITE.	3
	CHANNEL REGRADING	5	REGRADE CHANNEL IN FOOTPRINT OF THE DAM TO CREATE THALWEG NEAR THE CENTER OF THE CHANNEL.	1
WALL REPAIR	RETAINING WALL REPAIR	6	REMOVE EXISTING 4-6 INCH ROCK FILL IN EXISTING SINKHOLE. TEMPORARILY REMOVE EXISTING LARGE ROCK AND EXISTING CONCRETE BLOCK IN ORDER TO INSTALL FORM WORK TO CONTAIN PROPOSED FLOWABLE FILL. INSTALL FLOWABLE FILL: INSTALL GRANULAR COMPACTED; COVER WITH 4 INCHES OF TOPSOIL AND SEED. CONSTRUCT AS PER DETAIL ON SHEET 10 OF PLANSET, TITLED "CONSTRUCTION DETAIL - STONE MASONRY WALL REPAIR."	2
STAIRCASE CONSTRUCTION	RETAINING WALL REMOVAL	7	TRACK EQUIPMENT ACROSS PARK LAWN TO PROPOSED STAIRCASE LOCATION. 70 LF OF CONCRETE RETAINING WALL TO BE REMOVED. BREAK UP STONES FROM WALL AND SET ASIDE FOR REUSE IN STAIRCASE CONSTRUCTION.	2
	SOIL EXCAVATION	8	REMOVE SINGLE TREE AND RELOCATE ON SITE AS DIRECTED. EXCAVATE SOIL IN PROPOSED STAIRCASE LOCATION. SOIL TO BE REUSED ON-SITE IN DESIGNATED UPLAND AREA. ALL EXPOSED AREAS ARE TO BE COVERED WITH 4" TOPSOIL AND MULCHED AND SEEDED.	2
	STAIRCASE CONSTRUCTION	9	CONSTRUCT STAIRCASE USING CAST-IN-PLACE METHOD PER PLANS. STONES FROM THE REMOVED RETAINING WALL TO BE USED AS FACING ON THE INNER SIDE WALLS OF THE STAIRCASE. ANY ADDITIONAL BEDROCK DISCOVERED DURING SOIL EXCAVATION TO REMAIN IN PLACE AND BE INCORPORATED INTO THE STAIR DESIGN.	5
FENCE INSTALLATION		10	INSTALL MONTAGE PLUS GENESIS ORNAMENTAL FENCE ALONG RETAINING WALL AS PER DETAIL.	3
RESTORE SITE		11	REGRADE, RESEED AND STABILIZE AS NECESSARY TO RETURN ALL DISTURBED AREAS TO ORIGINAL PRECONSTRUCTION CONDITIONS. ANY EXISTING STRUCTURES ALTERED OR DAMAGED DURING CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AS DIRECTED	1
DEMOBILIZATION		12	CONDUCT FINAL WALK THROUGH WITH ENGINEER OF RECORD AND CLIENT. COMPLETE ALL ITEMS ON FINAL WALK THROUGH CHECKLIST. ONCE SITE HAS BEEN STABILIZED, REMOVE TEMPORARY EROSION & SEDIMENTATION CONTROLS. DEMOBILIZE EQUIPMENT.	1
			TOTAL ESTIMATED WORK DAYS:	30

NOTE: DURATION OF CONSTRUCTION MAY VARY DUE TO HIGH FLOW EVENTS.

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SLOCOMB POND DAM REMOVAL
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HARTFORD COUNTY, CONNECTICUT

DRAWING NAME:

CONSTRUCTION SEQUENCE AND EROSION & SEDIMENT CONTROL

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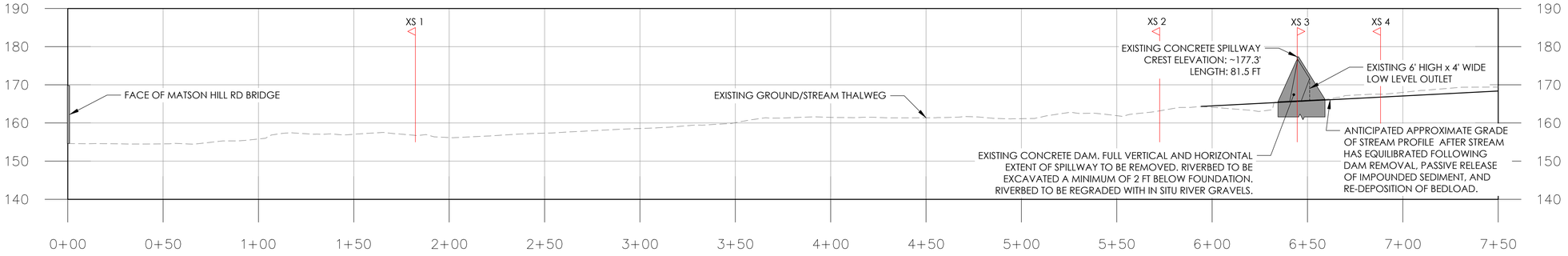
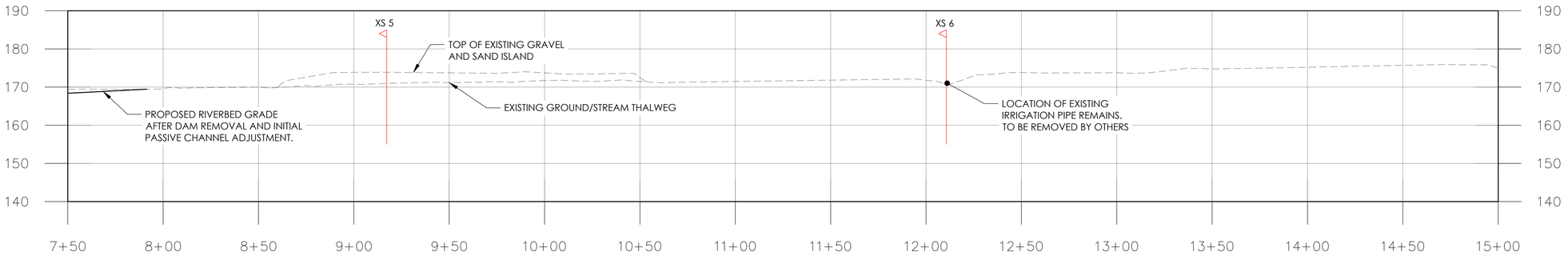
DRAWN BY:	JD, ML
CHECKED BY:	LW, PW

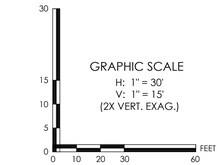
SHEET NO.

5 OF 10

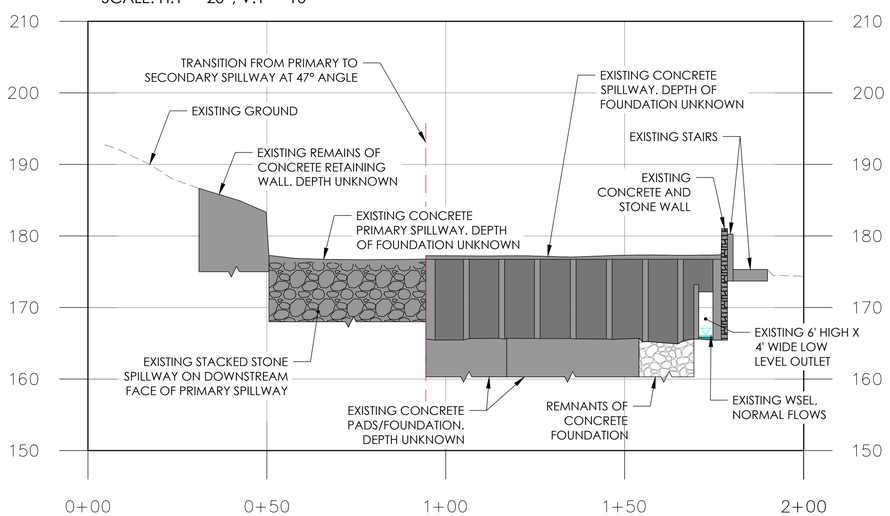
A PROFILE VIEW
SCALE: H:1" = 30' , V:1" = 15'

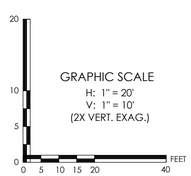




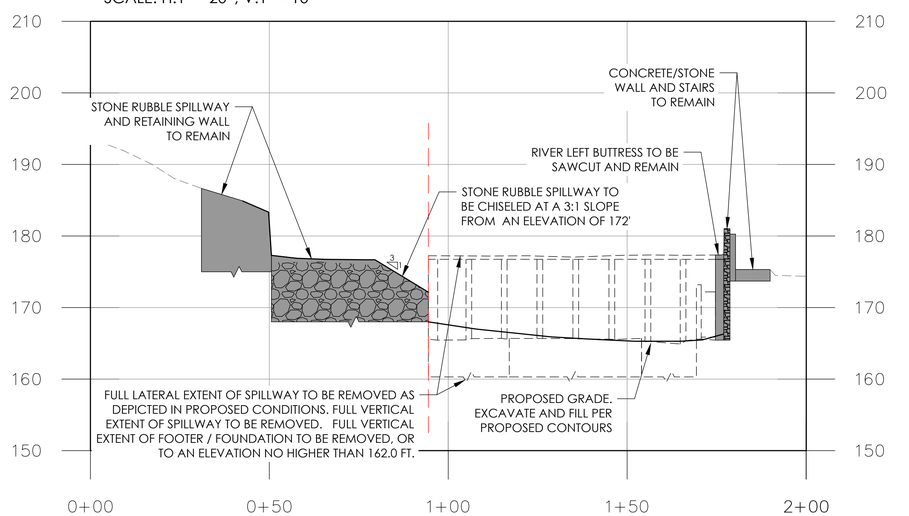


B EXISTING CROSS SECTION (FACING UPSTREAM)
CROSS SECTION 3-3'
SCALE: H:1" = 20' , V:1" = 10'





C PROPOSED CROSS SECTION (FACING UPSTREAM)
CROSS SECTION 3-3'
SCALE: H:1" = 20' , V:1" = 10'



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HARTFORD COUNTY, CONNECTICUT

DRAWING NAME:
PROFILE AND DAM CROSS SECTIONS

DATE:	06/12/2020
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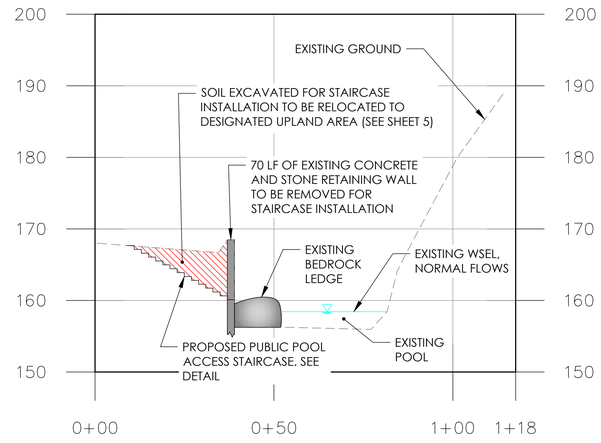
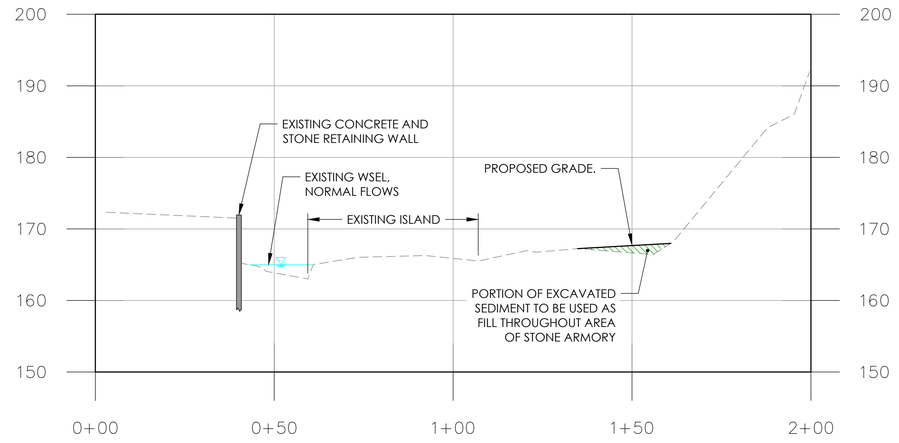
DRAWN BY:	JD, ML
CHECKED BY:	LW, PW

SHEET NO.
6 OF 10

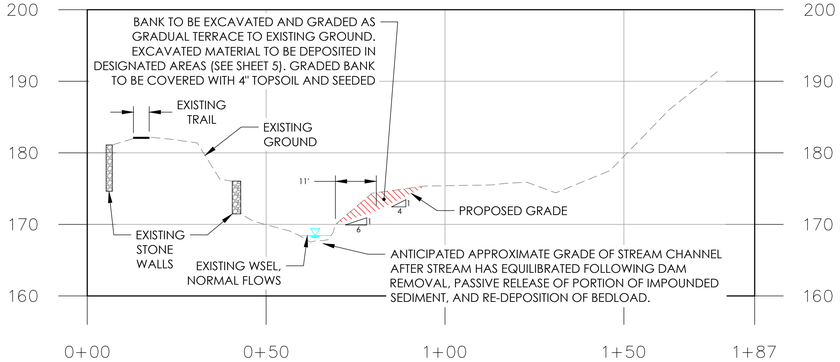
D CROSS SECTION 1-1'



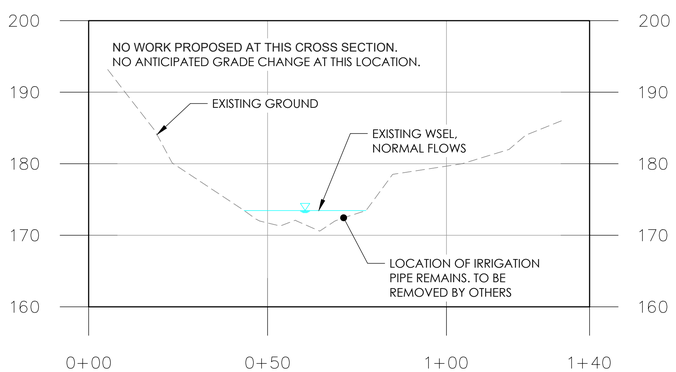
E CROSS SECTION 2-2'



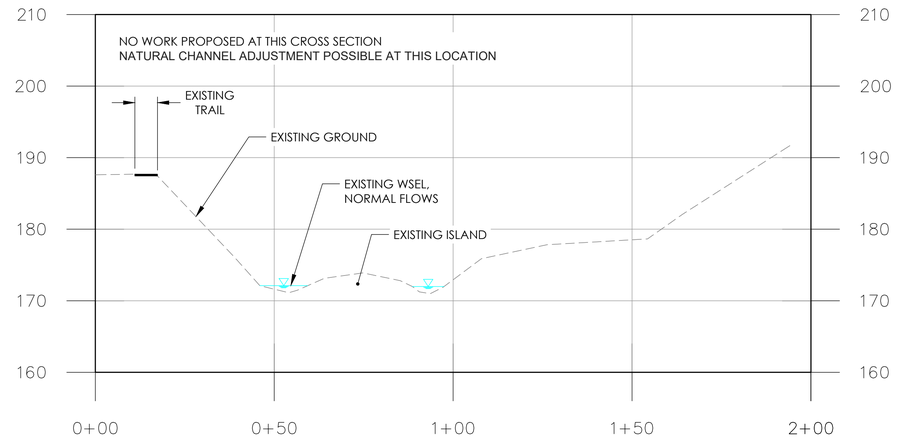
F CROSS SECTION 4-4'

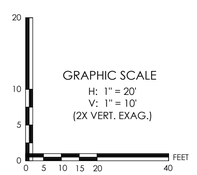


G CROSS SECTION 5-5'



H CROSS SECTION 6-6'





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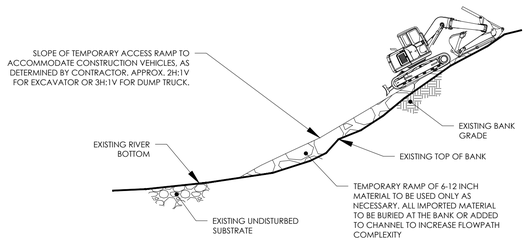
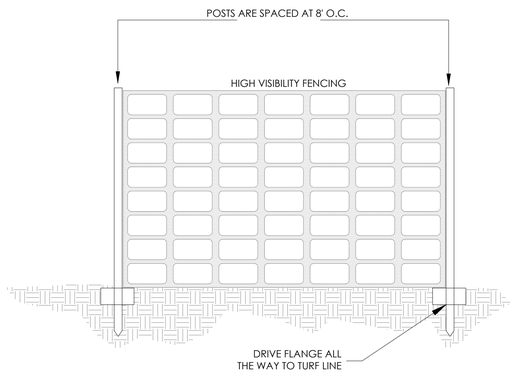
7 OF 10

A QR CODE TO PHOTOGRAPH LOG
SCAN WITH COMPUTER OR SMARTPHONE

B ORTHOGONAL VIEW OF AMBURSEN SPILLWAY
PHOTOGRAPH

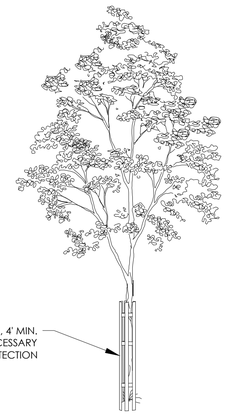


D ROCK ACCESS RAMP
NOT TO SCALE
AS NECESSARY



NOTE:
1. FENCE SHALL BE CONSTRUCTED OF UV STABILIZED HIGH VISIBILITY ORANGE POLYETHYLENE SAFETY FENCE.
2. THE FENCE SHALL BE A MINIMUM OF 4 FEET HIGH AND STAKED AT 8 FOOT ON CENTER.
3. THE FENCE SHALL BE ATTACHED TO EACH STAKE WITH A MINIMUM OF THREE (3) ZIP TIES OR APPROVED EQUAL.
4. STAKES SHOULD BE DRIVE 6 TO 12 INCHES BELOW GRADE.

C HIGH VISIBILITY FENCE
NOT TO SCALE



NOTES:

1. TO PREVENT GENERAL MECHANICAL DAMAGE TO TREES INSTALL TREE TRUNK PROTECTION AS INDICATED IN DETAIL.

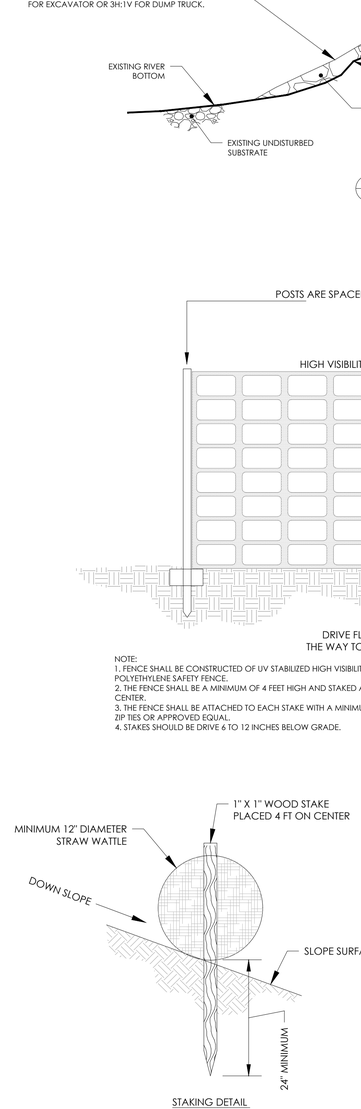
2. BOX TREES WITHIN 25 FEET OF BUILDINGS SITE TO PREVENT MECHANICAL INJURY. FENCING OR OTHER BARRIER SHOULD BE INSTALLED AT THE DRIP LINE OF THE TREE BRANCHES OR BEYOND. TREE ROOT SYSTEMS COMMONLY EXTEND WELL BEYOND THE DRIP LINE.

3. BOARDS WILL NOT BE NAILED TO TREES DURING CONSTRUCTION.

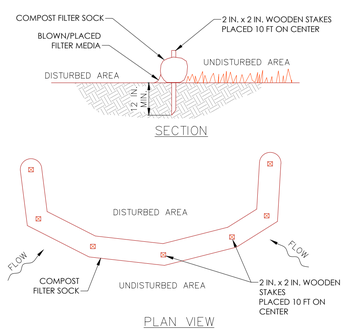
4. FEEDER ROOTS SHOULD NOT BE CUT IN AN AREA INSIDE THE DRIP LINE OF THE TREE BRANCHES

5. DAMAGED TRUNKS OR EXPOSED ROOTS SHOULD HAVE DAMAGED BARK REMOVED IMMEDIATELY AND NO PAINT SHALL BE APPLIED. EXPOSED ROOTS SHOULD BE COVERED WITH TOPSOIL IMMEDIATELY AFTER EXCAVATION IS COMPLETE. ROOTS SHALL BE PRUNED TO GIVE A CLEAN, SHARP SURFACE AMENABLE TO HEALING. ROOTS EXPOSED DURING HOT WEATHER SHOULD BE IRRIGATED TO PREVENT PERMANENT TREE INJURY. CARE FOR SERIOUS INJURY SHOULD BE PRESCRIBED BY A PROFESSIONAL FORESTER OR CERTIFIED TREE EXPERT.

I TREE TRUNK PROTECTION DETAIL
NOT TO SCALE



E STRAW WATTLE DETAIL
NOT TO SCALE



NOTES:

COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.

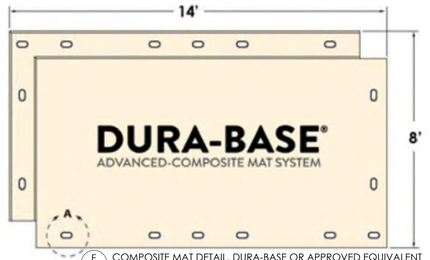
ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

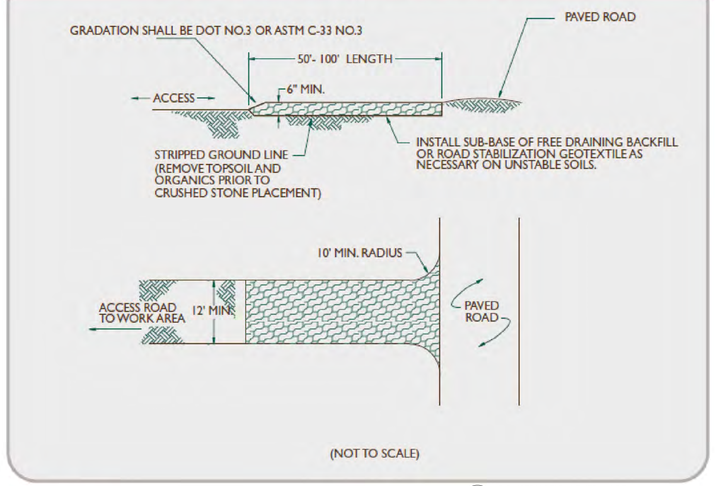
UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

J COMPOST FILTER SOCK
NOT TO SCALE



F COMPOSITE MAT DETAIL. DURA-BASE OR APPROVED EQUIVALENT
NOT TO SCALE

Figure CE-2 Diagram of Typical Construction Entrance



Source: USDA-NRCS

G CONSTRUCTION ENTRANCE
NOT TO SCALE
AS NECESSARY

Ernst Conservation Seeds
8884 Mercer Pike
Meadville, PA 16335
(800) 873-3321 Fax (814) 336-5191
www.ernstseed.com

Date: December 03, 2019

Floodplain Mix - ERNMX-154

	Botanical Name	Common Name	Price/lb
23.00 %	*Carex vulpinoidea, PA Ecotype*	Fox Sedge, PA Ecotype	26.40
21.50 %	*Panicum clandestinum, Tioga*	Deertongue, Tioga	18.91
20.00 %	*Elymus virginicus, PA Ecotype*	Virginia Wildrye, PA Ecotype	6.32
10.00 %	*Andropogon gerardii, 'Niagara'*	Big Bluestem, 'Niagara'	11.96
8.20 %	*Carex lupulina, PA Ecotype*	Hop Sedge, PA Ecotype	79.20
4.30 %	*Carex scoparia, PA Ecotype*	Blunt Broom Sedge, PA Ecotype	79.20
3.00 %	*Juncus effusus*	Soft Rush	44.00
3.00 %	*Verbena hastata, PA Ecotype*	Blue Vervain, PA Ecotype	35.20
2.00 %	*Helianthus helianthoides, PA Ecotype*	Oxeye Sunflower, PA Ecotype	39.60
1.00 %	*Asclepias incarnata, PA Ecotype*	Swamp Milkweed, PA Ecotype	176.00
1.00 %	*Cinna arundinacea, PA Ecotype*	Wood Reedgrass, PA Ecotype	132.00
0.60 %	*Eupatorium perfoliatum, PA Ecotype*	Boneset, PA Ecotype	330.00
0.40 %	*Aster lateriflorus*	Calico Aster	396.00
0.40 %	*Aster umbellatus, PA Ecotype*	Flat Topped White Aster, PA Ecotype	396.00
0.30 %	*Alisma subcordatum, PA Ecotype*	Mud Plantain, PA Ecotype	176.00
0.30 %	*Helenium autumnale, PA Ecotype*	Common Sneezeweed, PA Ecotype	198.00
0.30 %	*Monarda fistulosa, Fort Indiantown Gap-PA Ecotype*	Wild Bergamot, Fort Indiantown Gap-PA Ecotype	132.00
0.30 %	*Scirpus cyperinus, PA Ecotype*	Woolgrass, PA Ecotype	198.00
0.20 %	*Penthorum sedoides, PA Ecotype*	Ditch Stonecrop, PA Ecotype	264.00
0.10 %	*Carex stricta, PA Ecotype*	Tussock Sedge, PA Ecotype	528.00
0.10 %	*Lobelia siphilitica, PA Ecotype*	Great Blue Lobelia, PA Ecotype	440.00
100.00 %		**Mix Price/lb Bulk:**	**$37.50**

Seeding Rate: 20 lb per acre with a cover crop of grain rye at 30 lb per acre

Riparian Sites

The diverse annual and perennial grasses and forbs are attractive to humans and animals. Designed for economical wildlife food and habitat in newly established wetlands where wildlife food value is needed. The wildryes establish quickly and tolerate low fertility in wet or dry soils. Seed from October-May in full sun or partial shade. Mix formulations are subject to change without notice depending on the availability of existing and new products. While the formula may change, the guiding philosophy and function of the mix will not.

H SUGGESTED NATIVE SEED MIX
NOT TO SCALE
AS NECESSARY

CALL BEFORE YOU DIG!
CONNECTICUT LAW REQUIRES
2 FULL WORKING DAYS NOTICE
PRIOR TO CONSTRUCTION - STOP CALL
CALL BEFORE YOU DIG, INC.
REFERENCE CONNECTICUT SECTION 1:
SECTION 16-345-1 THROUGH 16-345-7
1-800-922-4455

PROJECT NOTES

1. HORIZONTAL DATUM IS CONNECTICUT STATE PLANE NAD83, FEET. VERTICAL DATUM BASED ON NAVD88, FEET.
2. SURVEY OBTAINED FROM "IMPROVEMENT LOCATION PLAN DEPICTING LAND OF TOWN OF GLASTONBURY "SLOCOMB OPEN SPACE PARK"" DATED AUGUST 2019 PROVIDED BY TOWN OF GLASTONBURY.
3. WETLAND DELINEATION COMPLETED BY MARTIN BROGIE, INC. ON AUGUST 20, 2019.
4. ALL DRAWING SCALES ACCURATE WHEN PRINTED ON 24" BY 36" PAPER.

DATE	DESCRIPTION
06/12/2020	UPDATED IN RESPONSE TO COMMENTS FROM LOCAL REGULATORY AGENCY

REVISIONS

STATE OF CONNECTICUT CERTIFICATE OF REGISTRATION NO.: 0001188

LAURA A.S. WILDMAN
Professional Engineer
Cert. #: No. 18596
JUNE 12, 2020
DATE

PRINCETON HYDRO
SCIENCE ENGINEERING DESIGN
1108 OLD YORK RD, SUITE 1
RINGOES, NEW JERSEY 08551
PHONE: 908.237.5660
PRINCETONHYDRO.COM

PROJECT NAME/LOCATION:

SLOCOMB POND DAM REMOVAL
(CT DEEP ID #5425)
TOWN OF GLASTONBURY
HARTFORD COUNTY, CONNECTICUT

DRAWING NAME:

CONSTRUCTION AND EROSION & SEDIMENT CONTROL DETAILS

DATE:	06/12/2020
PROJECT NO.:	1036.042
SCALE:	AS SHOWN
DRAWN BY:	JD, ML
CHECKED BY:	LW, PW

SHEET NO.

8 OF 10

BEST MANAGEMENT PRACTICES FOR PROTECTION OF THE ENVIRONMENT

1. NO CONSTRUCTION SHALL PROCEED UNTIL PROPER SEDIMENTATION AND EROSION CONTROL METHODS HAVE BEEN INSTALLED AS THE SEQUENCE OF CONSTRUCTION NECESSITATES.
2. EQUIPMENT, MATERIALS, AND MACHINERY SHALL BE STORED, CLEANED, REFUELED, MAINTAINED, AND REPAIRED IN UPLAND AREAS ONLY.
3. NO CONSTRUCTION SHALL PROCEED UNTIL A METHOD TO PREVENT CONSTRUCTION DEBRIS OR OTHER MATERIALS FROM ENTERING THE WETLAND OR WATERCOURSE HAS BEEN IMPLEMENTED AS THE SEQUENCE OF CONSTRUCTION NECESSITATES. THESE MATERIALS SHALL BE COLLECTED AND DISPOSED OF IN AN ENVIRONMENTALLY SAFE MANNER AS DETERMINED BY FEDERAL, STATE, AND LOCAL LAWS AT NO ADDITIONAL COST TO THE OWNER. THE APPLICANT SHALL MONITOR WIND VELOCITIES AND STORM EVENTS DURING THE CONDUCT OF SUCH WORK, AND SHALL CAUSE SUCH ACTIVITY TO CEASE IF STORM OR WIND CONDITIONS THREATEN TO CAUSE DEPOSITS OF MATERIALS IN THE WATERWAY.
4. NO OBJECTIONABLE MATERIALS RESULTING FROM ANY CLEARING ACTIVITY SHALL BE DISPOSED OF IN ANY WETLAND OR WATERCOURSE. THIS INCLUDES BUT IS NOT LIMITED TO: STUMPS, TREE ROOTS, MATTED ROOTS, WOOD CHIPS, AND OTHER DEBRIS, UNLESS SPECIFIED ON THE CONTRACT DRAWINGS .
5. NO FILL OR MATERIAL SHALL BE DEPOSITED IN SURROUNDING WETLANDS OR WATERCOURSES, UNLESS SPECIFIED ON THE CONTRACT DRAWINGS.
6. A WATER HANDLING PLAN INCLUDING A CONTINGENCY PLAN FOR FLOOD EVENTS SHALL BE IMPLEMENTED AS SEQUENCE OF CONSTRUCTION NECESSITATES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION IN THE WATERWAY.
7. WORK WITHIN AND ADJACENT TO WATERCOURSES SHALL BE CONDUCTED DURING PERIODS OF LOW FLOW, WHENEVER POSSIBLE. THE APPLICANT SHALL REMAIN AWARE OF FLOW CONDITIONS DURING THE CONDUCT OF SUCH WORK, AND SHALL CAUSE SUCH ACTIVITY TO CEASE SHOULD FLOW CONDITIONS THREATEN TO CAUSE EXCESSIVE EROSION, SILTATION OR TURBIDITY, DURING STORMS EVERY EFFORT SHALL BE TAKEN TO SECURE THE WORK SITE.
8. ALL TEMPORARY FILL, SUCH AS THAT USED FOR PERMITTED ACCESS ROADS AND/OR COFFERDAMS, SHALL BE PROPERLY STABILIZED DURING USE TO PREVENT EROSION, AND, WHEN NO LONGER NEEDED, MUST BE DISPOSED OF AT AN UPLAND SITE, AND SUITABLY CONTAINED TO PREVENT TURBID RUNOFF FROM REENTERING A WETLAND OR WATERCOURSE. ALL AREAS AFFECTED BY TEMPORARY FILLS MUST BE RESTORED TO THEIR ORIGINAL CONTOURS, AND REVEGETATED WITH SUITABLE VEGETATION. THE AREA EXTENT OF TEMPORARY FILL OR EXCAVATION SHALL BE MINIMIZED TO THAT AREA NECESSARY TO PERFORM THE REQUIRED WORK.
9. DUMPING OF OIL OR OTHER DELETERIOUS MATERIALS ON THE GROUND IS FORBIDDEN. THE APPLICANT SHALL PROVIDE A MEANS OF CATCHING, RETAINING, AND PROPERLY DISPOSING OF DRAINED OIL, REMOVED OIL FILTERS, OR OTHER DELETERIOUS MATERIAL. ALL OIL SPILLS SHALL BE REPORTED IMMEDIATELY TO THE DEP/HAZARDOUS MATERIALS OFFICE AT (860) 424-3338 OR (860) 424-3023. FAILURE TO DO SO MAY RESULT IN THE IMPOSITION OF A FINE UNDER SECTION 22A-450 OF THE CONNECTICUT GENERAL STATUTES. SPILL KITS INCLUSIVE OF EXTRA ABSORBENT BOOMS MUST BE PROVIDED ON SITE.
10. EVERY PRECAUTION SHALL BE USED WHILE WORKING IN THE VICINITY OF A WATERWAY TO PREVENT AND MINIMIZE DEGRADATIONS OF THE EXISTING WATER QUALITY. ALL ACTIVITIES SHALL CONFORM AND BE AT ALL TIMES CONSISTENT WITH APPLICABLE WATER QUALITY STANDARDS, AND MANAGEMENT PRACTICES OF THE FEDERAL CLEAN WATER ACT (1972), CONNECTICUT'S WATER QUALITY STANDARDS AND OTHER APPLICABLE STATE LAWS.
11. ALL EQUIPMENT BEING USED IN OR AROUND THE WATER SHALL BE FREE OF LEAKS INCLUDING BUT NOT LIMITED TO OIL, HYDRAULIC FLUIDS, RADIATOR FLUIDS, GREASE, AND FUEL. ALL EQUIPMENT TO BE USED IN THE WATER SHALL BE APPROVED BY THE ENGINEER. THE ENGINEER HAS THE AUTHORITY TO ORDER THE CONTRACTOR TO REMOVE ANY EQUIPMENT FROM THE WATER THAT THE ENGINEER FEELS IS DETRIMENTAL TO THE ENVIRONMENT.
12. SHOULD ANY EQUIPMENT BREAKDOWN IN THE WATER, THE CONTRACTOR SHALL HAVE A PLAN TO IMMEDIATELY REMOVE THE EQUIPMENT.

EMERGENCY OPERATION / FLOOD CONTINGENCY PLAN DURING CONSTRUCTION

1. THIS EMERGENCY OPERATION PLAN IS DESIGNED TO PROVIDE THE CONTRACTOR GUIDELINES DURING A FLOOD OR A THREATENING FLOOD PERIOD IN ORDER TO PROTECT THE SURROUNDING COMMUNITY.
2. THE CONTRACTOR SHALL MONITOR THE WEATHER FORECASTS AND PLAN CONSTRUCTION ACCORDINGLY.
3. IF THE WEATHER FORECASTS SHOULD INDICATE THE POSSIBILITY OF A MAJOR STORM SYSTEM WITHIN 24 TO 48 HOURS, THE CONTRACTOR SHOULD PLAN FOR THE POSSIBILITY OF HIGH WATER LEVELS AT THE SITE. ALSO, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND OWNER.
4. IF A SIGNIFICANT RAINFALL OCCURS, THE CONTRACTOR SHOULD CONTACT THE CLIENT, MAINTAIN SURVEILLANCE OF THE SITE.
5. IF THE WATER LEVELS ON SITE RISE TO POTENTIALLY UNSAFE LEVELS, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT, CONSTRUCTION MATERIALS (I.E. FUELS, SOLVENTS, HYDRAULIC FLUIDS, EXPLOSIVES, ETC.) AND STOCKPILES FROM THE FLOODPLAIN AND ALERT THE APPROPRIATE PROJECT PERSONNEL AND LOCAL AUTHORITIES OF A POTENTIAL EMERGENCY.
6. THE CONTRACTOR SHALL MAINTAIN SUFFICIENT EQUIPMENT AND MANPOWER AT THE SITES IN ORDER TO REACT TO A FLOODING EMERGENCY.
7. COMPENSATION: IN CASE OF EMERGENCY, AS DETERMINED BY THE ENGINEER OR OWNER, THE CONTRACTOR SHALL BE COMPENSATED FOR THE EXTRA WORK BY MEANS OF A CHANGE ORDER PER CONTRACT CONDITIONS.
8. ALL STEPS MUST BE FOLLOWED TO QUALIFY THE CONTRACTOR FOR COMPENSATION AND THE FLOOD EVENT MUST BE IN EXCESS OF WHAT IS TYPICALLY ANTICIPATED DURING THE CONSTRUCTION PERIOD BASED ON A REVIEW OF HISTORIC FLOW GAGE DATA.

DEMOLITION

1. CONTRACTOR WILL HAVE PREVIOUSLY INSTALLED SOIL EROSION AND SEDIMENTATION CONTROL MEASURES, REMOVED SEDIMENT AND ANY MATERIAL FROM BOTH SIDES OF THE DAM STRUCTURE, INSTALLED ACCESS ROAD, AND DE-WATERED CONSTRUCTION AREA AS NECESSARY..
2. CONTRACTOR SHALL EXCAVATE, REMOVE, AND DISPOSE OF EXISTING DAM STRUCTURES INCLUDING BUT NOT LIMITED TO CONCRETE STRUCTURES, REINFORCEMENT, GROUTED RIPRAP, RETAINING WALLS AND ANY REMAINS OF A HISTORIC DAM THAT MAY EXIST IMMEDIATELY UPSTREAM OR BENEATH THE EXISTING DAM.
3. THE TOTAL VERTICAL SECTION OF THE DAM SHALL BE REMOVED USING CONVENTIONAL DEMOLITION TOOLS. SAWCUTTING TOOLS SHALL BE USED AS NECESSARY.
4. ALL NON-CONCRETE STRUCTURE ASSOCIATED WITH THE DAM AND THE DAM FRAGMENTS SHALL BE REMOVED AND DISPOSED OF OFF SITE.
5. MEASUREMENT AND PAYMENT FOR DEMOLITION WILL BE AT A CONTRACT LUMP SUM AND SHALL INCLUDE THE REMOVAL AND DISPOSAL OF ALL DEBRIS INCLUDING CONCRETE STRUCTURES, REINFORCING, AND STONE MASONRY.
6. IN THE EVENT OF DAMAGE TO THE EXISTING ADJACENT RETAINING WALLS TO REMAIN DURING DAM REMOVAL; THE DAMAGED SURFACES WILL BE PROPERLY SCARIFIED FOR CONCRETE PLACEMENT; PRIOR TO CONCRETE PLACEMENT A BONDING AGENT WILL BE USED TO ENSURE PROPER BONDING OF THE TWO SURFACES. CONCRETE REPAIRS TO EXISTING/REMAINING STRUCTURE (CRACKS) WILL BE PREPARED BY SCORING THE EXISTING CRACK WITH A V NOTCH GRINDER DISC (1/2" WIDTH); FILLED WITH EPOXY AND FINALLY PARGED (MORTAR).

NOTES FROM LOCAL REGULATORY AGENCY

1. INSTALLATION OF SOIL EROSION AND SEDIMENTATION CONTROL AND STABILIZATION MEASURES SHALL BE THE PERMITTEE'S RESPONSIBILITY, ONCE INSTALLED, THESE MEASURES SHALL BE INSPECTED BY THE ENVIRONMENTAL PLANNER PRIOR TO LAND DISTURBANCE ACTIVITIES. AFTERWARDS IT THEN SHALL BE THE PERMITTEE'S RESPONSIBILITY TO INSPECT THESE CONTROL MEASURES DURING, IMMEDIATELY FOLLOWING, SUBSTANTIAL STORM EVENTS AND MAINTAIN AND/OR REPLACE THE CONTROL MEASURES, WHEN NEEDED, ON A REGULAR BASIS UNTIL THE SITE IS VEGETATIVELY STABILIZED. HAY BALES SHALL BE REPLACED EVERY 60 DAYS. THE ENVIRONMENTAL PLANNER IS HEREBY AUTHORIZED TO REQUIRE ADDITIONAL SOIL EROSION AND SEDIMENT CONTROLS AND STABILIZATION MEASURES TO ADDRESS SITUATIONS THAT ARISE ON SITE.
2. THE PERMITTEE SHALL BE FULLY RESPONSIBLE FOR DAMAGES CAUSED BY ALL ACTIVITIES UNDERTAKEN PURSUANT TO THIS PERMIT THAT MAY HAVE A DETRIMENTAL EFFECT ON WETLANDS AND/OR WATERCOURSES, AND ALL SUCH ACTIVITIES THAT CAUSE EROSION AND SEDIMENTATION PROBLEMS.
3. APPROPRIATE CONTINGENCY MEASURES (E.G. CEASE WORK AND TEMPORARILY PROTECT VULNERABLE, EXPOSED SOIL AREAS ALONG THE BROOK, ESPECIALLY THE LOWER ELEVATIONS SUBJECT TO EROSION FROM THE ELEVATED BROOK FLOWS) SHALL BE TAKEN FOR FORECASTED RAINSTORM EVENTS OF TWO (2) INCHES OR GREATER IN ADVANCE OF SUCH EVENTS.
4. THESE ASSIGNED CONDITIONS OF APPROVAL SHALL BE BOLDLY NOTED NO ALL SUBSEQUENT REVISED SITE PLANS, INCLUDING, BUT NOT LIMITED TO, THE CONSTRUCTION PLANS DEVISED FOR BIDDING PURPOSES.

SILT FENCE NOTES (REFER TO SHEET 8 DETAIL F):
AS REFERENCED FROM "2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL" SECTION 5-11-35

TRENCH EXCAVATION:
EXCAVATE A TRENCH A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE ON THE UP SLOPE SIDE OF THE FENCE LOCATION. FOR SLOPE AND SWALE INSTALLATIONS, EXTEND THE ENDS OF THE TRENCH SUFFICIENTLY UP SLOPE SUCH THAT BOTTOM END OF THE FENCE WILL BE HIGHER THAN THE TOP OF THE LOWEST PORTION OF THE FENCE. WHEN THE FENCE IS NOT TO BE INSTALLED ON THE CONTOUR, EXCAVATE WING TRENCHES SPACED AT THE INTERVALS GIVEN IN FIGURE GSF-2.

WHEN TRENCH EXCAVATION IS OBSTRUCTED BY AN OCCASIONAL STONE OR TREE ROOT, PROVIDE A SMOOTH TRANSITION BETWEEN THE TRENCH BOTTOM AND THE OBSTRUCTION.

SUPPORT POSTS:
DRIVE SUPPORT POSTS ON THE DOWN SLOPE SIDE OF THE TRENCH TO A DEPTH OF AT LEAST 12 INCHES INTO ORIGINAL GROUND. NEVER INSTALL SUPPORT POSTS MORE THAN 10 FEET APART, INSTALL SUPPORT POSTS CLOSER THAN 10 FEET APART WHEN CONCENTRATED FLOWS ARE ANTICIPATED OR WHEN STEEP CONTRIBUTING SLOPES AND SOIL CONDITIONS ARE EXPECTED TO GENERATE LARGER VOLUMES OF SEDIMENT. FOR CATCH BASINS IN HOLLOWS, DRIVE POSTS AT EACH CORNER OF THE CATCH BASIN. WHENEVER THE GEOTEXTILE FILTER FABRIC THAT IS USED EXCEEDS THE MINIMUM MATERIAL SPECIFICATIONS CONTAINED IN THIS MEASURE, THE SPACING OF THE STAKES SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.

GEOTEXTILE FILTER FABRIC:
STAPLE OR SECURE THE GEOTEXTILE TO THE SUPPORT POSTS PER MANUFACTURER'S INSTRUCTION SUCH THAT AT LEAST 6 INCHES OF GEOTEXTILE LIES WITHIN THE TRENCH, THE HEIGHT OF THE FENCE DOES NOT EXCEED 30 INCHES2 AND THE GEOTEXTILE IS TAUT BETWEEN
THE POSTS. WHEN THE TRENCH IS OBSTRUCTED BY STONES, TREE ROOTS, ETC, ALLOW THE GEOTEXTILE TO LAY OVER THE OBSTRUCTION SUCH THAT THE BOTTOM OF THE GEOTEXTILE POINTS UP SLOPE.

IN THE ABSENCE OF MANUFACTURER'S INSTRUCTIONS, SPACE WIRE STAPLES ON WOODEN STAKES AT A MAXIMUM OF 4 INCHES APART AND ALTERNATE THEIR POSITION FROM PARALLEL TO THE AXIS OF THE STAKE TO PERPENDICULAR. DO NOT STAPLE THE GEOTEXTILE TO LIVING TREES. PROVIDE REINFORCEMENT FOR THE FENCE WHEN IT CAN BE EXPOSED TO HIGH WINDS, WHEN JOINTS IN THE GEOTEXTILE FABRIC ARE NECESSARY, SPLICE TOGETHER ONLY AT A SUPPORT POSTS, AND SECURELY SEAL (SEE MANUFACTURER'S RECOMMENDATIONS).

BACKFILL & COMPACTION:
BACKFILL THE TRENCH WITH TAMPED SOIL OR AGGREGATE OVER THE GEOTEXTILE (SEE FIGURE GSF-3). WHEN THE TRENCH IS OBSTRUCTED BY A STONE, TREE ROOT, ETC. MAKE SURE THE BOTTOM OF THE GEOTEXTILE LIES HORIZONTAL ON THE GROUND WITH THE RESULTING FLAP ON THE UP SLOPE SIDE OF THE GEOTEXTILE AND BURY THE FLAP 6 INCHES OF TAMPED SOIL, OR AGGREGATE.

CONSTRUCTION ACCESS ROAD NOTES (REFER TO SHEET 8 DETAIL I):
AS REFERENCED FROM "2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL" SECTION 4-9

CONSTRUCTION ACCESS ROADS ARE UNPAVED ROADWAYS CONSISTING OF A TRAVEL SURFACE AND ASSOCIATED SIDE SLOPES. DURING WET WEATHER SUCH ROADWAYS CAN GENERATE SIGNIFICANT QUANTITIES OF SEDIMENT IF NOT CONSTRUCTED WITH ADEQUATE EROSION AND SEDIMENT CONTROL MEASURES.

WHERE POSSIBLE, THESE CONSTRUCTION ACCESS ROADS SHOULD CONFORM TO THE CONTOURS OF THE LAND, AVOIDING GRADES STEEPER THAN 10% AND CREATING SIDE SLOPES NO STEEPER THAN 2:1. IF THE SIDE SLOPES ARE STEEPER THAN 2:1, THEN USE ENGINEERED SLOPE STABILIZATION METHODS

INSPECTION OF THE CONSTRUCTION ACCESS ROAD AND THE ASSOCIATED EROSION AND SEDIMENT CONTROL SHOULD OCCUR AT THE END OF EACH DAY THE ROAD IS USED AND REPAIRS TO CONTROLS MADE IMMEDIATELY. IF THE ROAD IS NOT USED FOR MORE THAN A WEEK, THEN INSPECT THE EROSION AND SEDIMENT CONTROLS AT A FREQUENCY AS REQUIRED BY THE E&S MEASURE USED. REPAIRS MAY INCLUDE REGRADING OR TOP DRESSING THE TRAVELED SURFACE WITH ADDITIONAL AGGREGATE TO ELIMINATE RUTS, AS WELL AS THOSE REPAIRS REQUIRED BY EACH E&S MEASURE USED.

CONSTRUCTION ENTRANCE NOTES (REFER TO SHEET 8 DETAIL E):
AS REFERENCED FROM "2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL" SECTION 5-12-2

1. LOCATION:
LOCATE THE ENTRANCE TO PROVIDE MAXIMUM UTILIZATION BY CONSTRUCTION VEHICLES. AVOID POORLY DRAINED SOILS, WHERE POSSIBLE.
2. CONSTRUCTION ENTRANCE DIMENSIONS (SEE FIGURE CE-2):
STONE THICKNESS: NOT LESS THAN 6 INCHES.
WIDTH: A 12-FOOT MINIMUM WITH POINTS OF INGRESS OR EGRESS FLARED SUFFICIENTLY TO ACCOMMODATE THE TURNING RADIUS OF THE CONSTRUCTION VEHICLES USED.
LENGTH: A 50-FOOT MINIMUM EXCEPT WHERE THE TRACKED SEDIMENTS CONTAIN LESS THAN 80% SAND, A 100-FOOT MINIMUM IS REQUIRED. IF THE TRAVELED LENGTH IS LESS THAN THE MINIMUM, THEN THE CONSTRUCTION ENTRANCE SHALL BE THE TRAVELED LENGTH. ON A SITE SPECIFIC BASIS INCREASE LENGTHS AS NEEDED TO PREVENT THE TRACKING OF SEDIMENT ONTO PAVED SURFACES.
3. CONSTRUCTION:
CLEAR THE AREA OF THE ENTRANCE OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL. AT POORLY DRAINED LOCATIONS INSTALL SUBSURFACE DRAINAGE ENSURING THE OUTLET TO THE DRAINS ARE FREE FLOWING.

IF USING A GEOTEXTILE IN PLACE OF FREE DRAINING MATERIAL, UNROLL THE GEOTEXTILE IN A DIRECTION PARALLEL TO THE ROADWAY CENTERLINE IN A LOOSE MANNER PERMITTING IT TO CONFORM TO THE SURFACE IRREGULARITIES WHEN THE STONE IS PLACED. UNLESS OTHERWISE SPECIFIED BY THE MANUFACTURER, THE MINIMUM OVERLAP OF GEOTEXTILE PANELS JOINED WITHOUT SEWING ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. THE GEOTEXTILE MAY BE TEMPORARILY SECURED WITH PINS RECOMMENDED OR PROVIDED BY THE MANUFACTURER BUT THEY SHALL BE REMOVED PRIOR TO PLACEMENT OF THE STONE.

PLACE THE STONE TO THE SPECIFIED DIMENSIONS. KEEP ADDITIONAL STONE AVAILABLE OR STOCKPILE FOR FUTURE USE. IF THE GRADE OF THE CONSTRUCTION ENTRANCE DRAINS TO THE PAVED SURFACE AND IT EXCEEDS 2%, CONSTRUCT A WATER BAR WITHIN THE CONSTRUCTION ENTRANCE AT LEAST 15 FEET FROM ITS ENTRANCE ON THE PAVED SURFACE DIVERTING RUNOFF WATER TO A SETTLING OR FILTERING AREA.

CONSTRUCT ANY DRAINAGE AND SETTLING FACILITIES NEEDED FOR WASHING OPERATIONS. IF WASH RACKS ARE USED, INSTALL ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.

4. WASHING:
IF MOST OF THE SEDIMENT IS NOT REMOVED BY TRAVEL OVER THE STONE, WASH TIRES BEFORE VEHICLES ENTER A PUBLIC ROAD. DIVERT WASH WATER AWAY FROM THE ENTRANCE TO A SETTLING AREA TO REMOVE SEDIMENT. SIZE SETTLING AREA TO HOLD THE VOLUME OF WATER USED DURING ANY 2-HOUR PERIOD, USING A WASH RACK MAY MAKE WASHING MORE CONVENIENT AND EFFECTIVE.

MAINTENANCE:
MAINTAIN THE ENTRANCE IN A CONDITION WHICH WILL PREVENT TRACKING AND WASHING OF SEDIMENT ONTO PAVED SURFACES. PROVIDE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND. REPAIR ANY MEASURES USED TO TRAP SEDIMENT AS NEEDED. IMMEDIATELY REMOVE ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PAVED SURFACES. ROADS ADJACENT TO A CONSTRUCTION SITE SHALL BE LEFT CLEAN AT THE END OF EACH DAY. IF THE CONSTRUCTION ENTRANCE IS BEING PROPERLY MAINTAINED AND THE ACTION OF A VEHICLE TRAVELING OVER THE STONE PAD IS NOT SUFFICIENT TO REMOVE THE MAJORITY OF THE SEDIMENT, THEN EITHER
(1) INCREASE THE LENGTH OF THE CONSTRUCTION ENTRANCE,
(2) MODIFY THE CONSTRUCTION ACCESS ROAD SURFACE, OR
(3) INSTALL WASHING RACKS AND ASSOCIATED SETTLING AREA OR SIMILAR DEVICES BEFORE THE VEHICLE ENTERS A PAVED SURFACE.

TEMPORARY CULVERT FOR STREAM CROSSING: (REFER TO SHEET 8 DETAIL C)
AS REFERENCED FROM "2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL" SECTION 5-6-29

CULVERT SIZE:
THREE (3) ONE (1) FOOT DIAMETER PIPES SHALL BE USED.

CULVERT LENGTH:
IN NO CASE SHALL THE CULVERT EXCEED 40 FEET IN LENGTH. IF THE CROSSING APPROACH GRADES REQUIRE EXTENSIVE FILLS THEN CONSIDER USING A BRIDGE RATHER THAN A CULVERT FOR THE CROSSING STRUCTURE.

CULVERT SLOPE:
THE SLOPE OF THE CULVERT SHALL MATCH THE EXISTING CHANNEL BOTTOM SLOPE.

CULVERT BACKFILL:
CULVERT BACKFILL REQUIRES THE USE OF WELL GRADED, FREE DRAINING GRAVEL OR CRUSHED STONE TO FORM THE CROSSING AND A GEOTEXTILE. IF NECESSARY, SPECIFICALLY INTENDED FOR ROAD STABILIZATION BETWEEN THE FILL AND THE NATIVE SOIL. PROVIDE SPECIFICATIONS FOR THE GEOTEXTILE SUCH THAT IT CAN ADEQUATELY DISTRIBUTE LOADS, RETAIN FINES AND PROVIDE SEPARATION BETWEEN THE BACKFILL AND THE NATIVE SOIL. SEE CONSTRUCTION ENTRANCE MEASURE FOR REQUIRED PHYSICAL QUALITIES OF THE GEOTEXTILE. THE DEPTH OF COVER OVER THE CULVERT SHALL BE A MINIMUM OF 24 INCHES AND MAY BE INCREASED IF ANTICIPATED LOADS REQUIRE DESIGNED FILL DEPTHS TO BE GREATER. FOR CULVERT(S) ON A TEMPORARY STREAM CROSSING EXPECTED TO BE USED IN EXCESS OF 14 DAYS, THE BACKFILL SHALL BE PROTECTED FROM EROSION WITH RIPRAP DESIGNED IN ACCORDANCE WITH THE RIPRAP MEASURE.

INSTALLATION REQUIREMENTS
CHECK WEATHER FORECASTS TO INSURE A STORM IS NOT PREDICTED DURING THE TIME OF CONSTRUCTION. DELAY CONSTRUCTION UNTIL AFTER THE THREAT OF RAINFALL HAS PASSED.

1. KEEP CLEARING AND EXCAVATION OF THE STREAM BED AND BANKS TO A MINIMUM.
2. WHEN A GEOTEXTILE IS TO BE USED, PLACE IT ON THE STREAM BED AND STREAM BANKS PRIOR TO PLACEMENT OF THE PIPE CULVERT(S) AND FILL. COVER THE GEOTEXTILE IN THE STREAM BED AND EXTEND A MINIMUM OF SIX INCHES AND A MAXIMUM OF ONE FOOT BEYOND THE END OF THE CULVERT AND BEDDING MATERIAL
3. INSTALL THE CULVERT ON THE NATURAL STREAM BED.
4. EXTEND THE CULVERT(S) A MINIMUM OF ONE FOOT BEYOND THE UPSTREAM AND DOWNSTREAM TOE OF THE BACKFILL PLACED AROUND THE CULVERT.
5. COVER THE CULVERT(S) WITH A MINIMUM OF 24 INCHES OF BACKFILL. IF MULTIPLE CULVERTS ARE USED, SEPARATE THEM BY AT LEAST 12 INCHES OF COMPACTED FILL.

MAINTENANCE
INSPECT AND PERFORM ANY REPAIR WORK AT THE END OF EACH DAY THAT THE TEMPORARY STREAM CROSSING AND APPROACHES ARE EXPOSED TO VEHICULAR TRAFFIC. WHEN THE CROSSING IS NOT USED FOR A WEEK OR MORE, INSPECT AT LEAST ONCE A WEEK AND WITHIN 24 HOURS AFTER ANY RAINFALL GREATER THAN 0.5 INCH. CHECK FOR WASHOUTS AT CULVERTS, CROSSING APPROACHES AND FAILING ASSOCIATED CONTROLS. IMMEDIATELY REPAIR ALL DAMAGE. WHERE STRUCTURAL DAMAGE OR REPEATED WASHOUTS OF THE TEMPORARY STREAM CROSSING OCCUR, AN ENGINEERING REVIEW IS REQUIRED TO DETERMINE THE CAUSE OF THE FAILURES AND ADJUSTMENTS MADE TO THE STRUCTURE OR EROSION AND SEDIMENT CONTROLS AS NEEDED TO PREVENT FUTURE FAILURES.

WHEN THE TEMPORARY STREAM CROSSING IS NO LONGER NEEDED, IMMEDIATELY REMOVE ALL STRUCTURES. ASSOCIATED FILL MATERIALS AND GEOTEXTILES KEEPING IN-STREAM WORK TO A MINIMUM. UPON REMOVAL OF THE STRUCTURE, IMMEDIATELY SHAPE THE STREAM TO ITS ORIGINAL CROSS-SECTION, PROTECT THE BANKS FROM EROSION, AND REMOVE OF ALL CONSTRUCTION MATERIALS AND APPLY SOIL PROTECTION MEASURES TO UNSTABLE SOILS.

TREE PROTECTION NOTES (REFER TO SHEET 8 DETAIL D):
AS REFERENCED FROM "2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL" SECTION 5-1-2

THE TREE PROTECTION ZONE (TPZ) IS DEFINED AS A CIRCULAR AREA SURROUNDING A TREE OR GROUP OF TREES WITH A DIAMETER TWENTY TIMES THE DBH (DIAMETER OF THE TRUNK OF THE TREE MEASURED AT 4.5 FEET ABOVE THE GROUND), WHERE GROUPS OF TREES OR FORESTED AREAS REQUIRE DELINEATION OF THE TPZ, TREES WITHIN 20 FEET OF THE EDGE OF THE GROUP OR FOREST THAT HAVE A LARGER DBH THAN THE OUTERMOST TREES SHOULD BE NOTED TO PROPERLY ESTABLISH THE TPZ. THE TPZ ENCOMPASSES AND CREATES A BUFFER TO THE CRITICAL ROOT ZONE.

THE CRITICAL ROOT ZONE (CRZ) IS DEFINED AS A CYLINDRICAL AREA, WITH A DIAMETER TEN TIMES THE DBH, INCLUDING THE SOIL WITHIN THIS AREA TO A DEPTH OF TWO TO THREE FEET.
(SEE FIGURE TP-1 FOR EXAMPLE CALCULATING CRZ). WHERE TREE ROOTS ARE SEVERELY CROWDED BY SIDEWALKS, PAVED SURFACES, OR BUILDINGS, AND RESTRICTED BY LINEAR STRIPS
BETWEEN SIDEWALKS AND ROADS, THE CRZ SHOULD BE EXTENDED TO ENCOMPASS THE TREE PROTECTION ZONE WHERE THERE ARE ROOTS PRESENT. ALL TPZS SHOULD BE DELINEATED ON THE GRADING DRAWINGS. WHEN A SIGNIFICANT PORTION OF THE TPZ OR ANY PORTION
OF THE CRZ MUST BE IMPACTED, OBTAIN GUIDANCE FROM AN ARBORIST LICENSED TO PRACTICE IN CONNECTICUT. DISTURBANCE WITHIN THE CRZ CAN SERIOUSLY THREATEN TREE
SURVIVAL, THE ARBORIST SHOULD PROVIDE SPECIFIC GUIDANCE ON WHETHER TO KEEP OR REMOVE THE TREE, INCLUDING MEASURES TO MAINTAIN TREE HEALTH AND SAFETY. THESE MEASURES MAY INCLUDE CLEAN CUTTING OF ROOTS EXPOSED BY EXCAVATION, MAINTAINING GRADES AND MULCH, ENSURING PROPER AERATION AND DRAINAGE, CONSTRUCTION OF TREE WELLS AND TREE WALLS , PRUNING, MECHANICAL PROTECTION OF THE TREE TRUNK AND THE POSSIBILITY OF TUNNELING UNDER THE CRZ1.

WHEN GRADES MUST BE CHANGED OR TRENCHING IS TO OCCUR EITHER WITHIN THE TREE PROTECTION ZONE OR THE CRITICAL ROOT ZONE, THE UNDISTURBED PORTION OF THE CRITICAL ROOT ZONE MUST BE PROTECTED BY A FENCE.

CALL BEFORE YOU DIG!
CONNECTICUT LAW REQUIRES
2 FULL WORKING DAYS NOTICE
PRIOR TO CONSTRUCTION - STOP CALL
CALL BEFORE YOU DIG, INC.
REFERENCE CONNECTICUT SECTION 1;
SECTION 16-345-1 THROUGH 16-345-7
1-800-922-4455

PROJECT NOTES

1. HORIZONTAL DATUM IS CONNECTICUT STATE PLANE NAD83, FEET. VERTICAL DATUM BASED ON NAVD88, FEET.
2. SURVEY OBTAINED FROM "IMPROVEMENT LOCATION PLAN DEPICTING LAND OF TOWN OF GLASTONBURY "SLOCOMB OPEN SPACE PARK"" DATED AUGUST 2019 PROVIDED BY TOWN OF GLASTONBURY.
3. WETLAND DELINEATION COMPLETED BY MARTIN BROGIE, INC. ON AUGUST 20, 2019.
4. ALL DRAWING SCALES ACCURATE WHEN PRINTED ON 24" BY 36" PAPER.

DATE	DESCRIPTION
06/12/2020	UPDATED IN RESPONSE TO COMMENTS FROM LOCAL REGULATORY AGENCY

REVISIONS

STATE OF CONNECTICUT CERTIFICATE OF REGISTRATION NO.: 0001188

LAURA A.S. WILDMAN
Professional Engineer
CT Lic. No. 18596
JUNE 12, 2020
DATE

PRINCETON HYDRO
SCIENCE ENGINEERING DESIGN
1108 OLD YORK RD, SUITE 1
RINGOES, NEW JERSEY 08551
PHONE: 908.237.5660
PRINCETONHYDRO.COM

PROJECT NAME/LOCATION:
SLOCOMB POND DAM REMOVAL
(CT DEEP ID #5425)
TOWN OF GLASTONBURY
HARTFORD COUNTY, CONNECTICUT

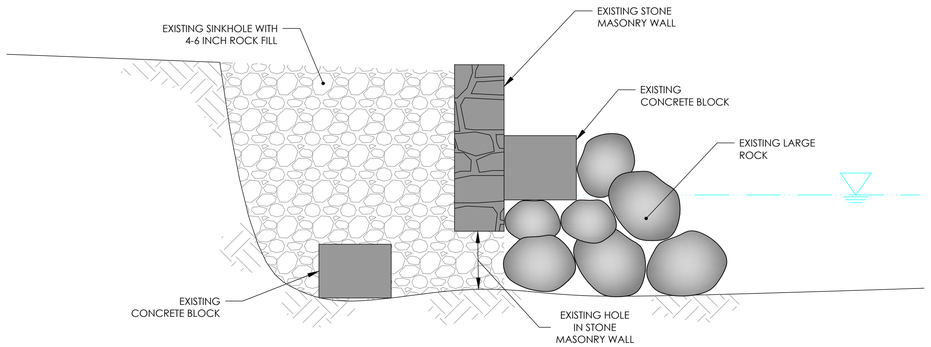
DRAWING NAME:
CONSTRUCTION NOTES

DATE:	06/12/2020
PROJECT NO.:	1036.042
SCALE:	AS SHOWN
DRAWN BY:	JD, ML
CHECKED BY:	LW, PW

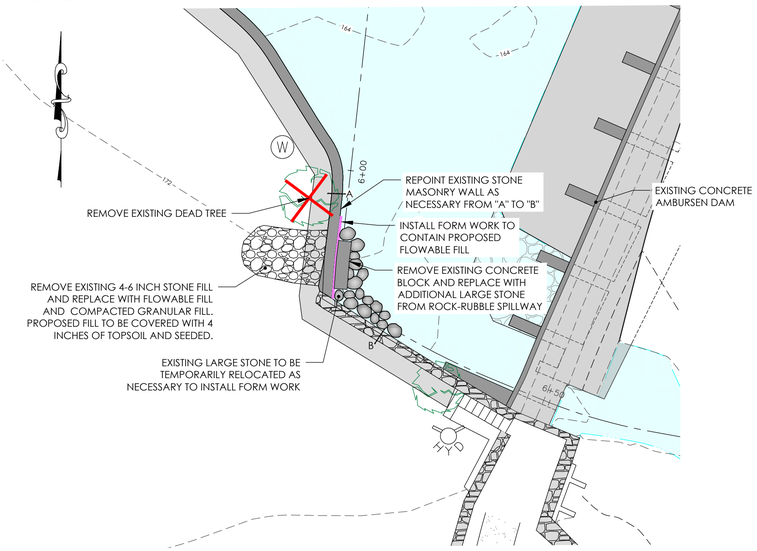
SHEET NO.
9 OF 10

K STONE MASONRY WALL REPAIR DETAIL
NOT TO SCALE

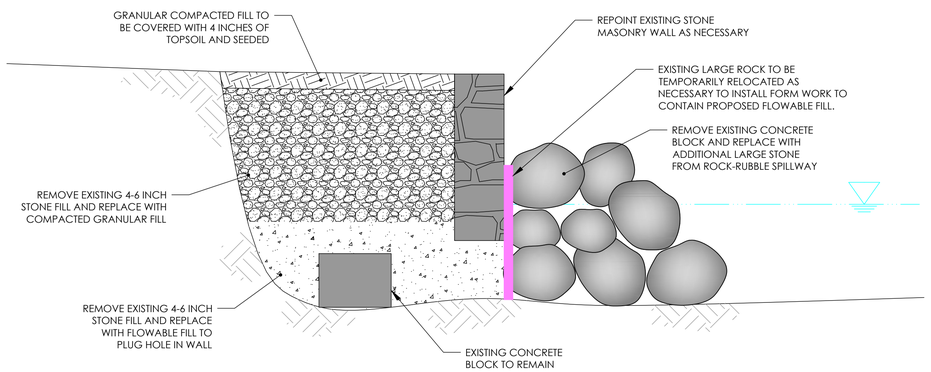
EXISTING CROSS SECTION VIEW



PLAN VIEW



PROPOSED CROSS SECTION VIEW



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HARTFORD COUNTY, CONNECTICUT

DRAWING NAME:

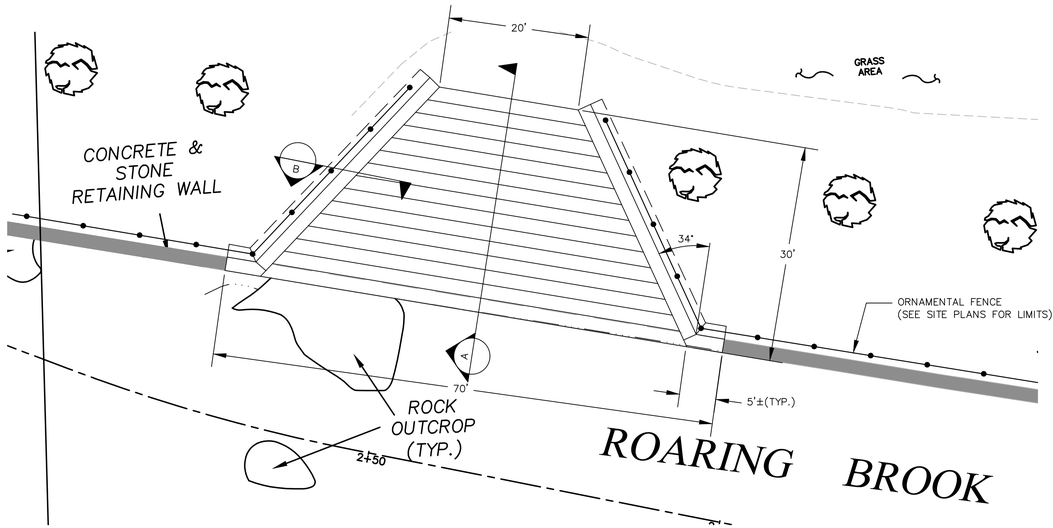
CONSTRUCTION DETAIL -
STONE MASONRY WALL REPAIR

DATE:	06/12/2020
PROJECT NO.:	1036.042
SCALE:	AS SHOWN
DRAWN BY:	JD, ML
CHECKED BY:	LW, PW

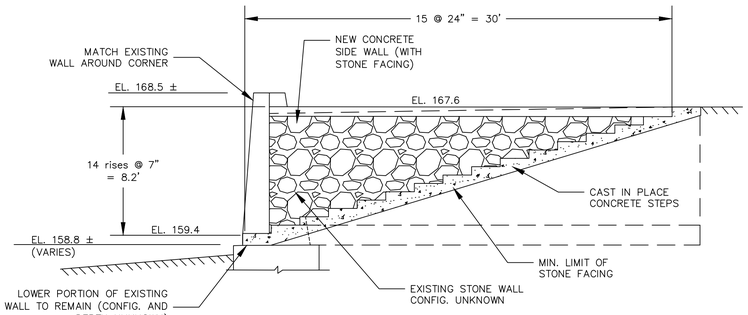
SHEET NO.

10 OF 10

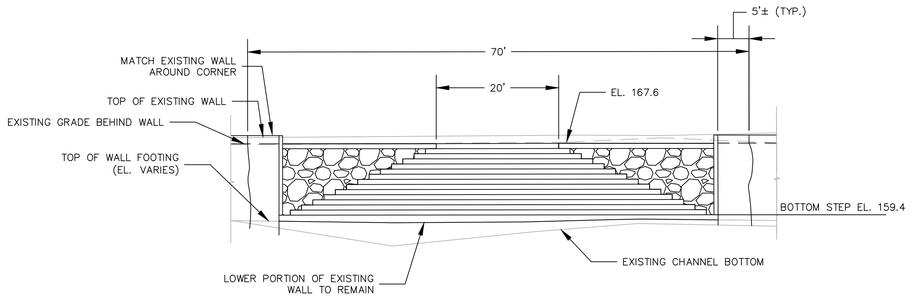
ATTACHMENT C2:
STAIRWAY CONSTRUCTION PLAN
BY FUSS & O'NEILL



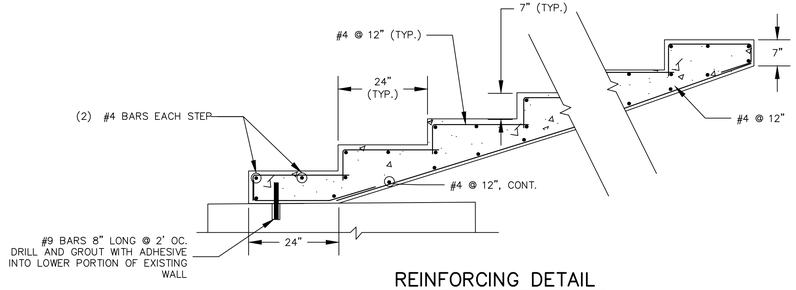
WALL PLAN
1"=10'



A STAIRS SECTION
1"=5'



ELEVATION
1"=10'



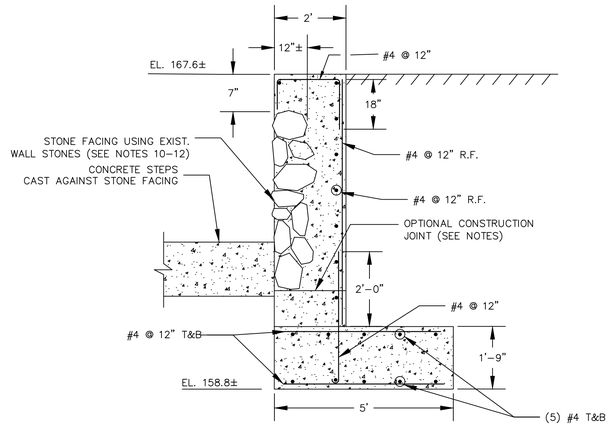
REINFORCING DETAIL
NOT TO SCALE

NOTES:

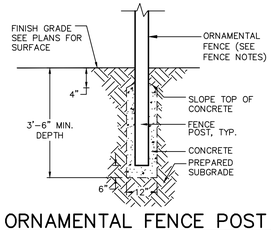
1. ALL CONCRETE WORK SHALL CONFORM TO ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS".
2. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60 AND BE DETAILED IN ACCORDANCE WITH ACI 315 "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES".
3. REBARS SHALL HAVE A MINIMUM CONCRETE COVER AS FOLLOWS:
   CONCRETE DEPOSITED AGAINST GROUND.....3 IN.
   CONCRETE EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
   FOR BARS #5 AND LARGER.....2 IN.
   FOR BARS SMALLER THAN #5.....1½ IN.
   CONCRETE NOT EXPOSED TO THE WEATHER OR THE GROUND:
   SLABS AND WALLS.....¾ IN.
4. ALL REINFORCING BARS SHALL BE CONTINUOUS AND LAPPED A MINIMUM OF 48 BAR DIAMETERS AT ALL SPLICES, CORNERS, AND INTERSECTIONS UNLESS NOTED OTHERWISE.
5. ALL REINFORCEMENT SHALL BE SECURELY TIED IN ITS PROPOSED LOCATION PRIOR TO AND DURING PLACEMENT OF CONCRETE USING APPROVED CHAIRS, SPACERS AND TIE WIRE AS REQUIRED. NO BARS SHALL BE CUT OR OMITTED IN THE FIELD WITHOUT THE APPROVAL OF THE ENGINEER.
6. CONCRETE FOR SHALL BE NORMAL WEIGHT CONCRETE AND SHALL DEVELOP A COMPRESSIVE STRENGTH OF **3,000** PSI IN 28 DAYS, UNLESS OTHERWISE NOTED. CONCRETE SHALL HAVE A MAXIMUM AGGREGATE SIZE OF ¾ INCH, A MINIMUM CEMENT CONTENT OF **560** LBS/CU YD., AND A MAXIMUM SLUMP OF **4** INCHES.
7. ALL EXPOSED EDGES OF CONCRETE SHALL HAVE A ¾ INCH CHAMFER UNLESS NOTED OTHERWISE.
8. ALL CONCRETE SHALL BE AIR–ENTRAINED.
9. HORIZONTAL CONSTRUCTION JOINTS ARE PERMITTED IN THE WALL STEMS AS SHOWN FOR THE PURPOSE OF PROVIDING A SHELF FOR THE STONE FACING.
10. IT IS ANTICIPATED THAT THE STONE FACING UTILIZING THE EXISTING WALL STONES WILL BE MORTARED IN PLACE PRIOR TO POURING THE STEM CONCRETE BEHIND THE FACING. THE REAR SIDE OF THE STONE FACING SHALL BE IRREGULAR TO PROMOTE INTEGRATION AND BONDING OF THE STEM CONCRETE WITH THE FACING.
11. THE MORTAR SHALL CONFORM TO THE REQUIREMENTS OF CTDOT FORM 817 SECTION M.11.04.
12. THE EXISTING WALL STONES USED FOR THE FACING SHALL BE CAREFULLY SELECTED TO PROVIDE A SIMILAR APPEARANCE TO THE EXISTING STONE WALLS ON THE SITE.

FENCE NOTES:

1. FENCING SYSTEM AND ALL COMPONENTS SHALL BE MONTAGE PLUS GENESIS ORNAMENTAL
2. STEEL PICKETS AS MANUFACTURED BY AMERISTAR FENCE PRODUCTS, INC.
3. FENCE PANELS SHALL BE 4' IN HEIGHT WITH A MAXIMUM SPAN OF 8'.
4. FENCE COLOR SHALL BE BLACK.
5. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO ORDERING.



B SIDE WALL SECTION
1/2"=1'



ORNAMENTAL FENCE POST FOOTINGS
NOT TO SCALE

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SEAL

SEAL

SCALE:
HORZ.: ?" = ??'
VERT.:
DATUM:
HORZ.:
VERT.:
?? ?? 0 ??
GRAPHIC SCALE

FUSS & O'NEILL
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.fando.com

PRINCETON HYDRO

SITE STAIR DETAILS

ROARING BROOK DAM REMOVAL

GLASTONBURY CONNECTICUT

PROJ. No.: 20190622.A20
DATE: 11/13/2019

STR-01

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Plotter: DWG TO PDF.PC3 CTB File: FO 2008 MONO.CTB
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MS VIEW: