TABLE OF CONTENTS OF SPECIAL PROVISIONS

Note: This Table of Contents has been prepared for the convenience of those using this contract with the sole express purpose of locating quickly the information contained herein; and no claims shall arise due to omissions, additions, deletions, etc., as this Table of Contents shall not be considered part of the contract.

Table of Contents

TABLE OF CONTENTS OF SPECIAL PROVISIONS 1
CONTRACT TIME AND LIQUIDATED DAMAGES 3
NOTICE TO CONTRACTOR - PRE-BID QUESTIONS AND ANSWERS 4
NOTICE TO CONTRACTOR - CONSTRUCTION CONTRACTOR 5
DIGITAL SUBMISSIONS 5
NOTICE TO CONTRACTOR - FEDERAL WAGE DETERMINATIONS 6
(Davis Bacon Act) 6
NOTICE TO CONTRACTOR - MINIMUM CONCRETE COMPRESSIVE 7
STRENGTH 7
NOTICE TO CONTRACTOR - ARCHITECTURAL AND INDUSTRIAL 8
MAINTENANCE COATINGS 8
NOTICE TO CONTRACTOR - HAZARDOUS MATERIALS 11
INVESTIGATIONS 11
NOTICE TO CONTRACTOR - ELECTRONIC ENGINEERING DATA 12
(EED) 12
NOTICE TO CONTRACTOR - GLOBAL POSITIONING SYSTEM (GPS) 13
COORDINATES FOR SIGNS 13
SECTION 1.02 - PROPOSAL REQUIREMENTS AND CONDITIONS 14
SECTION 1.05 - CONTROL OF THE WORK 15
SECTION 1.07 - LEGAL RELATIONS AND RESPONSIBILITIES 18
SECTION 1.08 - PROSECUTION AND PROGRESS 24
SECTION 2.86 - DRAINAGE TRENCH EXCAVATION, ROCK IN 25
DRAINAGE TRENCH EXCAVATION 25
SECTION 5.86 - CATCH BASINS, MANHOLES AND DROP INLETS 29
SECTION 6.86 - DRAINAGE PIPES, DRAINAGE PIPE ENDS 33
SECTION 12.00 - GENERAL CLAUSES FOR HIGHWAY SIGNING 37
ON-THE-JOB TRAINING (OJT) WORKFORCE DEVELOPMENT PILOT 39
D.B.E. SUBCONTRACTORS AND MATERIAL SUPPLIERS OR 43
MANUFACTURERS 43
ITEM #0101002A - CONFINED SPACE HEALTH AND SAFETY 55
ITEM #0204151A - HANDLING WATER 61
ITEM #0601073A - CLASS “S” CONCRETE 62
ITEM #0601948A - CRACK REPAIR 66
ITEM #0602936A - DRILLING AND GROUTING REINFORCING BARS 68
ITEM #0611002A - PRESSURE GROUTING 70
ITEM #0651649A - CURED-IN-PLACE PIPE LINING 73
ITEM #0913850A - HIGH VISIBILITY SAFETY FENCE 79
ITEM #0950016A - WETLAND GRASS ESTABLISHMENT 80
ITEM #0950040A - CONSERVATION SEEDING FOR SLOPES 83
ITEM #0952051A - CONTROL AND REMOVAL OF INVASIVE 85
VEGETATION 85
ITEM #0969062A - CONSTRUCTION FIELD OFFICE, MEDIUM 90
ITEM #0971001A - MAINTENANCE AND PROTECTION OF TRAFFIC 98
ITEM #1208931A - SIGN FACE - SHEET ALUMINUM (TYPE IX 118
RETROREFLECTIVE SHEETING) 118
PERMITS AND PERMIT APPLICATIONS 120
PERMITS AND/OR REQUIRED PROVISIONS 410

FEBRUARY 13, 2019
FEDERAL AID PROJECT NO. 0009(120)
STATE PROJECT NO. 60-158

REHABILITATION OF BRIDGE NO. 06728,
ROUTE 9 OVER POLE BRIDGE BROOK

Town of Haddam
Federal Aid Project No. 0009(120)

The State of Connecticut, Department of Transportation, Standard Specifications for Roads, Bridges, Facilities and Incidental Construction, Form 817, 2016, as revised by the Supplemental Specifications dated January 2018 (otherwise referred to collectively as "ConnDOT Form 817") is hereby made part of this contract, as modified by the Special Provisions contained herein. Form 817 is available at the following DOT website link http://www.ct.gov/dot/cwp/view.asp?a=3609&q=430362. The current edition of the State of Connecticut Department of Transportation's "Construction Contract Bidding and Award Manual" ("Manual"), is hereby made part of this contract. If the provisions of this Manual conflict with provisions of other Department documents (not including statutes or regulations), the provisions of the Manual will govern. The Manual is available at the following DOT website link http://www.ct.gov/dot/cwp/view.asp?a=2288&q=259258. The Special Provisions relate in particular to the REHABILITATION OF BRIDGE NO. 06728, ROUTE 9 OVER POLE BRIDGE BROOK in the Town of Haddam.

CONTRACT TIME AND LIQUIDATED DAMAGES

One Hundred Twenty Four (124) calendar days will be allowed for completion of the work on this Contract and the liquidated damages charge to apply will be One Thousand One Hundred Dollars ($1,100.00) per calendar day.

NOTICE TO CONTRACTOR - PRE-BID QUESTIONS AND ANSWERS

Questions pertaining to DOT advertised construction projects must be presented through the CTDOT Pre-Bid Q and A Website. The Department cannot guarantee that all questions will be answered prior to the bid date. **PLEASE NOTE - at 9:00 am Monday (i.e. typical Wednesday Bid Opening) the project(s) being bid will be closed for questions, at which time questions can no longer be submitted through the Q and A Website.**

Answers may be provided by the Department up to 12:00 noon, the day before the bid. At this time, the Q and A for those projects will be considered final, unless otherwise stated and/or the bid is postponed to a future date and time to allow for further questions and answers to be posted.

If a question needs to be asked the day before the bid date, please contact the Contracts Unit staff and email your question to dotcontracts@ct.gov immediately.

Contractors must identify their company name, contact person, contact email address and phone number when asking a question. The email address and phone number will not be made public.

The questions and answers (if any) located on the Q and A Website are hereby made part of the bid/contract solicitation documents (located on the State Contracting Portal), and resulting contract for the subject project(s). It is the bidder's responsibility to monitor, review, and become familiar with the questions and answers, as with all bid requirements and contract documents, prior to bidding. By signing the bid proposal and resulting contract, the bidder acknowledges receipt of, and agrees to the incorporation of the final list of Q and A, into the contract document.

Contractors will not be permitted to file a future claim based on lack of receipt, or knowledge of the questions and answers associated with a project. All bidding requirements and project information, including but not limited to contract plans, specifications, addenda, Q and A, Notice to Contractors, etc., are made public on the State Contracting Portal and/or the CTDOT website.

NOTICE TO CONTRACTOR - CONSTRUCTION CONTRACTOR DIGITAL SUBMISSIONS

Upon execution of the Contract, the Contractor acknowledges and agrees that contractual submittals for this Project shall be submitted and handled through a system of paperless electronic means as outlined in the special provision for Section 1.05 herein.

Shop drawings, working drawings, and product data shall be created, digitally signed and delivered by the Contractor in accordance with the Department's Contractor Digital Submission Manual (CDSM). Other deliverables that are required by other special provisions shall be similarly submitted.

Access credentials will be provided to the Contractor by the Department.

The Department will provide the Contractor with a list of email addresses that are to be used for each submittal type.

The Department shall not be held responsible for delays, lack of processing or response to submittals that do not follow the specified guidelines in the CDSM.

NOTICE TO CONTRACTOR - FEDERAL WAGE DETERMINATIONS (Davis Bacon Act)

The following Federal Wage Determinations are applicable to this Federal- Aid contract and are hereby incorporated by reference. During the bid advertisement period, it is the bidder's responsibility to obtain the latest Federal wage rates from the US Department of Labor website, as may be revised 10 days prior to bid opening. Any revisions posted 10 days prior to the bid opening shall be the wage determinations assigned to this contract.

Check Applicable WD# (DOT Use Only)	WD#	Construction Type	Counties
X	CT1	Highway	Fairfield, Litchfield, Middlesex, New Haven, Tolland, Windham
	CT2	Highway	New London
	CT3	Highway	Hartford
	CT5	Heavy Dredging (Hopper Dredging)	Fairfield, Middlesex, New Haven, New London
	CT6	Heavy Dredging	Statewide
	CT13	Heavy	Fairfield
	CT14	Heavy	Hartford
	CT15	Heavy	Middlesex, Tolland
	CT16	Heavy	New Haven
	CT17	Heavy	New London
	CT26	Heavy	Litchfield, Windham
	CT18	Building	Litchfield
	CT19	Building	Windham
	CT20	Building	Fairfield
	CT21	Building	Hartford
	CT22	Building	Middlesex
	CT23	Building	New Haven
	CT24	Building	New London
	CT25	Building	Tolland
	CT4	Residential	Litchfield, Windham
	CT7	Residential	Fairfield
	CT8	Residential	Hartford
	CT9	Residential	Middlesex
	CT10	Residential	New Haven
	CT11	Residential	New London
	CT12	Residential	Tolland

The Federal wage rates (Davis-Bacon Act) applicable to this Contract shall be the Federal wage rates that are current on the US Department of Labor website (http://www.wdol.gov/dba.aspx) as may be revised 10 days prior to bid opening. The Department will no longer physically include revised Federal wage rates in the bid documents or as part of addenda documents. These applicable Federal wage rates will be incorporated in the final contract document executed by both parties.

If a conflict exists between the Federal and State wage rates, the higher rate shall govern.

To obtain the latest Federal wage rates, go to the US Department of Labor website (link above). Under Davis-Bacon Act, choose "Selecting DBA WDs" and follow the instruction to search the latest wage rates for the State, County and Construction Type.

NOTICE TO CONTRACTOR - MINIMUM CONCRETE COMPRESSIVE STRENGTH

The concrete strength or allowable design stress specified in the General Notes is for design purposes only. The minimum compressive strength of concrete in constructed components shall comply with the requirements of Section 6.01 Concrete for Structures.

NOTICE TO CONTRACTOR - ARCHITECTURAL AND INDUSTRIAL MAINTENANCE COATINGS

This Contract includes the application of materials subject to the Volatile Organic Compounds (VOC) content limits stated in the Regulations of Connecticut State Agencies (RCSA) Sections 22a-174-41 and -41a. All architectural and industrial maintenance (AIM) coatings and applications of such coatings must comply with these regulations.

The Contractor shall submit a Material Safety Data Sheet/Safety Data Sheet or Product Technical Data Sheet developed by the manufacturer of each material that may be subject to the Regulations. The submittal must verify both the type of AIM and its VOC Content. VOC content shall be determined based on the formulation data supplied by the materials manufacturer.

The Contractor may only use AIM coatings that contain VOCs below the respective coating category Phase II limits specified in Table 1 if either:

a) the coating was manufactured on or after May 1, 2018, **or**
b) the coating is being applied after April 30, 2021.

The Contractor may use AIM coatings that contain VOCs exceeding the respective coating category Phase II limits specified in Table 1 only if all of the following four conditions are met:

a) the coating is being applied on or before April 30, 2021,
b) the coating contains VOCs below the applicable Phase I limits specified in Table 1,
c) the coating was manufactured prior to May 1, 2018, **and**
d) the coating container(s) are dated (or date coded) as such.

For any coating that is not categorized within Table 1, the Contractor shall classify the coating as follows and apply corresponding limits in Table 1.

- Registers gloss <15 on an 85-degree meter or <5 on a 60-degree meter) – Flat Coating,
- Registers gloss of ≥15 on an 85-degree meter and ≥5on a 60-degree meter) - Nonflat Coating,
- Registers gloss of ≥70 on a 60-degree meter - Nonflat-High Gloss Coating.

The Contractor must close all containers of coating and solvent when not in use.

Coating container labels must display the date the coating was manufactured, the manufacturer's recommendation regarding thinning with solvent, and the coating's VOC content in grams per liter (g/L) of coating. Certain coating categories as noted in Table 1 have additional labeling requirements.

The Contractor may add additional solvent to a coating only if such addition does not cause the coating to exceed the applicable VOC limit specified Table 1. The Contractor must adhere to type(s) of solvent and maximum amount of solvent recommended by coating manufacturer.

VOC content of a thinned coating shall be the VOC content as listed by the manufacturer after thinning in accordance with its recommendation.

TABLE 1		
Coating Category	**Phase I**	**Phase II**
	manufactured prior to May 1, 2018 VOC content limit (g/L)	**manufactured on or after May 1, 2018 VOC content limit (g/L)**
Aluminum roof coating	---[1]	450
Antenna coating	530	---[1]
Antifouling coating	400	---[1]
Basement specialty coating	---[1]	400
Bituminous roof coating	300	270
Bituminous roof primer	350	350
Bond breaker	350	350
Calcimine recoater	475	475
Clear wood coating - Clear brushing lacquer[2]	680	275
Clear wood coating - Lacquer[2,3]	550	275
Clear wood coating - Sanding sealer[2,4]	350	275
Clear wood coating - Varnish[2]	350	275
Concrete curing compound	350	350
Concrete or masonry sealer/ Waterproofing concrete or masonry sealer	400	100
Concrete surface retarder	780	780
Conjugated oil varnish	---[1]	450
Conversion varnish	725	725
Driveway sealer	---[1]	50
Dry fog coating	400	150
Faux finishing coating[2]	350	350
Fire resistive coating	350	350
Fire retardant coating - Clear	650	---[1]
Fire retardant coating - Opaque	350	---[1]
Flat coating	100	50
Floor coating	250	100
Flow coating	420	---[1]
Form-release compound	250	250
Graphic arts coating (sign paint)	500	500
High temperature coating	420	420
Impacted immersion coating	780	780
Industrial maintenance coating[2]	340	250
Industrial maintenance coating	340	250
Low solids coating	120	120
Magnesite cement coating	450	450

TABLE 1		
Coating Category	**Phase I**	**Phase II**
	manufactured prior to May 1, 2018 VOC content limit (g/L)	**manufactured on or after May 1, 2018 VOC content limit (g/L)**
Mastic texture coating	300	100
Metallic pigmented coating	500	500
Multi-color coating	250	250
Nonflat coating	150	100
Nonflat high gloss coating[2]	250	150
Nuclear coating	450	450
Pre-treatment wash primer	420	420
Primer, sealer and undercoater	200	100
Quick-dry enamel	250	---[1]
Quick-dry primer, sealer and undercoater	200	---[1]
Reactive penetrating carbonate stone sealer[2]	---[1]	500
Reactive penetrating sealer[2]	---[1]	350
Recycled coating	250	250
Roof coating	250	250
Rust preventive coating[2]	400	250
Shellac Clear	730	730
Shellac Opaque	550	550
Specialty primer, sealer and undercoater[2]	350	100
Stain	250	250
Stone consolidant[2]	---[1]	450
Swimming pool coating	340	340
Thermoplastic rubber coating and mastic	550	550
Traffic marking coating	150	100
Traffic marking coating	150	100
Tub and tile refinish	---[1]	420
Waterproofing membrane	---[1]	250
Waterproofing sealer	250	---[1]
Wood coating[2]	---[1]	275
Wood preservative	350	350
Zinc-rich primer[2]	---[1]	340

1 Classify as follows and apply corresponding limits in Table 1.

- Registers gloss <15 on an 85-degree meter or <5 on a 60-degree meter) – Flat Coating,
- Registers gloss of ≥15 on an 85-degree meter and ≥5on a 60-degree meter) – Nonflat Coating
- Registers gloss of ≥70 on a 60-degree meter – Nonflat-High Gloss Coating

2 Container must be appropriately labeled. See RCSA 22a-174-41a

3 "Clear Wood Coating – Lacquer" includes lacquer sanding sealer

4 "Clear Wood Coating - Sanding Sealer" does not include lacquer sanding sealer

-END-

NOTICE TO CONTRACTOR - HAZARDOUS MATERIALS INVESTIGATIONS

A limited hazardous materials site investigation has been conducted at Bridge No. 06728 (Culvert), Route 9 over Pole Bridge Brook in Haddam, Connecticut. The scope of inspection was limited to the representative components projected for impact.

There were no painted surfaces identified on the culvert, therefore no lead paint was identified.

All steel and metal generated from work tasks (painted or not) shall be segregated and recycled as scrap metal at a scrap metal recycling facility. The recycling of scrap metal (regardless of lead paint concentration) is exempt from USEPA RCRA and CTDEEP Hazardous Waste Regulation.

Black asphalt material inside the metal pipe arch of the culvert was sampled and found to contain no detectable asbestos.

Information pertaining to the results of the limited hazardous materials investigation discussed can be found in the document listed below. This document shall be available for review electronically.

- HazMat Inspection Letter, Bridge No. 06728 (Culvert), Rte. 9 over Pole Bridge Brook, Haddam, TRC Environmental Corporation, September 13, 2018.

NOTICE TO CONTRACTOR - ELECTRONIC ENGINEERING DATA (EED)

The EED is an assembly of engineering data files that were used to produce the Contract plans.

Electronic Engineering Data (EED) is provided for information purposes only. In case of conflict between the EED and the Contract plans and specifications, the contract plans and specifications shall govern. The EED has been reviewed by the Department for quality control purposes, but it is the Contractor's responsibility to build the Project per the contract plans and specifications.

The EED is being provided to the Engineer for GPS/RTS inspection. The Contractor may use the EED to assist in bidding, layout and Automated Machine Control/Guidance.

The EED includes geospatially-correct 2D CAD files and may include horizontal and vertical alignment data files, 3D surface model files (break-line features and triangles) and a preference file. The data is being provided in two formats:

- Native Format
  - Bentley MicroStation CAD files (dgn)
  - Bentley SS2 InRoads Alignment Files (alg)
  - Bentley SS2 InRoads Digital Terrain Models (dtm)
  - Bentley SS2 InRoads Preference File (xin)
- Converted Format (for use in GPS/RTS Site equipment)
  - AutoCAD CAD files (dxf)
  - Alignment files (xml)
  - Surface Models (xml)

For a complete list of EED files, see the EED file manifest (PDF) located in the EED_XXXX-XXXX.zip file (XXXX-XXXX is the project number) which is posted with the contract PS&E's on the State Contracting portal.

NOTICE TO CONTRACTOR - GLOBAL POSITIONING SYSTEM (GPS) COORDINATES FOR SIGNS

The Contractor shall obtain and provide to the Engineer sign installation data, including Global Positioning System (GPS) latitude and longitude coordinates, for all new State owned and maintained signs. The Engineer shall forward the sign data to the Division of Traffic Engineering for upload into the Highway Sign Inventory and Maintenance Management Program (SIMS). Sign data submissions or questions relating to SIMS or GPS shall be sent to DOT-SignInventory@ct.gov. Refer to the special provision for Section 12.00 General Clauses For Highway Signing.

SECTION 1.02 - PROPOSAL REQUIREMENTS AND CONDITIONS

Article 1.02.04 – Examination of Plans, Specifications, Special Provisions and Site of Work:

Replace the third sentence of the last paragraph with:

The Department cannot ensure a response to inquiries received later than ten (10) days prior to the original scheduled opening of the related bid.

SECTION 1.05 - CONTROL OF THE WORK

Replace Article 1.05.02 *with the following:*

1.05.02—Contractor Submittals, Working Drawings, Shop Drawings, Product Data, Submittal Preparation and Processing - Review Timeframes, Department's Action:

1. Contractor Submittals: The plans provided by the Department show the details necessary to give a comprehensive idea of the construction contemplated under the Contract. The plans will generally show the location, character, dimensions, and details necessary to complete the Project. If the plans do not show complete details, they will show the necessary dimensions and details, which when used along with the other Contract documents, will enable the Contractor to prepare working drawings, shop drawings or product data necessary to complete the Project.

The Contractor shall prepare submittals as Portable Document Format (PDF) files. The Contractor is also required to acquire, maintain access and use the Department's document management system for delivery of submittals. The format, digital signing requirements, delivery processes and document tracking procedures shall be performed in accordance with this specification and the Contractor's Digital Submission Manual (CDSM).

The submittals shall be sent to the Department's reviewer(s), sufficiently in advance of the work detailed, to allow for their review in accordance with the review periods as specified herein (including any necessary revisions, resubmittal, and final review), and acquisition of materials, without causing a delay of the Project.

2. Working Drawings: When required by the Contract or when ordered to do so by the Engineer, the Contractor shall prepare and submit the working drawings, signed, sealed and dated by a qualified Professional Engineer licensed to practice in the State of Connecticut, for review. The drawings shall be delivered sufficiently in advance of the work detailed, to allow for their review in accordance with the review periods specified herein (including any necessary revisions, resubmittal, and final review).

There will be no direct payment for furnishing any working drawings, procedures or supporting calculations, but the cost thereof shall be considered as included in the general cost of the work.

a. Working Drawings for Permanent Construction: The Contractor shall supply to the Assistant District Engineer a certificate of insurance in accordance with 1.03.07 at the time that the working drawings for the Project are submitted.

The Contractor's designer, who prepares the working drawings, shall secure and maintain at no direct cost to the State a Professional Liability Insurance Policy for errors and omissions in the minimum amount of $2,000,000 per error or omission. The Contractor's designer may elect to obtain a policy containing a maximum $250,000 deductible clause, but if the Contractor's designer should obtain a policy containing such a clause, they shall be liable to the extent of at

least the deductible amount. The Contractor's designer shall obtain the appropriate and proper endorsement of its Professional Liability Policy to cover the indemnification clause in this Contract, as the same relates to negligent acts, errors or omissions in the Project work performed by them. The Contractor's designer shall continue this liability insurance coverage for a period of

(i) 3 years from the date of acceptance of the work by the Engineer, as evidenced by a State of Connecticut, Department of Transportation form entitled "Certificate of Acceptance of Work," issued to the Contractor; or

(ii) 3 years after the termination of the Contract, whichever is earlier, subject to the continued commercial availability of such insurance.

b. Working Drawings for Temporary Construction: The Contractor shall submit drawings, calculations, procedures and other supporting data to the Assistant District Engineer.

3. Shop Drawings: When required by the Contract, or when ordered to do so by the Engineer, the Contractor shall prepare and deliver shop drawings to the Designer for review. Review timeframes and submission locations are as specified herein.

There will be no direct payment for furnishing any shop drawings, but the cost thereof shall be considered as included in the general cost of the work.

4. Product Data: When required by the Contract, or when ordered to do so by the Engineer, the Contractor shall prepare and deliver product data.

The Contractor shall submit the product data in a single submittal for each element or group of elements of construction.

The Contractor shall mark each copy of the product data submittal to show applicable choices and options. Where product data includes information on several products that are not required, copies shall be marked to indicate the applicable information. Product data shall include the following information and confirmation of conformance with the Contract to the extent applicable: manufacturer's printed recommendations, compliance with recognized trade association standards, compliance with recognized testing agency standards, application of testing agency labels and seals, notation of coordination requirements, Contract item number, and any other information required by the individual Contract provisions.

There will be no direct payment for furnishing any product data, but the cost thereof shall be considered as included in the general cost of the work.

5. Submittal Preparation and Processing – Review Timeframes: The Contractor shall allow 30 calendar days for submittal review by the Department, from the date receipt is acknowledged by the Department's reviewer. For any submittals marked with "Revise and Resubmit" or "Rejected," the Department is allowed an additional 20 calendar days for review of any resubmissions.

An extension of Contract time will not be authorized due to the Contractor's failure to transmit submittals sufficiently in advance of the work to permit processing.

The furnishing of shop drawings, working drawings or product data, or any comments or suggestions by the Designer or Engineer concerning shop drawings, working drawings or product data, shall not relieve the Contractor of any of its responsibility for claims by the State or by third parties, as per 1.07.10.

The furnishing of the shop drawings, working drawings and product data shall not serve to relieve the Contractor of any part of its responsibility for the safety or the successful completion of the Project construction.

6. Department's Action: The Designer or Engineer will review each submittal, mark each with a self-explanatory action stamp, and return the stamped submittal promptly to the Contractor. The Contractor shall not proceed with the part of the Project covered by the submittal until the submittal is marked "No Exceptions Noted" or "Exceptions as Noted" by the Designer or Engineer. The Contractor shall retain sole responsibility for compliance with all Contract requirements. The stamp will be marked as follows to indicate the action taken:

a. If submittals are marked "No Exceptions Noted," the Designer or Engineer has not observed any statement or feature that appears to deviate from the Contract requirements. This disposition is contingent on being able to execute any manufacturer's written warranty in compliance with the Contract provisions.

b. If submittals are marked "Exceptions as Noted" the considerations or changes noted by the Department's Action are necessary for the submittal to comply with Contract requirements. The Contractor shall review the required changes and inform the Designer or Engineer if they feel the changes violate a provision of the Contract or would lessen the warranty coverage.

c. If submittals are marked "Revise and Resubmit," the Contractor shall revise the submittals to address the deficiencies or provide additional information as noted by the Designer or Engineer. The Contractor shall allow an additional review period as specified in 1.05.02-5.

d. If submittals are marked "Rejected," the Contractor shall prepare and submit a new submittal in accordance with the Designer's or Engineer's notations. The resubmissions require an additional review and determination by the Designer or Engineer. The Contractor shall allow an additional review period as specified in 1.05.02-5.

SECTION 1.07 - LEGAL RELATIONS AND RESPONSIBILITIES

Delete Article 1.07.07 in its entirety and replace it with the following:

1.07.07—Safety and Public Convenience: The Contractor shall conduct the Project work at all times in such a manner as to ensure the least possible obstruction to traffic. In a manner acceptable to the Engineer, the Contractor shall provide for the convenience and interests of the general public; the traveling public; parties residing along or adjacent to the highway or Project Site; and parties owning, occupying or using property adjacent to the Project Site, such as commuters, workers, tenants, lessors and operating agencies.

Notwithstanding any other Contract provision, the Contractor shall not close to normal pedestrian or vehicular traffic any section of road, access drive, parking lot, sidewalk, station platform, railroad track, bus stop, runway, taxiway, occupied space within a Site, or occupied space within a building, except with the written permission of the Engineer.

All equipment, materials, equipment or material storage areas, and work areas must be placed, located, and used in ways that do not create a hazard to people or property, especially in areas open to public pedestrian or vehicular traffic. All equipment and materials shall be placed or stored in such a way and in such locations as will not create a hazard to the traveling public or reduce sight lines. In an area unprotected by barriers or other means, equipment and materials must not be stored within 30 feet of any traveled way.

The Contractor must always erect barriers and warning signs between any of its work or storage areas and any area open to public, pedestrian, or vehicular traffic. Such barriers and signs must comply with all laws and regulations, including any applicable codes.

The Contractor must arrange for temporary lighting, snow and ice removal, security against vandalism and theft, and protection against excessive precipitation runoff within its Project work and storage areas, and within other areas specifically designated in the Contract.

In addition to meeting the requirements of Section 9.71, the Contractor shall take all precautions necessary and reasonable for the protection of all persons, including, but not limited to, employees of the Contractor or the Department, and for the protection of property, until the Engineer notifies the Contractor in writing that the Project or the pertinent portion of the Project has been completed to the Engineer’s satisfaction.

The Contractor shall comply with the safety provisions of applicable laws, including building and construction codes and the latest edition of the CFR. The Contractor must make available for reference in its field office, throughout the duration of the Project, a copy of the latest edition and all supplements of the CFR pertaining to OSHA.

The Contractor shall make available to the Contractor's employees, subcontractors, the Engineer, and the public, all information pursuant to OSHA 29 CFR Part 1926.59 and The Hazard Communication Standard 29 CFR 1910.1200, and shall also maintain a file on each job site containing all MSDS for products in use at the Project. These MSDS shall be made available to the Engineer upon request.

The Contractor shall observe all rules and regulations of the Federal, State, and local health officials. Attention is directed to Federal, State, and local laws, rules, and regulations concerning construction safety and health standards. The Contractor shall not require any worker to work in surroundings or under conditions that are unsanitary, hazardous, or dangerous to the worker's health or safety.

Safety Plan: Before starting work on the Project, the Contractor shall submit to the Engineer a written Safety and Health Plan (hereinafter referred to as the "Plan"). The Plan shall meet or exceed the minimum requirements of this Subsection and any applicable State or Federal regulations.

The Plan shall apply to any work under the Contract whether such work is performed, by way of example and not limitation, by the Contractor's forces, subcontractors, suppliers, or fabricators.

The Plan shall be prepared by the Contractor and submitted to the Engineer for review before the actual start of work on the Project. Within ten (10) calendar days of receipt, the Engineer will determine whether or not the Plan meets the requirements of this Specification. If the Plan does not meet the requirements of this Specification, it will be returned for revision. Work on the Project may not proceed until the Engineer has accepted the Plan. Nothing herein shall be construed, however, to relieve the Contractor from responsibility for the prosecution of the Project.

The Plan shall conform to the following general format:

1. **General Introduction**.
   - **a. Description.** The general introduction of the Plan shall include a statement by the Contractor describing its commitment to maintain a safe work environment for its employees, Department representatives, and the public. Implementation procedures and company policies relative to safety shall be summarized or referenced in the Plan.
     - i. The Plan shall include the names, addresses, and telephone numbers of the Contractor's Project Manager, Project superintendent and/or its designee for safety oversight, all competent persons, and the traffic control coordinator. Any changes to the safety management and oversight for the Project shall be promptly communicated to all concerned.
     - ii. The Plan shall provide guidelines for protecting all personnel from hazards associated with Project operations and activities.
     - iii. The Plan shall establish the policies and procedures that are necessary for the Project to be in compliance with the requirements of OSHA and other State and

Federal regulatory agencies with jurisdiction, rules, regulations, standards, or guidelines in effect at the time the work is in progress.

b. Responsibility, Identification of Personnel, and Certifications. The Contractor is solely responsible for creating, implementing, and monitoring the Plan.

i. The Contractor shall identify and designate on-site supervisory level personnel who shall be responsible for implementing and monitoring the Plan at all times throughout the duration of the Project and shall have authority to take prompt corrective measures to eliminate hazards including the ability to stop work activities.

ii. Documentation of training provided to the on-site supervisory level personnel shall be included as part of the Plan.

iii. For any work activities wherein the Contractor has identified a competent person as defined by OSHA, that person shall be capable of identifying existing and predictable hazards and have the authority to take prompt corrective measures to eliminate the hazards, including the ability to stop work activities.

iv. Documentation of the qualifications of such competent persons identified, including any certifications received, shall be included as part of the Plan.

v. The Contractor shall further identify the qualified safety professional responsible for developing the Plan and shall provide that person's qualifications for developing the Plan which shall include, but not be limited to, education, training, certifications, and experience in developing this type of Plan.

vi. The Plan shall contain a certification executed by the qualified safety professional that developed the Plan, stating that the Plan complies with OSHA and other applicable State and Federal regulatory agencies with jurisdiction, rules, regulations, standards, or guidelines in effect at the time the work is in progress.

2. Elements of the Plan. The Plan shall address, but not be limited to, the following elements:

a. Management Safety Policy and Implementation Statement.

i. The Plan shall describe in detail the means by which the Contractor shall implement and monitor the Plan. Implementation and monitoring shall also mean that the Plan shall be a document with provision for change to update the Plan with new information on a yearly basis at a minimum and shall include new practices or procedures, changing site and environmental conditions, or other situations that could adversely affect site personnel. The Plan shall provide guidelines for protecting all personnel from hazards associated with Project operations and activities.

b. Emergency Telephone Numbers.

c. Personnel Responsibilities.

i. Management responsibilities

ii. Responsibilities of Supervisor(s)

iii. Site safety officer(s) responsibilities

iv. Employee responsibilities

v. Competent person(s) as defined by OSHA responsibilities

d. Training.
- i. Regulatory
- ii. Documentation
- iii. Site hazard assessment -Daily employee awareness of site operations

e. Safety Rules.
- i. General safety rules
- ii. Personal protective equipment
- iii. Housekeeping

f. Safety Checklists.
- i. Project safety-planning checklist
- ii. Emergency plans and procedures checklist
- iii. Documentation checklist
- iv. Protective materials and equipment checklist

g. Traffic Control Coordinator Inspections.
- i. Responsible person
- ii. Frequency
- iii. Documentation of actions taken

h. Record Keeping.
- i. OSHA 200 log

i. Reporting.
- i. Accident(s)
- ii. On site
- iii. Legal notice requirement
- iv. Public liability
- v. Property damage
- vi. Department of Labor
- vii. Hazard Communications

j. Additional Procedures for Project Specific Situations as Applicable.
- i. Compressed gas cylinders
- ii. Confined spaces
- iii. Cranes
- iv. Crystalline silica (stone, masonry, concrete, and brick dust)
- v. Electrical
- vi. Equipment operators
- vii. Fall protection
- viii. Hand and power tools
- ix. Hearing conservation
- x. Highway safety
- xi. Lead health and safety plan
- xii. Lock out/tag out
- xiii. Materials handling, storage, use, and disposal
- xiv. Areas of environmental concern
- xv. Night work
- xvi. Personal protective equipment

xvii. Project entry and exit
xviii. Respiratory protection
xix. Sanitation
xx. Signs, signals, and barricades
xxi. Subcontractors
xxii. Trenching

3. **Appendix for Environmental Health and Safety Plan (HASP).** If environmental hazards are identified in the Contract, an Environmental HASP shall be included in an appendix to the Plan, or in a separate document. References to any Environmental HASP shall be included within the Plan, where appropriate.

The Plan shall be kept on the site and shall apply and be available to all workers and all other authorized persons entering the work site. Copies of all updates to the Plan shall be promptly supplied to the Engineer.

If at any time during the Project the Engineer determines that the Contractor is not complying with the requirements of this provision or the updated Plan, the Contractor shall correct such deficiencies immediately. Failure to remediate such deficiencies may result in suspension of the Contractor's operations until the deficiencies have been corrected. Suspensions ordered due to safety deficiencies will not be considered compensable or excusable delays.

The Contractor is responsible for implementation of the Plan. Pursuant to Article 1.07.10, the Contractor shall indemnify, and save harmless the State from any and all liability related to the Plan in proportion to the extent that the Contractor is held liable for same by an arbiter of competent jurisdiction.

The Contractor shall allow onto the Project site any inspector of OSHA or other legally responsible agency involved in safety and health administration upon presentation of proper credentials, without delay and without the presentation of an inspection warrant.

Article 1.07.10 - Contractor's Duty to Indemnify the State against Claims for Injury or Damage:

Add the following after the only paragraph:

"It is further understood and agreed by the parties hereto, that the Contractor shall not use the defense of Sovereign Immunity in the adjustment of claims or in the defense of any suit, including any suit between the State and the Contractor, unless requested to do so by the State."

Article 1.07.13 – Contractor's Responsibility for Adjacent Property, Facilities and Services is supplemented as follows:

The following company and representative shall be contacted by the Contractor to coordinate the protection of their utilities on this project 30 days prior to the start of any work on this project involving their utilities:

Mr. Richard Russo
District 2 Electrical Supervisor
Department of Transportation
Colchester, Connecticut
(860) 537-8942/8943

SECTION 1.08 - PROSECUTION AND PROGRESS

Article 1.08.04 - Limitation of Operations - Add the following:

In order to provide for traffic operations as outlined in the Special Provision "Maintenance and Protection of Traffic," the Contractor will not be permitted to perform any work which will interfere with the described traffic operations on all project roadways as follows:

Hubbard Road

Monday through Friday between 6:00 a.m. and 9:00 a.m. & between 3:00 p.m. and 6:00 p.m.
Saturday and Sunday between 10:00 a.m. and 6:00 p.m.

All Other Roadways

Monday through Friday between 6:00 a.m. and 9:00 a.m. & between 3:00 p.m. and 6:00 p.m.
Saturday and Sunday between 10:00 a.m. and 6:00 p.m.

Additional Lane Closure Restrictions

It is anticipated that work on adjacent projects will be ongoing simultaneously with this project. The Contractor shall be aware of those projects and anticipate that coordination will be required to maintain proper traffic flow at all times on all project roadways, in a manner consistent with these specifications and acceptable to the Engineer.

The Contractor will not be allowed to perform any work that will interfere with traffic operations on a roadway when traffic operations are being restricted on that same roadway, unless there is at least a one mile clear area length where the entire roadway is open to traffic or the closures have been coordinated and are acceptable to the Engineer. The one mile clear area length shall be measured from the end of the first work area to the beginning of the signing pattern for the next work area.

SECTION 2.86 - DRAINAGE TRENCH EXCAVATION, ROCK IN DRAINAGE TRENCH EXCAVATION

2.86.01—Description
2.86.03—Construction Methods
2.86.04—Method of Measurement
2.86.05—Basis of Payment

2.86.01—Description: Drainage trench excavation consists of the excavation necessary for the proper installation of drainage structures, pipes, pipe ends and any other incidental drainage items.

It shall include earth and rock excavation, removal of existing pipes, dewatering, backfill, and disposal of materials; to the trench limits described herein, to the dimensions shown on the plans, or as directed by the Engineer.

Classifications:

(1) Drainage Trench Excavation will include only the excavation necessary for the construction of the drainage items and the removals specified above.

(2) Rock in Drainage Trench Excavation, insofar as it applies to drainage trench excavation, shall be defined as **1/2 cubic yard or more** in volume of the following obstructions removed from the limits of the drainage trench:

(a) rock in definite ledge formation
(b) boulders, or portions of boulders
(c) cement masonry structures
(d) concrete or reinforced concrete structures
(e) reinforced concrete pipe
(f) subsurface concrete pavement or concrete base

The removal shall be as indicated or directed from within the limits defined in 2.86.03 for drainage trench excavation.

2.86.03—Construction Methods:

(1) Drainage Trench Excavation Limits:

Horizontal Limits: Trench widths for pipes, pipe ends, pipe-arches, and drainage structures shall be as follows:

(a) 2 feet greater than the nominal inside diameter of circular pipe or nominal inside span of elliptical pipe or pipe-arch for such diameters or spans of less than 30 inches
(b) 3 feet greater than the nominal inside diameter of circular pipe or the nominal inside span of elliptical pipe or pipe-arch for such diameters or spans that are 30 inches or greater
(c) 4 feet greater than the nominal inside diameter or nominal horizontal inside span for pipe-arches fabricated from structural plates
(d) 2 feet beyond the neat lines of all exterior or foundation walls of drainage structures

Vertical Limits: Trench depths shall extend vertically as follows:

(a) From the bottom of the trench to the bottom of the roadway excavation, or in areas away from roadway excavation, to the top of existing ground surface.

(b) Where drainage pipe is to be laid in a fill area, the embankment shall be placed and compacted to a minimum elevation 12 inches above the top of the proposed pipe, whereupon the drainage trench excavation shall be performed and the pipe installed.

(2) Drainage Trench Excavation: Drainage trench excavation shall be made in conformity with the requirements of the plans, or as directed by the Engineer. The Contractor shall furnish and employ such shores, braces, pumps, or ancillary equipment as needed for the proper protection of property, proper completion of the work, as well as safety of the public and employees of both the Contractor and the Department. All bracing and shoring shall be removed when no longer required for the construction or safety of the work. When required, the Contractor shall provide or have on the Site at all times any OSHA certification for equipment to be used, per 1.07.07. For support of trenches greater than 10 feet in depth, working drawings shall be submitted, in accordance with 1.05.02. The Contractor shall control erosion and sedimentation at trench locations and ensure that pumped water from the drainage excavation is discharged in accordance with the requirements of 1.10.

Where a firm foundation is not encountered at the grades established due to unsuitable material, such as soft, spongy, or unstable soil, the unsuitable material shall be removed and replaced with approved backfill, thoroughly compacted in lifts not to exceed 6 inches, for the full trench width. The Engineer shall be notified prior to removal of the unsuitable material in order to determine the depth of removal necessary.

After the excavation is complete, the Contractor shall notify the Engineer and no drainage structure or material shall be placed in the excavated area until the Engineer has approved the depth of excavation and the character of the foundation material.

(3) Rock in Drainage Trench Excavation:

(a) Rock in Drainage Trench Excavation - Ledge: When rock in definite ledge form is encountered, the Contractor shall excavate a minimum of 12 inches below the bottom of the proposed pipe or drainage structure; and this depth shall be filled with bedding material (as specified in M.08.03-1) below the proposed pipe; or granular fill (as specified in M.02.01) below the proposed drainage structure, which shall be thoroughly compacted in lifts not to exceed 6 inches.

(b) Rock in Drainage Trench Excavation - Boulders: When boulders are encountered, the Contractor shall remove them from the trench and if backfill is required, the void shall be filled with bedding material, surplus excavated material (as specified in 2.02.03-8) or granular fill which shall be thoroughly compacted in lifts not to exceed 6 inches.

(c) Rock in Drainage Trench Excavation –Structures: When cement masonry, concrete or reinforced concrete structures are encountered within the drainage trench limits, the Contractor shall remove the structure in its entirety or as directed by the Engineer, and if backfill is required, the void shall be filled with bedding material, surplus excavated material or granular fill which shall be thoroughly compacted in lifts not to exceed 6 inches.

(4) Backfill: Suitable material excavated from the drainage trench shall be used as backfill material prior to consideration of using any other source of backfill. Backfill material used shall be of a quality satisfactory to the Engineer and shall be free from large or frozen lumps, wood and other extraneous material. Rock fill or stones larger than 5 inches shall not be placed within 1 foot of the drainage structure or pipe. The grading shall be

completed to the lines shown on the plans, or as ordered, by refilling to the required elevation with approved material, placed in layers not to exceed 6 inches in depth after compaction, which shall be thoroughly compacted with equipment approved by the Engineer.

All surplus or unsuitable material shall be removed and disposed of as directed. Should additional material be required for backfilling, it may be obtained from the Project surplus excavation in accordance with 2.02.03-8 or from borrow pits, gravel pits, or elsewhere as directed by the Engineer.

2.86.04—Method of Measurement:

Drainage Trench Excavation: Drainage trench excavation will not be measured for payment.

If granular fill or borrow is required to replace unsuitable material it will be measured for payment as directed by the Engineer.

Rock in Drainage Trench Excavation: If any material meeting the definition of Rock in Drainage Trench Excavation is encountered, the Contractor shall strip it of sufficient overlying material to allow for proper measurement and shall then notify the Engineer that the rock surface is ready for measurement. If the Contractor fails to give such notice, the Engineer will presume that the measurements taken at the time the Engineer first saw the material in question will give the true quantity of excavation.

Rock in Drainage Trench Excavation will be measured according to the classification provided in 2.86.01 and within the drainage trench excavation limits provided in 2.86.03.

For the removal of underground obstructions, as classified in 2.86.01-2, the measurement shall be the actual volume of rock removed (1/2 cubic yard or more) as approved by the Engineer.

Rock in Drainage Trench Excavation will not be measured for payment in fills.

Bedding Material or other suitable fill, as specified in 2.86.03(3), used to fill voids after rock is excavated will not be measured for payment.

2.86.05—Basis of Payment:

Drainage Trench Excavation: There will be no direct payment for drainage trench excavation required for the installation of drainage pipes, pipe ends, catch basins, drop inlets, manholes, and other drainage structures, or any other incidental drainage work including materials, tools, equipment and labor necessary to complete the drainage trench excavation in conformity with the plans or as directed by the Engineer.

There will be no direct payment for backfill or disposal of surplus material necessary for the satisfactory completion of this work.

There will be no direct payment made for shoring, bracing, dewatering, or for material or equipment necessary for the satisfactory completion of the work.

Where called for on the plans to install temporary earth retaining systems for the support of existing facilities, pavement, utilities, or for other constraints, payment will be made in accordance with such items in the Contract.

If granular fill or borrow is used to replace unsuitable material, payment will be made at the respective Contract unit prices, or in the absence of such items in the Contract, as Extra Work in accordance with 1.04.05.

Rock in Drainage Trench Excavation: When rock, conforming to the description in 2.86.01 is encountered within the limits of drainage trench excavation, its removal will be classified and

paid for at the Contract unit price per cubic yard for "Rock in Drainage Trench Excavation 0' – 10' Deep," or "Rock in Drainage Trench Excavation 0' – 20' Deep," as the case may be.

Those portions of drainage trench excavation classified and paid for as "Rock in Drainage Trench Excavation" of the various depths will be the actual volumes of rock excavated within the limits for drainage trench excavation, at the applicable bottom depth price.

Where no item or items for "Rock in Drainage Trench Excavation" at the applicable depth appear in the proposal and rock is encountered in drainage trench excavation, its removal will be paid for as Extra Work in accordance with 1.04.05.

When excavation is necessary in fill, no such excavation will be paid for as "Rock in Drainage Trench Excavation."

When excavation is necessary for any purpose other than drainage-related items, no such excavation will be paid under this item.

Bedding material or any other suitable material used to fill voids vacated by excavated rock will not be paid for but shall be included in the unit price per cubic yard for "Rock in Drainage Trench Excavation."

Pay Item	Pay Unit
Rock in Drainage Trench Excavation 0' - 10' Deep	c.y.
Rock in Drainage Trench Excavation 0' - 20' Deep	c.y.

SECTION 5.86 - CATCH BASINS, MANHOLES AND DROP INLETS

5.86.01—Description
5.86.02—Materials
5.86.03—Construction Methods
5.86.04—Method of Measurement
5.86.05—Basis of Payment

5.86.01—Description: The work under this Section shall consist of furnishing, preparing, and installing catch basins, manholes and drop inlets (and also the removal, abandonment, alteration, reconstruction, or conversion of such existing structures) in conformity with the lines, grades, dimensions and details shown on the plans.

This Section shall also include resetting or replacing catch basin tops as well as manhole frames and covers.

5.86.02—Materials: The materials for this work shall meet the following requirements:

Drainage structures shall meet the requirements of M.08.02 and shall utilize concrete with a 28-day minimum compressive strength of 4000 psi.

Galvanizing shall meet the requirements of M.06.03.

Mortar shall meet the requirements of M.11.04.

Butyl rubber joint seal shall meet the requirements of ASTM C990.

Granular fill, if necessary, shall meet the requirements of M.02.01.

Protective compound material shall be a type appearing on the Department's Qualified Products List and be acceptable to the Engineer, as specified in M.03.09.

5.86.03—Construction Methods: Drainage trench excavation, including rock in drainage trench excavation and backfilling, shall be performed in accordance with 2.86.03 and the requirements of the plans.

Where a drainage structure is to be installed below the surface, a drainage trench shall be excavated to the required depth, the bottom of which shall be graded to the elevation of the bottom of the proposed drainage structure or to ensure a uniform foundation for the structure.

Where a firm foundation is not encountered at the grades established due to unsuitable material, such as soft, spongy, or unstable soil, the unsuitable material shall be removed and replaced with approved granular fill, thoroughly compacted in lifts not to exceed 6 inches. The Engineer shall be notified prior to removal of the unsuitable material in order to determine the depth of removal necessary.

When rock, as defined in 2.86.01-2, is encountered, work shall be performed in accordance with 2.86.03 and the requirements of the plans.

When a drainage structure outside of proposed drainage trench limits is to be removed, it shall be completely removed and all pipes shall be removed or plugged with cement masonry.

When a drainage structure is to be abandoned, the structure shall be removed to a depth 2 feet below the subgrade or as directed by the Engineer. The floor of the structure shall be broken and all pipes shall be plugged with cement masonry.

Drainage structures shall be constructed in accordance with the plans and the requirements contained herein for the character of the work involved. The provisions of 6.02.03 pertaining to bar reinforcement shall apply except that shop drawings need not be submitted for approval unless called for in the plans, Contract or directed by the Engineer. Welding shall be performed in accordance with the applicable sections of the AWS Structural Welding Code, D1.1.

When it becomes necessary to increase the horizontal dimensions of manholes, catch basins and drop inlets to sizes greater than those shown on the plans in order to provide for multiple pipe installations, large pipes or for other reasons, the Contractor shall construct such manholes, catch basins and drop inlets to modified dimensions as directed by the Engineer.

The surfaces of the tops of all catch basins, and drop inlets shall be given a coat of protective compound material, at the manufacturer's recommended application rate, immediately upon completion of the concrete curing period.

All masonry units shall be laid in full mortar beds.

Metal fittings for catch basins, manholes or drop inlets shall be set in full mortar beds or otherwise secured as shown on the plans.

All inlet and outlet pipes shall be set flush with the inside face of the wall of the drainage structure as shown on the plans. The pipes shall extend through the walls for a sufficient distance beyond the outside surface to allow for satisfactory connections, and the concrete or masonry shall be constructed around them neatly to prevent leakage along their outer surfaces.

When constructing a new drainage structure within a run of existing pipe, the section of existing pipe disturbed by the construction shall be replaced with new pipe of identical type and size extending from the drainage structure to the nearest joint of the existing pipe in accordance with 6.86.03 or as directed by the Engineer.

Backfilling shall be performed in accordance with 2.86.03.

Frames, covers and tops which are to be reset shall be removed from their present beds, the walls or sides shall be rebuilt to conform to the requirements of the new construction and the frames, covers and tops shall be reset as shown on the plans or as directed by the Engineer.

5.86.04—Method of Measurement:

Drainage Trench Excavation: In accordance with 2.86.04, excavation for drainage trench will not be measured for payment but shall be included in the Contract unit price for the type of structure being installed.

Rock in Drainage Trench Excavation: Rock in Drainage Trench Excavation will be measured in accordance with the drainage trench excavation limits described in 2.86.03.

Manholes, Catch Basins and Drop Inlets will be measured as separate units.

Resetting of Manholes, Catch Basins and Drop Inlets will be measured as separate units.

Replacement of frames, covers, and tops will be measured as a unit for catch basin top or manhole frame and cover.

Conversion of drainage structures as specified on the plans, or as directed by the Engineer, including structure reconstruction will be measured for payment as a unit.

Removal or abandonment of drainage structures outside of drainage trench excavation limits, as defined in 2.86.03, will be measured as separate units.

There will be no measurement or direct payment for the application of the protective compound material, the cost of this work shall be considered as included in the general cost of the work.

Measurement for payment for work and materials involved with installing pipes to connect new drainage structures into a run of existing pipe will be as provided for under the applicable Contract items in accordance with 6.86.04.

There will be no measurement or direct payment for plugging existing pipes with cement masonry, the cost of this work will be considered as included in the general cost of the work.

5.86.05—Basis of Payment:

Drainage Trench Excavation for the installation of proposed structures described herein will be paid for under the respective drainage Contract item(s) for which the excavation is being performed, in accordance with the provisions of 2.86.05.

Rock in Drainage Trench Excavation will be paid for in accordance with the provisions of 2.86.05.

Manholes and Catch Basins will be paid for at the Contract unit price for each "Manhole," or "Catch Basin," of the type specified, at "0' to 10' Deep" or "0' to 20' Deep," complete in place, which price shall include all excavation, backfill, materials, equipment, tools and labor incidental thereto.

Drop Inlets will be paid for at the Contract unit price for each "Drop Inlet," of the type specified, complete in place, which price shall include all excavation, backfill, materials, equipment, tools and labor incidental thereto.

Manholes, Catch Basins and Drop Inlets constructed to modified dimensions as directed by the Engineer, will be paid for as follows:

Where the interior floor area has to be increased to accommodate existing field conditions, as measured horizontally at the top of the base of the completed structure, and does not exceed 125% of the interior floor area as shown on the plans for that structure, then the structure shall be paid for at the Contract unit price for each "Manhole," "Catch Basin," or "Drop Inlet" of the type specified. Where the floor area is greater than 125%, the increase in the unit price for the individual structure shall be in direct proportion to the increase of the completed structure interior floor area as compared to the interior floor area as shown on the plans for that structure. Such increased unit price shall include all excavation, materials, equipment, tools, and labor incidental to the completion of the structure.

Reset Units will be paid for at the Contract unit price each for "Reset Manhole," "Reset Catch Basin," or "Reset Drop Inlet," of the type specified, respectively, complete in place, which price shall include excavation, cutting of pavement, removal and replacement of pavement structure, and all materials, equipment, tools and labor incidental thereto, except when the work requires reconstruction greater than 3 feet, measured vertically, then the entire cost of resetting the unit will be paid for as Extra Work in accordance with the provisions of 1.04.05.

Frames, Covers, and Tops when required in connection with reset units, will be paid for at the Contract unit price each for such "Manhole Frame and Cover" or "(Type) Catch Basin Top," complete in place, including all incidental expense; or when no price exists, the furnishing and placing of such material will be paid for as Extra Work in accordance with the provisions of 1.04.05.

When the catch basin top has a stone or granite curb in its design, the curb or inlet shall be included in the cost of the "(Type) Catch Basin Top."

Conversion of drainage structures will be paid for at the Contract unit price each for "Convert Catch Basin to (Type) Catch Basin," "Convert Catch Basin to (Type) Manhole," or

"Convert Manhole to (Type) Catch Basin," complete in place, which price shall include excavation, cutting of pavement, removal and replacement of pavement, backfill, all alterations to existing structure, all materials including catch basin frame and grate of the type specified, or manhole frame and cover, all equipment, tools and labor incidental thereto.

The maximum change in elevation of frame under these items shall not exceed 3 feet. Greater depth changes, if required, shall be paid for as Extra Work, in accordance with 1.04.05.

Removal or abandonment of drainage structures outside of drainage trench excavation limits as defined in 2.86.03 will be paid for at the Contract unit price each for "Remove Drainage Structure – 0' to 10' Deep," "Remove Drainage Structure – 0' to 20' Deep," or "Abandon Drainage Structure," which price shall include excavation, cutting of pavement, removal and replacement of pavement, backfill, and all equipment, tools and labor incidental thereto.

Pay Item	Pay Unit
(Type) Catch Basin – 0' to 10' Deep	ea.
(Type) Catch Basin – 0' to 20' Deep	ea.
Manhole (Size) – 0' to 10' Deep	ea.
Manhole (Size) – 0' to 20' Deep	ea.
(Type) Drop Inlet	ea.
Reset Catch Basin	ea.
Reset Manhole	ea.
Reset Drop Inlet	ea.
Convert Catch Basin to (Type) Catch Basin	ea.
Convert Catch Basin to (Type) Manhole	ea.
Convert Manhole to (Type) Catch Basin	ea.
Manhole Frame and Cover	ea.
(Type) Catch Basin Top	ea.
Remove Drainage Structure – 0' to 10' Deep	ea.
Remove Drainage Structure – 0' to 20' Deep	ea.
Abandon Drainage Structure	ea.

SECTION 6.86 - DRAINAGE PIPES, DRAINAGE PIPE ENDS

6.86.01—Description
6.86.02—Materials
6.86.03—Construction Methods
6.86.04—Method of Measurement
6.86.05—Basis of Payment

6.86.01—Description: This work shall consist of furnishing, preparing and installing drainage pipes of the size and type specified, bedding material, joint sealant, rubber gaskets, clamps, collars, grout, grout collars, drainage trench excavation, backfilling or satisfactory disposal of all materials, the removal of which is necessary for the proper completion of the work, connecting proposed drainage systems to existing systems, plugging or abandoning existing pipes and removal of existing pipe within trench limits, as shown on the plans or as directed by the Engineer.

This Section shall also include removal of drainage pipes outside of drainage trench excavation limits, as defined in 2.86.03-1.

6.86.02—Materials: The materials for this work shall meet the following requirements:

Drainage Pipe, Drainage Pipe Ends, Sealers, Gaskets and connection hardware shall meet the requirements of M.08.01.

Bedding Material shall meet the requirements of M.08.03-1.

Granular Fill, if necessary, shall meet the requirements of M.02.01.

Brick Masonry shall meet the requirements of M.11.03 and Mortar shall meet the requirements of M.11.04.

Concrete used for Concrete Pipe Connections shall be Class "F" Concrete meeting the requirements of M.03.

6.86.03—Construction Methods:

(1) Drainage Trench Excavation: Drainage trench excavation and backfilling shall be performed in accordance with 2.86.03 and the requirements of the plans.

Where drainage pipe is to be laid below the surface, a drainage trench shall be excavated to the required depth, the bottom of which shall be graded to the elevation of the bottom of the bedding material.

Where drainage pipe is to be laid in a fill area, the embankment shall be placed and compacted to a minimum elevation 12 inches above the top of the proposed pipe, whereupon the drainage trench excavation shall be performed and the pipe installed.

(2) Rock in Drainage Trench Excavation: When rock, as defined in 2.86.01-2, is encountered, work shall be performed in accordance with 2.86.03 and the requirements of the plans.

(3) Drainage Pipe Installation: New or re-laid drainage pipes shall be installed on 4 inches of bedding material (12 inches if over rock in ledge formation), the details as shown on the plans, or as directed by the Engineer. Prior to placement of the drainage pipe, in accordance with the plans, bedding material shall be pre-shaped to 10% of the total height

of the pipe in order to keep the pipe in the center of the trench. Following placement of the drainage pipe, bedding material backfill shall be placed in accordance with the following table:

Internal Pipe Diameter	**Required Bedding Material Backfill**
< 48 inches*	25% of total height of the pipe
≥ 48 inches*	12 inches above the top of the pipe
*Includes pipe arch of equivalent internal horizontal span See Standard Drawing	

The placement of the drainage pipe shall start at the downstream end and progress upstream or as shown on the plans, or as directed by the Engineer. All drainage pipes shall be carefully laid in the center of the drainage trench, true to the lines and grades given. Bell ends shall face upgrade and all joints shall be tight.

Joints in concrete pipe shall be sealed with cold-applied bituminous sealer, preformed plastic gaskets or flexible, watertight, rubber-type gaskets. Portland cement mortar shall not be used for sealing pipe joints except with permission of the Engineer.

When cold-applied bituminous sealer is used, the bell and spigot ends shall be wiped clean and dry before applying the bituminous sealer to the pipe ends. Before the drainage pipes are placed in contact with each other, the spigot or tongue end shall be completely covered with bituminous sealer; then the pipe shall be laid to line and grade so the inside surface of all abutting pipes are flush. Additional bituminous sealer shall be applied to the joint after the connection has been made to ensure a water tight connection.

Where the end of an existing drainage pipe is not compatible with the end of a proposed concrete pipe, the Contractor shall align the inner diameters of the pipes being connected, butt the pipe ends together, and construct a cast-in-place concrete pipe connection, as shown in the plans. Incompatible bell/spigot or tongue/groove ends shall be cut off as required to ensure the interior drainage pipe walls are aligned to provide a smooth transition between the pipes.

Metal pipe and pipe arches shall be carefully joined and firmly clamped together by approved connecting bands, which shall be properly bolted in place before any backfill is placed.

Newly installed drainage pipe which is not in true alignment, or which shows any settlement or distortion, shall be reinstalled in accordance with 1.05.03.

When drainage pipe outside of proposed drainage trench limits is to be removed, it shall be removed to the limits shown on the plans and all remaining pipes shall be plugged with cement masonry.

Where shown on the plans or directed by the Engineer, the Contractor shall plug abandoned existing pipes with cement masonry.

(4) Drainage Pipe End Installation: Reinforced concrete drainage pipe ends shall be placed on a prepared bed of the existing ground and accurately aligned as shown on the plans. The joints shall be sealed as specified in 6.86.03-3 and backfill shall be placed around both sides of the unit simultaneously to the elevation shown on the plans.

Metal drainage pipe ends shall be placed on a prepared bed of the existing ground and accurately aligned as shown on the plans. After the attachment of the drainage pipe end, backfill shall be placed around both sides of the unit up to the elevation shown on the plans, exercising caution to avoid displacement or deformation of the unit.

6.86.04—Method of Measurement: This work will be measured as follows:

Drainage Trench Excavation, in accordance with 2.86.04, will not be measured for payment.

Rock in Drainage Trench Excavation will be measured in accordance with 2.86.04.

Bedding Material will not be measured for payment.

New and Re-laid Pipes and Pipe Arches will be measured for payment by the actual number of linear feet of pipe or pipe arch of the various sizes and types, completed and accepted and measured in place along the invert. Coupling bands and fittings for pipes and pipe arches will not be measured for payment.

Reinforced Concrete Drainage Pipe Ends and Metal Drainage Pipe Ends will be measured for payment as separate units.

Corrugated Metal Pipe Elbows (of the Size and Type specified) will be measured for payment by the actual number of linear feet of pipe elbows completed and accepted, based on 6 linear feet per elbow, as shown on the plans. Coupling bands for elbows will not be measured for payment.

Concrete Pipe Connection will be measured for payment by the number of each concrete pipe connection constructed at locations where proposed concrete pipes tie into an existing pipe with an incompatible end, completed and accepted by the Engineer.

Removal of drainage pipe outside of drainage trench excavation limits, as defined in 2.86.03, will be measured for payment by the actual number of linear feet of drainage pipe removed.

There will be no measurement for plugging existing pipes with cement masonry.

6.86.05—Basis of Payment:

Drainage Trench Excavation for the installation of drainage pipes will not be paid separately but shall be included in the Contract unit price for the respective drainage pipe or pipe end item(s), in accordance with the provisions of 2.86.05.

Rock in Drainage Trench Excavation will be paid for in accordance with the provisions of 2.86.05.

Bedding Material necessary for the installation of drainage items described herein will be included in the Contract unit price for the respective drainage pipe or pipe end item(s). Bedding material required to fill voids when rock in drainage trench is encountered will not be measured for payment but shall be included in the Contract unit price for "Rock in Drainage Trench Excavation," in accordance with 2.86.05.

New Pipes and Pipe Arches will be paid for at the Contract unit price per linear foot for "(Size and Type) Pipe (Thickness) – 0' to 10' Deep," "(Size and Type) Pipe (Thickness) – 0' to 20' Deep," "(Size) Pipe Arch (Thickness) – 0' to 10' Deep" or "(Size) Pipe Arch (Thickness) – 0' to 20' Deep" complete in place, including materials, drainage trench excavation, bedding material, equipment, tools, and labor incidental thereto.

Relaid Pipes and Pipe Arches will be paid for at the Contract unit price per linear foot for "Relaid Pipe (Size and Type) – 0' to 10' Deep," "Re-laid Pipe (Size and Type) – 0' to 20' Deep," "Relaid Pipe Arch (Size and Type) – 0' to 10' Deep," or "Relaid Pipe Arch (Size and Type) – 0' to 20' Deep," complete in place, including all materials, drainage trench excavation, bedding material, equipment, tools, and labor incidental thereto.

Reinforced Concrete Drainage Pipe Ends and Metal Drainage Pipe Ends will be paid for at the Contract unit price for each drainage pipe end of the Size and Type specified, complete in place, including all excavation, materials, attachment systems, equipment, tools and labor incidental thereto.

Corrugated Metal Pipe Elbows will be paid for at the Contract unit price per linear foot for "(Size and Type) Corrugated Metal Pipe Elbow" including all materials, drainage trench excavation, bedding material, equipment, tools, and labor incidental thereto.

Concrete Pipe Connection will be paid for at the Contract unit price each for "Concrete Pipe Connection" complete in place, including all materials, equipment, tools and labor incidental thereto.

Removal of drainage pipes of all types and sizes, outside of drainage trench excavation limits, as defined in 2.86.03-1, will be paid for at the Contract unit price per linear foot for "Remove Existing Pipe – 0' to 10' Deep," or "Remove Existing Pipe – 0' to 20' Deep," which price shall include excavation, temporary trench protection, backfill, and all equipment, tools and labor incidental thereto.

There will be no direct payment for the plugging of existing drainage pipes, but the cost thereof shall be included in the respective drainage Contract item(s).

Pay Item	Pay Unit
(Size and Type) Pipe (Thickness) – 0' to 10' Deep	l.f.
(Size and Type) Pipe (Thickness) – 0' to 20' Deep	l.f.
(Size and Type) Pipe Arch (Thickness) – 0' to 10' Deep	l.f.
(Size and Type) Pipe Arch (Thickness) – 0' to 20' Deep	l.f.
Relaid (Size and Type) Pipe– 0' to 10' Deep	l.f.
Relaid (Size and Type) Pipe– 0' to 20' Deep	l.f.
(Size and Type) Relaid Pipe Arch – 0' to 10' Deep	l.f.
(Size and Type) Relaid Pipe Arch – 0' to 20' Deep	l.f.
(Size) Reinforced Concrete Drainage Pipe End	ea.
(Size) Metal Drainage Pipe End	ea.
(Size and Type) Corrugated Metal Pipe Elbow	l.f.
Concrete Pipe Connection	ea.
Remove Existing Pipe – 0' to 10' Deep	l.f.
Remove Existing Pipe – 0' to 20' Deep	l.f.

SECTION 12.00 - GENERAL CLAUSES FOR HIGHWAY SIGNING

Description:

Work under this item shall conform to the requirements of Section 12.00 supplemented as follows:

12.00.07 – Global Positioning System (GPS) coordinates for signs:

The Contractor shall obtain and provide to the Engineer sign installation data, including Global Positioning System (GPS) latitude and longitude coordinates, for all new permanent State owned and maintained signs (temporary and construction signs are not to be included) installed in the project. The Engineer shall forward the sign data to the Division of Traffic Engineering for upload into the Highway Sign Inventory and Maintenance Management Program (SIMS). Sign data submissions or questions relating to SIMS or GPS shall be sent to DOT-SignInventory@ct.gov.

The horizontal datum is to be set to the State Plane Coordinate System, North American Datum of 1983 (NAD83) in feet. The minimum tolerance must be within 10 feet. The format of the GPS information shall be provided in a Microsoft Office compatible spreadsheet (Excel) file with data for each sign. The record for each sign installed is to be compatible with the anticipated CTDOT Sign Inventory and Management System (CTSIMS). The following format shall be used. However, the data fields noted by "#" are not required for the project submission. These entries will be completed as part of the Traffic Engineering CTSIMS data upload.

The cost of this work shall be included in the cost of the respective sign face – sheet aluminum and sign face – extruded aluminum items. The receipt of this electronic database must be received and accepted by the Engineer prior to final payment for items involving permanent highway signing. The electronic database information shall detail information regarding the sign actually installed by the project.

	Field Number	Type	size	Description
	1	text	20	Record Number (starting at 1…)
	2	text	20	Sign Catalog Number
#	3	text	10	Size Height
#	4	text	10	Size Width
	5	text	25	Legend
#	6	text	10	Background Color
#	7	text	10	Copy Color
	8	Link	25	Material (see acceptable categories)
	9	text	30	Comments if any
#	10	text	20	MUTCD Type
	11	text	15	Town

	12	text	5	Route
	13	text	5	Route direction
#	14	text	10	Highway Log Mileage
	15	text	15	Latitude
	16	text	15	Longitude
	17	text	25	Mounting Type
	18	text	25	Reflective Sheeting Type
	19	date	25	Date Installed
	20	text	10	Number of Posts
	21	text	255	Sheeting Manufacturer name and address
	22	text	15	State Project Number (or)
	23	text	15	Encroachment Permit number.
	24	Graphic	*	Sign Picture Graphic.

* Graphics provided shall be representative of the sign supplied and be in color. Graphic formats shall be either JPG or TIFF and provided with a recommended pixel density of 800 x 600. The graphic shall be inserted in the supplied media in field 24 for each sign.

ON-THE-JOB TRAINING (OJT) WORKFORCE DEVELOPMENT PILOT

Description

To provide construction industry related job opportunities to minorities, women and economically disadvantaged individuals; and to increase the likelihood of a diverse and inclusive workforce on Connecticut Department of Transportation (ConnDOT) projects.

All contractors (existing and newcomers) will be automatically placed in the Workforce Development Pilot. Standard OJT requirements typically associated with individual projects will no longer be applied at the project level for new projects. Instead, these requirements will be applicable on an annual basis for each contractor performing work on ConnDOT projects.

The OJT Workforce Development Pilot will allow a contractor to train employees on Federal, State and privately funded projects located in Connecticut. However, contractors should give priority to training employees on ConnDOT Federal-Aid funded projects.

Funding

The Department will establish an OJT fund annually from which contractors may bill the Department directly for eligible trainee hours. The funds for payment of trainee hours on federal-aid projects will be allocated from the ½ of 1% provided for OJT funding, and will be based on hours trained, not to exceed a maximum of $25,000.00 per year; per contractor.

Minorities and Women

Developing, training and upgrading of minorities, women and economically disadvantaged individuals toward journeyperson level status is the primary objective of this special training provision. Accordingly, the Contractor shall make every effort to enroll minority, women and economically disadvantaged individuals as trainees to the extent that such persons are available within a reasonable area of recruitment. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training whether a member of a minority group or not.

Assigning Training Goals

The Department, through the OJT Program Coordinator, will assign training goals for a calendar year based on the contractor's past two year's activities and the contractor's anticipated upcoming year's activity with the Department. At the beginning of each year, all contractors eligible will be contacted by the Department to determine the number of trainees that will be assigned for the upcoming calendar year. At that time, the Contractor shall enter into an agreement with the Department to provide a self-imposed on-the-job training program for the calendar year. This agreement will include a specific number of annual training goals agreed to by both parties. The number of training assignments may range from one (1) to six (6) per

contractor per calendar year. Each January, a summary of the trainees required and the OJT Workforce Development Pilot package will be sent to participating contractors. The number of trainees assigned to each contractor in the summary will increase proportionately not to exceed 6, as shown in the following table. This package will also be provided to contractors as they become newly eligible for the OJT Workforce Development Pilot throughout the remainder of the year. Projects awarded after September 30 will be included in the following year's Program.

The dollar thresholds for training assignments are as follows:

$4.5 – 8 million=	1 trainee
$ 9 – 15 million=	2 trainees
$16 – 23 million=	3 trainees
$24 – 30 million=	4 trainees
$31 – 40 million=	5 trainees
$41 – and above=	6 trainees

Training Classifications

Preference shall be given to providing training in the following skilled work classifications. However, the classifications established are not all-inclusive:

Equipment Operators	Electricians
Laborers	Painters
Carpenters	Iron / Reinforcing Steel Workers
Concrete Finishers	Mechanics
Pipe Layers	Welders

The Department has on file common training classifications and their respective training requirements; that may be used by the contractors. Contractors shall submit new classifications for specific job functions that their employees are performing. The Department will review and recommend for acceptance the new classifications proposed by contractors, if applicable. New classifications shall meet the following requirements:

Proposed training classifications are reasonable and realistic based on the job skill classification needs, and the number of training hours specified in the training classification is consistent with common practices and provides enough time for the trainee to obtain journeyman level status.

Where feasible, 25% percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. The number of trainees shall be distributed among the work classifications on the basis of the contractor's needs and the availability of journeymen in the various classifications within a reasonable area of recruitment.

No employee shall be employed as a trainee in any classification in which they have successfully completed a training course leading to journeyman level status or in which they have been employed as a journeyman.

Records and Reports

The Contractor shall maintain enrollment in the program and submit all required reports documenting company compliance under these contract requirements. These documents and any other information shall be submitted to the OJT Program Coordinator as requested.

Upon the trainee's completion and graduation from the program, the Contractor shall provide each trainee with a certification Certificate showing the type and length of training satisfactorily completed.

Trainee Interviews

In order to determine the continued effectiveness of the OJT Program in Connecticut, the department will periodically conduct personal interviews with current trainees and may survey recent graduates of the program. This enables the OJT Program Coordinator to modify and improve the program as necessary. Trainee interviews are generally conducted at the job site to ensure that the trainees' work and training is consistent with the approved training program.

Trainee Wages

Contractors shall compensate trainees on a graduating pay scale based upon a percentage of the prevailing minimum journeyman wages (Davis-Bacon Act). Minimum pay shall be as follows:

60 percent	of the journeyman wage for the first half of the training period
75 percent	of the journeyman wage for the third quarter of the training period
90 percent	of the journeyman wage for the last quarter of the training period

In no case, will the trainee be paid less than the prevailing rate for general laborer as shown in the contract wage decision (must be approved by the Department of Labor).

Achieving or Failing to Meet Training Goals

The Contractor will be credited for each trainee currently enrolled or who becomes enrolled in the approved training program and providing they receive the required training under the specific training program. Trainees will be allowed to be transferred between projects if required by the Contractor's schedule and workload. The OJT Program Coordinator must be notified of transfers within five (5) days of the transfer or reassignments by e-mail (Phylisha.Coles@ct.gov).

Where a contractor does not or cannot achieve its annual training goal with female or minority trainees, they must produce adequate Good Faith Efforts documentation. Good Faith Efforts are those designed to achieve equal opportunity through positive, aggressive, and continuous result-oriented measures. 23 CFR § 230.409(g) (4). Contractors should request minorities and females from unions when minorities and females are under-represented in the contractor's workforce.

Whenever a contractor requests ConnDOT approval of someone other than a minority or female, the contractor must submit documented evidence of its Good Faith Efforts to fill that position with a minority or female. When a non-minority male is accepted, a contractor must continue to attempt to meet its remaining annual training goals with females and minorities.

Where a contractor has neither attained its goal nor submitted adequate Good Faith Efforts documentation, ConnDOT will issue a letter of non-compliance. Within thirty (30) days of receiving the letter of non-compliance, the contractor must submit a written Corrective Action Plan (CAP) outlining the steps that it will take to remedy the non-compliance. The CAP must be approved by ConnDOT. Failure to comply with the CAP may result in your firm being found non-responsive for future projects.

Measurement and Payment

Optional reimbursement will be made to the contractor for providing the required training under this special provision on ConnDOT Federal-Aid funded projects only.

Contractor will be reimbursed at $0.80 for each hour of training given to an employee in accordance with an approved training or apprenticeship program. This reimbursement will be made even though the Contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the contractor from receiving other reimbursement.

Reimbursement for training is made annually or upon the trainees completion and not on a monthly basis. No payment shall be made to the Contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyperson, is caused by the Contractor.

Program reimbursements will be made directly to the prime contractor on an annual basis. To request reimbursement, prime contractors must complete the Voucher for OJT Workforce Development Pilot Hourly Reimbursement for each trainee in the OJT Program. This form is included in the OJT Workforce Development Pilot package and is available on the Department's web site at:

www.ct.gov/dot

The completed form must be submitted to the Office of Contract Compliance for approval. The form is due on the 15th day of January for each trainee currently enrolled and for hours worked on ConnDOT Federal-Aid funded projects only.

D.B.E. SUBCONTRACTORS AND MATERIAL SUPPLIERS OR MANUFACTURERS

January 2013

I. ABBREVIATIONS AND DEFINITIONS AS USED IN THIS SPECIAL PROVISION

A. *CTDOT* means the Connecticut Department of Transportation.

B. *USDOT* means the U.S. Department of Transportation, including the Office of the Secretary, the Federal Highway Administration ("FHWA"), the Federal Transit Administration ("FTA"), and the Federal Aviation Administration ("FAA").

C. *Broker* means a party acting as an agent for others in negotiating Contracts, Agreements, purchases, sales, etc., in return for a fee or commission.

D. *Contract, Agreement or Subcontract* means a legally binding relationship obligating a seller to furnish supplies or services (including but not limited to, construction and professional services) and the buyer to pay for them. For the purposes of this provision, a lease for equipment or products is also considered to be a Contract.

E. *Contractor* means a consultant, second party or any other entity under Contract to do business with CTDOT or, as the context may require, with another Contractor.

F. *Disadvantaged Business Enterprise ("DBE")* means a for profit small business concern:

1. That is at least 51 percent owned by one or more individuals who are both socially and economically disadvantaged or, in the case of a corporation, in which 51 percent of the stock is owned by one or more such individuals; and

2. Whose management and daily business operations are controlled by one or more of the socially and economically disadvantaged individuals who own it; and

3. Certified by CTDOT under Title 49 of the Code of Federal Regulations, Part 26, (Title 49 CFR Part 23 of the Code of Federal Regulations for Participation of Disadvantaged Business Enterprise in Airport Concessions)

G. *USDOT-assisted Contract* means any Contract between CTDOT and a Contractor (at any tier) funded in whole or in part with USDOT financial assistance.

H. *Good Faith Efforts ("GFE")* means all necessary and reasonable steps to achieve a DBE goal or other requirement which by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the program requirement.

I. *Small Business Concern* means, with respect to firms seeking to participate as DBEs in USDOT-assisted Contracts, a small business concern as defined pursuant to Section 3 of the Small Business Act and Small Business Administration ("SBA") regulations implementing it (13 CFR Part 121) that also does not exceed the cap on average annual gross receipts in 49 CFR Part 26, Section 26.65(b).

J. *Socially and Economically Disadvantaged Individual* means any individual who is a citizen (or lawfully admitted permanent resident) of the United States and who is:

1. Any individual who CTDOT finds, on a case-by-case basis, to be a socially and economically disadvantaged individual.

2. Any individuals in the following groups, members of which are rebuttably presumed to be socially and economically disadvantaged:

    - "Black Americans", which includes persons having origins in any of the Black racial groups of Africa;
    - "Hispanic Americans", which includes persons of Mexican, Puerto Rican, Cuban, Dominican, Central or South American, or other Spanish or Portuguese culture or origin, regardless of race;
    - "Native Americans", which includes persons who are American Indians, Eskimos, Aleuts, or Native Hawaiians.
    - "Asian-Pacific Americans", which includes persons whose origins are from Japan, China, Taiwan, Korea, Burma (Myanmar), Vietnam, Laos, Cambodia (Kampuchea), Thailand, Malaysia, Indonesia, the Philippines, Brunei, Samoa, Guam, the U.S. Trust Territories of the Pacific Islands (Republic of Palau), the Commonwealth of the Northern Marianas Islands, Macao, Fiji, Tonga, Kiribati, Juvalu, Nauru, or Federated States of Micronesia;
    - "Subcontinent Asian Americans", which includes persons whose origins are from India, Pakistan, Bangladesh, Bhutan, the Maldives Islands, Nepal or Sri Lanka;
    - Women;
    - Any additional groups whose members are designated as socially and economically disadvantaged by the SBA, at such time as the SBA designation becomes effective.

K. *Commercially Useful Function ("CUF")* means the DBE is responsible for the execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved with its own forces and equipment. The DBE must be responsible for procuring, determining quantity, negotiating price, determining quality and paying for all materials (where applicable) associated with their work. The DBE must also perform at least 30% of the total cost of its contract with its own workforce.

II. ADMINISTRATIVE REQUIREMENTS

A. General Requirements

A DBE goal percentage equaling __**0**__ percent (%) of the Contract value has been established for this Contract. This DBE goal percentage will be applied to the final Contract value to ultimately determine the required DBE goal. If additional work is required, DBE firms should be provided the appropriate opportunities to achieve the required DBE goal.

In order to receive credit toward the Contract DBE goal, the firms utilized as DBE subcontractors or suppliers must be certified as DBEs in the type of work to be counted for credit by CTDOT's Office of Contract Compliance prior to the date of the execution of the subcontract. Neither CTDOT nor the State of Connecticut's Unified Certification Program (UCP) makes any representation as to any DBE's

technical or financial ability to perform the work. Prime contractors are solely responsible for performing due diligence in hiring DBE subcontractors.

All DBEs shall perform a CUF for the work that is assigned to them. The Contractor shall monitor and ensure that the DBE is in compliance with this requirement. The Connecticut DBE UPC Directory of certified firms can be found on the CTDOT website http://www.ct.gov/dot. The directory lists certified DBE firms with a description of services that they are certified to perform. Only work identified in this listing may be counted towards the project's DBE goal. A DBE firm may request to have services added at any time by contacting CTDOT's Office of Contract Compliance. No credit shall be counted for any DBE firm found not to be performing a CUF.

Once a Contract is awarded, all DBEs that were listed on the pre-award DBE commitment document must be utilized. The Contractor is obligated to provide the value and items of the work originally established in the pre-award documentation to the DBE firms listed in the pre-award documentation. Any modifications to the pre-award commitment must follow the procedure established in Section II-C.

The Contractor shall designate a liaison officer who will administer the Contractor's DBE program. Upon execution of this Contract, the name of the liaison officer shall be furnished in writing to CTDOT's unit administering the Contract, CTDOT's Office of Contract Compliance and CTDOT's Office of Construction ("OOC"). Contact information for the designated liaison officer shall be furnished no later than the scheduled date for the pre-construction meeting.

The Contractor shall submit a bi-monthly report to the appropriate CTDOT unit administering the Contract. This report shall indicate what work has been performed to date, with the dollars paid and percentage of DBE goal completed.

Verified payments made to DBEs shall be included in this bi-monthly report. A sample form is included on the CTDOT website.

In addition, the report shall include:

1. A projected time frame of when the remaining work is to be completed for each DBE.

2. A statement by the Contractor either confirming that the approved DBEs are on schedule to meet the Contract goal, or that the Contractor is actively pursuing a GFE.

3. If retainage is specified in the Contract specifications, then a statement of certification that the subcontractors' retainage is being released in accordance with 1.08.01 (Revised or supplemented).

Failure by the Contractor to provide the required reports may result in CTDOT withholding an amount equal to one percent (1%) of the monthly estimate until the required documentation is received.

The Contractor shall receive DBE credit when a DBE, or any combination of DBEs, perform work under the Contract in accordance with this specification.

Only work actually performed by and/or services provided by DBEs which are certified for such work and/or services, as verified by CTDOT, can be counted toward the DBE goal. Supplies and equipment a DBE purchases or leases from the Contractor or its affiliate cannot be counted toward the goal.

Monitoring of the CUF will occur by CTDOT throughout the life of the project. If it is unclear that the DBE is performing the work specified in its subcontract with the prime Contractor, further review may be required. If it is determined that the DBE is not performing a CUF, then the work performed by that DBE will not be counted towards the DBE goal percentage.

B. Subcontract Requirements

The Contractor shall submit to CTDOT's OOC all requests for subcontractor approvals on the standard CLA-12 forms provided by CTDOT. The dollar amount and items of work identified on the CLA-12 form must, at minimum, equal the dollar value submitted in the pre-award commitment. CLA-12 forms can be found at http://www.ct.gov/dot/construction under the "Subcontractor Approval" section. All DBE subcontractors must be identified on the CLA-12 form, regardless of whether they are being utilized to meet a Contract goal percentage. A copy of the legal Contract between the Contractor and the DBE subcontractor/supplier, a copy of the Title VI Contractor Assurances and a copy of the Required Contract Provision for Federal Aid Construction Contracts (Form FHWA-1273) (Federal Highway Administration projects only) must be submitted along with a request for subcontractor approval. These attachments cannot be substituted by reference.

If retainage is specified in the Contract specifications, then the subcontract agreement must contain a prompt payment mechanism that acts in accordance with Article 1.08.01 (Revised or supplemented).

If the Contract specifications do not contain a retainage clause, the Contractor shall not include a retainage clause in any subcontract agreement, and in this case, if a Contractor does include a retainage clause, it shall be deemed unenforceable.

In addition, the following documents are to be included with the CLA-12, if applicable:

- An explanation indicating who will purchase material.
- A statement explaining any method or arrangement for utilization of the Contractor's equipment.

The subcontract must show items of work to be performed, unit prices and, if a partial item, the work involved by all parties. If the subcontract items of work or unit prices are modified, the procedure established in Section II-C must be followed.

Should a DBE subcontractor further sublet items of work assigned to it, only lower tier subcontractors who are certified as a DBE firm will be counted toward the DBE goal. If the lower tier subcontractor is a non-DBE firm, the value of the work performed by that firm will not be counted as credit toward the DBE goal.

The use of joint checks between a DBE firm and the Contractor is acceptable, provided that written approval is received from the OOC prior to the issuance of any joint check. Should it become necessary to issue a joint check between the DBE firm and the Contractor to purchase materials, the DBE firm must be responsible for negotiating the cost, determining the quality and quantity, ordering the material and installing (where applicable), and administering the payment to the supplier. The Contractor should not make payment directly to suppliers.

Each subcontract the Contractor signs with a subcontractor must contain the following assurance:

"The subcontractor/supplier/manufacturer shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor/subcontractor/supplier/manufacturer to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate."

C. Modification to Pre-Award Commitment

Contractors may not terminate for convenience any DBE subcontractor or supplier that was listed on the pre-award DBE commitment without prior written approval of the OOC. This includes, but is not limited to, instances in which a Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm. Prior to approval, the Contractor must demonstrate to the satisfaction of the OOC, that it has good cause, as found in 49CFR Part 26.53 (f)(3), for termination of the DBE firm.

Before transmitting its request for approval to terminate pre-award DBE firms to the OOC, the Contractor must give written notice to the DBE subcontractor and include a copy to the OOC of its notice to terminate and/or substitute, and the reason for the notice.

The Contractor must provide five (5) days for the affected DBE firm to respond. This affords the DBE firm the opportunity to advise the OOC and the Contractor of any reasons why it objects to the termination of its subcontract and why the OOC should not approve the Contractor's action.

Once the Contract is awarded, should there be any amendments or modifications of the approved pre-award DBE submission other than termination of a DBE firm, the Contractor shall follow the procedure below that best meets the criteria associated with the reason for modification:

1. If the change is due to a scope of work revision or non-routine quantity revision by CTDOT, the Contractor must notify CTDOT's OOC in writing or via electronic mail that their DBE participation on the project may be impacted as soon as they are aware of the change. In this case, a release of work from the DBE firm may not be required; however the Contractor must concurrently notify the DBE firm in writing, and copy the OOC for inclusion in the project DBE file. This does not relieve the Contractor of its obligation to meet the Contract specified DBE goal, or of any other responsibility found in this specification.

2. If the change is due to a factor other than a CTDOT directive, a request for approval in writing or via electronic mail of the modification from the OOC must be submitted, along with an explanation of the change(s), prior to the commencement of work. The Contractor must also obtain a letter of release from the originally named DBE indicating their concurrence with the change, and the reason(s) for their inability to perform the work. In the event a release cannot be obtained, the Contractor must document all efforts made to obtain it.

3. In the event a DBE firm that was listed in the pre-award documents is **unable** or **unwilling** to perform the work assigned, the Contractor shall:

- Notify the OOC Division Chief immediately and make efforts to obtain a release of work from the firm.

- Submit documentation that will provide a basis for the change to the OOC for review and approval prior to the implementation of the change.

- Use the DBE Directory to identify and contact firms certified to perform the type of work that was assigned to the unable or unwilling DBE firm. The Contractor should also contact CTDOT's Office of Contract Compliance for assistance in locating additional DBE firms to the extent needed to meet the contract goal.

Should a DBE subcontractor be terminated or fail to complete work on the Contract for any reason, the Contractor must make a GFE to find another DBE subcontractor to substitute for the original DBE. The DBE replacement shall be given every opportunity to perform at least the same amount of work under the Contract as the original DBE subcontractor.

If the Contractor is unable to find a DBE replacement:

- The Contractor should identify other contracting opportunities and solicit DBE firms in an effort to meet the Contract DBE goal requirement, if necessary, and provide documentation to support a GFE. (Refer to GFE in Section III.)

- The Contractor must demonstrate that the originally named DBE, who is unable or unwilling to perform the work assigned, is in default of its subcontract, or identify other issues that affected the DBE firm's ability to perform the assigned work. **The Contractor's ability to negotiate a more advantageous agreement with another subcontractor is not a valid basis for change.**

III. GOOD FAITH EFFORTS

The DBE goal is **NOT** reduced or waived for projects where the Contractor receives a Pre-Award GFE determination from the Office of Contract Compliance prior to the award of the Contract. It remains the responsibility of the Contractor to make a continuing GFE to achieve the specified Contract DBE goal. The Contractor shall pursue every available opportunity to obtain additional DBE firms and document all efforts made in such attempts.

At the completion of all Contract work, the Contractor shall submit a final report to CTDOT`s unit administering the Contract indicating the work done by and the dollars paid to DBEs. Only verified payments made to DBEs performing a CUF will be counted towards the Contract goal.

Goal attainment is based on the total Contract value, which includes all construction orders created during the Contract. If the Contractor does not achieve the specified Contract goal for DBE participation or has not provided the value of work to the DBE firms originally committed to in the pre-award submission, the Contractor shall submit documentation to CTDOT`s unit administering the Contract detailing the GFE made during the performance of the Contract to satisfy the goal.

A GFE should consist of the following, where applicable (CTDOT reserves the right to request additional information):

1. A detailed statement of the efforts made to replace an unable or unwilling DBE firm, and a description of any additional subcontracting opportunities that were identified and offered to DBE firms in order to increase the likelihood of achieving the stated goal.

2. A detailed statement, including documentation of the efforts made to contact and solicit bids from certified DBEs, including the names, addresses, and telephone numbers of each DBE firm contacted; the date of contact and a description of the information provided to each DBE regarding the scope of services and anticipated time schedule of work items proposed to be subcontracted and the response from firms contacted.

3. Provide a detailed explanation for each DBE that submitted a subcontract proposal which the Contractor considered to be unacceptable stating the reason(s) for this conclusion.

4. Provide documentation, if any, to support contacts made with CTDOT requesting assistance in satisfying the specified Contract goal.

5. Provide documentation of all other efforts undertaken by the Contractor to meet the defined goal. Additional documentation of efforts made to obtain DBE firms may include but will not be limited to:
   - Negotiations held in good faith with interested DBE firms, not rejecting them without sound reasons.
   - Written notice provided to a reasonable number of specific DBE firms in sufficient time to allow effective participation.
   - Those portions of work that could be performed by readily available DBE firms.

In instances where the Contractor can adequately document or substantiate its GFE and compliance with other DBE Program requirements, the Contractor will have satisfied the DBE requirement and no administrative remedies will be imposed.

IV. PROJECT COMPLETION

At the completion of all Contract work, the Contractor shall:

1. Submit a final report to CTDOT`s unit administering the Contract indicating the work done by, and the dollars paid to DBEs.

2. Submit verified payments made to all DBE subcontractors for the work that was completed.

3. Submit documentation detailing any changes to the DBE pre-award subcontractors that have not met the original DBE pre-award commitment, including copies of the Department's approvals of those changes.

4. Retain all records for a period of three (3) years following acceptance by CTDOT of the Contract and those records shall be available at reasonable times and places for inspection by authorized representatives of CTDOT and Federal agencies. If any litigation, claim, or audit is started before

the expiration of the three (3) year period, the records shall be retained until all litigation, claims, or audit findings involving the records are resolved.

If the Contractor does not achieve the specified Contract goal for DBE participation in addition to meeting the dollar value committed to the DBE subcontractors identified in the pre-award commitment, the Contractor shall submit documentation to CTDOT`s unit administering the Contract detailing the GFE made during the performance of the Contract to satisfy the goal.

V. SHORTFALLS

A. Failure to meet DBE goals

As specified in (II-A) above, attainment of the Contract DBE goal is based on the final Contract value. The Contractor is expected to achieve the amount of DBE participation originally committed to at the time of award; however, additional efforts must be made to provide opportunities to DBE firms in the event a Contract's original value is increased during the life of the Contract.

The Contractor is expected to utilize the DBE subcontractors originally committed in the DBE pre-award documentation for the work and dollar value that was originally assigned.

If a DBE is terminated or is unable or unwilling to complete its work on a Contract, the Contractor shall make a GFE to replace that DBE with another certified DBE to meet the Contract goal.

The Contractor shall immediately notify the OOC of the DBE's inability or unwillingness to perform, and provide reasonable documentation and make efforts to obtain a release of work from the firm.

If the Contractor is unable to find a DBE replacement, then the Contractor should identify other contracting opportunities and solicit DBE firms in an effort to meet the Contract DBE goal requirement, if necessary, and provide documentation to support a GFE.

When a DBE is unable or unwilling to perform, or is terminated for just cause, the Contractor shall make a GFE to find other DBE opportunities to increase DBE participation to the extent necessary to at least satisfy the Contract goal.

For any DBE pre-award subcontractor that has been released appropriately from the project, no remedy will be assessed, provided that the Contractor has met the criteria described in Section II-C.

B. Administrative Remedies for Non-Compliance:

In cases where the Contractor has failed to meet the Contract specified DBE goal or the DBE pre-award commitment, and where no GFE has been demonstrated, then one or more of the following administrative remedies will be applied:

1. A reduction in Contract payments to the Contractor as determined by CTDOT, not to exceed the shortfall amount of the **DBE goal**. The maximum shortfall will be calculated by multiplying the

Contract DBE goal (adjusted by any applicable GFE) by the final Contract value, and subtracting any verified final payments made to DBE firms by the Contractor.

2. A reduction in Contract payments to the Contractor determined by CTDOT, not to exceed the shortfall amount of the **pre-award commitment**. The maximum shortfall will be calculated by subtracting any verified final payments made by the Contractor to each DBE subcontractor from the amount originally committed to that subcontractor in the pre-award commitment.

3. A reduction in Contract payments to the Contractor determined by CTDOT for any pre-award DBE subcontractor who has not obtained the dollar value of work identified in the DBE pre-award commitment and has not followed the requirements of Section II-C or for any DBE firm submitted for DBE credit that has not performed a CUF.

4. The Contractor being required to submit a written DBE Program Corrective Action Plan to CTDOT for review and approval, which is aimed at ensuring compliance on future projects.

5. The Contractor being required to attend a Non-Responsibility Meeting on the next contract where it is the apparent low bidder.

6. The Contractor being suspended from bidding on contracts for a period not to exceed six (6) months.

VI. CLASSIFICATIONS OTHER THAN SUBCONTRACTORS

A. Material Manufacturers

Credit for DBE manufacturers is 100% of the value of the manufactured product. A manufacturer is a firm that operates or maintains a factory or establishment that produces on the premises the materials or supplies obtained by the Contractor.

If the Contractor elects to utilize a DBE manufacturer to satisfy a portion of, or the entire specified DBE goal, the Contractor must provide the OOC with:

- Subcontractor Approval Form (CLA-12) indicating the firm designation,
- An executed “Affidavit for the Utilization of Material Suppliers or Manufacturers" (sample attached), and
- Substantiation of payments made to the supplier or manufacturer for materials used on the project.

B. Material Suppliers (Dealers)

Credit for DBE dealers/suppliers is limited to 60% of the value of the material to be supplied, provided such material is obtained from an approved DBE dealer/supplier.

In order for a firm to be considered a regular dealer, the firm must own, operate, or maintain a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. At least one of the following criteria

must apply:

- To be a regular dealer, the firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question.
- A person may be a regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone, or asphalt without owning, operating or maintaining a place of business if the person both owns and operates distribution equipment for the products. Any supplementing of the regular dealers' own distribution equipment shall be by long term lease agreement, and not on an ad hoc or contract to contract basis.
- Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions are not regular dealers within the meaning of this paragraph.

If the Contractor elects to utilize a DBE supplier to satisfy a portion or the entire specified DBE goal, the Contractor must provide the OOC with:

- Subcontractor Approval Form (CLA-12) indicating the firm designation,
- An executed "Affidavit for the Utilization of Material Suppliers or Manufacturers" (sample attached), and
- Substantiation of payments made to the supplier or manufacturer for materials used on the project.

C. Brokering

- Brokering of work for DBE firms who have been listed by the Department as certified brokers is allowed. Credit for those firms shall be applied following the procedures in Section VI-D.

- Brokering of work by DBEs who have been approved to perform subcontract work with their own workforce and equipment is not allowed, and is a Contract violation.

- Firms involved in the brokering of work, whether they are DBEs and/or majority firms who engage in willful falsification, distortion or misrepresentation with respect to any facts related to the project shall be referred to the U.S. DOT, Office of the Inspector General for prosecution under Title 18, U.S. Code, Part I, Chapter 47, Section 1020.

D. Non-Manufacturing or Non-Supplier DBE Credit

Contractors may count towards their DBE goals the following expenditures with DBEs that are not manufacturers or suppliers:

- Reasonable fees or commissions charged for providing a bona fide service such as professional, technical, consultant or managerial services and assistance in the procurement of essential personnel, facilities, equipment materials or supplies necessary for the performance of the Contract, provided that the fee or commission is determined by the OOC to be reasonable and consistent with fees customarily allowed for similar services.

- The fees charged only for delivery of materials and supplies required on a job site when the hauler, trucker, or delivery service is a DBE, and not the manufacturer, or regular dealer of the materials and

supplies, and provided that the fees are determined by the OOC to be reasonable and not excessive as compared with fees customarily allowed for similar services.

- The fees or commissions charged for providing bonds or insurance specifically required for the performance of the Contract, provided that the fees or commissions are determined by CTDOT to be reasonable and not excessive as compared with fees customarily allowed for similar services.

E. Trucking

While technically still considered a subcontractor, the rules for counting credit for DBE trucking firms are as follows:

- The DBE must own and operate at least one fully licensed, insured, and operational truck used on the Contract.
- The DBE receives credit for the total value of the transportation services it provides on the Contract using trucks it owns, insures and operates using drivers it employs.
- The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the Contract.
- The DBE may lease trucks from a non-DBE firm; however the DBE may only receive credit for any fees or commissions received for arranging transportation services provided by the non-DBE firms. Additionally, the DBE firm must demonstrate that they are in full control of the trucking operation for which they are seeking credit.

VII. Suspected DBE Fraud

In appropriate cases, CTDOT will bring to the attention of the USDOT any appearance of false, fraudulent, or dishonest conduct in connection with the DBE program, so that USDOT can take the steps, e.g. referral to the Department of Justice for criminal prosecution, referral to USDOT Inspector General, action under suspension and debarment or Program Fraud and Civil Penalties rules provided in 49 CFR Part 31.

CONNECTICUT DEPARTMENT OF TRANSPORTATION
(OFFICE OF CONSTRUCTION)
BUREAU OF ENGINEERING AND CONSTRUCTION

This affidavit must be completed by the State Contractor's DBE notarized and attached to the contractor's request to utilize a DBE supplier or manufacturer as a credit towards its DBE contract requirements; failure to do so will result in not receiving credit towards the contract DBE requirement.

State Contract No.

Federal Aid Project No.

Description of Project

I, _____, acting in behalf of _____,
(Name of person signing Affidavit) (DBE person, firm, association or corporation)
of which I am the _____ certify and affirm that _____
(Title of Person) (DBE person, firm, association or corporation)
is a certified Connecticut Department of Transportation DBE. I further certify and affirm that I have read and understand 49 CFR, Sec. 26.55(e)(2), as the same may be revised.

I further certify and affirm that _____ will assume the actual and
(DBE person, firm, association or Corporation)
for the provision of the materials and/or supplies sought by _____ .

If a manufacturer, I operate or maintain a factory or establishment that produces, on the premises, the materials, supplies, articles or equipment required under the contract an of the general character described by the specifications.

If a supplier, I perform a commercially useful function in the supply process. As a regular dealer, I, at a minimum, own and operate the distribution equipment for bulk items. Any supplementing of my distribution equipment shall be by long-term lease agreement, and not on an ad hoc or contract-by-contract basis.

I understand that false statements made herein are punishable by Law (Sec. 53a-157), CGS, as revised).

(Name of Corporation or Firm)

(Signature & Title of Official making the Affidavit)

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

Notary Public (Commissioner of the Superior Court)

My Commission Expires_____

CERTIFICATE OF CORPORATION

I, _____, certify that I am the _____
(Official) (President)
of the Corporation named in the foregoing instrument; that I have been duly authorized to affix the seal of the Corporation to such papers as require the seal; that _____, who signed said instrument on behalf of the Corporation, was then
of said corporation; that said instrument was duly signed for and in behalf of said Corporation by authority of its governing body and is within the scope of its corporation powers.

_____ _____
(Signature of Person Certifying) (Date)

ITEM #0101002A - CONFINED SPACE HEALTH AND SAFETY

Description:

The work required on the Rehabilitation of Bridge No. 06728, Route 9 over Pole Bridge Brook, will involve construction activities in areas that meet the definition of a "Confined Space" (CS) as defined in 29 CFR Part 1910.146. The types of activities as well as materials, products and procedures involved in this work will have the characteristics required to potentially create a hazardous atmosphere within the CS, thereby rendering the area a "Permit- Required Confined Space" (PRCS) work area as defined in 29 CFR 1910.146.

The Contractor shall prepare and administer a written program that protects the safety of its employees, subcontractors, the Engineer, and all other persons who may enter the PRCS work areas during the execution of the work. This program includes monitoring of air spaces in all PRCS work areas; providing proper training of all with access to the PRCS work area; and all required record keeping. The Contractor shall also furnish all required respiratory and other personal protective equipment (PPE) needed for its own employees and subcontractors including medical surveillance, testing, fit testing and training of all individuals in its safe and proper usage.

The PRCS entry program that is developed and administered by the Contractor under this Item shall apply to ALL personnel who may have a need to access the PRCS work area as part of this Project. This includes all personnel directly or indirectly employed by the Contractor and the Engineer. The Contractor shall furnish all training required to safely and effectively implement the entry programs.

Applicable Regulations

At a minimum, the Contractor's work under this item shall comply with the following Federal Regulations:

1. 29 CFR Part 1910.1020 Access to Employee Exposure and Medical Records
2. 29 CFR Part 1910.134 Respiratory Protection
3. 29 CFR Part 1910.146 Permit-Required Confined Spaces
4. 29 CFR Part 1910.1000 Air Contaminants
5. 29 CFR Part 1926 Safety and Health Regulations for Construction
6. 29 CFR Part 1926.24 Fire Protection and Prevention
7. 29 CFR Part 1910, Subpart Q Welding, Cutting and Brazing

Construction Methods:

Within 30 calendar days of the award of this Contract, the Contractor shall submit to the Engineer a written Confined Space Health and Safety Plan (CS HASP) prepared by a Certified Industrial Hygienist (CIH) that fully describes the Contractor's proposed PRCS entry program

required under 29 CFR Part 1910.146. This document shall describe in detail all elements of the proposed entry program including, but not limited to, the following:

1. Identification of potential hazards;

2. Measures to provide safe entrance and egress by authorized entrants;

3. Measures to prevent unauthorized entry;

4. Acceptable entry conditions;

5. Measures to isolate/restrict permit space;

6. Measures to provide ventilation required to eliminate or control atmospheric hazards;

7. Measures to monitor atmospheric conditions within the work space throughout construction;

8. Measures to monitor for flooding conditions within the culvert;

9. Measures to communicate with personnel working in the PRCS work area; provide description of how communication procedures will interface with hearing protection measures;

10. Description of method of work and equipment to be used for removal of soil/sediment and all other work inside the confined space, maintenance records of equipment shall also be furnished;

11. Required personal protective equipment;

12. Rescue and emergency equipment to be furnished;

13. Any other equipment to be furnished for safe entry into and rescue from PRCS work areas;

14. A description of how attendant(s) and entry supervisors will be deployed and their responsibilities, including a list of names and qualifications of all persons who are to have active roles as attendants, entry supervisors and air monitors;

15. Lighting equipment, including methods of grounding, to be furnished;

16. Measures for fire protection and prevention within the PRCS;

17. A description of any "Hot Work", i.e. welding, cutting or brazing to be performed within the PRCS, Hot Work Permit Requirements and safety measures to be taken;

18. Detailed procedures for:

    a. Furnishing or summoning rescue and emergency services, including the location of telephone number and directions to the nearest hospital,

        i. Contacting the local fire department and EMS service to determine their rescue capabilities that are available during those time periods when work in the PRCS will be taking place. Provide a written description of capabilities of outside rescue/emergency services that would be summoned in an emergency. Provide written concurrence from such fire department/EMS/outside rescue/emergency services that they will support any rescue operation in the PRCS.

        ii. In the event the local fire and EMS services are not equipped/trained to provide CS rescue, provide a description of the measures which will be used to perform CS rescue.

    b. Rescuing entrants from PRCS, including non-entry rescue, retrieval systems or methods,

    c. Providing necessary emergency services to rescued entrants,

    d. Preventing unauthorized personnel from attempting a rescue.

19. Procedures for coordinating entry operations of all individuals who have reason to enter PRCS work areas, including employees of the Contractor, his subcontractor(s), the Engineer, and employees and agents of the Department;

20. Procedures for concluding the entry after entry operations are completed;

21. Procedures for reviewing the entry permit program and making revisions to correct deficiencies;

22. Proposed training programs(s) to be conducted by the Contractor that conform to 29 CFR Parts 19l0.l46(g) and 19l0.l34(k), provide current applicable certificates of training;

23. Proposed record keeping system.

24. The name and qualifications of the individual proposed to serve as Confined Space Health and Safety Officer (CSHSO). The CSHSO shall have full authority to carry out and ensure compliance with the CS HASP. The Contractor shall provide a competent CSHSO on-site who is capable of identifying existing and potential hazards in the surroundings or working conditions which are unsanitary, hazardous or dangerous to employees and who has authorization to take prompt corrective measures to eliminate or control them. The qualifications of the CSHSO shall include completion of OSHA 40-

hour HAZWOPER training and 8-hour HAZWOPER supervisory training, completion of a Confined Space Entry Operations Program, a minimum of one year of working experience as a confined space entry supervisor, a working knowledge of Federal and State safety regulations; specialized training or documented experience (one year minimum) in personal and respiratory protective equipment program implementation; the proper use of air monitoring instruments, air sampling methods and procedures; and certification training in first aid and CPR by a recognized, approved organization such as the American Red Cross. Provide current certificates of training.

The primary duties of the CSHSO shall be those associated with worker health and safety in a confined space. The Contractor's CSHSO responsibilities shall be detailed in the written CS HASP and shall include, but not be limited to the following:

a. Directing and implementing the CS HASP;

b. Ensuring that all project personnel have been adequately trained in the recognition and avoidance of unsafe conditions and the regulations applicable to the work environment to control or eliminate any hazards or other exposure to illness or injury. All personnel shall be adequately trained in procedures outlined in the Contractor's written CS HASP;

c. Authorizing Stop Work Orders, which shall be executed upon the determination of an imminent health safety concern;

d. Contacting the Contractor's CIH and the Engineer immediately upon the issuance of a Stop Work order when the CSHSO has made the determination of an imminent health and safety concern;

e. Authorizing work to resume, upon approval from the Contractor's CIH;

f. Directing activities, as defined in the Contractor's written CS HASP, during emergency situations; and

g. Providing personal monitoring where applicable, as identified in the CS HASP.

The Engineer will review the Contractor's submittal within four weeks. If the Engineer requires any changes, the entire document shall be resubmitted with changes. All training shall be completed prior to commencing work within the PRCS work area.

No work shall be allowed within any area deemed by the Engineer to be a confined space until the Engineer has accepted the Contractor's written CS HASP.

Training

The Contractor shall be required to train all individuals who may have reason to enter a PRCS

work area in all aspects of the permit entry program in a manner that complies with 29 CFR Part 1929.146 (g).

1. The duties and responsibilities of each individual;

2. Procedures to be followed when working the PRCS work areas, including anticipated hazards;

3. Air monitoring programs;

4. Proper communication procedures;

5. Early warning signs and symptoms;

6. Emergency rescue procedures, including basic first aid and cardiopulmonary resuscitation (CPR); and

7. Proper use of respiratory equipment (if required) including fit testing and medical surveillance, in accordance with the requirements of 29 CFR Part 1910.134.

The Contractor shall keep records of the date of each training session, the purpose of the session and a list of attendees.

Medical Monitoring

If in the event respirators are required, the Contractor shall have medical evaluations completed for all of its employees, including subcontractors, who may have reason to enter a PRCS work area in accordance with 1910.134(e) and any other applicable regulations prior to starting work in the PRCS.

Storage of Materials

The Contractor shall not store any raw materials, combustible materials or waste products within any confined space areas.

Method of Measurement:

Within thirty (30) calendar days of the award of the Contract, the Contractor shall submit to the Engineer for acceptance, a breakdown of the lump sum bid price for this item detailing:

1. The development costs associated with preparing the CS HASP in accordance with these Specifications;

2. The lump sum cost for employee training, including all Contractor employees, subcontractor employees, and up to ten (10) Department employees; and

3. The cost per month for the duration of the project to implement the CS HASP and provide services for the CIH and the CSHSO.

If the lump sum bid price breakdown is unacceptable to the Engineer, substantiation showing that the submitted costs are reasonable shall be required.

Upon acceptance of the payment schedule by the Engineer, payments for work performed will be made as follows:

1. The lump sum development cost will be certified for payment.

2. The lump sum cost for training will be certified for payment.

3. The Contractor shall demonstrate to the Engineer monthly that the CS HASP has been kept current and is being implemented and the monthly cost will be certified for payment.

Failure of the Contractor to implement the CS HASP in accordance with this Specification will result in the withholding of all Contract payments.

The Contractor shall submit a schedule of values for payment to the Department for review and Comment.

Basis of Payment:

This work will be paid for at the lump sum price for "Confined Space Health and Safety" which price shall include all materials, tools, equipment and labor incidental to the completion of this item for the duration of the project to develop, revise, monitor and implement the CS HASP. Such costs also include providing the services of the CIH and CSHSO; training; record keeping; atmospheric testing and monitoring; PPE and personal respiratory equipment; disposal of PPE; communication equipment; emergency medical and rescue equipment and personnel; medical surveillance; engineering controls; furnishing, operating and maintaining a ventilation system; and implementing all other CS HASP protocols and procedures established to protect the health and safety of on-site workers when working in the confined space.

Pay Item	Pay Unit
Confined Space Health and Safety	L.S.

ITEM #0204151A - HANDLING WATER

Description: Work under this item shall consist of furnishing, installing, maintaining, removing and disposing of a temporary water handling system to redirect water beyond, through or around the limits of construction to allow work to be done in the dry. This work shall also include the design of the system, if warranted. The water handling system may include but not be limited to water-handling-cofferdams, pumps, hoses and pipes. Also included shall be any work or equipment necessary for dewatering.

Materials: The materials required for this work shall be as shown on the plans, on the accepted working drawings, or as ordered by the Engineer.

Construction Methods: The Contractor shall prepare and submit written procedures for handling water. Working drawings, in accordance with Article 1.05.02, shall also be prepared and submitted as warranted by the complexity and safety considerations of the work.

The Contractor shall verify stream conditions, elevations, or tidal conditions associated with the Project to determine the type of temporary water handling system required to redirect water away from work being performed. The system shall be designed to be compatible with the stage construction, and Maintenance and Protection of Traffic as indicated in the Contract and in accordance with Section 1.10.

The Contractor shall be responsible for maintenance of the water handling system. If the system becomes damaged or displaced during construction, the system shall be corrected as required.

Unless otherwise provided or directed, all temporary water handling systems shall be removed and disposed of in an approved manner when no longer required.

Method of Measurement: The work under this item, being paid on a lump sum basis, will not be measured for payment.

Basis of Payment: This work, completed and accepted, will be paid for at the Contract lump sum price for "Handling Water," which price shall include submittals and working drawings, furnishing, installing, maintaining, removing, and disposing of all temporary water handling systems as are necessary for completion of the work, including energy dissipator. This price shall include design, if warranted, and all materials, equipment, tools, labor and work incidental thereto.

A schedule of values for payment shall be submitted to the Engineer for review and comment.

Pay Item	Pay Unit
Handing Water	L.S.

ITEM #0601073A - CLASS "S" CONCRETE

Description: Work under this item shall consist of locating and repairing voids in horizontal and vertical surfaces of concrete areas greater than 1 inch deep (exclusive of deck slabs and concrete pavement). This work shall include sawcutting, abrasive blast cleaning areas to be patched, roughening surfaces, installing welded wire fabric and reinforcement, and casting concrete as shown in the plans.

Access shall be provided for the Engineer to identify repair locations and limits prior to any repair work, and also shall be provided for the Engineer to verify soundness of the repairs.

Materials: Materials shall meet the requirements of Section M.03, modified as follows:

M.03.02—Mix Design Requirements is amended and supplemented as follows:

TYPE	PROPORT. BY WT. APPROX.	WATER PER BAG MAX.	CEM. FACTOR
Class "S"	1:2.16:2.20	5.7 (Gals.)	7.0 (Bags/C.Y.)

1. Coarse Aggregate:

   (c) Grading: Coarse aggregate for Class "S" Concrete shall meet the following gradation requirements:

   For Class "S" Concrete, the required grading shall be obtained by using 100% 3/8 inch coarse aggregate.

3. Cement:

   Type I or II Portland Cement shall be used for Class "S" Concrete.

5. Admixtures:

Add the following:

(c) Superplasticizing Admixtures: The superplasticizer admixture shall be a high-range water reducer (HRWR) capable of increasing the slump of the mix from approximately 2 1/2 inches to 6 1/2 inches upon the addition of the amount recommended by the respective manufacturer. The HRWR shall conform to ASTM C494 Type F or Type G and shall be approved by the Engineer. The use of this material shall be in strict accordance with the respective manufacturer's written instructions and procedures.

M.03.04—Curing Materials is amended and supplemented as follows:

3. Liquid Membrane Forming Compound: No liquid membrane forming compound shall be used for Class "S" Concrete.

Add the following:

Welded Wire Fabric: Welded wire fabric shall conform to the requirements of ASTM A185.

Primer: Zinc rich primer shall conform to Federal Specification TT-P-641, Type 1 and shall be obtained from one of the suppliers on the American Galvanizers Association's most current Product Suppliers List for Zinc-Rich Paints and shall be brush-applied in accordance with the manufacturer's instructions. Spraying shall not be permitted. A Materials Certificate is required for the primer in accordance with Article 1.06.07, certifying the conformance of this material to the requirements stated herein.

Composition:
Class "S" Concrete shall conform to the requirements as specified in M.03 as amended herein. Class "S" Concrete shall contain not less than 6.5% and not more than 8.5% entrained air at the time of placement.

The Class "S" Concrete shall have a minimum 4,000 psi compressive strength at 28 days.

Consistency:
Class "S" Concrete shall have a slump range of 2 inches to 4 inches prior to the addition of the HRWR and from 6 inches to 8 inches slump after the addition of the HRWR. The addition rates of the air-entraining admixture (A.E.A.) and the HRWR will vary. Frequent field testing of the air content and slump prior to and after addition of the HRWR will be the determining factor of actual addition rates for each admixture.

Mixing Concrete:
For hand mixing of Class "S" Concrete, the Contractor shall provide scale(s) approved by the Engineer in which cement and aggregate can be accurately weighed for the required mix proportions.

> Note: The Contractor shall also have measuring graduates marked for the proportioning of the A.E.A. and the HRWR. Do not mix the A.E.A. and the HRWR together before adding to the mix; the resultant solution will not work. DO NOT add the A.E.A. and the HRWR at the mixer simultaneously; these admixtures must be added separately in the mixing cycle. All manufactured materials shall be stored, mixed and used in strict accordance with the written recommendations of the respective manufacturers.

Material Storage: The Contractor shall store and maintain the A.E.A. and the HRWR materials in clean original containers as delivered by the manufacturer.

Construction Methods:

All surfaces of exposed concrete and reinforcing steel shall be free of oil, solvent, grease, dirt, dust, bitumen, rust, loose particles and foreign matter.

When using abrasive blasting equipment, all work shall be shielded for the protection of the public.

Welded wire fabric reinforcement shall be installed in accordance with the plans.

Adequate measures shall be taken by the Contractor to prevent concrete chips, tools and/or materials from entering into adjacent roadway lanes or dropping to areas below the structure. All debris shall be promptly swept up and removed from the Site. All materials removed shall be satisfactorily disposed of by the Contractor.

Vertical surfaces of concrete members shall be formed using forms coated with a plastic or similar film to preclude the use of form release agents. Forms and support system shall be properly designed in accordance with Article 6.01.03. Forms shall be so designed that placement access shall be allowed at the top of each respective formwork assembly for contiguous void areas.

The minimum ambient and patch area surface temperature shall be 45°F and rising at the time of concrete installation.

No bonding compounds shall be used before or during the placement of this concrete material. Concrete surfaces against which this material is to be placed shall be sound, tight, and thoroughly roughened. The exposed concrete surfaces shall be dampened with fresh water immediately prior to placement of the fresh concrete by "hosing" down the areas behind the forms as thoroughly as possible.

Placement of the fresh concrete shall be maximum height lifts possible under the circumstances and all freshly placed concrete shall be consolidated during placement with adequately sized and effective vibrators.

Curing Concrete:
Concrete shall be cured by leaving forms on for seven (7) days.

Following curing and stripping, the exposed faces of new concrete shall be finished off with the use of the appropriate tools to blend in the physical appearance to the surrounding areas as much as possible.

Cured patches shall be sounded by the Engineer to detect the presence of any hollow spots. Such spots shall be removed and replaced by the Contractor at their expense until a patch acceptable to the Department is in place.

Method of Measurement:
Class "S" Concrete shall be measured by the actual volume in cubic feet of concrete placed and accepted by the Engineer. Welded wire fabric reinforcement and reinforcement will not be measured for payment.

Basis of Payment:
"Class "S" Concrete" will be paid for at the Contract unit price per cubic foot, complete in place, which price shall include providing scaffolding or other access for the Engineer's inspection, sandblasting, cleaning, welded wire fabric, reinforcement splices, forming, placing, curing, stripping and finishing new concrete, debris shields, and all materials, equipment, tools, labor and clean-up incidental thereto.

Pay Item	Pay Unit
Class "S" Concrete	c.f.

ITEM #0601948A - CRACK REPAIR

Description:

This item shall consist of all work and material for repairing cracks in concrete structures at locations shown on the plans or as directed by the Engineer.

Materials:

The patching material shall consist of concrete mortar using quick setting cement, fine aggregate, and water. The concrete shall harden within 40 minutes and develop a minimum compressive strength of 3,000 psi within three (3) days.

Fine aggregate shall conform to M.03.01-2.

Water shall conform to M.03.01-4.

Quick setting cement shall be one of the following:

> Emaco T-415, Rapid Set DOT Cement, Fastcrete, Perma-Patch, or Speed Crete Green Line.

Construction Methods:

Before any concrete is removed, the Engineer will perform an inspection to determine the exact limits and locations of all areas to be repaired.

Cracks shall be chiseled to a "V" shaped groove with a minimum width of ½ inches at the surface and a minimum depth of ½ inches.

Prior to filling, cracks shall be cleaned free of dust, silt and any other material which would impair bond. Cleaning shall be done with oil-free compressed air jets or preferably by vacuum cleaning with an industrial vacuum cleaner (Such as Black and Decker No. 95 Vacker or equivalent.)

Method of Measurement:

This work will be measured for payment by the number of linear feet of cracks, shown on the Plans and also as designated on site to be repaired by the Engineer/Inspector, and which were subsequently filled with mortar, complete and accepted.

Where cracks are designated for repair on opposite sides of a concrete component and the crack on the opposite side is the backside of a through crack, payment will be made for cracks on both

sides, except that no payment will be made for such cracks on the opposite side that were not designated by the Engineer for repair.

Where a crack designated for repair extends around a corner of a concrete member, the length of crack on both faces will be measured for payment.

Basis of Payment:

This work will be paid for at the contract unit price per linear foot for "Crack Repair," complete in place, of which price shall include all preparation, materials, equipment, tools, labor and clean-up incidental thereto.

Pay Item	Pay Unit
Crack Repair	L.F.

ITEM #0602936A - DRILLING AND GROUTING REINFORCING BARS

6.02.01 - Description: Work under this item shall consist of drilling holes in concrete and grouting rebar at the locations shown on the plans, in accordance with the plans, the manufacturer's recommendations, and as directed by the Engineer.

6.02.02 - Materials: The adhesive bonding material shall be a resin compound specially formulated to anchor steel rods in holes drilled into concrete for the purpose of resisting tension pull-out. The adhesive bonding materials shall be selected from the Connecticut Department of Transportation Approved Product List.

Materials Certificate and a Certificate of Compliance shall be required for the adhesive bonding material in accordance with Article 1.06.07, certifying the conformance of this material to the requirements stated herein.

6.02.03 - Construction Methods: The Contractor shall drill holes into the concrete to the depth and at the locations shown on the plans.

The Contractor shall submit the following to the Engineer for approval: type of drill, diameter of bit, method of cleaning holes and methods of placement of the adhesive bonding material. Specifications and recommendations for the aforementioned may be obtained from the manufacturer of the adhesive bonding material. The mass of the drill shall not exceed 20 lbs.

Rebar shall be able to develop a pullout resistance of 90 percent of their nominal yield strengths when bonded at the embedment depths provided.

The Contractor shall provide the minimum cover for rebar as shown on the plans.

If the existing reinforcing steel is encountered during drilling, the holes may be relocated only if approved by the Engineer.

Drilling methods shall not cause spalling, cracking, or other damage to the concrete. Those areas damaged by the Contractor shall be repaired by the Contractor in a manner suitable to the Engineer and at no expense to the State.

The Contractor shall take necessary precautions to prevent any materials from falling onto the roadway or other areas below.

6.02.04 - Method of Measurement: This work will be measured for payment by the number of linear feet of drilled holes in which bars are embedded and accepted.

6.02.05 - Basis of Payment: This work will be paid for at the contract unit price per linear foot for "Drilling and Grouting Reinforcing Bars", which price shall include drilling and preparing holes, and applying adhesive bonding material in the hole. It shall also include all material, except

reinforcing bars, and all equipment, tools and labor incidental thereto.

Note: Reinforcing bars will be paid for under the item “Deformed Steel Bars”.

Pay Item	**Pay Unit**
Drilling and Grouting Reinforcing Bars	LF

ITEM #0611002A - PRESSURE GROUTING

Description:

Work under this item consists of furnishing and installing low pressure grout to fill voids under the existing corrugated metal pipe due to deterioration, penetrations, and erosion. This work shall be completed prior to the installation of the Cured-in-Place Pipe Lining.

Materials:

The grout materials shall consist of Portland cement (Portland cement and fly ash) and/or additives as described in the following subsections of Section M.03.0 1.

Portland Cement	M.03.01-3
Water	M.03.01-4
Air-Entraining Admixtures	M.03.01-5a
Fine Aggregate	M.03.01-2
Fly Ash	M.03.01-3c.1
Chemical Admixtures	M.03.01-5b
Accelerating Admixtures	AASHTO M-194 Type "C"

Portland cement shall comply with ASTM C-150, C-150 Type I, II, or III.

Mixing water shall be potable and free from deleterious amounts of acids, alkali, salts, oils and organic materials which would adversely affect the setting time or strength of the concrete.

Admixtures for reducing water, accelerating set, etc. may be used when specifically approved by the Engineer, and must be used in accordance with the admixture manufacturer's recommendations.

Compressive Strength:

The grout shall have a minimum penetration resistance of 75 psi in 24 hours when tested in accordance with ASTM C 403 and a minimum compressive strength of 300 psi in 28 days when tested in accordance with ASTM C 495 or C 109. Hydraulic cement or a similar approved material may be used in localized areas as approved by the Engineer.

Performance Requirements:

The Contractor shall submit the proposed grout mix, methods, plans of the grouting operations. The grouting system shall have sufficient gauges, monitoring devices and tests to determine the effectiveness of the grouting operation and to ensure compliance with the liner pipe specifications and design parameters.

Mix Designs:
One or more mixes shall be developed to completely fill the voids based on the following requirements:

1) Size of corrugated metal pipe deterioration
2) Void (size) of the surrounding soil
3) Absence or presence of groundwater
4) Sufficient strength and durability as approved by the Engineer
5) Provide less than 1 percent shrinkage by volume

A Materials Certificate will be required confirming the conformance to the requirements set forth in this specification.

Construction Methods:
The grout shall be mixed to a flowable consistency with proportions as recommended by the manufacturer based on site conditions. This work shall be coordinated with the design of the Cured-In-Place Pipe Lining.

The grout shall be placed to fill the erosion voids under the corrugated culvert plate, and at locations as directed by the engineer, with a low pressure pumping system.

The material shall not be placed on frozen ground.

The material may be placed in confined spaces containing standing water.

Any substitutions for pressure grouting shall be submitted to the Engineer for approval.

Submittals and Required Calculations:

The Contractor shall submit the following for review by the Engineer:

a) The proposed grout mix design(s) with corresponding densities and viscosities.
b) Initial set time of the grout.
c) The proposed grouting method including a description and/or depiction of the various stages.
d) The maximum injection pressures.
e) The 24-hour and 28 day compressive strengths.
g) Certification that the grouting plan conforms to all guidelines, cautions, and restrictions of the cured-in-place pipe lining manufacturer, these specifications and the contract plans for this project.

Method of Measurement: This item will be measured by the number of cubic yards of low pressure grout installed and accepted.

Basis of Payment: This work will be paid for at the contract unit price per cubic yard for "Pressure Grouting" which price shall include all materials, tools, equipment and labor incidental to the work described herein.

The work to line the existing culvert shall be paid for separately under the special provision for Cured-In-Place Pipe Lining.

The filling of holes and voids in the existing corrugated metal pipe is to be paid for under the item “Pressure Grouting.”

Pay Item	Pay Unit
Pressure Grouting	C.Y.

ITEM #0651649A - CURED-IN-PLACE PIPE LINING

Description: Work under this item consists of furnishing and installing a fiber reinforced mortar lining by centrifugal casting methods to the limits and dimensions shown on the plans, in accordance with this specification and as directed by the Engineer. Work shall also include cleaning and preparation of the surface to be lined, containment, installation of baffles as shown on the plans, and all quality-control testing noted herein.

Materials: The fiber reinforced centrifugally cast mortar lining shall be one of the following:

1. PL-8000
   Manufacturer: AP/M Permaform (Centripipe)
   Box 555
   Johnston, IA 50131
   800-662-6465

2. Quadex QM-1s RESTORE
   Manufacturer: PIMCorp
   201 Circle Drive No., Suite 105
   Piscataway, New Jersey 08854
   732-469-6224

3. Geospray
   Manufacturer: Milliken Infrastructure
   920 Milliken Road
   Spartanburg, South Carolina 29303
   855-655-6750

The fiber reinforced centrifugally cast mortar lining shall meet or exceed the following performance requirements:

PERFORMANCE REQUIREMENT	TEST METHOD	UNITS
28 Day Compressive Strength	ASTM C39/C109	8,000 psi
28 Day Flexural Strength	ASTM C78/C293	1,000 psi
Bond Strength	ASTM C882	1,500 psi
Freeze-Thaw Durability	ASTM C666	<1% loss
Abrasion Resistance	ASTM C1138	<3% loss

Test Reports: The Contractor shall submit to the Engineer Certified Test Reports showing conformance with the identified Performance Requirements listed in this specification in tests done no longer than 5 years prior to the anticipated installation date.

Materials Certificate: The Contractor shall submit to the Engineer a Materials Certificate for the fiber reinforced centrifugally cast mortar lining material in accordance with the requirements of Article 1.06.07.

Pressure Grout

Pressure grout shall conform to the special provision for Pressure Grouting.

Welded studs and deformed steel bars for the baffles shall conform to the relevant sections of Form 817.

Construction Methods:

Submittals:

1. **Design:** The design and manufacture of the culvert liner shall conform to the requirements of the latest edition of the AASHTO LRFD Bridge Design Specifications, including the latest interim specifications available prior to the advertising date of the contract, as supplemented by ASTM C1433.

2. Working Drawings, Design Computations: The Contractor shall submit design computations, working drawings, and materials data submittals to the Engineer for review in accordance with Article 1.05.02.

The complete lining procedure is to be submitted as a Working Drawing and shall detail the following at a minimum:

- Surface preparation and culvert cleaning techniques, proposed equipment and containment methods
- Materials and methods to fill voids in the existing pipe (in accordance with special provision for Pressure Grouting)
- Stud application methods and surface preparation, if necessary
- Mortar application equipment to be utilized, method of mixing and mortar application and rate of application
- Direction of application and expected daily production
- Anticipated number of coats and thickness
- Time allowable for interlayer application and provisions for surface treatment if the interlayer application time is exceeded
- Provisions for cold joints
- Methods for baffle construction
- Recommended repairs of system non-compliant issues identified during application

The working drawings and design computations shall be signed and sealed by a Professional Engineer licensed in the State of Connecticut.

Containment – The Contractor shall prepare a plan of the proposed containment scheme for review and approval by the Engineer prior to commencing any work. Containment is required for cleaning the existing culvert, grouting voids and post rinse of the centrifugally cast cured-in-place pipe lining.

Surface Preparation – The interior of the culvert shall be cleaned with a high-pressure water blast sufficient to remove any loose material or laitance and flush debris from the culvert. Upon final inspection, the culvert shall be free of sand, dirt and any foreign material that may impede placement of the lining material. No solvents or chemicals may be used with the surface preparation. The cured-in-place pipe lining must be able to be placed over asphaltic coating if present on the existing pipe. No removal of asphaltic coating shall be necessary other than that which is removed during the high pressure water blasting operation.

Filling of Voids in Existing Pipe – Voids in the existing pipe are to be filled with pressure grout in accordance with the special provision for Pressure Grouting.

No repairs to the existing culvert are required prior to the installation of the cured-in-place pipe lining other than the pressure grouting necessary to fill voids. Any additional repairs required to the culvert by the pipe lining manufacturer shall be considered incidental to the cost of this item.

Water Handling – Water handling shall be in accordance with the plans and shall be paid under the item "Handling Water". While diversion of water around the host pipe is preferred, the cured in place pipe lining must be capable of being installed around a bypass pipe running through pipe that is to be repaired if no bypass around the pipe is possible.

Wall Thickness – The wall thickness design shall be based upon the compressive and bending strength of the liner material, but shall not exceed 2 inches as measured from the inside diameter of the pipe, or top of the inward corrugation's crest. The liner thickness shall be applied in ½ inch layers to the thickness specified by the Engineer, but at no point shall it be less than the required minimum of ½-inch. For structural plate culvert materials, the cover over the projecting bolts shall be a minimum of ½-inch. As Per ASTM A979, this thickness is to be measured from the inside diameter of the pipe, or top of the inward corrugation's crest.

Mortar Pipe Lining Installation:

Equipment:

Mortar mixers, compressors and pumps should be commercial models. A high-speed, rotating application device should be used to provide a densely compacted liner of uniform thickness and thorough coverage.

Mixing:

The Contractor shall combine the packaged dry mix with the Manufacturer's specified amount of potable water with mixing to be accomplished with a high-speed shear type mixer until proper consistency is obtained. The Contractor shall continue to agitate the mortar to prevent thickening beyond the desired fluidity.

Application:

The Contractor shall position the bi-directional rotating casting applicator within the culvert pipe as required by the Manufacturer and commence pumping the mortar. As the mortar begins to be centrifugally cast evenly around the interior, the Contractor shall retrieve the applicator head at the best speed for applying the thickness that has been specified. If the mortar flow is interrupted for any reason, the Contractor shall arrest the retrieval of the applicator head until the mortar flow is restored. Throughout the application process the Contractor shall verify the thickness using an appropriate tool. It may be necessary for a manual application of the lining mortar prior to rotating casting if so determined by the mortar lining supplier.

Hot Weather & Cold Weather Application

Comply with Manufacturer's recommendations.

Curing/Finishing:

If called for by the Manufacturer, the Contractor shall use a curing compound conforming to ASTM C309.

Baffle Installation:

Work to form and pour the baffles to the dimensions shown on the plans using pipe lining mortar shall be consistent with the specifications provided in the Materials section. Welded studs and deformed steel bars shall be installed in accordance with the relevant sections of Form 817.

Materials Handling:

The bags of the mortar materials shall be stored in a cool, dry location until the Contractor is ready to use the material.

Quality Assurance and Acceptance:

A technical representative, in the direct employ of the manufacturer, shall be present on-site immediately prior to and during application of the fiber reinforced centrifugally cast mortar lining material. The representative shall inspect and approve the surface prior to installation, and provide guidance on the handling, mixing and observe application of the material. The

representative shall perform all required quality-control testing and remain on the Project site until the cast-in-place mortar liner has fully cured.

All quality-control testing, including verbal direction or observations on the day of the installation, shall be recorded and submitted to the Engineer for inclusion in the Project's records. A submittal of the quality-control testing data shall be received by project personnel within 30 days following completion of the work.

The Contractor's Applicator shall be fully trained and licensed by the fiber reinforced centrifugally cast mortar lining manufacturer and shall have successfully completed at least three fiber reinforced centrifugally cast mortar lining projects in the past five years. The Contractor shall furnish references from those projects, including names of contact persons and the names, addresses and phone numbers of persons who supervised the projects. This information shall be submitted to the Engineer prior to the start of construction. The Engineer shall have sole authority to determine the adequacy and compliance of the submitted information. Inadequate proof of ability to perform the work will be grounds to reject proposed applicators.

Final Review: The Engineer and the Applicator shall jointly review the area(s) over which the completed pipe liner has been installed. Any irregularities or other items that do not meet the requirements of the Engineer shall be addressed at this time.

A minimum of four test cubes of the mortar material shall be taken daily as directed by the Engineer daily to verify strengths. Thickness shall be verified with a wet gage at any random point of the new interior surface by the Contractor as directed by the Engineer. Any areas found to be thinner than the specified minimum shall immediately receive additional material. Visual inspection should verify a leak-free, uniform appearance.

Method of Measurement:

This work will be measured for payment by the linear foot of fiber reinforced centrifugally cast cured in place mortar pipe lining installed and accepted by the Engineer measured along the invert of the existing pipe.

Basis of Payment:

This work will be paid for by the linear foot of "Cured-in-Place Pipe Lining" complete in place including all materials, labor, equipment and incidentals thereto.

Also included under this item shall be the culvert liner design, working drawings, inspection, cleaning, containment and proper disposal of water blast debris, and preparation of the culvert required for the successful completion of the lining installation.

All work to form and construct the concrete baffles within the culvert, utilizing pipe lining mortar, including welded studs and deformed steel bars, shall be included under this item.

Handling water is to be paid for under the item “Handling Water.”

The filling of holes and voids in the existing corrugated metal pipe is to be paid for under the item “Pressure Grouting.”

Pay Item	Pay Unit
Cured in Place Pipe Lining	L.F.

ITEM #0913850A - HIGH VISIBILITY SAFETY FENCE

Description: Work under this item shall consist of supplying installing high visibility polyethylene construction safety fencing, as shown on the plans, as directed by the Engineer and in accordance with this specification.

Materials: Materials for this work shall conform to the following requirements:

Fencing: Fencing shall be 4 feet high constructed of high density polyethylene, ultraviolet resistant and orange in color.

Posts: Posts shall be steel T-posts with a minimum weight of 0.85 pounds per linear foot.

Construction Methods: High visibility safety fence shall be installed prior to the clearing and grubbing operation and maintained throughout the duration of the project. Fence shall be installed outside the sedimentation control system where shown on the plans and as ordered by the Engineer. Fence posts shall be embedded and spaced in such a manner to permit the fence fabric to be stretched tightly between the posts without sagging. The fence fabric shall be secured to each post in no less than three locations with appropriate metal or plastic ties.
The installed fence shall be maintained or replaced as directed by the Engineer for the duration of the project.

Method of Measurement: This work will be measured for payment by the actual number of linear feet of "High Visibility Safety Fence" installed and accepted. Measurement shall be made along the center-line of the system. Repaired and replacement systems will not be measured for payment.

Basis of Payment: Payment for this work will be made at the contract unit price per linear foot for "High Visibility Safety Fence" complete in place, which price shall include all materials, equipment, tools and labor incidental to the installation, maintenance, replacement, removal and disposal of the system and surplus material.

Pay Item	Pay Unit
High Visibility Safety Fence	L.F.

ITEM #0950016A - WETLAND GRASS ESTABLISHMENT

Description: The work included in this item shall consist of providing an accepted stand of established wetland grasses by furnishing and placing seed and mulch as shown on the plans or as directed by the Engineer within the Wetland Mitigation Areas.

Materials: The materials for this work shall conform to the requirements of Section 9.50 of Standard Specification Form 816. The following mixes shall be used for this item.

Wetland Seed Mixes: In order to preserve and enhance the diversity of native wetland species, it is necessary that the source for wetland seed mixtures for use in wetland mitigation areas shall be locally obtained within the Northeast USA including New England, New York, Pennsylvania, New Jersey, Delaware, or Maryland. Two approved seed mixtures are detailed. Other proposed mixtures must be approved prior to use by the Connecticut Department of Transportation Office of Environmental Planning (CT DOT OEP).

Wetland Seed Mixture: (NEWP) New England WetMix, New England Wetland Plants, Inc. 800 Main Street Amherst, MA 01002, or equal. Rate shall be 1 pound per 2500 S.F.

scientific name	**common name**
Alisima plantago-aquatica	Water plantain
Aster umbellatus	Flat-top Aster
Bidens cernua	Nodding Bur Marigold
Carex comosa	Bearded sedge
Carex crinita	Fringed sedge
Carex lupulina	Hop sedge
Carex lurida	Lurid sedge
Carex vulpinoides	Fox sedge
Eupatorium maculatum	Spotted Joe-pye weed
Eupatorium perfoliatum	Boneset
Juncus effusus	Soft rush
Penthorum sedoides	Ditch Stonecrop
Scirpus acutus	Hard-stem bulrush
Scirpus atrovirens	Green bulrush
Scirpus cyperinus	Wool grass
Solidago graminifolia	Grass-leaved goldenrod
Verbena hastata	Blue vervain

Wetland Seed Mixture: (BRN) Wetland Seed Mix, Blackledge River Nursery, 155 Jerry Daniels Road, Marlborough, CT, 06447, or equal. Rate shall be 1 pound per 2500 S.F.

scientific name	**common name**
Alisma plantago-aquatica	Water Plantain
Asclepias incarnata	Swamp Milkweed
Aster novae-angliae	New England Aster
Carex comosa	Bristly Sedge
Carex crinita	Fringed Sedge
Carex intumescens	Bladder Sedge
Carex lupulina	Hop Sedge
Carex lurida	Lurid Sedge
Carex scoparia	Broom Sedge
Carex stricta	Tussock Sedge
Carez tribuloides	Blunt Broom Sedge
Carex vesicaria	Inflated Sedge
Carex vulpinoidea	Fox Sedge
Eupatoriadelphis maculatus	Joe Pye Weed
Eupatorium perfoliatum	Boneset
Glyceria canadensis	Canada Manna Grass
Glyceria striata	Fowl Mannagrass
Hibiscus moscheutos	Rose-mallow
Iris versicolor	Blue flag iris
Juncus acuminatus	Sharp-fruited Rush
Juncus brevicaudatus	Narrow-pannicled Rush
Juncus canadensis	Canada Rush
Juncus effusus	Soft Rush
Lobelia cardinalis	Cardinal Flower
Lysimachia terrestris	Swamp Candle
Mimulus ringens	Monkey Flower
Rhynchospora capitellata	Brownish Beak Rush
Sagittaria latifolia	Broad-leaved Arrowhead
Scirpus atrovirens	Green Bulrush
Scirpus cyperinus	Wool Grass
Scirpus expansus	Woodland Bulrush
Scirpus hattorianus	Green Bulrush
Scirpus validus	Soft-stem Bulrush
Spirea tomentosa	Steeplebush
Triademum virginicum	Marsh St. John’s Wort
Verbena hastata	Blue Vervain

Construction Methods: Construction Methods shall be those established as agronomically acceptable and feasible and which the Engineer approves. Seeding shall be applied to all non-inundated constructed wetland areas.

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

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

Pay Item	Pay Unit
Wetland Grass Establishment	S.Y.

ITEM #0950040A - CONSERVATION SEEDING FOR SLOPES

Description: The work included in this item shall consist of providing an accepted stand of established conservation grasses by furnishing and placing seed as shown on the plans, permits, or as directed by the Engineer within the wetland mitigation Sites(s) or other areas when required.

Materials: All conservation grass mixture sources shall be locally obtained within the Northeast USA (New England, New York, Pennsylvania, New Jersey, Delaware, or Maryland) in order to preserve and enhance the diversity of native conservation grass species.

Three qualified conservation seed mixtures are detailed below:

1. **New England Conservation/Wildlife Mix**, New England Wetland Plants, Inc. 820 West Street Amherst, MA 01002, or equal. Rate shall be 1 pound PLS per 1,750 sq. ft.

2. **5311 Conservation Mix,** Ernst Conservation Seeds, Inc. 8884 Mercer Pike, Meadville, PA 16335, or equal. Rate shall be 3-5 pound PLS per 1,000 sq. ft.

3. **Vermont Conservation and Wildlife**, Vermont Wetland Plant Supply, LLC, P.O. Box 153, Orwell, VT 05760, or equal. Rate shall be 1 pound PLS per 2,180 sq. ft.

Fertilizer, if required, shall meet the requirements of Article M.13.03.
Mulch shall meet the requirements of Article M.13.05.
Erosion control matting shall be bio-degradable and meet the requirements of Article M.13.09.

All conservation seed mixture sources shall be reviewed and approved by the Engineer in advance of purchase and prior to application.

The Materials Certificate for all seed mixtures shall have a statement that certifies that the seed mixture does not include any invasive species pursuant to Connecticut General Statutes Sec. 22a-381d or any State Threatened or State Endangered species pursuant to Connecticut General Statutes Sec. 26-303. The seed tags from the bags are to be removed by the Engineer upon delivery and attached to the Materials Certificate. Seeding shall not occur if these requirements are not met.

All approved seed mixtures shall be obtained in sufficient quantities to meet the pure live seed (PLS) application rates as determined by the seed analysis of the mixture.

Construction Methods: Construction methods shall be those established as agronomically acceptable and feasible and shall be approved by the Engineer. The methods described in Article 9.50.03 shall be amended as follows:

Conservation seeding for slopes for wetland mitigation Site(s): Seeding shall occur during the fall season immediately following construction of the wetland mitigation Site(s). Seeding for wetland mitigation Site(s) must occur from August 15th to October 31st.

For non-wetland mitigation Site(s), seeding shall occur during the dates specified in Article 9.50.03-2.

If seed is purchased in bulk rather than by PLS, the rate of application must be adjusted to meet the required PLS seeding rate. This seeding rate shall be increased by the appropriate percentage as determined by the following formula based off of the information provided on the seed tags at delivery.

(Germination Percentage X Purity Percentage)/ 100 = Percentage PLS

The Engineer will verify that the seed is applied at a rate that will allow for 100 percent PLS.

Mowing will not be allowed within areas that are seeded with conservation seed mix, unless authorized by the Engineer.

Method of Measurement: This work will be measured for payment by the number of square yards of surface area of accepted established conservation grasses as specified.

Basis of Payment: This work will be paid for at the Contract unit price per square yard for "Conservation Seeding for Slopes," which price shall include all materials, maintenance, equipment, tools, labor, and work incidental thereto. Partial payment of up to 50% may be made for work completed, but not accepted. Full payment shall not be made until the area has been accepted by the Engineer.

Pay Item	Pay Unit
Conservation Seeding for Slopes	s.y.

ITEM #0952051A - CONTROL AND REMOVAL OF INVASIVE VEGETATION

Description: This work shall include the development and implementation of an Invasive Vegetation Removal Plan (IVRP) to outline the materials, labor, and equipment the Contractor plans to use for the complete eradication and treatment of the invasive vegetation. The work shall also include the identification, excavation, removal, and off-Site disposal of unwanted vegetation as indicated on the plan sheets, permits or as directed by the Engineer.

All invasive vegetation listed on the following websites will be subject to eradication:

- Connecticut Invasive Plant Working Group (CIPWG) Invasive Plants Council (http://cipwg.uconn.edu/invasive_plant_list/)
- US Army Corps of Engineers (ACOE) New England District Compensatory Mitigation Guidance Appendix K (http://www.nae.usace.army.mil/portals/74/docs/regulatory/Mitigation/2016_New_England_Compensatory_Mitigation_Guidance.pdf)

All vegetation designated for removal shall be eradicated in its entirety in accordance with the IVRP submitted by the Contractor and approved by the Engineer. Certain situations may require the full and complete mechanical excavation of invasive vegetation including its entire root system. The use of herbicides will not be permitted between the dates of October 1 and May 31.

Materials: All herbicides shall be registered for the species being treated and shall be formulated as applicable for target-species foliar treatment, cut surface, or injection applications. Where work in or immediately adjacent to wetlands is necessary, the product label(s) for any chemical/adjuvant formulation applied must indicate that the formulation is approved for aquatic environments.

Construction Methods:

1. IVRP: Prior to any ground disturbance within the Project limits, the Contractor shall submit an IVRP to the Engineer for review and approval. Within 30 days of receipt of the submittal, the Engineer will notify the Contractor whether the IVRP is approved, rejected or requires modifications by the Contractor. If any part of the plan is not approved, the Contractor shall promptly make any necessary changes and re-submit the entire plan for approval. The entire plan must be approved in writing prior to beginning any work on Site. In all cases, mechanical means shall be considered before the use of herbicides. If mechanical means is neither feasible nor recommended, an explanation must be provided in the IVRP. All removal methods shall prevent the spread of seeds – no mowing or "Brush Hog" equipment will be allowed. The approved methods must be capable of total removal and eradication of all identified invasive species in the designated areas throughout the Contract and the 1-Year Plant Establishment Period.

The IVRP shall include a schedule and outline with the following information:

1) The Contractor's methods of determining invasive vegetation surveyed limits, including:
    a. Stake out the limits prior to the initial treatment
    b. Maintain a record of the staked limits throughout the life of the Contract

2) Identification of the type(s) of invasive species present within the field surveyed limits
3) A marked up plan sheet outlining the invasive species limits and identifying the types of invasive species present within those limits and total square yards of proposed removal
4) For each species present on-Site, the following shall be described:
    a. Methods to eradicate specific invasive plant species for the life of the Contract (e.g. mechanical, herbicide, etc.) shall include any initial, intermediate and 1-Year Plant Establishment Period Treatment eradication methods for each plant species
    b. Types and concentrations of any herbicides to be used, including any adjuvants, SDS sheets, types of tools or machinery to be used
    c. Schedules showing dates and eradication methods for the initial, intermediate, and 1-Year Plant Establishment Period Treatments. This schedule must take into consideration stage construction, the time period required between herbicide application, and the physical removal of the target species wherever such methodology is employed
5) All invasive species are considered controlled materials and are to be taken off-Site to an approved disposal facility. For disposal methods:
    a. Provide address of location, current permits / letters from the town authorizing such activity and a Site map (complete with regulated areas)
    b. Wood chips from invasive species are not allowed to be stockpiled or reused on-Site
    c. Wood chipping on-Site will be allowed if temporarily stored in a properly contained enclosure and removed at the end of the treatment cycle
    d. Invasive plants shall not be buried on-Site
6) Proof of CT DEEP licensure for herbicide application
7) A description of safety equipment required
8) Procedures for handling chemical spills

Where certain species of invasive vegetation are present and identified on the plan sheets, permits, or as identified in the field by the Engineer, the removal via bulk mechanical excavation of such vegetation and the underlying soils may be required as directed. The approved method must be capable of the removal of all soil to a depth where invasive plant material and root system is no longer evident, or as directed by the Engineer.

Whether the Contractor's method of removal is by mechanical excavation or cutting and spraying of herbicides, invasive species must be removed separately from clearing and grubbing operations and disposed at an approved location as described in the Contractor's IVRP.

No equipment or vehicles other than that required to complete the work will be permitted in the areas designated for invasive vegetation removal. Any equipment used to process invasive vegetation, such as chippers and transport vehicles, must be cleaned prior to further use.

Any invasive species control and removal work performed throughout the duration of the Contract that causes damage or soil disturbance shall be repaired at the Contractor's expense within 7 days. It is the Contractor's responsibility to identify additional areas of concern for invasive vegetation within the limits of the Project, notify the Engineer, and to amend the IVRP.

The Contractor shall be responsible to identify invasive vegetation at all times of the year and to prepare a plan for its eradication without assistance.

All treatments, with the exception of an initial mechanical excavation of invasive species, will not be allowed outside of the optimal growing season between the dates of October 1 and May 31.

Herbicide applications will not be permitted during any rain event or during windy conditions. Broadcast or uncontrolled spray application will not be permitted and care must be taken to avoid contacting non-target native species. If any non-target native species to remain within the Project limits are inadvertently treated with herbicide and perish, the Contractor will be responsible to replace in-kind species at no cost to the State.

Remove all twining vines in treetops to the greatest extent possible without damaging the branches of the supporting desired vegetation. Cut and remove vines overtopping tree canopies to the extent practical. Climbing spikes will not be permitted for aerial work.

The Contractor shall also:

1) Maintain the labels for herbicides being used in his/her possession
2) Conduct all herbicide formulations and applications, including the addition of appropriate surfactants and other adjuvants, in strict conformance with the manufacturer's recommendation and per requirements of regulatory agencies
3) Maintain a written record of herbicide application, including the formulation, concentration, area treated, and date for each application. The records are to be provided by the commercial applicator and submitted to the Engineer following each treatment

Flush cut brush and trees shall not be more than 2 inches above the ground line. Prune out any branches on non-treatment plants that are damaged during removal of vegetation. All corrective pruning shall conform to the National Arborists Association Pruning Standards.

Wherever removal operations result in exposed soils, disturbed areas shall be vegetatively stabilized with the appropriate seed mix and protected with hay, cellulous fiber mulch, or erosion control matting.

Once the IVRP is approved, a field review shall be scheduled for the Contractor and Engineer to review the limits of invasive species removal (surveyed and flagged by the Contactor prior to the meeting), the specific species required to be removed, and the Contractor’s submitted invasive species removal plan. At this time, the Engineer may identify additional invasive species or designate additional areas for removal that are not included with the Contractor’s submitted IVRP.

If changes are required to the approved IVRP during the life of the Contract, these changes shall be documented by the Contractor and resubmitted to the Engineer for review and approval a minimum of 10 days prior to beginning of the additional work associated with the change. The Contractor shall provide a 10 day work notice to the Engineer prior to proceeding with each treatment.

2. Treatments: The treatment schedule below may be modified based on field conditions at the discretion of the Engineer. The Contractor shall provide a 10 day work notice to the Engineer prior to proceeding with each treatment. In all cases, each treatment must be reviewed once the work is performed, and accepted before payment is made for that treatment stage.

Initial Treatment: Shall commence at the beginning of the Contract time, prior to clearing and grubbing activities. Any invasive species found within a proposed cut slope shall be fully eradicated to the satisfaction of the Engineer prior to any earth work operations. After the completion of the initial treatment, the work must be reviewed and accepted by the Engineer prior to any earth excavation in that area. If herbicide is the initial treatment method, a minimum of 14 days is required prior to clearing and grubbing operations, so the herbicide application can take effect.

Intermediate Treatment(s): Shall be conducted during the optimal growing season between the dates of June 1 and September 30 for invasive species up to and including 10 days prior to plant installation or at the end of the Project if no landscaping plan is in the Contract. Optimal treatment times may be specific to the species being treated and this must be considered and documented when developing the Invasive Vegetation Removal Plan. Several treatments may be required to treat all species that are present.

1-Year Plant Establishment Period Treatment: Treatments as needed or as directed by the Engineer shall be conducted throughout the 1-Year Plant Establishment Period or when required under another Contract item.

Method of Measurement: This work will be measured for payment by the number of square yards of invasive vegetation identified, surveyed, treated and eradicated as required including any required re-treatment of any regrowth or new growth. No additional payment will be made for subsequent treatments. The area for removal will be surveyed and flagged prior to treatment and measured. After a review of the surveyed limits, the Engineer may designate additional areas for removal that are not shown on the plans. These additional areas will be measured for payment and included as part of the Contract work.

Where selective removal is required, the square yards of the drip line of the invasive vegetation will be measured for payment.

Basis of Payment: This work will be paid for at the Contract unit price per square yard for "Control and Removal of Invasive Vegetation." This payment shall include all labor, surveys, materials, tools, and equipment necessary for limits of the invasive area(s); maintenance of the limits throughout the Project; species identification; and cutting, excavation, treating, re-treating, removal, and off-Site disposal of designated invasive plant material. Off-Site disposal of residue shall include the loading, transport, dumping, and fees associated with legal off-site disposal.

- Upon approval of the required IVRP, the Contractor will receive a payment equal to 10% of the estimated Contract value

- Upon initial herbicide or mechanical removal treatment methods as it is described in the IVRP, the Contractor will receive a payment equal to 20% of all areas receiving treatment
- Upon successful completion of the initial treatment period, as determined during the review by the Engineer, the Contractor will receive a payment equal to 20%
- Upon successful completion of the intermediate treatment period as determined during the Site review by the Engineer, the Contractor will receive a payment equal to 20%
- Upon successful completion of the 1-Year Plant Establishment Period covering all treated areas on the Project (or the last treatment for those Projects which may not include a 1-Year Plant Establishment Period), the Contractor will receive final payment equal to the measured areas in place and treated, less any previous payments

Where bulk excavation is required for removal, this work shall be covered under the Contract Item "Earth Excavation" for all excavation in excess of 2 feet. All other vegetation not designated as invasive vegetation shall be removed in compliance with the Item "Clearing and Grubbing" in accordance with Section 2.01.

Vegetative stabilization of disturbed areas will be paid for under the respective Contract Items: "Turf Establishment," "Wetland Grass Establishment," or "Conservation Seeding for Slopes."

Pay Item	Pay Unit
Control and Removal of Invasive Vegetation	s.y.

ITEM #0969062A - CONSTRUCTION FIELD OFFICE, MEDIUM

Description: Under the item included in the bid document, adequate weatherproof office quarters with related furnishings, materials, equipment and other services, shall be provided by the Contractor for the duration of the work, and if necessary, for a close-out period determined by the Engineer. The office, furnishings, materials, equipment, and services are for the exclusive use of CTDOT forces and others who may be engaged to augment CTDOT forces with relation to the Contract. The office quarters shall be located convenient to the work site and installed in accordance with Article 1.08.02. This office shall be separated from any office occupied by the Contractor. Ownership and liability of the office quarters shall remain with the Contractor.

Furnishings/Materials/Supplies/Equipment: All furnishings, materials, equipment and supplies shall be in like new condition for the purpose intended and require approval of the Engineer.

Office Requirements: The Contractor shall furnish the office quarters and equipment as described below:

Description \ Office Size	Medium
Minimum Sq. Ft. of floor space with a minimum ceiling height of 7 ft.	400
Minimum number of exterior entrances.	2
Minimum number of parking spaces.	7

Office Layout: The office shall have a minimum square footage as indicated in the table above, and shall be partitioned as shown on the building floor plan as provided by the Engineer.

Tie-downs and Skirting: Modular offices shall be tied-down and fully skirted to ground level.

Lavatory Facilities: For field offices sizes Small and Medium the Contractor shall furnish a toilet facility at a location convenient to the field office for use by CTDOT personnel and such assistants as they may engage; and for field offices sizes Large and Extra Large the Contractor shall furnish two (2) separate lavatories with toilet (men and women), in separately enclosed rooms that are properly ventilated and comply with applicable sanitary codes. Each lavatory shall have hot and cold running water and flush-type toilets. For all facilities the Contractor shall supply lavatory and sanitary supplies as required.

Windows and Entrances: The windows shall be of a type that will open and close conveniently, shall be sufficient in number and size to provide adequate light and ventilation, and shall be fitted with locking devices, blinds and screens. The entrances shall be secure, screened, and fitted with a lock for which four keys shall be furnished. All keys to the construction field office shall be furnished to the CTDOT and will be kept in their possession while State personnel are using the office. Any access to the entrance ways shall meet applicable building codes, with appropriate handrails. Stairways shall be ADA/ABA compliant and have non-skid tread surfaces. An ADA/ABA compliant ramp with non-skid surface shall be provided with the Extra-Large field office.

Lighting: The Contractor shall equip the office interior with electric lighting that provides a minimum illumination level of 100 foot-candles at desk level height, and electric outlets for each desk and drafting table. The Contractor shall also provide exterior lighting that provides a minimum illumination level of 2 foot-candles throughout the parking area and for a minimum distance of 10 ft. on each side of the field office.

Parking Facility: The Contractor shall provide a parking area, adjacent to the field office, of sufficient size to accommodate the number of vehicles indicated in the table above. If a paved parking area is not readily available, the Contractor shall construct a parking area and driveway consisting of a minimum of 6 inches of processed aggregate base graded to drain. The base material will be extended to the office entrance.

Field Office Security: Physical Barrier Devices - This shall consist of physical means to prevent entry, such as: 1) All windows shall be barred or security screens installed; 2) All field office doors shall be equipped with dead bolt locks and regular day operated door locks; and 3) Other devices as directed by the Engineer to suit existing conditions.

Electric Service: The field office shall be equipped with an electric service panel, wiring, outlets, etc., to serve the electrical requirements of the field office, including: lighting, general outlets, computer outlets, calculators etc., and meet the following minimum specifications:

A. 120/240 volt, 1 phase, 3 wire
B. Ampacity necessary to serve all equipment. Service shall be a minimum 100 amp dedicated to the construction field office.
C. The electrical panel shall include a main circuit breaker and branch circuit breakers of the size and quantity required.
D. Additional 120 volt, single phase, 20 amp, isolated ground dedicated power circuit with dual NEMA 5-20 receptacles will be installed at each desk and personal computer table (workstation) location.
E. Additional 120 volt, single phase, 20 amp, isolated ground dedicated power circuit with dual NEMA 5-20 receptacles will be installed, for use by the Telephone Company.
F. Additional 120-volt circuits and duplex outlets as required meeting National Electric Code requirements.
G. One exterior (outside) wall mounted GFI receptacle, duplex, isolated ground, 120 volt, straight blade.
H. After work is complete and prior to energizing, the State's CTDOT electrical inspector, must be contacted at 860-594-2240. (Do Not Call Local Town Officials)
I. Prior to field office removal, the CTDOT Office of Information Systems (CTDOT OIS) must be notified to deactivate the communications equipment.

Heating, Ventilation and Air Conditioning (HVAC): The field office shall be equipped with sufficient heating, air conditioning and ventilation equipment to maintain a temperature range of 68°-80° Fahrenheit within the field office.

Telephone Service: The Contractor shall provide telephone service with unlimited nation-wide calling plan. For a Small, Medium and Large field office this shall consist of the installation of two (2) telephone lines: one (1) line for phone/voice service and one (1) line dedicated for the facsimile machine. For an Extra-Large field office this shall consist of four (4) telephone lines: three (3) lines for phone/voice service and one (1) line dedicated for facsimile machine. The Contractor shall pay all charges.

Data Communications Facility Wiring: Contractor shall install a Category 6 568B patch panel in a central wiring location and Cat 6 cable from the patch panel to each PC station, Smart Board location, Multifunction Laser Printer/Copier/Scanner/Fax, terminating in a (Category 6 568B) wall or surface mount data jack. The central wiring location shall also house either the data circuit with appropriate power requirements or a category 5 cable run to the location of the installed data circuit. The central wiring location will be determined by the CTDOT OIS staff in coordination with the designated field office personnel as soon as the facility is in place.

For Small, Medium and Large field offices the Contractor shall run a CAT 6 LAN cable a minimum length of 25 feet for each CTDOT networked device (including but not limited to: smartboards and Multi-Function Laser Printer/Copier/Scanner/Fax) to LAN switch area leaving an additional 10 feet of cable length on each side with terminated RJ45 connectors. For an Extra-Large field office the Contractor shall run CAT 6 LAN cables from workstations, install patch panel in data circuit demark area and terminate runs with RJ45 jacks at each device location. Terminate runs to patch panel in LAN switch area. Each run / jack shall be clearly labeled with an identifying Jack Number.

The Contractor shall supply cables to connect the Wi-Fi printer to the Contractor supplied internet router and to workstations/devices as needed. These cables shall be separate from the LAN cables and data Jacks detailed above for the CTDOT network.

The number of networked devices anticipated shall be at least equal to the number of personal computer tables, Multi-Function Laser Printer/Copier/Scanner/Fax, and smartboards listed below.

The installation of a data communication circuit between the field office and the CTDOT OIS in Newington will be coordinated between the CTDOT District staff, CTDOT OIS staff and the local utility company once the Contractor supplies the field office phone numbers and anticipated installation date. The Contractor shall provide the field office telephone number(s) to the CTDOT Project Engineer within 10 calendar days after the signing of the Contract as required by Article 1.08.02. This is required to facilitate data line and computer installations.

Additional Equipment, Facilities and Services: The Contractor shall provide at the field Office at least the following to the satisfaction of the Engineer:

Furnishing Description	Office Size Medium
	Quantity
Office desk (2.5 ft. x 5 ft.) with drawers, locks, and matching desk chair that have pneumatic seat height adjustment and dual wheel casters on the base.	3
Standard secretarial type desk and matching desk chair that has pneumatic seat height adjustment and dual wheel casters on the base.	-
Personal computer tables (4 ft. x 2.5 ft.).	3
Drafting type tables (3 ft. x 6 ft.) and supported by wall brackets and legs; and matching drafters stool that have pneumatic seat height adjustment, seat back and dual wheel casters on the base.	1
Conference table, 3 ft. x 12 ft.	-
Table – 3 ft. x 6 ft.	-
Office Chairs.	4
Mail slot bin – legal size.	-
Non-fire resistant cabinet.	-
Fire resistant cabinet (legal size/4 drawer), locking.	1
Storage racks to hold 3 ft. x 5 ft. display charts.	-
Vertical plan racks for 2 sets of 2 ft. x 3 ft. plans for each rack.	1
Double door supply cabinet with 4 shelves and a lock – 6 ft. x 4 ft.	-
Case of cardboard banker boxes (Min 10 boxes/case)	1
Open bookcase – 3 shelves – 3 ft. long.	-
White Dry-Erase Board, 36” x 48”min. with markers and eraser.	1
Interior partitions – 6 ft. x 6 ft., soundproof type, portable and freestanding.	-
Coat rack with 20 coat capacity.	-
Wastebaskets - 30 gal., including plastic waste bags.	1
Wastebaskets - 5 gal., including plastic waste bags.	3
Electric wall clock.	-
Telephone.	1
Full size stapler 20 (sheet capacity, with staples)	2
Desktop tape dispensers (with Tape)	2
8 Outlet Power Strip with Surge Protection	4
Rain Gauge	1
Business telephone system for three lines with ten handsets,	-

Furnishing Description	Office Size Medium
	Quantity
intercom capability, and one speaker phone for conference table.	
Mini refrigerator - 3.2 c.f. min.	1
Hot and cold water dispensing unit. Disposable cups and bottled water shall be supplied by the Contractor for the duration of the project.	1
Microwave, 1.2 c.f. , 1000W min.	1
Fire extinguishers - provide and install type and *number to meet applicable State and local codes for size of office indicated, including a fire extinguisher suitable for use on a computer terminal fire.	*
Electric pencil sharpeners.	2
Electronic office type printing calculators capable of addition, subtraction, multiplication and division with memory and a supply of printing paper.	1
Small Multi-Function Laser Printer/Copier/Scanner/Fax combination unit, network capable, as specified below under Computer Related Hardware and Software.	1
Large Multi-Function Laser Printer/Copier/Scanner/Fax combination unit, network capable, as specified below under Computer Related Hardware and Software.	-
Field Office Wi-Fi Connection as specified below under Computer Related Hardware and Software	1
Wi-Fi Printer as specified below under Computer Related Hardware and Software.	1
Digital Camera as specified below under Computer Related Hardware and Software.	1
Video Projector as specified below under Computer Related Hardware and Software.	-
Smart Board as specified below under Computer Related Hardware and Software.	-
Infrared Thermometer, including annual third party certified calibration, case, and cleaning wipes.	1
Concrete Curing Box as specified below under Concrete Testing Equipment.	1
Concrete Air Meter and accessories as specified below under Concrete Testing Equipment as specified below. Contractor shall provide third party calibration on a quarterly basis.	1

Furnishing Description	Office Size Medium
	Quantity
Concrete Slump Cone and accessories as specified below under Concrete Testing Equipment.	1
First Aid Kit	1
Flip Phones as specified under Computer Related Hardware and Software.	-
Smart Phones as specified under Computer Related Hardware and Software.	-

The furnishings and equipment required herein shall remain the property of the Contractor. Any supplies required to maintain or operate the above listed equipment or furnishings shall be provided by the Contractor for the duration of the project.

Computer Related Hardware and Software: The CTDOT will supply by its own means the actual Personal Computers for the CTDOT representatives. The Contractor shall supply the Field Office Wi-Fi Connection, Wi-Fi Printer, Digital Camera(s), Flip Phones, Smart Phones, Multifunction Laser Printer/Copier/Scanner/Fax, Video Projectors, and Smart Board(s) as well as associated hardware and software, must meet the requirements of this specification as well as the latest minimum specifications posted, as of the project advertising date, at CTDOTs web site http://www.ct.gov/dot/cwp/view.asp?a=1410&q=563904

Within 10 calendar days after the signing of the Contract but before ordering/purchasing the Wi-Fi Printer (separate from the Multifunction Laser Printer/Copier/Scanner/Fax), Field Office Wi-Fi, Digital Camera(s), Flip Phones, Smart Phones, Multifunction Laser Printer/Copier/Scanner/Fax, Video Projector(s) and Smart Board(s) as well as associated hardware, the Contractor must submit a copy of their proposed order(s) with catalog cuts and specifications to the Administering CTDOT District for review and approval. The Wi-Fi Printer, Wi-Fi Router, Flip Phones, Smart Phones, digital cameras, Projector(s) and Smart Board(s) will be reviewed by CTDOT District personnel. The Multifunction Laser Printer/Copier/Scanner/Fax will be reviewed by the CTDOT OIS. The Contractor shall not purchase the hardware, software, or services until the Administering CTDOT District informs them that the proposed equipment, software, and services are approved. The Contractor will be solely responsible for the costs of any hardware, software, or services purchased without approval.

The Contractor and/or their internet service provider shall be responsible for the installation and setup of the field office Wi-Fi, Wi-Fi printer, and the configuration of the wireless router as directed by the CTDOT. Installation will be coordinated with CTDOT District and Project personnel.

After the approval of the hardware and software, the Contractor shall contact the designated representatives of the CTDOT administering District, a minimum of 2 working days in advance

of the proposed delivery or installation of the Field Office Wi-Fi Connection, Wi-Fi Printer, Digital Camera(s), Flip Phones, Smart Phones, Multifunction Laser Printer/Copier/Scanner/Fax, Video Projectors and Smart Board(s), as well as associated hardware, software, supplies, and support documentation.

The Contractor shall provide all supplies, paper, maintenance, service and repairs (including labor and parts) for the Wi-Fi printers, copiers, field office Wi-Fi, fax machines and other equipment and facilities required by this specification for the duration of the Contract. All repairs must be performed with-in 48 hours. If the repairs require more than a 48 hours then an equal or better replacement must be provided.

Once the Contract has been completed, the hardware and software will remain the property of the Contractor.

First Aid Kit: The Contractor shall supply a first aid kit adequate for the number of personnel expected based on the size of the field office specified and shall keep the first aid kit stocked for the duration that the field office is in service.

Rain Gauge: The Contractor shall supply install and maintain a rain gauge for the duration of the project, meeting these minimum requirements. The rain gauge shall be installed on the top of a post such that the opening of the rain gauge is above the top of the post an adequate distance to avoid splashing of rain water from the top of the post into the rain gauge. The Location of the rain gauge and post shall be approved by the Engineer. The rain gauge shall be made of a durable material and have graduations of 0.1 inches or less with a minimum total column height of 5 inches. If the rain gauge is damaged the Contractor shall replace it prior to the next forecasted storm event at no additional cost.

Concrete Testing Equipment: If the Contract includes items that require compressive strength cylinders for concrete, in accordance with the Schedule of Minimum Testing Requirements for Sampling Materials for Test, the Contractor shall provide the following equipment.

A) Concrete Cylinder Curing Box – meeting the requirements of Section 6.12 of the Standard Specifications.

B) Air Meter – The air meter provided shall be in good working order and meet the requirements of AASHTO T 152.

C) Slump Cone Mold – Slump cone, base plate, and tamping rod shall be provided in like-new condition and meet the requirements of AASHTO T119, Standard Test Method for Slump of Hydraulic-Cement Concrete.

All testing equipment will remain the property of the Contractor at the completion of the project.

Insurance Policy: The Contractor shall provide a separate insurance policy, with no deductible, in the minimum amount of five thousand dollars ($5,000) in order to insure all State-owned data

equipment and supplies used in the office against all losses. The Contractor shall be named insured on that policy, and the CTDOT shall be an additional named insured on the policy. These losses shall include, but not be limited to: theft, fire, and physical damage. The CTDOT will be responsible for all maintenance costs of CTDOT owned computer hardware. In the event of loss, the Contractor shall provide replacement equipment in accordance with current CTDOT equipment specifications, within seven days of notice of the loss. If the Contractor is unable to provide the required replacement equipment within seven days, the CTDOT may provide replacement equipment and deduct the cost of the equipment from monies due or which may become due the Contractor under the Contract or under any other contract. The Contractor's financial liability under this paragraph shall be limited to the amount of the insurance coverage required by this paragraph. If the cost of equipment replacement required by this paragraph should exceed the required amount of the insurance coverage, the CTDOT will reimburse the Contractor for replacement costs exceeding the amount of the required coverage.

Maintenance: During the occupancy by the CTDOT, the Contractor shall maintain all facilities and furnishings provided under the above requirements, and shall maintain and keep the office quarters clean through the use of weekly professional cleaning to include, but not limited to, washing & waxing floors, cleaning restrooms, removal of trash, etc. Exterior areas shall be mowed and clean of debris. A trash receptacle (dumpster) with weekly pickup (trash removal) shall be provided. Snow removal, sanding and salting of all parking, walkway, and entrance ways areas shall be accomplished during a storm if on a workday during work hours, immediately after a storm and prior to the start of a workday. If snow removal, salting and sanding are not completed by the specified time, the State will provide the service and all costs incurred will be deducted from the next payment estimate.

Method of Measurement: The furnishing and maintenance of the construction field office will be measured for payment by the number of calendar months that the office is in place and in operation, rounded up to the nearest month.

There will not be any price adjustment due to any change in the minimum computer related hardware and software requirements.

Basis of Payment: The furnishing and maintenance of the Construction Field Office will be paid for at the Contract unit price per month for "Construction Field Office, Medium," which price shall include all material, equipment, labor, service contracts, licenses, software, repair or replacement of hardware and software, related supplies, utility services, parking area, external illumination, trash removal, snow and ice removal, and work incidental thereto, as well as any other costs to provide requirements of this specified this specification.

Pay Item	Pay Unit
Construction Field Office, Medium	Month

ITEM #0971001A - MAINTENANCE AND PROTECTION OF TRAFFIC

Article 9.71.01 – Description is supplemented by the following:

The Contractor shall maintain and protect traffic as described by the following and as limited in the Special Provision "Prosecution and Progress":

Hubbard Road

The Contractor shall maintain and protect a minimum of one lane of traffic in each direction, each lane on a paved travel path not less than 11 feet in width.

Minimal off-peak lane/shoulder closures are allowed as needed and as approved by the Engineer, during which time the contractor must always maintain one (1) lane of alternating one-way traffic minimum.

Commercial and Residential Driveways

The Contractor shall maintain access to and egress from all commercial and residential driveways throughout the project limits. The Contractor will be allowed to close said driveways to perform the required work during those periods when the businesses are closed, unless permission is granted from the business owner to close the driveway during business hours. If a temporary closure of a residential driveway is necessary, the Contractor shall coordinate with the owner to determine the time period of the closure.

Article 9.71.03 - Construction Method is supplemented as follows:

General

The Contractor is required to delineate any raised structures within the travel lanes, so that the structures are visible day and night, unless there are specific contract plans and provisions to temporarily lower these structures prior to the completion of work.

The Contractor shall schedule operations so that pavement removal and roadway resurfacing shall be completed full width across a roadway (bridge) section by the end of a workday (work night), or as directed by the Engineer.

When the installation of all intermediate courses of bituminous concrete pavement is completed for the entire roadway, the Contractor shall install the final course of bituminous concrete pavement.

When the Contractor is excavating adjacent to the roadway, the Contractor shall provide a 3-foot shoulder between the work area and travel lanes, with traffic drums spaced every 50 feet. At the

end of the workday, if the vertical drop-off exceeds 3 inches, the Contractor shall provide a temporary traversable slope of 4:1 or flatter that is acceptable to the Engineer.

The Contractor, during the course of active construction work on overhead signs and structures, shall close the lanes directly below the work area for the entire length of time overhead work is being undertaken. At no time shall an overhead sign be left partially removed or installed.

If applicable, when an existing sign is removed, it shall be either relocated or replaced by a new sign during the same working day.

The Contractor shall not store any material on-site which would present a safety hazard to motorists or pedestrians (e.g. fixed object or obstruct sight lines).

The field installation of a signing pattern shall constitute interference with existing traffic operations and shall not be allowed, except during the allowable periods.

Construction vehicles entering travel lanes at speeds less than the posted speed are interfering with traffic, and shall not be allowed without a lane closure. The lane closure shall be of sufficient length to allow vehicles to enter or exit the work area at posted speeds, in order to merge with existing traffic.

Existing Signing

The Contractor shall maintain all existing overhead and side-mounted signs throughout the project limits during the duration of the project. The Contractor shall temporarily relocate signs and sign supports as many times as deemed necessary, and install temporary sign supports if necessary and as directed by the Engineer.

Requirements for Winter

The Contractor shall schedule a meeting with representatives from the Department including the offices of Maintenance and Traffic, and the Town/City to determine what interim traffic control measures the Contractor shall accomplish for the winter to provide safety to the motorists and permit adequate snow removal procedures. This meeting shall be held prior to October 31 of each year and will include, but not be limited to, discussion of the status and schedule of the following items: lane and shoulder widths, pavement restoration, traffic signal work, pavement markings, and signing.

Signing Patterns

The Contractor shall erect and maintain all signing patterns in accordance with the traffic control plans contained herein. Proper distances between advance warning signs and proper taper lengths are mandatory.

Pavement Markings -Non-Limited Access Multilane Roadways
Secondary and Local Roadways

During construction, the Contractor shall maintain all pavement markings on paved surfaces on all roadways throughout the limits of the project.

Interim Pavement Markings

The Contractor shall install painted pavement markings, which shall include centerlines, shoulder edge lines, lane lines (broken lines), lane-use arrows, and stop bars, on each intermediate course of bituminous concrete pavement and on any milled surface by the end of the work day/night. If the next course of bituminous concrete pavement will be placed within seven days, shoulder edge lines are not required. The painted pavement markings will be paid under the appropriate items.

If the Contractor will install another course of bituminous concrete pavement within 24 hours, the Contractor may install Temporary Plastic Pavement Marking Tape in place of the painted pavement markings by the end of the work day/night. These temporary pavement markings shall include centerlines, lane lines (broken lines) and stop bars; shoulder edge lines are not required. Centerlines shall consist of two 4 inch wide yellow markings, 2 feet in length, side by side, 4 to 6 inches apart, at 40-foot intervals. No passing zones should be posted with signs in those areas where the final centerlines have not been established on two-way roadways. Stop bars may consist of two 6 inch wide white markings or three 4 inch wide white markings placed side by side. The Contractor shall remove and dispose of the Temporary Plastic Pavement Marking Tape when another course of bituminous concrete pavement is installed. The cost of furnishing, installing and removing the Temporary Plastic Pavement Marking Tape shall be at the Contractor's expense.

If an intermediate course of bituminous concrete pavement will be exposed throughout the winter, then Epoxy Resin Pavement Markings should be installed unless directed otherwise by the Engineer.

Final Pavement Markings

The Contractor should install painted pavement markings on the final course of bituminous concrete pavement by the end of the work day/night. If the painted pavement markings are not installed by the end of the work day/night, then Temporary Plastic Pavement Marking Tape shall be installed as described above and the painted pavement markings shall be installed by the end of the work day/night on Friday of that week.

If Temporary Plastic Pavement Marking Tape is installed, the Contractor shall remove and dispose of these markings when the painted pavement markings are installed. The cost of furnishing, installing and removing the Temporary Plastic Pavement Marking Tape shall be at the Contractor's expense.

The Contractor shall install permanent Epoxy Resin Pavement Markings in accordance with Section 12.10 entitled "Epoxy Resin Pavement Markings" after such time as determined by the Engineer.

TRAFFIC CONTROL DURING CONSTRUCTION OPERATIONS

The following guidelines shall assist field personnel in determining when and what type of traffic control patterns to use for various situations. These guidelines shall provide for the safe and efficient movement of traffic through work zones and enhance the safety of work forces in the work area.

TRAFFIC CONTROL PATTERNS

Traffic control patterns shall be used when a work operation requires that all or part of any vehicle or work area protrudes onto any part of a travel lane or shoulder. For each situation, the installation of traffic control devices shall be based on the following:

Speed and volume of traffic
Duration of operation
Exposure to hazards

Traffic control patterns shall be uniform, neat and orderly so as to command respect from the motorist.

In the case of a horizontal or vertical sight restriction in advance of the work area, the traffic control pattern shall be extended to provide adequate sight distance for approaching traffic.

If a lane reduction taper is required to shift traffic, the entire length of the taper should be installed on a tangent section of roadway so that the entire taper area can be seen by the motorist.

Any existing signs that are in conflict with the traffic control patterns shall be removed, covered, or turned so that they are not readable by oncoming traffic.

When installing a traffic control pattern, a Buffer Area should be provided and this area shall be free of equipment, workers, materials and parked vehicles.

Typical traffic control plans 19 through 25 may be used for moving operations such as line striping, pot hole patching, mowing, or sweeping when it is necessary for equipment to occupy a travel lane.

Traffic control patterns will not be required when vehicles are on an emergency patrol type activity or when a short duration stop is made and the equipment can be contained within the shoulder. Flashing lights and appropriate trafficperson shall be used when required.

Although each situation must be dealt with individually, conformity with the typical traffic control plans contained herein is required. In a situation not adequately covered by the typical traffic control plans, the Contractor must contact the Engineer for assistance prior to setting up a traffic control pattern.

PLACEMENT OF SIGNS

Signs must be placed in such a position to allow motorists the opportunity to reduce their speed prior to the work area. Signs shall be installed on the same side of the roadway as the work area. On multi-lane divided highways, advance warning signs shall be installed on both sides of the highway. On directional roadways (on-ramps, off-ramps, one-way roads), where the sight distance to signs is restricted, these signs should be installed on both sides of the roadway.

ALLOWABLE ADJUSTMENT OF SIGNS AND DEVICES SHOWN ON THE TRAFFIC CONTROL PLANS

The traffic control plans contained herein show the location and spacing of signs and devices under ideal conditions. Signs and devices should be installed as shown on these plans whenever possible.

The proper application of the traffic control plans and installation of traffic control devices depends on actual field conditions.

Adjustments to the traffic control plans shall be made only at the direction of the Engineer to improve the visibility of the signs and devices and to better control traffic operations. Adjustments to the traffic control plans shall be based on safety of work forces and motorists, abutting property requirements, driveways, side roads, and the vertical and horizontal curvature of the roadway.

The Engineer may require that the traffic control pattern be located significantly in advance of the work area to provide better sight line to the signing and safer traffic operations through the work zone.

Table I indicates the minimum taper length required for a lane closure based on the posted speed limit of the roadway. These taper lengths shall only be used when the recommended taper lengths shown on the traffic control plans cannot be achieved.

TABLE I – MINIMUM TAPER LENGTHS

POSTED SPEED LIMIT MILES PER HOUR	MINIMUM TAPER LENGTH IN FEET FOR A SINGLE LANE CLOSURE
30 OR LESS	180
35	250
40	320
45	540
50	600
55	660
65	780

SECTION 1. WORK ZONE SAFETY MEETINGS

1.a) Prior to the commencement of work, a work zone safety meeting will be conducted with representatives of DOT Construction, Connecticut State Police (Local Barracks), Municipal Police, the Contractor (Project Superintendent) and the Traffic Control Subcontractor (if different than the prime Contractor) to review the traffic operations, lines of responsibility, and operating guidelines which will be used on the project. Other work zone safety meetings during the course of the project should be scheduled as needed.

1.b) A Work Zone Safety Meeting Agenda shall be developed and used at the meeting to outline the anticipated traffic control issues during the construction of this project. Any issues that can't be resolved at these meetings will be brought to the attention of the District Engineer and the Office of Construction. The agenda should include:

- Review Project scope of work and time
- Review Section 1.08, Prosecution and Progress
- Review Section 9.70, Trafficpersons
- Review Section 9.71, Maintenance and Protection of Traffic
- Review Contractor's schedule and method of operations.
- Review areas of special concern: ramps, turning roadways, medians, lane drops, etc.
- Open discussion of work zone questions and issues
- Discussion of review and approval process for changes in contract requirements as they relate to work zone areas

SECTION 2. GENERAL

2.a) If the required minimum number of signs and equipment (i.e. one High Mounted Internally Illuminated Flashing Arrow for each lane closed, two TMAs, Changeable Message Sign, etc.) are not available; the traffic control pattern shall not be installed.

2.b) The Contractor shall have back-up equipment (TMAs, High Mounted Internally Illuminated Flashing Arrow, Changeable Message Sign, construction signs, cones/drums, etc.) available at all times in case of mechanical failures, etc. The only exception to this is in the case of sudden equipment breakdowns in which the pattern may be installed but the Contractor must provide replacement equipment within 24 hours.

2.c) Failure of the Contractor to have the required minimum number of signs, personnel and equipment, which results in the pattern not being installed, shall not be a reason for a time extension or claim for loss time.

2.d) In cases of legitimate differences of opinion between the Contractor and the Inspection staff, the Inspection staff shall err on the side of safety. The matter shall be brought to the District Office for resolution immediately or, in the case of work after regular business hours, on the next business day.

SECTION 3. INSTALLING AND REMOVING TRAFFIC CONTROL PATTERNS

3.a) Lane Closures shall be installed beginning with the advanced warning signs and proceeding forward toward the work area.

3.b) Lane Closures shall be removed in the reverse order, beginning at the work area, or end of the traffic control pattern, and proceeding back toward the advanced warning signs.

3.c) Stopping traffic may be allowed:

- As per the contract for such activities as blasting, steel erection, etc.
- During paving, milling operations, etc. where, in the middle of the operation, it is necessary to flip the pattern to complete the operation on the other half of the roadway and traffic should not travel across the longitudinal joint or difference in roadway elevation.
- To move slow moving equipment across live traffic lanes into the work area.

3.d) Temporary road closures using Rolling Road Blocks (RRB) may be allowed on limited access highways for operations associated with the installation and removal of temporary lane closures. RRB may be allowed for the installation and removal of lead signs and lane tapers only and shall meet the following requirements:

- RRB may not start prior to the time allowed in the contract Limitations of Operation for sign pattern installation. Sign pattern removal must be complete prior to the time indicated in the Limitations of Operation for restoring the lanes to traffic.
- On limited access highways with 4 lanes or more, a RRB may not start until the Limitations of Operation Chart allows a 2 lane closure. In areas with good sight lines and full shoulders, opposite side lead signs should be installed in a separate operation.
- Truck-Mounted Impact Attenuators (TMAs) equipped with arrow boards shall be used to slow traffic to implement the RRB. State Police Officers in marked vehicles may be used to support the implementation of the RRB. The RRB shall start by

having all vehicles, including Truck-Mounted Impact Attenuators TMAs and police vehicles leave the shoulder or on-ramp and accelerate to a normal roadway speeds in each lane, then the vehicles will position themselves side by side and decelerate to the RRB speed on the highway.

- An additional Truck-Mounted Impact Attenuator TMAs equipped with a Portable Changeable Message Sign shall be utilized to advise the motorists that sign pattern installation / removal is underway. The Pre-Warning Vehicle (PWV) should be initially positioned in the right shoulder ½ mile prior to the RRB operation. If a traffic queue reaches the PWV's initial location, the contractor shall slowly reverse the PWV along the shoulder to position itself prior to the new back of queue. A Pre-Warning Vehicle, as specified elsewhere in the contract, shall be utilized to advise the motorists that sign pattern installation / removal is underway.
- The RRB duration shall not exceed 15 minutes from start of the traffic block until all lanes are opened as designated in the Limitation of Operation chart. If the RRB duration exceeds 15 minutes on 2 successive shifts, no further RRB will be allowed until the Contractor obtains approval for a revised installation procedure from the respective construction District.
- RRB should not be utilized to expand a lane closure pattern to an additional lane during the shift. The workers and equipment required to implement the additional lane closure should be staged from within the closed lane. Attenuator trucks (and State Police if available) should be used to protect the workers installing the taper in the additional lane.
- Exceptions to these work procedures may be submitted to the District Office for consideration. A minimum of 2 business days should be allowed for review and approval by the District.
- The RRB procedures (including any approved exceptions) will be reviewed and discussed by the inspection team and the Contractor in advance of the work. The implementation of the agreed upon plan will be reviewed with the State Police during the Work Zone Safety meeting held before each shift involving temporary lane closures. If the State Police determine that alternative procedures should be implemented for traffic control during the work shift, the Department and Contractor will attempt to resolve any discrepancies with the duty sergeant at the Troop. If the discrepancies are unable to be resolved prior to the start of the shift, the work will proceed as recommended by the Department Trooper. Any unresolved issues will be addressed the following day.

3.e) The Contractor must adhere to using the proper signs, placing the signs correctly, and ensuring the proper spacing of signs.

3.f) Additional devices are required on entrance ramps, exit ramps, and intersecting roads to warn and/or move traffic into the proper travelpath prior to merging/exiting with/from the main line traffic. This shall be completed before installing the mainline pattern past the ramp or intersecting roadway.

3.g) Prior to installing a pattern, any conflicting existing signs shall be covered with an opaque material. Once the pattern is removed, the existing signs shall be uncovered.

3.h) On limited access roadways, workers are prohibited from crossing the travel lanes to install and remove signs or other devices on the opposite side of the roadway. Any signs or devices on the opposite side of the roadway shall be installed and removed separately.

SECTION 4. USE OF HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW

4.a) On limited access roadways, one Flashing Arrow shall be used for each lane that is closed. The Flashing Arrow shall be installed concurrently with the installation of the traffic control pattern and its placement shall be as shown on the traffic control plan. For multiple lane closures, one Flashing Arrow is required for each lane closed. If conditions warrant, additional Flashing Arrows should be employed (i.e.: curves, major ramps, etc.).

4.b) On non-limited access roadways, the use of a Flashing Arrow for lane closures is optional. The roadway geometry, sight line distance, and traffic volume should be considered in the decision to use the Flashing Arrow.

4.c) The Flashing Arrow shall not be used on two lane, two-way roadways for temporary alternating one-way traffic operations.

4.d) The Flashing Arrow board display shall be in the "arrow" mode for lane closure tapers and in the "caution" mode (four corners) for shoulder work, blocking the shoulder, or roadside work near the shoulder. The Flashing Arrow shall be in the "caution" mode when it is positioned in the closed lane.

4.e) The Flashing Arrow shall not be used on a multi-lane roadway to laterally shift all lanes of traffic, because unnecessary lane changing may result.

SECTION 5. USE OF TRUCK MOUNTED OR TRAILER MOUNTED IMPACT ATTENUATOR VEHICLES (TMAs)

5.a) For lane closures on limited access roadways, a minimum of two TMAs shall be used to install and remove traffic control patterns. If two TMAs are not available, the pattern shall not be installed.

5.b) On non-limited access roadways, the use of TMAs to install and remove patterns closing a lane(s) is optional. The roadway geometry, sight line distance, and traffic volume should be considered in the decision to utilize the TMAs.

5.c) Generally, to establish the advance and transition signing, one TMA shall be placed on the shoulder and the second TMA shall be approximately 1,000 feet ahead blocking the lane. The flashing arrow board mounted on the TMA should be in the "flashing arrow"

mode when taking the lane. The sign truck and workers should be immediately ahead of the second TMA. In no case shall the TMA be used as the sign truck or a work truck. Once the transition is in place, the TMAs shall travel in the closed lane until all Changeable Message Signs, signs, Flashing Arrows, and cones/drums are installed. The flashing arrow board mounted on the TMA should be in the "caution" mode when traveling in the closed lane.

5.d) A TMA shall be placed prior to the first work area in the pattern. If there are multiple work areas within the same pattern, then additional TMAs shall be positioned at each additional work area as needed. The flashing arrow board mounted on the TMA should be in the "caution" mode when in the closed lane.

5.e) TMAs shall be positioned a sufficient distance prior to the workers or equipment being protected to allow for appropriate vehicle roll-ahead in the event that the TMA is hit, but not so far that an errant vehicle could travel around the TMA and into the work area. For additional placement and use details, refer to the specification entitled "Type 'D' Portable Impact Attenuation System". Some operations, such as paving and concrete repairs, do not allow for placement of the TMA(s) within the specified distances. In these situations, the TMA(s) should be placed at the beginning of the work area and shall be advanced as the paving or concrete operations proceed.

5.f) TMAs should be paid in accordance with how the unit is utilized. When it is used as a TMA and is in the proper location as specified, and then it should be paid at the specified hourly rate for "Type 'D' Portable Impact Attenuation System". When the TMA is used as a Flashing Arrow, it should be paid at the daily rate for "High Mounted Internally Illuminated Flashing Arrow". If a TMA is used to install and remove a pattern and then is used as a Flashing Arrow, the unit should be paid as a "Type 'D' Portable Impact Attenuation System" for the hours used to install and remove the pattern, typically 2 hours (1 hour to install and 1 hour to remove), and is also paid for the day as a "High Mounted Internally Illuminated Flashing Arrow".

SECTION 6. USE OF TRAFFIC DRUMS AND TRAFFIC CONES

6.a) Traffic drums shall be used for taper channelization on limited-access roadways, ramps, and turning roadways and to delineate raised catch basins and other hazards.

6.b) Traffic drums shall be used in place of traffic cones in traffic control patterns that are in effect for more than a 36-hour duration.

6.c) Traffic Cones less than 42 inches in height shall not be used on limited-access roadways or on non-limited access roadways with a posted speed limit of 45 mph and above.

6.d) Typical spacing of traffic drums and/or cones shown on the Traffic Control Plans in the Contract are maximum spacings and may be reduced to meet actual field conditions as required.

SECTION 7. USE OF (REMOTE CONTROLLED) CHANGEABLE MESSAGE SIGNS (CMS)

7.a) For lane closures on limited access roadways, one CMS shall be used in advance of the traffic control pattern. Prior to installing the pattern, the CMS shall be installed and in operation, displaying the appropriate lane closure information (i.e.: Left Lane Closed - Merge Right). The CMS shall be positioned ½ - 1 mile ahead of the lane closure taper. If the nearest Exit ramp is greater than the specified ½ - 1 mile distance, than an additional CMS shall be positioned a sufficient distance ahead of the Exit ramp to alert motorists to the work and therefore offer them an opportunity to take the exit.

7.b) CMS should not be installed within 1000 feet of an existing CMS.

7.c) On non-limited access roadways, the use of CMS for lane closures is optional. The roadway geometry, sight line distance, and traffic volume should be considered in the decision to use the CMS.

7.d) The advance CMS is typically placed off the right shoulder, 5 feet from the edge of pavement. In areas where the CMS cannot be placed beyond the edge of pavement, it may be placed on the paved shoulder with a minimum of five (5) traffic drums placed in a taper in front of it to delineate its position. The advance CMS shall be adequately protected if it is used for a continuous duration of 36 hours or more.

7.e) When the CMS are no longer required, they should be removed from the clear zone and have the display screen cleared and turned 90° away from the roadway.

7.f) The CMS generally should not be used for generic messages (ex: Road Work Ahead, Bump Ahead, Gravel Road, etc.).

7.g) The CMS should be used for specific situations that need to command the motorist's attention which cannot be conveyed with standard construction signs (Examples include: Exit 34 Closed Sat/Sun - Use Exit 35, All Lanes Closed - Use Shoulder, Workers on Road - Slow Down).

7.h) Messages that need to be displayed for long periods of time, such as during stage construction, should be displayed with construction signs. For special signs, please coordinate with the Office of Construction and the Division of Traffic Engineering for the proper layout/dimensions required.

7.i) The messages that are allowed on the CMS are as follows:

Message No.	Frame 1	Frame 2	Message No.	Frame 1	Frame 2
1	LEFT LANE CLOSED	MERGE RIGHT	9	LANES CLOSED AHEAD	REDUCE SPEED
2	2 LEFT LANES CLOSED	MERGE RIGHT	10	LANES CLOSED AHEAD	USE CAUTION
3	LEFT LANE CLOSED	REDUCE SPEED	11	WORKERS ON ROAD	REDUCE SPEED
4	2 LEFT LANES CLOSED	REDUCE SPEED	12	WORKERS ON ROAD	SLOW DOWN
5	RIGHT LANE CLOSED	MERGE LEFT	13	EXIT XX CLOSED	USE EXIT YY
6	2 RIGHT LANES CLOSED	MERGE LEFT	14	EXIT XX CLOSED USE YY	FOLLOW DETOUR
7	RIGHT LANE CLOSED	REDUCE SPEED	15	2 LANES SHIFT AHEAD	USE CAUTION
8	2 RIGHT LANES CLOSED	REDUCE SPEED	16	3 LANES SHIFT AHEAD	USE CAUTION

For any other message(s), approval must be received from the Office of Construction prior to their use. No more than two (2) displays shall be used within any message cycle.

SECTION 8. USE OF STATE POLICE OFFICERS

8a) State Police may be utilized only on limited access highways and secondary roadways under their primary jurisdiction. One Officer may be used per critical sign pattern. Shoulder closures and right lane closures can generally be implemented without the presence of a State Police Officer. Likewise in areas with moderate traffic and wide, unobstructed medians, left lane closures can be implemented without State Police presence. Under some situations it may be desirable to have State Police presence, when one is available. Examples of this include: nighttime lane closures; left lane closures with minimal width for setting up advance signs and staging; lane and shoulder closures on turning roadways/ramps or mainline where sight distance is minimal; and closures where extensive turning movements or traffic congestion regularly occur, however they are not required.

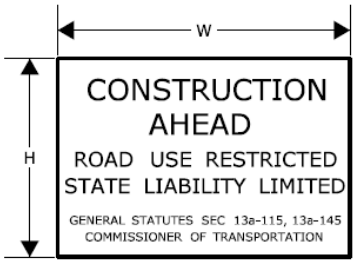
8b) Once the pattern is in place, the State Police Officer should be positioned in a non-hazardous location in advance of the pattern If traffic backs up beyond the beginning of the pattern, then the State Police Officer shall be repositioned prior to the backup to give warning to the oncoming motorists. The State Police Officer and TMA should not be in proximity to each other.

8c) Other functions of the State Police Officer(s) may include:

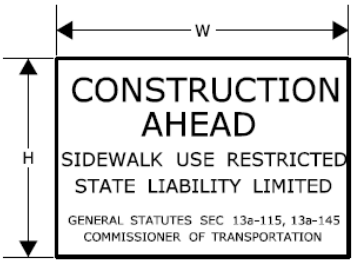
- Assisting entering/exiting construction vehicles within the work area.
- Enforcement of speed and other motor vehicle laws within the work area, if specifically requested by the project.

8d) State Police Officers assigned to a work site are to only take direction from the Engineer.

SERIES 16 SIGNS



		W H
16-E	80-1605	84" x 60"
16-H	80-1608	60" x 42"
16-M	80-1613	30" x 24"



		W H
16-S	80-1619	48" x 30"

THE 16-S SIGN SHALL BE USED ON ALL PROJECTS THAT REQUIRE SIDEWALK RECONSTRUCTION OR RESTRICT PEDESTRIAN TRAVEL ON AN EXISTING SIDEWALK.

SERIES 16 SIGNS SHALL BE INSTALLED IN ADVANCE OF THE TRAFFIC CONTROL PATTERNS TO ALLOW MOTORISTS THE OPPORTUNITY TO AVOID A WORK ZONE. SERIES 16 SIGNS SHALL BE INSTALLED ON ANY MAJOR INTERSECTING ROADWAYS THAT APPROACH THE WORK ZONE. ON LIMITED-ACCESS HIGHWAYS, THESE SIGNS SHALL BE LOCATED IN ADVANCE OF THE NEAREST UPSTREAM EXIT RAMP AND ON ANY ENTRANCE RAMPS PRIOR TO OR WITHIN THE WORK ZONE LIMITS.

THE LOCATION OF SERIES 16 SIGNS CAN BE FOUND ELSEWHERE IN THE PLANS OR INSTALLED AS DIRECTED BY THE ENGINEER.

SIGNS 16-E AND 16-H SHALL BE POST-MOUNTED.

SIGN 16-E SHALL BE USED ON ALL EXPRESSWAYS.

SIGN 16-H SHALL BE USED ON ALL RAMPS, OTHER STATE ROADWAYS, AND MAJOR TOWN/CITY ROADWAYS.

SIGN 16-M SHALL BE USED ON OTHER TOWN ROADWAYS.

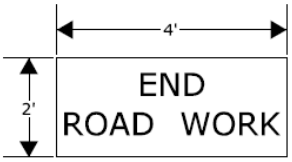
REGULATORY SIGN "ROAD WORK AHEAD, FINES DOUBLED"

THE REGULATORY SIGN "ROAD WORK AHEAD FINES DOUBLED" SHALL BE INSTALLED FOR ALL WORK ZONES THAT OCCUR ON ANY STATE HIGHWAY IN CONNECTICUT WHERE THERE ARE WORKERS ON THE HIGHWAY OR WHEN THERE IS OTHER THAN EXISTING TRAFFIC OPERATIONS.

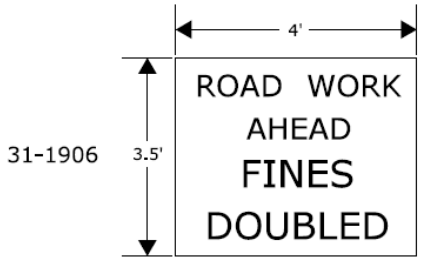
THE "ROAD WORK AHEAD FINES DOUBLED" REGULATORY SIGN SHALL BE PLACED AFTER THE SERIES 16 SIGN AND IN ADVANCE OF THE "ROAD WORK AHEAD" SIGN.

"END ROAD WORK" SIGN

THE LAST SIGN IN THE PATTERN MUST BE THE "END ROAD WORK" SIGN.



80-9612



31-1906

SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN
REQUIRED SIGNS

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED

Charles S. Harlow
2012.06.05 11:35:43-04'00'

PRINCIPAL ENGINEER

NOTES FOR TRAFFIC CONTROL PLANS

1. IF A TRAFFIC STOPPAGE OCCURS IN ADVANCE OF SIGN (A), THEN AN ADDITIONAL SIGN (A) SHALL BE INSTALLED IN ADVANCE OF THE STOPPAGE.

2. SIGNS (AA), (A), AND (D) SHOULD BE OMITTED WHEN THESE SIGNS HAVE ALREADY BEEN INSTALLED TO DESIGNATE A LARGER WORK ZONE THAN THE WORK ZONE THAT IS ENCOMPASSED ON THIS PLAN.

3. SEE TABLE 1 FOR ADJUSTMENT OF TAPERS IF NECESSARY.

4. IF THIS PLAN REMAINS IN CONTINUOUS OPERATION FOR MORE THAN 36 HOURS, THEN TRAFFIC DRUMS SHALL BE USED IN PLACE OF TRAFFIC CONES.

5. ANY LEGAL SPEED LIMIT SIGNS WITHIN THE LIMITS OF A ROADWAY / LANE CLOSURE AREA SHALL BE COVERED WITH AN OPAQUE MATERIAL WHILE THE CLOSURE IS IN EFFECT, AND UNCOVERED WHEN THE ROADWAY / LANE CLOSURE IS RE-OPENED TO ALL LANES OF TRAFFIC.

6. IF THIS PLAN REMAINS IN CONTINUOUS OPERATION FOR MORE THAN 36 HOURS, THEN ANY EXISTING CONFLICTING PAVEMENT MARKINGS SHALL BE ERADICATED OR COVERED, AND TEMPORARY PAVEMENT MARKINGS THAT DELINEATE THE PROPER TRAVELPATHS SHALL BE INSTALLED.

7. DISTANCES BETWEEN SIGNS IN THE ADVANCE WARNING AREA MAY BE REDUCED TO 100' ON LOW-SPEED URBAN ROADS (SPEED LIMIT < 40 MPH).

8. IF THIS PLAN IS TO REMAIN IN OPERATION DURING THE HOURS OF DARKNESS, INSTALL BARRICADE WARNING LIGHTS - HIGH INTENSITY ON ALL POST-MOUNTED DIAMOND SIGNS IN THE ADVANCE WARNING AREA.

9. A CHANGEABLE MESSAGE SIGN SHALL BE INSTALLED ONE HALF TO ONE MILE IN ADVANCE OF THE LANE CLOSURE TAPER.

10 SIGN (P) SHALL BE MOUNTED A MINIMUM OF 7 FEET FROM THE PAVEMENT SURFACE TO THE BOTTOM OF THE SIGN.

TABLE 1 - MINIMUM TAPER LENGTHS

POSTED SPEED LIMIT (MILES PER HOUR)	MINIMUM TAPER LENGTH FOR A SINGLE LANE CLOSURE
30 OR LESS	180' (55m)
35	250' (75m)
40	320' (100m)
45	540' (165m)
50	600' (180m)
55	660' (200m)
65	780' (240m)

METRIC CONVERSION CHART (1" = 25mm)

ENGLISH	METRIC	ENGLISH	METRIC	ENGLISH	METRIC
12"	300mm	42"	1050mm	72"	1800mm
18"	450mm	48"	1200mm	78"	1950mm
24"	600mm	54"	1350mm	84"	2100mm
30"	750mm	60"	1500mm	90"	2250mm
36"	900mm	66"	1650mm	96"	2400mm

SCALE: NONE

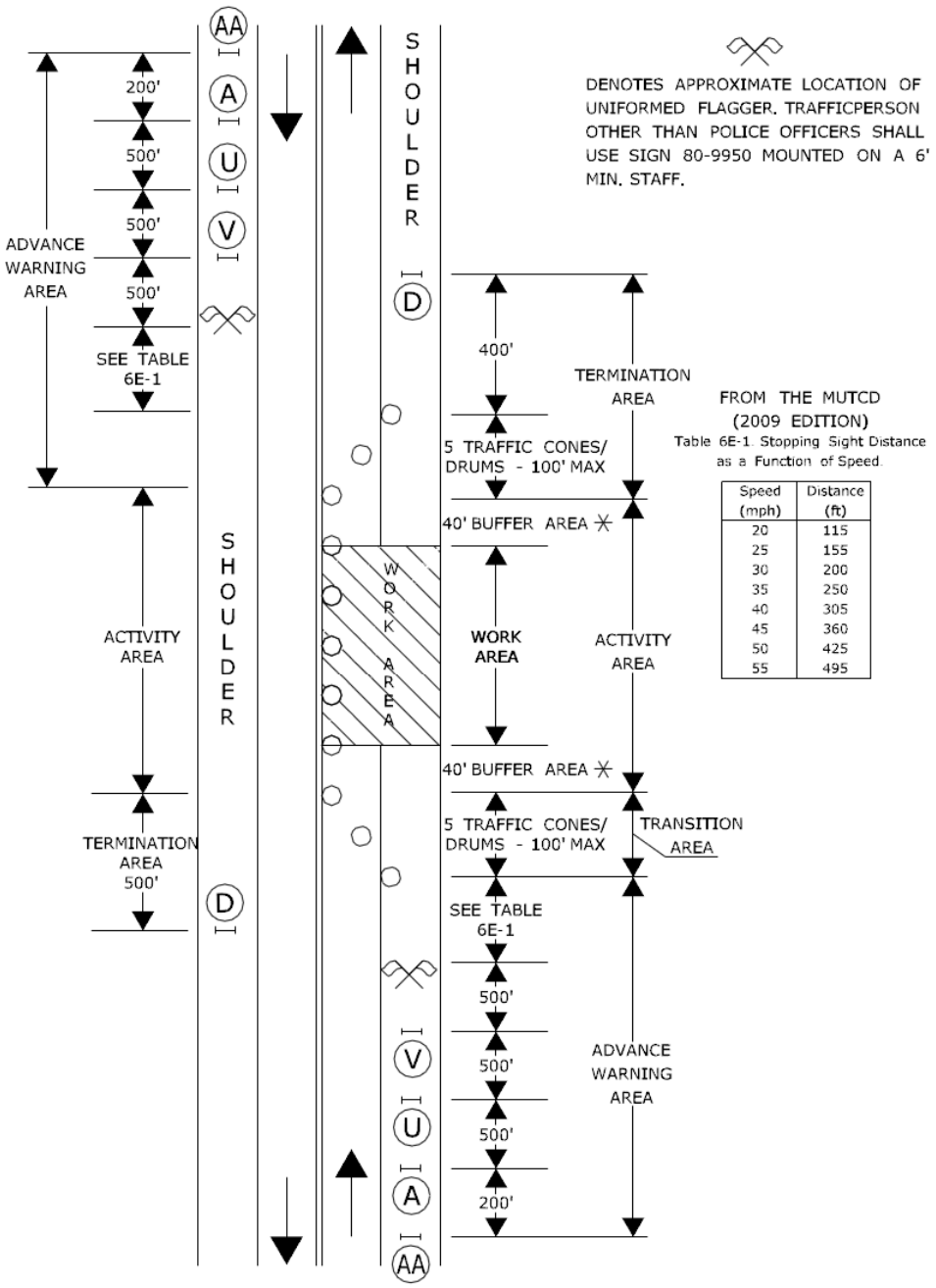
CONSTRUCTION TRAFFIC CONTROL PLAN

NOTES

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED Charles S. Harlow 2012.06.05 15:50:35-04'00'
PRINCIPAL ENGINEER

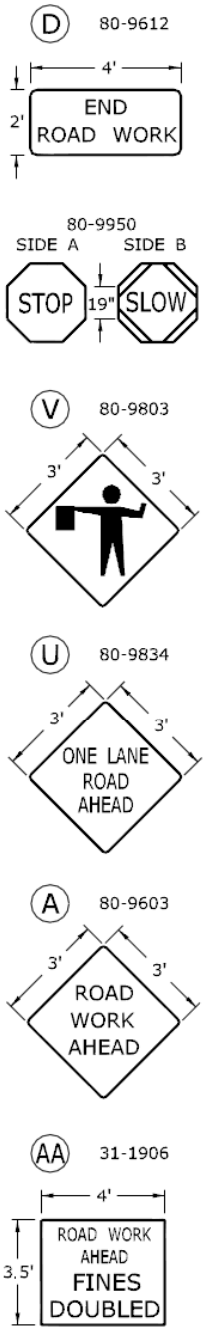
WORK IN TRAVEL LANE AND SHOULDER
TWO LANE HIGHWAY
ALTERNATING ONE-WAY TRAFFIC OPERATIONS



FROM THE MUTCD (2009 EDITION)
Table 6E-1. Stopping Sight Distance as a Function of Speed

Speed (mph)	Distance (ft)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495

SIGN FACE
108 SQ. FT (MIN.)



TRAFFIC CONE **OR** TRAFFIC DRUM
OPTIONAL TRAFFIC DRUM PORTABLE SIGN SUPPORT
HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW

SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN

PLAN 13 - SHEET 1 OF 2

SEE NOTES 1, 2, 4, 6, 7, 8

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

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PRINCIPAL ENGINEER

WORK IN TRAVEL LANE AND SHOULDER
TWO LANE HIGHWAY
ALTERNATING ONE-WAY TRAFFIC OPERATIONS

SIGN FACE
108 SQ. FT (MIN.)

HAND SIGNAL METHODS TO BE USED BY UNIFORMED FLAGGERS

THE FOLLOWING METHODS FROM SECTION 6E.07, FLAGGER PROCEDURES, IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES," SHALL BE USED BY UNIFORMED FLAGGERS WHEN DIRECTING TRAFFIC THROUGH A WORK AREA. THE STOP/SLOW SIGN PADDLE (SIGN NO. 80-9950) SHOWN ON THE TRAFFIC STANDARD SHEET TR-1220 01 ENTITLED, "SIGNS FOR CONSTRUCTION AND PERMIT OPERATIONS" SHALL BE USED.

A. TO STOP TRAFFIC

TO STOP ROAD USERS, THE FLAGGER SHALL FACE ROAD USERS AND AIM THE STOP PADDLE FACE TOWARD ROAD USERS IN A STATIONARY POSITION WITH THE ARM EXTENDED HORIZONTALLY AWAY FROM THE BODY. THE FREE ARM SHALL BE HELD WITH THE PALM OF THE HAND ABOVE SHOULDER LEVEL TOWARD APPROACHING TRAFFIC.

B. TO DIRECT TRAFFIC TO PROCEED

TO DIRECT STOPPED ROAD USERS TO PROCEED, THE FLAGGER SHALL FACE ROAD USERS WITH THE SLOW PADDLE FACE AIMED TOWARD ROAD USERS IN A STATIONARY POSITION WITH THE ARM EXTENDED HORIZONTALLY AWAY FROM THE BODY. THE FLAGGER SHALL MOTION WITH THE FREE HAND FOR ROAD USERS TO PROCEED.

C. TO ALERT OR SLOW TRAFFIC

TO ALERT OR SLOW TRAFFIC, THE FLAGGER SHALL FACE ROAD USERS WITH THE SLOW PADDLE FACE AIMED TOWARD ROAD USERS IN A STATIONARY POSITION WITH THE ARM EXTENDED HORIZONTALLY AWAY FROM THE BODY. TO FURTHER ALERT OR SLOW TRAFFIC, THE FLAGGER HOLDING THE SLOW PADDLE FACE TOWARD ROAD USERS MAY MOTION UP AND DOWN WITH THE FREE HAND, PALM DOWN.

◯ TRAFFIC CONE **OR** TRAFFIC DRUM
✳ OPTIONAL ⊗ TRAFFIC DRUM ⊢⊣ PORTABLE SIGN SUPPORT
⟵ HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW

SCALE: NONE

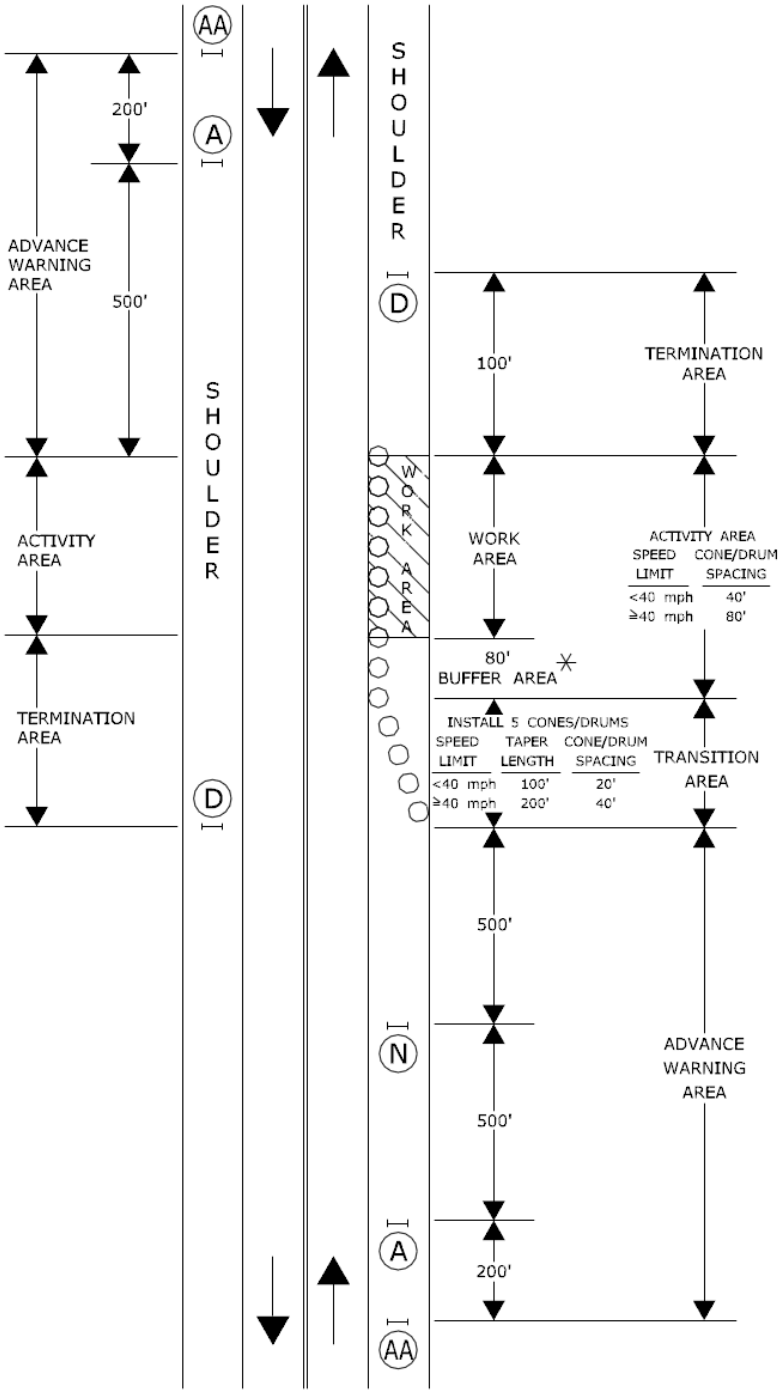
CONSTRUCTION TRAFFIC CONTROL PLAN
PLAN 13 - SHEET 2 OF 2
SEE NOTES 1, 2, 4, 6, 7, 8

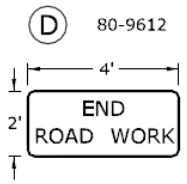
CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

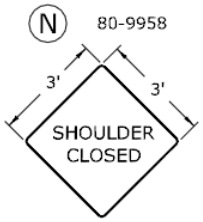
APPROVED _____ PRINCIPAL ENGINEER
Charles S. Harlow
2012.06.05 15:55:45-04'00'

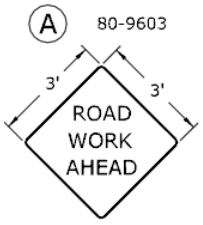
WORK IN SHOULDER - TWO LANE HIGHWAY

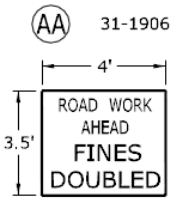
SIGN FACE
71 SQ. FT (MIN.)











TRAFFIC CONE **OR** TRAFFIC DRUM
OPTIONAL TRAFFIC DRUM PORTABLE SIGN SUPPORT
HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW

SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN

PLAN 14

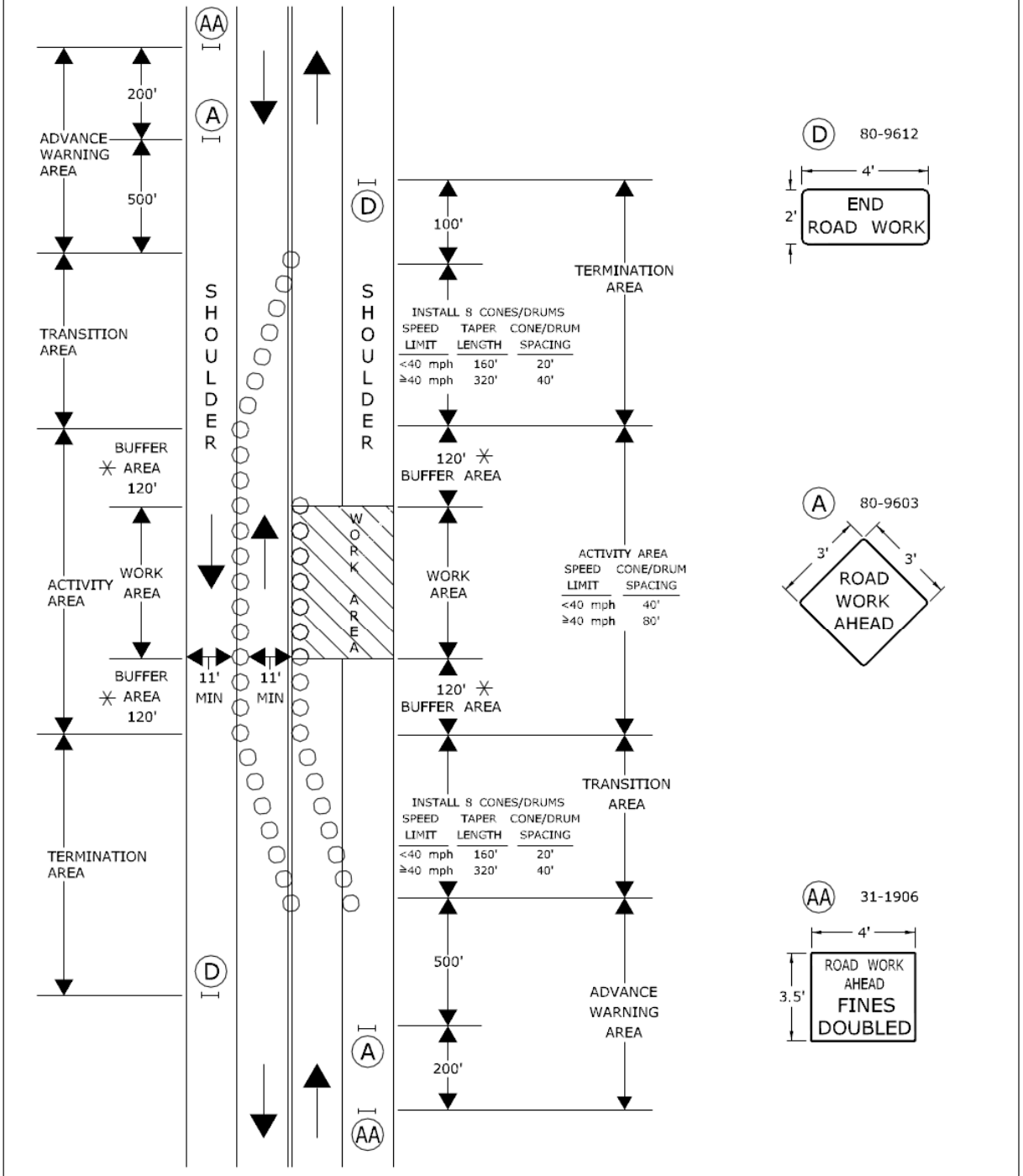
SEE NOTES 1, 2, 4, 7, 8

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED Charles S. Harlow 2012.06.05 15:56:09-04'00'
PRINCIPAL ENGINEER

WORK IN TRAVEL LANE AND SHOULDER
TWO LANE HIGHWAY

SIGN FACE
62 SQ. FT (MIN.)



TRAFFIC CONE **OR** TRAFFIC DRUM
OPTIONAL TRAFFIC DRUM PORTABLE SIGN SUPPORT
HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW

SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN
PLAN 15
SEE NOTES 1, 2, 4, 6, 7, 8

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED Charles S. Harlow 2012.06.05 15:56:29-04'00'
PRINCIPAL ENGINEER

Article 9.71.05 – Basis of Payment is supplemented by the following:

The temporary relocation of signs and supports, and the furnishing, installation and removal of any temporary supports shall be paid for under the item "Maintenance and Protection of Traffic". Temporary overhead sign supports and foundations shall be paid for under the appropriate item(s).

The cost of furnishing, installing, and removing the material for the 4H:1V traversable slope shall be paid for under the item "Maintenance and Protection of Traffic."

Pay Item	Pay Unit
Maintenance and Protection of Traffic	L.S.

ITEM #1208931A - SIGN FACE - SHEET ALUMINUM (TYPE IX RETROREFLECTIVE SHEETING)

Section 12.08 is supplemented and amended as follows:

12.08.01—Description:

Add the following:

This item shall also include field testing of metal sign base posts as directed by the Engineer.

12.08.03—Construction Methods:

Delete the last sentence and add the following:

Metal sign base posts shall be whole and uncut. Sign base post embedment and reveal lengths shall be as shown on the plans. The Contractor shall drive the metal sign base posts by hand tools, by mechanical means or by auguring holes. If an obstruction is encountered while driving or placing the metal sign base post, the Contractor shall notify the Engineer who will determine whether the obstruction shall be removed, the sign base post or posts relocated, or the base post installation in ledge detail shall apply. Backfill shall be thoroughly tamped after the posts have been set level and plumb.

Field Testing of Metal Sign Posts: When the sign installations are complete, the Contractor shall notify the Engineer the Project is ready for field testing. Based on the number of posts in the Project, the Engineer will select random sign base posts which shall be removed by the Contractor for inspection and measurement by the Engineer. After such inspection is completed at each base post location, the Contractor shall restore or replace such portions of the work to the condition required by the Contract. Refer to the table in 12.08.05 for the number of posts to be field tested.

12.08.04—Method of Measurement:

Add the following:

The work required to expose and measure sign base post length and embedment depth using field testing methods, and restoration of such work, will not be measured for payment and shall be included in the general cost of the work.

12.08.05—Basis of Payment:

Replace the entire Article with the following:

This work will be paid for at the Contract unit price per square foot for "Sign Face - Sheet Aluminum" of the type specified complete in place, adjusted by multiplying by the applicable Pay Factor listed in the table below. The price for this work shall include the completed sign, metal sign post(s), span-mounted sign brackets and mast arm-mounted brackets, mounting hardware, including reinforcing plates, field testing, restoration and replacement of defective base post(s), and all materials, equipment, and work incidental thereto.

Pay Factor Scale: Work shall be considered defective whenever the base post length or base post embedment depth is less than the specified length by more than 2 inches. If the number of defects results in rejection, the Contractor shall remove and replace all metal sign base posts on the Project, at no cost to the Department.

Number of Posts to be Tested and Pay Factors (Based on Number of Defects)

Number of Posts in Project =>	**51-100**	**101-250**	**251-1000**	**>1000**
Sample Size=>	**5 Posts**	**10 Posts**	**40 Posts**	**60 Posts**
0 Defects	1.0	1.0	1.025	1.025
1 Defect	0.9	0.95	0.975	0.983
2 Defects	Rejection	0.9	0.95	0.967
3 Defects	Rejection	Rejection	0.925	0.95
4 Defects	Rejection	Rejection	0.9	0.933
5 Defects	Rejection	Rejection	Rejection	0.917
6 Defects	Rejection	Rejection	Rejection	0.9
7 or more Defects	Rejection	Rejection	Rejection	Rejection

Note: Projects with 50 or fewer posts will not include field testing.

PERMITS AND PERMIT APPLICATIONS

- CTDEEP CT General Permit Addendum (CT GP)
- General Permit for Water Resource Construction Activities
- Army Corps of Engineers Section Pre-Construction Notification (PCN)

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

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

Date December 21, 2018

Diane M. Ray, Chief
Regulatory and Enforcement Branch B
U.S. Army Corps of Engineers
New England District
CENAE-RDB
696 Virginia Road
Concord, MA 01742-2751

Thomas Maziarz
Bureau Chief of Policy Planning
State of Connecticut Department of Transportation
2800 Berlin Turnpike, P.O. Box 317546
Newington, CT 06131-7546

SUBJECT: DEEP License #: 201814487-PGP
Rehabilitation of State Bridge #06728, Route 9 Over Pole Bridge Brook, Haddam

Dear Mr. Maziarz:

Please find attached a copy of your subject license and relevant enclosures which are being issued pursuant to your application of November 9, 2018. Your attention is directed to the conditions of the license. All work must conform to that which is specifically authorized.

Any work in regulated areas of the State which has not been authorized by a valid license is a violation of state law and subject to enforcement action by the Department of Energy & Environmental Protection and the Office of the Attorney General.

Your initiation of authorized activities will be relied upon as your agreement to comply with the terms and conditions of the license.

If you have not already done so, you should contact your local Planning and Zoning Office and the U. S. Army Corps of Engineers to determine local and federal permit requirements on your project, if any. Write the Corps' New England District, Regulatory Branch, 696 Virginia Road, Concord, MA 01742-2751; http://www.nae.usace.army.mil/ or call 1-800-343-4789.

If you should have any questions or concerns, please contact me at (860) 424-3233, or john.natale@ct.gov.

Sincerely,

John Natale

John Natale, Analyst
Land & Water Resources Division
Bureau of Water Protection & Land Reuse

Encl(s): License # 201814487-PGP

cc: File 201814487-PGP
cc (via email): Lizz Milardo, Haddam First Selectwoman: Selectasst@haddam.org
Steve Gephard, CT DEEP Fisheries Division: steve.gephard@ct.gov
Aija Zeidenbergs, Close, Jensen and Miller, P.C.: azeidenbergs@gmail.com

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

Bureau of Water Protection and Land Reuse
Land & Water Resources Division

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

Connecticut Department of Energy and Environmental Protection License*

USACE CT GP - Pre-Construction Notification Approval

Licensee(s):	State of Connecticut Department of Transportation
Licensee Address(s):	2800 Berlin Turnpike Newington, CT 06131-7546
License Number(s):	201814487-PGP
Municipality:	Haddam
Project Description:	Rehabilitation of Bridge #06728
Project Address/Location:	Route 9 over Pole Bridge Brook
Waters:	Pole Bridge Brook
Authorizing CT Statute(s) and/or Federal Law:	Section 401 CWA (33 USC 1341)
Applicable Regulations of CT State Agencies:	22a-426-1 to 9
Agency Contact:	Land & Water Resources Division, Bureau of Water Protection & Land Reuse, 860-424-3019
License Expiration:	Upon expiration of the U.S. Army Corps of Engineers Section 404 permit for the same activity.
Project Site Plan Set:	*Environmental Permit Plans, State Project No. 60-158, Rehabilitation of Bridge No. 06728, Route 9 in the Town of Haddam, 5* sheets, prepared by WMC Consulting Engineers, dated December 11, 2018.
License Enclosures:	WQC CT GP Conditions

*Connecticut's Uniform Administrative Procedure Act defines License to include, "*the whole or part of any agency permit, certificate, approval, registration, charter or similar form of permission required by law . . .*"

Authorized Activities:
The Licensee is hereby authorized to conduct the following work as described in application # 201814487-PGP :

1. Rehabilitate the existing 397-foot-long, six-foot diameter asphalt-coated corrugated metal pipe (ACCMP) by lining the barrel with a 2-inch maximum thickness cured-in-place structural pipe lining system.
2. All activities shall be conducted in accordance with plans entitled: *Environmental Permit Plans, State Project No. 60-158, Rehabilitation of Bridge No. 06728, Route 9 in the Town of Haddam, 5* sheets, prepared by WMC Consulting Engineers, dated December 11, 2018, submitted as part of the application.

Failure to comply with the terms and conditions of this license shall subject the Licensee and / or the Licensee's contractor(s) to enforcement actions and penalties as provided by law.

This license is subject to the following Terms and Conditions:

1. **License Enclosure(s) and Conditions.** The Licensee shall comply with all applicable terms and conditions as may be stipulated within the License Enclosure(s) listed above.

Issued under the authority of the Commissioner of Energy and Environmental Protection on:

December 21, 2018
Date

Brian P. Thompson
Division Director
Land & Water Resources Division

Section 401 Water Quality Certification Conditions for Department of the Army (Corps of Engineers) General Permits for the State of Connecticut

1. **Rights.** This certificate is subject to and does not derogate any present or future property rights or other rights or powers of the State of Connecticut, and conveys no property rights in real estate or material nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state, or local laws or regulations pertinent to the property or activity affected hereby. This certification does not comprise the permits or approvals as may be required by Chapters 440, 446i, 446j and 446k of the Connecticut General Statutes.

2. **Expiration of Certificate.** The Section 401 Water Quality Certifications contained herein shall be valid until such time as the Department of the Army General Permits for the State of Connecticut expires or is modified, suspended, revoked or reissued.

3. **Compliance with Certificate.** All work and all activities authorized herein conducted by the permittee at the site shall be consistent with the terms and conditions of this certificate. Any regulated activities carried out at the site, including but not limited to, construction of any structure, excavation, fill, obstruction, or encroachment, that are not specifically identified and authorized herein shall constitute a violation of this certificate and may result in its modification, suspension, or revocation. In carrying out the certified discharge(s) authorized herein, the permittee shall not store equipment or construction material, or discharge any material including without limitation, fill, construction materials or debris in any wetland or watercourse on or off site unless specifically authorized by this certificate. Upon initiation of the activities authorized herein, the permittee thereby accepts and agrees to comply with the terms and conditions of this certificate.

4. **Transfer of Certificate.** This authorization is not transferable without the written consent of the Commissioner.

5. **Reliance on Application.** In evaluating the permittee's application, the Commissioner has relied on information provided by the permittee. If such information subsequently proves to be false, deceptive, incomplete or inaccurate, this certificate may be modified, suspended or revoked.

6. **Best Management Practices.** In constructing or maintaining the activities authorized herein, the permittee shall employ best management practices, consistent with the terms and conditions of this certificate, to control storm water discharges and erosion and sedimentation and to prevent pollution. Such practices to be implemented by the permittee at the site include, but are not necessarily limited to:

    a. Prohibiting dumping of any quantity of oil, chemicals or other deleterious material on the ground;

    b. Immediately informing the Commissioner's Oil and Chemical Spill Response Division at (860) 424-3338 (24 hours) of any adverse impact or hazard to the environment, including any discharges, spillage, or loss of oil or petroleum or chemical liquids or solids, which occurs or is likely to occur as the direct or indirect result of the activities authorized herein;

    c. Separating staging areas at the site from the regulated areas by silt fences or straw/hay bales at all times;

    d. Prohibiting storage of any fuel and refueling of equipment within twenty-five (25) feet from any wetland or watercourse;

e. Preventing pollution of wetlands and watercourses in accordance with the document "Connecticut Guidelines for Soil Erosion and Sediment Control" as revised. Said controls shall be inspected by the permittee for deficiencies at least once per week and immediately after each rainfall and at least daily during prolonged rainfall. The permittee shall correct any such deficiencies within 48 hours of said deficiencies being found;

f. Stabilizing disturbed soils in a timely fashion to minimize erosion. If a grading operation at the site will be suspended for a period of thirty (30) or more consecutive days, the permittee shall, within the first seven (7) days of that suspension period, accomplish seeding and mulching or take such other appropriate measures to stabilize the soil involved in such grading operation. Within seven (7) days after establishing final grade in any grading operation at the site the permittee shall seed and mulch the soil involved in such grading operation or take such other appropriate measures to stabilize such soil until seeding and mulching can be accomplished.

g. Prohibiting the storage of any materials at the site which are buoyant, hazardous, flammable, explosive, soluble, expansive, radioactive, or which could in the event of a flood be injurious to human, animal or plant life, below the elevation of the five hundred (500) year flood. Any other material or equipment stored at the site below said elevation by the permittee or the permittee's contractor must be firmly anchored, restrained or enclosed to prevent flotation. The quantity of fuel stored below such elevation for equipment used at the site shall not exceed the quantity of fuel that is expected to be used by such equipment in one day.

h. Immediately informing the Commissioner's Inland Water Resources Division at (860) 424-3019 and the U.S. Army Corps of Engineers at (978) 318-8879, of the occurrence of pollution or other environmental damage resulting from construction or maintenance of the authorized activity or any construction associated therewith in violation of this certificate. The permittee shall, no later than 48 hours after the permittee learns of a violation of this certificate, report same in writing to the Commissioner. Such report shall contain the following information:

(i) the provision(s) of this certificate that has been violated;
(ii) the date and time the violation(s) was first observed and by whom;
(iii) the cause of the violation(s), if known
(iv) if the violation(s) has ceased, the duration of the violation(s) and the exact date(s) and times(s) it was corrected;
(v) if the violation(s) has not ceased, the anticipated date when it will be corrected;
(vi) steps taken and steps planned to prevent a reoccurrence of the violation(s) and the date(s) such steps were implemented or will be implemented;
(vii) the signatures of the permittee and of the individual(s) responsible for actually preparing such report, each of whom shall certify said report in accordance with condition 7 of this certificate.

For information and technical assistance, contact the DEEP Land and Water Resources Division at (860) 424-3019.

7. **Unconfined Instream Work; Installation and Removal of Confining Structures.**
   - Unconfined instream work is limited to the period June 1 through September 30.
   - Confinement of a work area by cofferdam techniques using sand bag placement, sheet pile installation (vibratory method only), portadam, or similar confinement devices is allowed any time of the year unless specifically prohibited by a permit condition.

- The removal of such confinement devices is allowed any time of the year unless specifically prohibited by a permit condition.
- The confinement technique used shall completely isolate and protect the confined area from all flowing water. The use of silt boom/curtain or similar technique as a means for confinement is prohibited.
- Once a work area has been confined, in-water work within the confined area is allowed any time of the year.

8. **Certification of Documents.** Any document, including but not limited to any notice, which is required to be submitted to the Commissioner under this certificate shall be signed by the permittee, a responsible corporate officer of the permittee, a general partner of the permittee, or a duly authorized representative of the permittee and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows:

   "I have personally examined and am familiar with the information submitted in this document and all attachments and certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief, and I understand that any false statement made in this document or its attachments may be punishable as a criminal offense in accordance with Section 22a-6 under Section 53a-157 of the Connecticut General Statutes."

9. **Submission of Documents.** The date of submission to the Commissioner of any document required by this certificate shall be the date such document is received by the Commissioner. Except as otherwise specified in this certificate, the word "day" as used in this certificate means the calendar day. Any document or action which falls on a Saturday, Sunday, or legal holiday shall be submitted or performed by the next business day thereafter.

   Any document or notice required to be submitted to the Commissioner under this certificate shall, unless otherwise specified in writing by the Commissioner, be directed to:

   Director, Land and Water Resources Division
   Bureau of Water Protection and Land Reuse
   Department of Environmental Protection
   79 Elm Street
   Hartford, Connecticut 06106-5127

INTERDEPARTMENTAL MESSAGE

STATE OF CONNECTICUT

To	NAME, TITLE Central Permit Processing Unit, 1st floor	DATE 11/5/2018
	AGENCY, ADDRESS Department of Energy and Environmental Protection, 79 Elm Street, Hartford, CT	
From	NAME, TITLE Ms. Kimberly C. Lesay, Transportation Assistant Planning Director	TELEPHONE (860) 594-2931
	AGENCY, ADDRESS Department of Transportation, Bureau of Policy and Planning, Newington	

Subject: **State Bridge Program**
State Project No. 060-158
Rehabilitation of Bridge No. 06728
Route 9 over Pole Bridge Brook
Town of Haddam

Attached are an original and two copies of the Connecticut Addendum Army Corps of Engineers General Permit State of Connecticut (CT GP) application associated with the above referenced project. The project has concurrently submitted a PCN application to the USACE.

Any questions pertaining to this application may be directed to Mr. Andrew H. Davis, Transportation Supervising Planner of my staff, at 860-594-2157.

Attachments

Aaron M. Ferraro/amf
bcc: Kimberly C. Lesay - Andrew H. Davis – Amanda M. Saul
Theodore H. Nezames – Rabih M. Barakat – Louis D. Bacho – Lesgie M. Ruiz
Robert E. Obey – Eileen Ego (District 2)
Thomas M. Ryan – Mark F. Levesque (CJM)

Connecticut Department of Energy & Environmental Protection

CPPU USE ONLY
App #:
Doc #:
Check #:

Permit Application Transmittal Form

Please complete this transmittal form in accordance with the instructions in order to ensure the proper handling of your application(s) and the associated fee(s). Print legibly or type.

Part I: Applicant Information:

- **If an applicant is a corporation, limited liability company, limited partnership, limited liability partnership, or a statutory trust, it must be registered with the Secretary of State. If applicable, applicant's name shall be stated **exactly** as it is registered with the Secretary of State.*
- *If an applicant is an individual, provide the legal name (include suffix) in the following format: First Name; Middle Initial; Last Name; Suffix (Jr, Sr., II, III, etc.).*

Applicant: **Connecticut Department of Transportation**

Mailing Address: **2800 Berlin Turnpike, P.O. Box 317546**

City/Town: **Newington** State: **CT** Zip Code: **06131-7546**

Business Phone: **(860) 594-2931** ext.:

Contact Person: **Kimberly C. Lesay** Phone: **(860) 594-2931** ext.

E-Mail: **kimberly.lesay@ct.gov**

Applicant (check one): ☐ individual ☐ *business entity ☐ federal agency ☒ state agency ☐ municipality ☐ tribal
*If a business entity, list type (e.g., corporation, limited partnership, etc.):

☐ Check if any co-applicants. If so, attach additional sheet(s) with the required information as supplied above.

Please provide the following information to be used for *billing purposes only*, if different:

Company/Individual Name:

Mailing Address:

City/Town: State: Zip Code:

Contact Person: Phone: ext.

Part II: Project Information

Brief Description of Project: *(Example: Development of a 50 slip marina on Long Island Sound)*

Rehabilitation of Bridge No. 06728, Route 9 over Pole Bridge Brook

Location (City/Town): **Haddam**

Other Project Related Permits (*not* included with this form):

Permit Description	Issuing Authority	Submittal Date	Issuance Date	Denial Date	Permit #
PCN	USACE	Concurrently			
GP for WRCA	CTDEEP	Pending PGP & PCN Approval			

Part III: Individual Permit Application and Fee Information

New, Mod. or Renew	Individual Permit Applications	Initial Fees	No. of Permits Applied For	Total Initial Fees	Original + Required Copies
	AIR EMISSIONS				
	New Source Review ☐ Revision ☐ minor mod	$940.00			1 + 0
	Title V Operating Permits ☐ Revision ☐ minor mod ☐ non-minor mod	none			1 + 0
	Title IV	none			1 + 0
	Clean Air Interstate Rule (CAIR)	none			1 + 0
	WATER DISCHARGES				
	To Groundwater	$1300.00			1 + 1
	To Sanitary Sewer (POTW)	$1300.00			1 + 1
	To Surface Water (NPDES)	$1300.00			1 + 1
	WATER PLANNING AND MANAGEMENT				
	Dam Safety	none			1 + 2
	Domestic Sewage Treatment Works (For municipal and private sewage treatment facilities discharging to surface waters)	$1300.00/ Mod = $940			1 + 1
	Water Diversion (consumptive) and Registrations	★			1 + 5
	LAND AND WATER RESOURCES				
	Flood Management Certification	none			1 + 1
	Flood Management Certification Exemption	none			1 + 1
	Inland Wetlands and Watercourses (State Agencies Only)	none			1 + 5
	Inland 401 Water Quality Certification	none			1 + 5
	FERC- Hydropower Projects- 401 Water Quality Certification	none			
	Water Diversion (non-consumptive)	★			1 + 5
	Certificate of Permission	$375.00			1 + 2
	Coastal 401 Water Quality Certification	none			1 + 2
	Structures and Dredging/and Fill/Tidal Wetlands	$660.00			1 + 2
	WASTE MANAGEMENT				
	Aerial Pesticide Application	★			1 + 2
	Aquatic Pesticide Application	$200.00			1 + 0
	CGS Section 22a-454 Waste Facilities	★			1 + 1
	Disruption of a Solid Waste Disposal Area	$0			1 + 1
	Hazardous Waste Treatment, Storage and Disposal Facilities	★			1 + 1
	Marine Terminal License	$100.00			1 + 0
	Stewardship	$4000.00			1 + 1
	Solid Waste Facilities	★			1 + 1
	Waste Transportation	★			1 + 0
		Subtotal ➡	0	$0	
	GENERAL PERMITS and AUTHORIZATIONS — Subtotals Page 3 &4 ➡		1	None	
	Enter subtotals from Part IV, pages 3 - 6 of this form — Subtotals Page 5 ➡		0	$0	
	Subtotals Page 6 ➡		N/A	N/A	
		TOTAL ➡	1	None	
	☒ Indicate whether municipal discount or state waiver applies. Less Applicable Discount ➡			State Waiver	
		AMOUNT REMITTED ➡		None	

Check # ➡ _____

Check or money order should be made payable to: "Department of Energy and Environmental Protection"

★ See fee schedule on individual application.

Part IV: General Permit Registrations and Requests for Other Authorizations Application and Fee Information

✓	General Permits and Other Authorizations	Initial Fees	No. of Permits Applied For	Total Initial Fees	Original + Required Copies
	AIR EMISSIONS				
☐	Limit Potential to Emit from Major Stationary Sources of Air Pollution	$2760.00			1 + 0
☐	Diagnostic and Therapeutic X-Ray Devices (Medical X-Ray) Registration	$190.00/Xray device			1 + 0
☐	Radioactive Materials and Industrial Device Registration (Ionizing Radiation)	$200.00			1 + 0
☐	Emergency/Temporary Authorization	★★			★★
☐	License Revocation Request	$0			★★
☐	Other, (please specify):				
	WATER DISCHARGES				
	Categorical Industry User to a POTW				
☐	Discharges ≥ 10,000 gpd	$6250.00			1 + 0
☐	Discharges < 10,0000 gpd	$3125.00			
	Comprehensive Discharges to Surface Water and Groundwater				
☐	Registration Only	$625.00			1 + 0
☐	Approval of Registration by DEEP	$1250.00			
☐	Domestic Sewage	$625.00			1 + 0
☐	Food Service Establishment Wastewater	No Registration			
	Groundwater Remediation Wastewater				
☐	Registration Only	$625.00			1 + 0
☐	Approval of Registration by DEEP	$1250.00			
	Miscellaneous Discharges of Sewer Compatible Wastewater				
☐	Registration Only	$500.00			1 + 0
☐	Approval of Registration by DEEP	$1000.00			
☐	Nitrogen Discharges	No Registration			
☐	Point Source Discharges from Application of Pesticides	$200.00			1 + 0
☐	Stormwater Associated with Commercial Activities	$300.00			1 + 0
	Stormwater Associated with Industrial Activities				
☐	No Exposure Certification	$250.00			1 + 0
☐	<50 employees–see general permit for additional requirements	$500.00			
☐	>50 employees–see general permit for additional requirements	$1000.00			
☐	Stormwater & Dewatering Wastewaters-Construction Activities	★			1 + 0
☐	Stormwater from Small Municipal Separate Storm Sewer Systems (MS4)	$625.00			1 + 0
☐	Stormwater from DOT Separate Storm Sewer Systems (DOT MS4)	$0			1 + 0
☐	Subsurface Sewage Disposal Systems Serving Existing Facilities	★ ★			1 + 0
☐	Swimming Pool Wastewater - Public Pools and Contractors	$500.00			1 + 0
	Vehicle Maintenance Wastewater				
☐	Registration Only	$625.00			1 + 0
☐	Approval of Registration by DEEP	$1250.00			
☐	Emergency/Temporary Authorization - Discharge to POTW	$1500.00			1 + 0
☐	Emergency/Temporary Authorization - Discharge to Surface Water	$1500.00			1 + 0
☐	Emergency/Temporary Authorization - Discharge to Groundwater	$1500.00			1 + 0
☐	Other, (please specify):				
	Note: Carry subtotals over to Part III, page 2 of this form.	**Subtotal ➡**	0	$0	

★ See fee schedule on registration/application.

★★ Contact the specific permit program for this information. (Contact numbers are provided in the instructions)

Part IV: General Permit Registrations and Requests for Other Authorizations (continued)

✓	General Permits and Other Authorizations	Initial Fees	No. of Permits Applied For	Total Initial Fee	Original + Required Copies
	AQUIFER PROTECTION PROGRAM				
☐	Registration for Regulated Activities	$625.00			1 + 0
☐	Permit Application to Add a Regulated Activity	$1250.00			1 + 0
☐	Exemption Application from Registration	$1250.00			1 + 0
	WATER PLANNING AND MANAGEMENT				
☐	Dam Safety Repair and Alteration: Non Filing	No Registration			
☐	Dam Safety Repair and Alteration: Filing – No PE	$100.00			1 + 0
☐	Dam Safety Repair and Alteration: Filing – PE	$200.00			1 + 0
☐	Dam Safety Repair and Alteration: Approval of Filing	$250.00			1 + 0
☐	Diversion of Remediation Groundwater	No Registration			
☐	Diversion of Water for Consumptive Use: Reauthorization Categories	$2500.00			1 + 0
☐	Diversion of Water for Consumptive Use: Authorization Required	$2500.00			1 + 4
☐	Diversion of Water for Consumptive Use: Filing Only	$1500.00			1 + 1
☐	Water Resource Construction Activities	★			1 +0
☐	Emergency/Temporary Authorization	★★			★★
☐	Notice of High Hazard Dam or a Significant Hazard Dam	$0			1 +0
☐	Other, (please specify):				
	LAND AND WATER RESOURCES				
	Minor Coastal Structures				
☐	4/40 Docks/Access Stairs	$700.00			1 + 1
☐	Beach Grading	No Registration			
☐	Buoys or Markers	No Registration			
☐	Experimental Activities/Scientific Monitoring Devices	No Registration			
☐	Harbor Moorings	No Registration			
☐	Non-harbor Moorings	$250.00			1 + 1
☐	Osprey Platforms and Perch Poles	No Registration			
☐	Pump-out Facilities	No Registration			
☐	Swim Floats	No Registration			
	Coastal Maintenance				
☐	Backflow Prevention Structure	No Registration			
☐	Beach Grading/Raking	No Registration			
☐	Catch Basin Cleaning	No Registration			
☐	Coastal Remedial Activities Required by Order	$700.00			1 + 1
☐	Coastal Restoration	No Registration			
☐	DEEP Boat Launch Infrastructures	No Registration			
☐	DOT Infrastructures	No Registration			
☐	Marina and Mooring Field Reconfiguration	$700.00			1 + 1
☐	Minor Seawall Repair	No Registration			
☐	Placement of Cultch	No Registration			
☐	Reconstruction of Legally Existing Structure/Obstruction/Encroachment	$300.00			1 + 1
☐	Removal of Derelict Structures	No Registration			
☐	Residential Flood Hazard Mitigation	$100.00			1 + 1
☐	Temporary Access of Construction Vehicles/Equipment	No Registration			
☒	Programmatic General Permit	★	1	None	1 + 1
☐	Emergency/Temporary Authorization				
☐	Other, (please specify):				
	Note: Carry subtotals over to Part III, page 2 of this form. **Subtotal** ➡		1	None	

★ See fee schedule on registration/application.

★★ Contact the specific permit program for this information. (Contact numbers are provided in the instructions)

Part IV: General Permit Registrations and Requests for Other Authorizations (continued)

✓	General Permits and Other Authorizations	Initial Fees	No. of Permits Applied For	Total Initial Fee	Original + Required Copies
	WASTE MANAGEMENT				
☐	Addition of Grass Clippings at Registered Leaf Composting Facilities	$500.00			1 + 0
☐	Beneficial Use Determination	★			1 + 0
☐	Collection and Storage of Post Consumer Paint	$0			1 + 0
☐	Connecticut Solid Waste Demonstration Project	$1000.00			1 + 0
	Construct and Operate a Commercial Facility for the Management of Recyclable Materials and Certain Solid Wastes (Commercial GP)	**Initial/Mod Fee**			
☐	Asbestos Containing Materials	$1,250.00/$ 625			1 + 0
☐	Ash Residue	$1,250.00/$ 625			1 + 0
☐	Clean Wood: Tier III	$500.00/$250			1 + 0
☐	Clean Wood: Tier II	$250.00/$125			1 + 0
☐	Construction and Demolition Waste: Tier III	$1,250.00/$625			1 + 0
☐	Construction and Demolition Waste: Tier II	$500.00/$250			1 + 0
☐	Non-RCRA Hazardous Waste/Compatible Solid Wastes	$1,250.00/$625			1 + 0
☐	Recyclables	$500.00/$250			1 + 0
☐	Universal Wastes/Compatible Solid Wastes	$1,250.00/$625			1 + 0
	Contaminated Soil and/or Staging Management (Staging/Transfer)				
☐	New Registrations	$250.00			1 + 0
☐	New Approval of Registrations	$1500.00			1 + 0
☐	Renewal of Registrations	$250.00			1 + 0
☐	Renewal of Approval of Registrations	$750.00			1 + 0
☐	Disassembling Used Electronics	$2000.00			1 + 0
☐	Leaf Composting Facility	$0			1 + 1
☐	Municipal Transfer Station	$800.00			1 + 1
☐	One Day Collection of Certain Wastes and Household Hazardous Waste	$1000.00			1 + 0
☐	Sheet Leaf Composting Notification	$0			★★
	Special Waste Authorization				
☐	Landfill or RRF Disposal	$660.00			
☐	Asbestos Disposal	$300.00			1 + 0
☐	homeowner	$0			
☐	Storage and Processing of Asphalt Roofing Shingle Waste	$2500.00			1 + 0
☐	Storage and Processing of Scrap Tires for Beneficial Use	$1250.00			1 + 0
☐	Emergency/Temporary Authorization	★★			★★
☐	Other, (please specify):				
	REMEDIATION				
☐	In Situ Groundwater Remediation: Enhance Aerobic Biodegradation	★			1 + 2
☐	In Situ Groundwater Remediation: Chemical Oxidation	$500.00			1 + 0
☐	Emergency/Temporary Authorization	★			★★
	Note: Carry subtotals over to Part III, page 2 of this form.	**Subtotal ➡**	0	$0	

★ See fee schedule on registration/application. ★★ Contact the specific permit program for this information. (Contact numbers are provided in the instructions)

Affirmative Action, Equal Employment Opportunity and Americans with Disabilities

The Connecticut Department of Energy and Environmental Protection is an Affirmative Action/Equal Opportunity Employer that is committed to complying with the requirements of the Americans with Disabilities Act (ADA). Please contact us at (860) 418-5910 or deep.accommodations@ct.gov if you: have a disability and need a communication aid or service; have limited proficiency in English and may need information in another language; or if you wish to file an ADA or Title VI discrimination complaint.

Connecticut Department of
Energy & Environmental Protection
Bureau of Water Protection & Land Reuse
Inland Water Resources Division

DEEP/CPPU USE ONLY
App #:
Doc #:
Check #:
Program: Programmatic General Permit
NAE #:
DEEP #:
Determinations: ☐ Eligible Category 2 ☐ Eligible Category 1 ☐ Individual Permit

Connecticut Addendum Army Corps of Engineers General Permit State of Connecticut (CT GP)

Print or type unless otherwise noted.

Part I: Application Description

Town where site is located: Haddam

Brief Description of Project: **Project No. 60-158, Rehabilitation of Bridge No. 06728**

Part II: Fee Information

There is no fee required at this time. The Department of Energy and Environmental Protection (DEEP) may require an application fee to be submitted with this addendum at a later date.

Part III: Applicant Information

- **If an applicant is a corporation, limited liability company, limited partnership, limited liability partnership, or a statutory trust, it must be registered with the Secretary of State. If applicable, registrant's name shall be stated **exactly** as it is registered with the Secretary of State. This information can be accessed at CONCORD.*
- *If an applicant is an individual, provide the legal name (include suffix) in the following format: First Name; Middle Initial; Last Name; Suffix (Jr, Sr., II, III, etc.).*

1. Applicant Name: **State of Connecticut, Department of Transportation**

   Mailing Address: **2800 Berlin Turnpike, P.O. Box 317546**

   City/Town: **Newington** State: **CT** Zip Code: **06131-7546**

   Business Phone: **(860) 594-2931** ext. Fax: **(860) 594-3028**

   Contact Person: **Kimberly C. Lesay** Title: **Transportation Assistant Planning Director**

   *E-Mail: **kimberly.lesay@ct.gov**

   *By providing this e-mail address you are agreeing to receive official correspondence from the department, at this electronic address, concerning the subject application. Please remember to check your security settings to be sure you can receive e-mails from "ct.gov" addresses. Also, please notify the department if your e-mail address changes.

Part III: Applicant Information (continued)

a) Registrant Type (check one): ☐ individual ☐ *business entity ☐ federal agency
☒ state agency ☐ municipality ☐ tribal

*If a business entity:

i) check type: ☐ corporation ☐ limited liability company ☐ limited partnership
☐ limited liability partnership ☐ statutory trust ☐ Other: _____

ii) provide Secretary of the State business ID #:_____This information can be accessed at **CONCORD**

iii) ☐ Check here if you are **NOT** registered with the SOTS.

☐ Check here if any co-applicants. If so, attach additional sheet(s) with the required information as requested above.

b) Applicant's interest in property at which the proposed activity is to be located:

☒ site owner ☐ option holder ☐ lessee ☐ developer
☐ easement holder ☐ operator ☐ other (specify):

☐ Check here if there are co-applicants. If so, label and attach additional sheet(s) to this sheet with the required information.

2. List primary contact for departmental correspondence and inquiries, if different than the applicant.

Name:

Mailing Address:

City/Town: State: Zip Code:

Business Phone: ext. Fax:

Contact Person: Title:

E-Mail:

*By providing this e-mail address you are agreeing to receive official correspondence from the department, at this electronic address, concerning the subject application. Please remember to check your security settings to be sure you can receive e-mails from "ct.gov" addresses. Also, please notify the department if your e-mail address changes.

3. Property Owner, if different than the applicant:

Name:

Mailing Address:

City/Town: State: Zip Code:

Business Phone: ext. Fax:

Contact Person: Title:

E-Mail:

Part III: Applicant Information (continued)

4. List any engineer(s) or other consultant(s) employed or retained to assist in preparing the application or in designing or constructing the activity.

Name: **Close, Jensen and Miller, P.C.**

Mailing Address: **1137 Silas Deane Highway**

City/Town: **Wethersfield** State: **CT** Zip Code: **06109**

Business Phone: **(860) 563-9375** ext. Fax:

Contact Person: **Aija Zeidenbergs** Title: **Environmental Coordinator**

E-Mail: **azeidenbergs@gmail.com**

Service Provided: **Permit Application Preparation, Hydrology & Hydraulics**

☒ Check here if additional sheets are necessary, and label and attach them to this sheet.

Part IV: Site/Project Information

1. **SITE NAME AND LOCATION**

Is the name of the site the same as the name of the applicant? ☐ Yes ☒ No

Name of Site : **Bridge No. 06728**

Street Address or Description of Location: **Route 9 over Pole Bridge Brook**

City/Town: **Haddam** State: **CT** Zip Code: **06438**

Latitude and longitude of the exact location of the proposed activity in degrees, minutes, and seconds or in decimal degrees: Latitude: **41° 27' 50.65" N** Longitude: **72° 32' 26.20" W**

Method of determination (check one):

☐ GPS ☒ USGS Map ☐ Other (please specify):

If a USGS Map was used, provide the quadrangle name: **Haddam**

2. **COASTAL BOUNDARY:** Is the activity which is the subject of this application located within the coastal boundary as delineated on DEEP approved coastal boundary maps? ☐ Yes ☒ No

If yes, and this application is for a new authorization or a modification of an existing authorization where the physical footprint of the subject activity is modified, you must submit a *Coastal Consistency Review Form* (DEP-APP-004) with this completed application.

Information on the coastal boundary is available at the local town hall or on the "Coastal Boundary Map" available at DEEP Maps and Publications (860-424-3555).

3. **ENDANGERED OR THREATENED SPECIES:** Is the project site located within an area identified as a habitat for endangered, threatened or special concern species as identified on the "State and Federal Listed Species and Natural Communities Map"? ☐ Yes ☒ No Date of Map: **Dec. 2017**

If yes, complete and submit a *Request for NDDB State Listed Species Review Form* (DEP-APP-007) to the address specified on the form. **Please note NDDB review generally takes 4 to 6 weeks and may require additional documentation from the applicant.**

The CT NDDB response ***must*** be submitted with this completed application.

For more information visit the DEEP website at www.ct.gov/dep/nddbrequests or call the NDDB at 860-424-3011.

Part III: Applicant Information (Continued)

6. Engineer(s) or other consultant(s) employed or retained to assist in preparing the request of in designing or constructing the activity.

Name: **Wengell, McDonnell & Costello, Inc.**

Mailing Address: **87 Holmes Road**

City/Town: **Newington** State: **CT** Zip Code: **06111**

Business Phone: **(860) 815-0260** Ext:

Contact Person: **Jay A. Costello** Title: **Project Manager**

Service Provided: **Project Design and Permit Plans**

Part IV: Project Information (continued)

4. **AQUIFER PROTECTION AREAS:** Is the site located within a town required to establish Aquifer Protection Areas, as defined in section 22a-354a through 354bb of the General Statutes (CGS)?

☐ Yes ☒ No To view the applicable list of towns and maps visit the DEEP website at www.ct.gov/deep/aquiferprotection

If yes, is the site within an area identified on a Level A map? ☐ Yes ☐ No

If yes, is the site within an area identified on a Level B map? ☐ Yes ☐ No

If your site is on a Level A map, check the DEEP website, Business and Industry Information to determine if your activity is required to be registered under the Aquifer Protection Area Program.

If your site is on a Level B map, no action is required at this time, however you may be required to register under the Aquifer Protection Area Program in the future when the area is delineated as Level A.

5. **CONSERVATION OR PRESERVATION RESTRICTION:** Is the property subject to a conservation or preservation restriction? ☐ Yes ☒ No

If Yes, proof of written notice of this registration to the holder of such restriction or a letter from the holder of such restriction verifying that this registration is in compliance with the terms of the restriction, must be submitted with this completed form.

6. **Total area** (in acres) within property boundaries: **0.6**

7. **Project Category:** (please check all that apply)

☐ Industrial Site Developmet	☐ Condo/Apartment Complex
☐ Commercial Site Development	☐ Stream Restoration/Enhancement
☐ Pond/Lake Dredging	☐ Multiple Lot Residential Development
☐ Fish/Wildlife Management (Government Agency)	☐ Public Water Supply
☐ Golf Course Development	☐ Mine/Quarry
☐ Individual Residential	☒ Other (Describe below):

CT Bridge Rehabilitation

Part V: Environmental Information

1.	Wetland Impact		
	a. Direct Impact		
	(Fill includes permanent & temporary):	**1,263** sf	**0.03** acres
	b. Secondary/Indirect Impact:	**0** sf	**0** acres
	c. **Total Impact**:	**1,263** sf	**0.03** acres
2.	Waters/Waterways/Watercourses Impact		
	a. Direct Impact		
	(Fill includes permanent & temporary):	**438** lf	**2,911** sf
	b. Secondary/Indirect Impact:	**0** lf	**0** sf
	c. **Total Impact**:	**438** lf	**2,911** sf

Part V: Environmental Information (continued)

3. Do the following special wetland types occur on site?

Special Wetland	Yes	No	Total Area of Resource (SF)	Area of Resource Impacted (SF)
Vernal Pool	☐	☒		
Fen	☐	☒		
Bog	☐	☒		
Cedar Swamp	☐	☒		
Spruce Swamp	☐	☒		
Calcareous Seepage Swamp	☐	☒		

4. **Channel Relocation/Restoration/Stabilization**

Does the project include alterations to a perennial watercourse(s)? ☒ Yes ☐ No

If Yes, indicate all design features included in your project from the list below:

Design Features	Yes	No
Avoidance of barriers to fish movement	☐	☒
Formation of pools and riffles	☐	☒
Provisions for areas of sheltered flow (e.g., boulders, low check dams)	☐	☒
Preservation of stream bank vegetation and establishment of new vegetation	☒	☐
Use of clean natural bed materials of a suitable size	☒	☐

Indicate Design Flow for bank-full flow: 30 **cfs**

Indicate Frequency Recurrence (year): 2-Year

Indicate Design Velocity for bank-full flow: 11 **fps**

Indicate Frequency Recurrence (year): 2-Year

5. **Floodplains**	Yes	No
Is there a FEMA mapped floodplain for floodway on the site?	☐	☒
Are any excavations or permanent fill/structures proposed within the floodplain?	☐	☒
Are any excavations or permanent fill/structures proposed within the floodway?	☐	☒
Are any temporary stockpiles of fill or materials proposed within the floodplain?	☐	☒
Are any increases in the 100 year water surface elevation proposed? If Yes, indicate maximum increase in feet: 1.02	☒	☐
Are any flooding increases proposed that would extend off the subject property? If Yes, attach an explanation to this sheet.	☐	☒

If applicable, include with this form, hydraulic calculations including tabulated summary of results that demonstrate no adverse impacts of any fill in a floodplain and which are in accordance with the guidance document entitled, "Hydraulic Analysis Guidance Document" (www.ct.gov/dep/lib/dep/Permits_and_Licenses/Land_Use_Permits/Inland_Water_Permits/iwrdhydraulicguidance.pdf)

Part VI: Hydraulic and Drainage Structures *(You are required to complete a separate sheet for each structure)*

1. Identify the type of structure: (Check one below that applies)

☒ Culvert ☐ Detention/Retention Basin ☐ Infiltration Basin/Structure ☐ Drainage Outfall ☐ Drainage Swale ☐ Bridge ☐ Dam
☐ Dike ☐ Weir ☐ Outlet Control Structure ☐ Pipe/Conduit/Aqueduct ☐ Other:

60-158

2. How is the structure labeled on the site plans and in reports? **Bridge No. 06728**

3. Where is the structure located on the site plans? **Route 9 over Pole Bridge Brook**

4. For bridge/culvert structures, what is the **openness ratio**? **0.02** meters
(The openness ratio is the X-sectional area of structure opening/ length of the structure parallel to the stream.)
(www.nae.usace.army.mil/reg/Openness Ratio (OR) Spreadsheet.pdf)

5. What is the size of the contributing watershed to the structure? **307** Acres **0.48** Square Miles

6. Is the structure located within a **FEMA flood zone**? ☒ No ☐ Yes If yes, indicate the type of zone: ☐ Floodway ☐ Flood Plain

7. **Provide the following information as appropriate for the structure identified above.**

Water Surface Elevation (feet) (Immediately upstream of structure)

Storm Event Frequency

2-yr			10-yr			25-yr			50-yr			100-yr		
Existing	Proposed	Change (+/-)	Existing	Proposed	Change (+/-)	Existing	Proposed	Change (+/-)	Existing	Proposed	Change (+/-)	Existing	Proposed	Change (+/-)
249.06	**249.29**	**0.23**	**251.64**	**252.02**	**0.38**	**253.45**	**253.90**	**0.55**	**255.20**	**255.84**	**0.64**	**257.52**	**258.54**	**1.02**

141

Aerial Extent of Inundation (square feet) (Maximum)

Storm Event Frequency

2-yr			10-yr			25-yr			50-yr			100-yr		
Existing	Proposed	Change (+/-)	Existing	Proposed	Change (+/-)	Existing	Proposed	Change (+/-)	Existing	Proposed	Change (+/-)	Existing	Proposed	Change (+/-)

Information not provided since convergence location upstream is unknown.

Duration of Inundation (hours) Storm Event Frequency					**Discharge Velocity (feet/second)** Storm Event Frequency					**Flow Volume (cubic feet/second)** Storm Event Frequency				
2-yr	10-yr	25-yr	50-yr	100-yr	2-yr	10-yr	25-yr	50-yr	100-yr	2-yr	10-yr	25-yr	50-yr	100-yr
24	**24**	**24**	**24**	**24**	**11.00**	**17.20**	**19.29**	**20.71**	**21.83**	**30**	**135**	**220**	**290**	**365**

Part VII: Supporting Documents

Please check the documents submitted as verification that *all* applicable attachments have been submitted with this application form. When submitting any supporting documents, please label the documents as indicated in this part and be sure to include the applicant's name.

Environmental Documentation	Report	Show on Plans
	√ If included with this application	
Description of the proposed activities and the purpose.	☒	☐
Evaluation of the functions and values of all wetlands and waters on-site or affected off-site.	☒	☐
Evaluation of direct and secondary impacts to the functions and values of wetlands and waters affected.	☒	☐
Evaluation of mitigation/restoration and or creation of wetlands to replace the functions and values of impacted wetlands/watercourses.	☒	☐
Design details for reconstruction/modification of existing stream crossings	☒	☒
Biological field survey of the project area and any other information to identify the presence of endangered, threatened, or special concern species, including copies of any correspondence to and from the NDDB (including a completed CT NDDB Review Request Form, if applicable).	☐	☐
Culvert invert elevations for roadway crossings set at least 12 inches below the elevation of the natural stream bed for fish and aquatic passage?	☐	☐
Federal wetland delineation of the site shown on plans.	☒	☒
State wetland delineation of the site shown on plans.	☒	☒
Are there amphibian breeding pool(s) present on the project site or adjacent to the project site? If yes, project development plans incorporate recommendations presented in *"Best Development Practices, Conserving Pool-Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States. MCA Technical Paper No. 5, Metropolitan Conservation Alliance, Wildlife Conservation Society, Bronx, NY*	☐	☐
Report documenting vegetation, soils, and hydrology of wetlands on site.	☒	☐
Incorporation of a permanently protected buffer zone adjacent to wetlands and waters.	☐	☐
Site plans drawn at a scale of 1":100' or larger showing the pre- and post- construction aerial extent of inundation of wetlands and waters for the 2-yr, 10-yr, 25-yr, 50-yr and 100-yr storm frequency events.	☒	☒

Part VI: Supporting Documents

Engineering Documentation ***All plans and calculations must be signed and sealed by a professional engineer (PE) licensed in the state of Connecticut***	Report **√ If included with this application**	Show on Plans **√ If included with this application**
Summary of all water handling proposed at the site, including plans and computations, as needed to show that temporary water handling will not cause erosion or flooding.	☒	☒
Erosion and Sediment control measures designed in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*, including calculations as required for engineered measures. (www.ct.gov/dep/cwp/view.asp?a=2720&q=325660&depNav_GID1654)	☐	☒
Design details and calculations for each hydraulic and drainage structure demonstrating consistency with the standards contained within the Connecticut DOT Drainage Manual and 2004 Connecticut Storm Water Quality Manual.	☒	☐
FEMA floodway/floodplain boundaries within the project site plotted on the site plans and a copy of the FEMA map showing the site location.	☐	☐
Hydrologic calculations including pre- and post- drainage area maps and a tabulated summary of results that demonstrate no adverse increase in runoff rates or velocities as a result of the proposed activity at appropriate downstream points.	☒	☐

Part VII: Application Certification

The applicant *and* the individual(s) responsible for actually preparing the application must sign this part. An application will be considered incomplete unless all required signatures are provided. This includes consultants, professional engineers, surveyors, soil scientists, etc. If the applicant is the preparer, please mark N/A in the spaces provided for the preparer. By their signature, they certify that, to the best of their knowledge and belief, the information contained in this application, including all attachments, is true, accurate and complete.

The certification of this application package shall be signed as follows: 1) For an individual(s) or sole proprietorship: by the individual(s) or proprietor, respectively; 2) For a corporation: by a principal executive officer of at least the level of vice president, or his agent; 3) For a limited liability company (LLC): by a manager, if management of the LLC is vested in a manager(s) in accordance with the company's "Articles of Organization", or by a member of the LLC if no authority is vested in a manager(s); 4) For a partnership: by a general partner; 5) For a municipal, state, or federal agency or department: by either a principal executive officer, a ranking elected official, or by other representatives of such registrant authorized by law.

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of the individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief.

I understand that a false statement in the submitted information may be punishable as a criminal offense, in accordance with section 22a-6 of the General Statutes, pursuant to section 53a-157b of the General Statutes, and in accordance with any other applicable statute.

I certify that this application is on complete and accurate forms as prescribed by the commissioner without alteration of the text."

Thomas J Maziarz	11-6-2018
Signature of Applicant	Date
Thomas J. Maziarz	**Bureau Chief - Policy and Planning**
Name of Applicant (print or type)	Title (if applicable)
Mark F. Levesque FOR	10/30/18
Signature of Preparer (if different than above)	Date
Aija Zeidenbergs	**Environmental Coordinator**
Name of Preparer (print or type)	Title (if applicable)

☐ Check here if additional signatures are required. If so, please reproduce this sheet and attach signed copies to this sheet. You must include signatures of any person preparing any report or parts thereof required in this application (i.e., professional engineers, surveyors, soil scientists, consultants, etc.)

Note: Please submit ***three*** copies of this completed Addendum Form, a completed Army Corps Application Form (ENG Form 4345), and ***all*** Supporting Documents (including full scale plans, 1" = 40') to:

CENTRAL PERMIT PROCESSING UNIT
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

Please do ***not*** mail or directly deliver this completed application and supporting documents to the DEEP's Inland Water Resources Division.

DEPARTMENT OF THE ARMY
GENERAL PERMIT
STATE OF CONNECTICUT

NOTICE TO APPLICANTS FOR CT GP CATEGORY 2 AUTHORIZATION NEW ENGLAND DISTRICT ARMY CORPS OF ENGINEERS

If you are filing a Federal Clean Water Act Section 404 application with the New England District Army Corps of Engineers for a CT GP Category 2 authorization for an activity located within the State of Connecticut, then you must also submit the required documents listed below directly to the Connecticut Department of Energy and Environmental Protection for Section 401 authorization (Water Quality Certification) at the following address:

CENTRAL PROCESSING UNIT
CONNECTICUT DEPARTMENT OF ENERGY AND
ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

The Central Processing Unit is located on the first floor and is open for deliveries Monday through Friday from 8:30 AM to 4:30 PM.

Applications submitted to the Connecticut Department of Energy and Environmental Protection are **not** to be mailed or delivered directly to the Department's Inland Water Resources Division.

Applications for PGP Category 2 authorization submitted to the Connecticut Department of Energy and Environmental Protection shall include ***three (3) copies*** *of each of the following:

- CT GP Addendum form (DEP-ACGP-APP-001),
- Army Corps of Engineers application form (ENG Form 4345),
- 8.5" x 11" drawings (plans),
- Large scale drawings (plans) (1" = 40'),
- Wetland functions and values assessment,
- Federal wetland delineation data sheets,
- Documentation of any proposed wetland mitigation,
- Any other supporting documentation provided to the Army Corps in support of the Army Corps of Engineers application, and
- Any application fee as may be required by the State of Connecticut, Department of Energy and Environmental Protection.

* Applicants may submit one paper copy with original signatures along with 2 copies in PDF format on 2 CDs or DVDs in lieu of 3 paper copies.

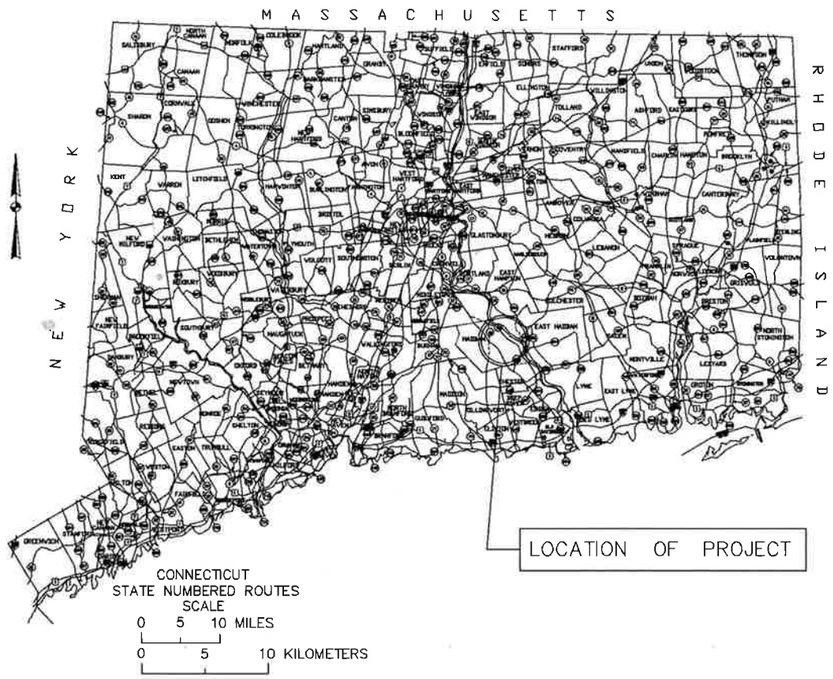
Attachment A: Plan Sheets and Drawings

Addendum for Department of the Army Permit

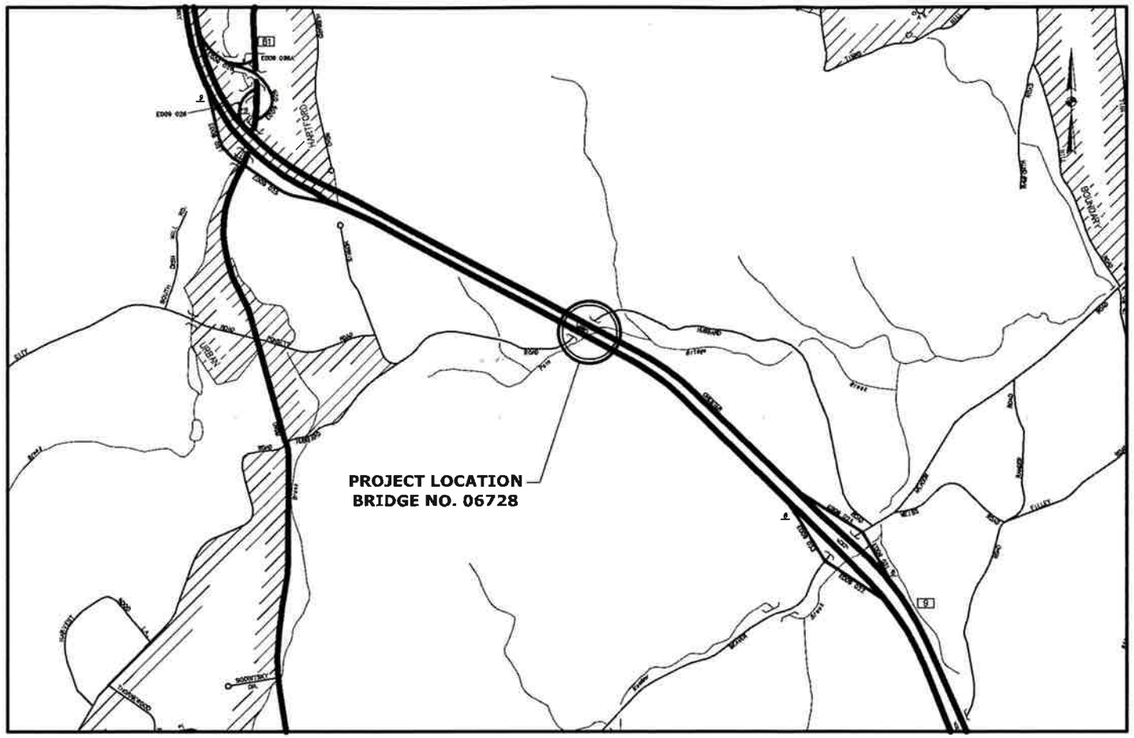
Applicant: State of Connecticut, Department of Transportation
Project No. 60-158 (Constr.), 60-158 (P.E.)
Rehabilitation of Bridge No. 06728 in Haddam
Route 9 over Pole Bridge Brook

List of Plan Sheets and Drawings

PMT-01	Title Sheet	October 2018
PMT-02	General Site Plan	October 2018
PMT-03	Wetland/Watercourse Impact Plan	October 2018
PMT-04	Elevation and Section Plan	October 2018
PMT-05	Staging and Water Handling Plan	October 2018
PMT-06	Seeding/Planting and Invasive Plan	October 2018



ENVIRONMENTAL PERMIT PLANS
STATE PROJECT NO. 60-158
REHABILITATION OF BRIDGE NO. 06728, ROUTE 9
IN THE TOWN OF HADDAM



LOCATION PLAN
SCALE: 1" = 1000'

GENERAL NOTES

1. THESE PLANS ARE INTENDED ONLY FOR ENVIRONMENTAL PERMITTING PURPOSES. THESE PLANS HOLD AUTHORITY FOR ALL ACTIVITIES CONCERNING THE REGULATED AREA. FOR DETAILED PLANIMETRIC INFORMATION AND PAYMENT REFER TO THE APPLICABLE CONTRACT DOCUMENTS.
2. THE DEPARTMENT OF TRANSPORTATION WILL ONLY SUBMIT REVISIONS TO DEEP AND USACE FOR CHANGES TO THE DESIGN THAT WILL AFFECT REGULATED AREAS.
3. FOR A DESCRIPTION OF THE WATERCOURSES, WETLANDS AND WETLAND SOILS SEE RELEVANT SECTIONS OF THE PERMIT APPLICATION.
4. 400 FOOT GRID BASED ON CONNECTICUT COORDINATE SYSTEM N.A.D. 1927. VERTICAL DATUM BASED ON NGVD 1929.
5. ALL CONSTRUCTION ACTIVITIES WILL BE CONDUCTED IN ACCORDANCE WITH THE DEPARTMENT'S STANDARD SPECIFICATIONS FOR ROADS, BRIDGE, AND INCIDENTAL CONSTRUCTION, FORM 817, SECTION 1.10 AND WILL ALSO FOLLOW REQUIRED BEST MANAGEMENT PRACTICES (BMPs) AND SEDIMENT AND EROSION CONTROL MEASURES IN ACCORDANCE WITH THE 2002 EROSION & SEDIMENTATION CONTROL GUIDELINES AND THE 2004 STORMWATER QUALITY MANUAL.
6. WETLANDS DELINEATION BY FHI ON OCTOBER 2016.

LIST OF DRAWINGS	
DRAWING NO.	TITLE
PMT-01	TITLE SHEET
PMT-02	GENERAL SITE PLAN
PMT-03	WETLAND /WATERCOURSE IMPACT PLAN
PMT-04	ELEVATION AND SECTION PLAN
PMT-05	STAGING AND WATER HANDLING PLAN 06840
PMT-06	SEEDING/PLANTING AND INVASIVE PLAN

DESIGNED BY:
WMC CONSULTING ENGINEERS
87 HOLMES ROAD
NEWINGTON CT 06111

PLAN DATE: OCTOBER 24, 2018

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

60-158

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 10/24/2018

DESIGNER/DRAFTER: **M. GREER**
CHECKED BY: **K. ELDER**
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\01_Title Sheet Environmental Permit Plans.dgn

147

SIGNATURE/ BLOCK:

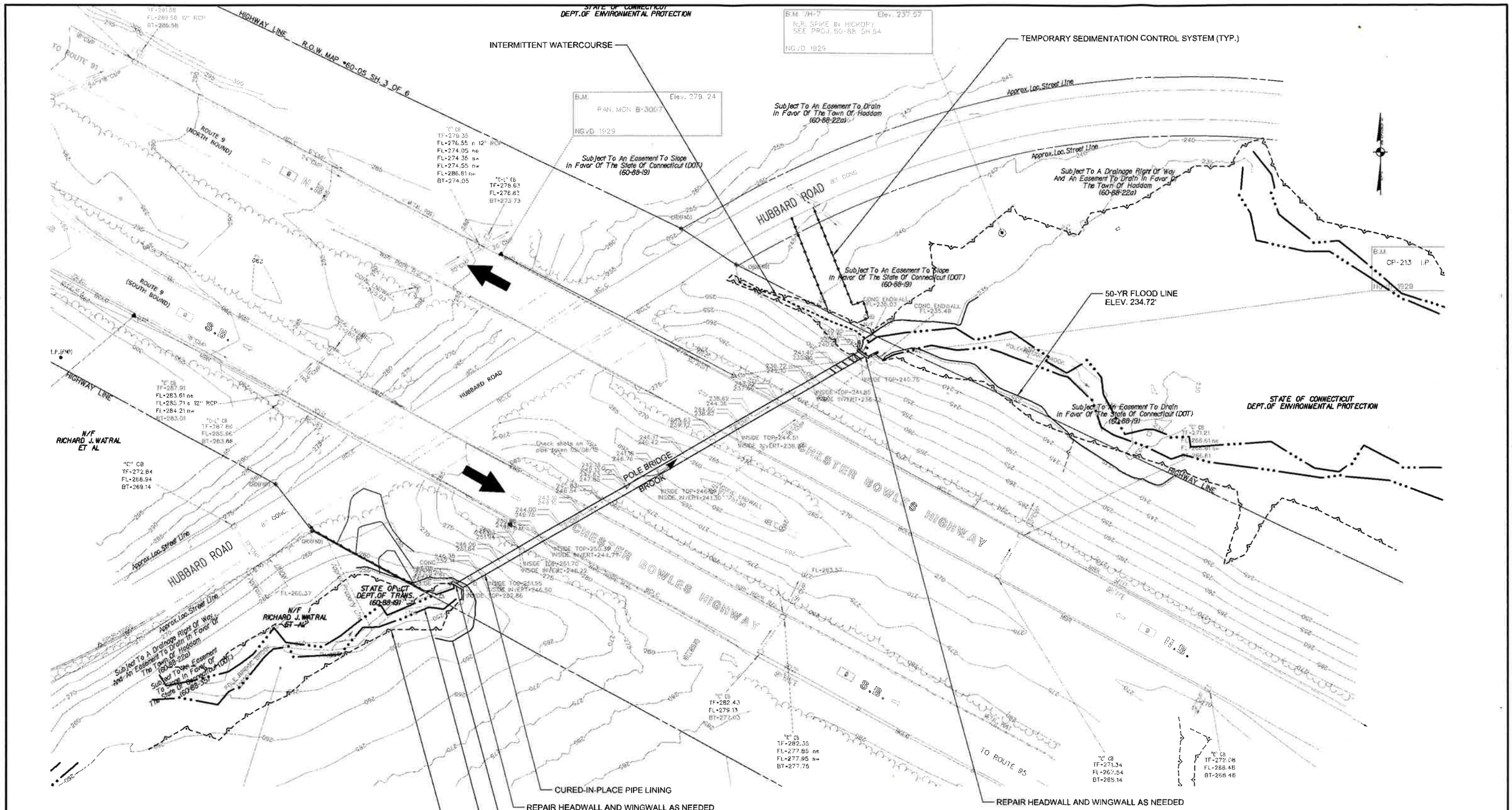
WMC Consulting Engineers
87 Holmes Road
Newington, CT 06111

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 06728, ROUTE 9 OVER POLE BRIDGE BROOK

TOWN: **HADDAM**

DRAWING TITLE: **TITLE SHEET**

PROJECT NO. **60-158**
DRAWING NO. **PMT-01**
SHEET NO



LEGEND

- STATE/FEDERAL WETLANDS
- ORDINARY HIGH WATER (OHW)
- SEDIMENTATION CONTROL SYSTEM (SCS)

GENERAL SITE PLAN
SCALE: 1" = 40'

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 24, 2018

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

60-158

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 10/24/2018

DESIGNER/DRAFTER: M. GREER
CHECKED BY: K. ELDER
SCALE IN FEET 0 40 80
SCALE 1"=40'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\02.General Site Plan.dgn

148

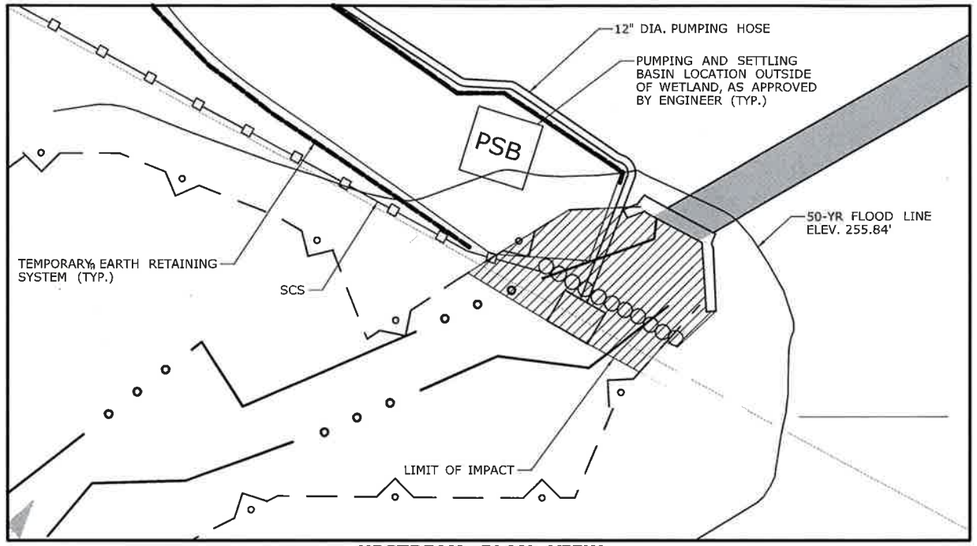
SIGNATURE/ BLOCK:

PROJECT TITLE: REHABILITATION OF BRIDGE NO. 06728, ROUTE 9 OVER POLE BRIDGE BROOK

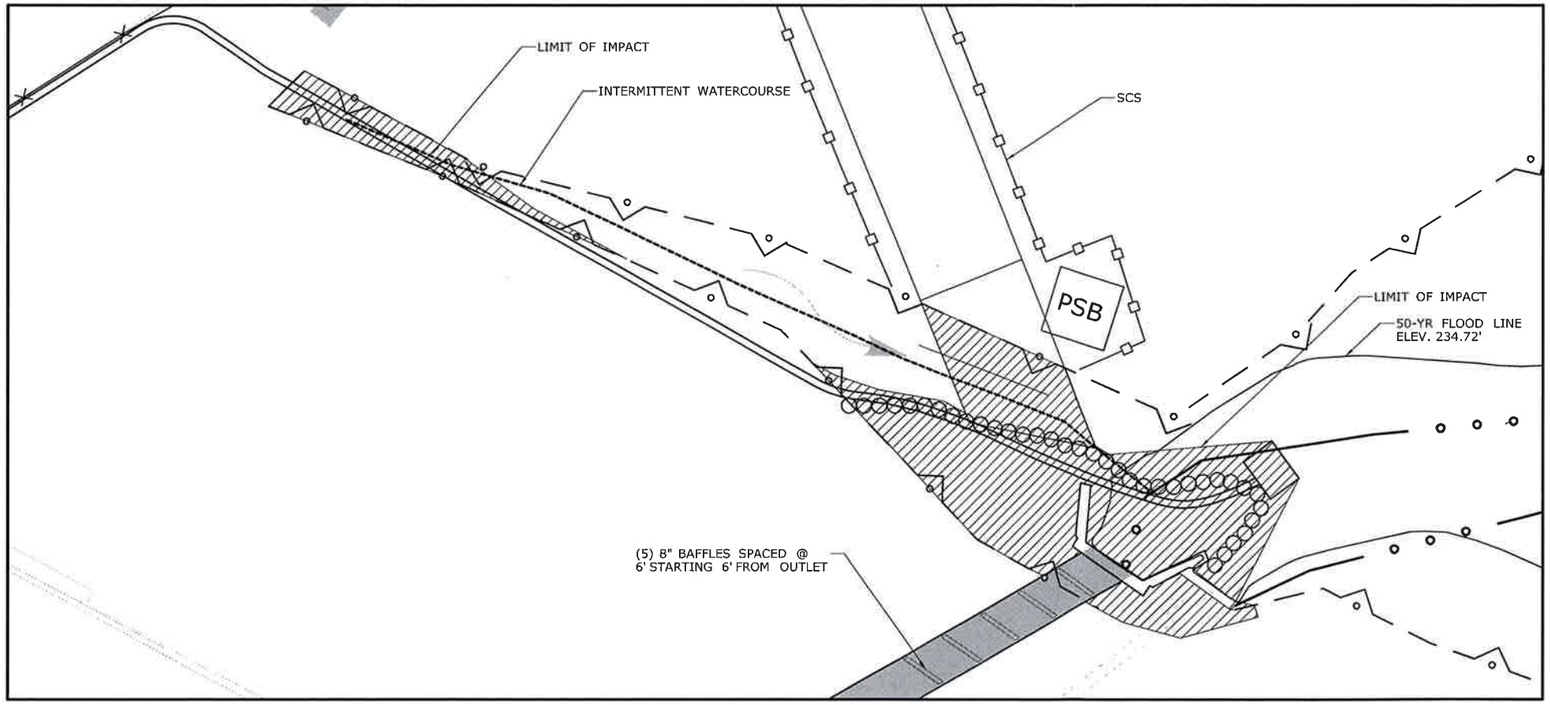
TOWN: HADDAM

DRAWING TITLE: GENERAL SITE PLAN

PROJECT NO. 60-158
DRAWING NO. PMT-02
SHEET NO.



UPSTREAM PLAN VIEW
SCALE: 1" = 10'



DOWNSTREAM PLAN VIEW
SCALE: 1" = 10'

SCALE 1" = 10'
20 10 0 10 20

LEGEND:

THE DEPARTMENT OF TRANSPORTATION WILL ONLY SUBMIT REVISIONS TO THE DEEP FOR CHANGES TO THE DESIGN THAT WILL EFFECT THE NOTED REGULATED AREAS.

- PERMANENT WETLAND IMPACTS
- TEMPORARY WETLAND IMPACTS
- STATE/FEDERAL WETLANDS
- ORDINARY HIGH WATER (OHW)
- SEDIMENTATION CONTROL SYSTEM (SCS)
- TEMPORARY-WATER-HANDLING-COFFERDAM

NOTE:
THE CONTRACTOR SHALL NOT WORK WITHIN THE LIMITS OF THE WETLANDS AND WATERCOURSE WITH THE EXCEPTION OF THOSE AREAS DELINEATED AS TEMPORARY OR PERMANENT IMPACTS TO THE WETLANDS AND WATERCOURSE. ALL DISTURBED AREAS SHALL BE RESTORED.

WETLAND IMPACT TABLE			
	WETLAND IMPACTS	WATERWAY IMPACTS	TOTAL
PERMANENT IMPACTS	0 S.F (0.000 AC.)	2,385 S.F (0.055 AC.)	2,385 S.F (0.055 AC.)
TEMPORARY IMPACTS	1,263 S.F (0.029 AC.)	526 S.F (0.012 AC.)	1,789 S.F (0.041 AC.)
TOTAL IMPACTS	1,263 S.F (0.029 AC.)	2,911 S.F (0.067 AC.)	4,174 S.F (0.096 AC.)

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 24, 2018

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 11/2/2018

DESIGNER/DRAFTER: M. GREER
CHECKED BY: K. ELDER
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\03_Wetland Watercourse Impact Plan.dgn

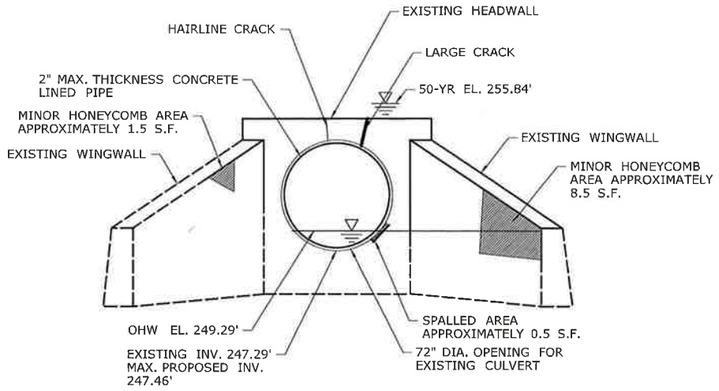
SIGNATURE/ BLOCK:

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 06728, ROUTE 9 OVER POLE BRIDGE BROOK

TOWN: HADDAM

DRAWING TITLE: WETLAND/WATERCOURSE IMPACT PLAN

PROJECT NO. 60-158
DRAWING NO. PMT-03
SHEET NO.



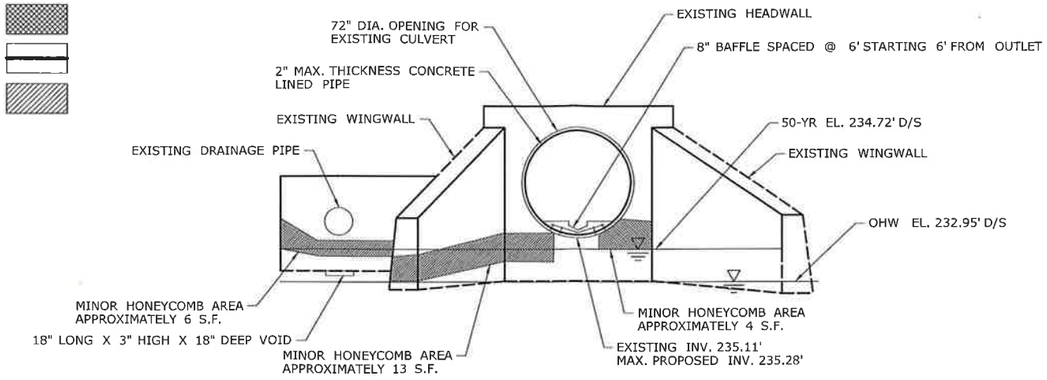
UPSTREAM ELEVATION
SCALE: ¼" = 1'-0"

LEGEND

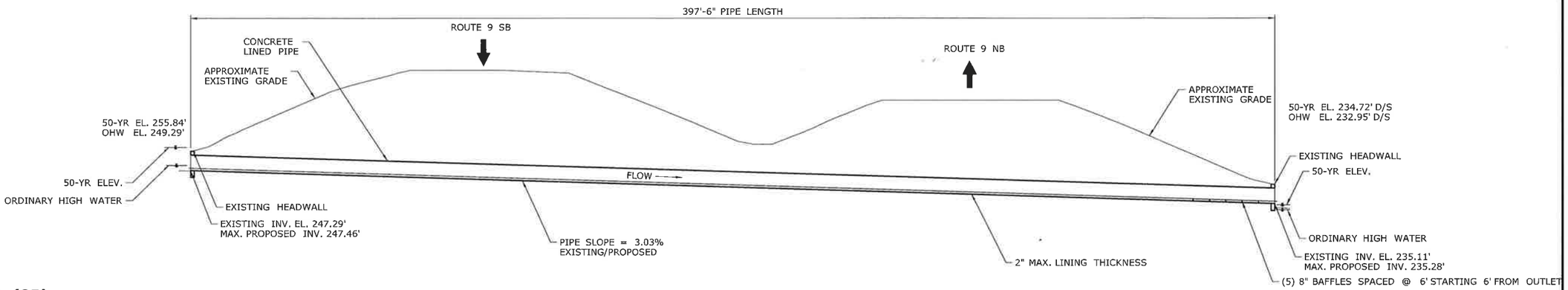
SPALLED AREA

CRACK

HONEYCOMB AREA



DOWNSTREAM ELEVATION
SCALE: ¼" = 1'-0"

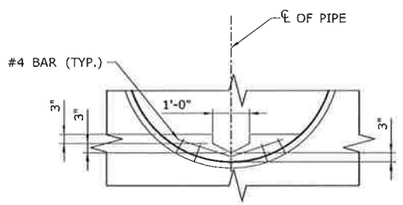


TYPICAL BRIDGE SECTION
SCALE: 1" = 20'

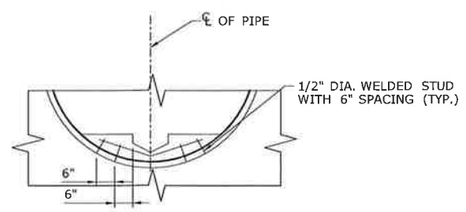
OPENNESS RATIO (OR):
OR = OPEN AREA / BRIDGE LENGTH
OR = 26.7 S.F / 396.5 L.F = 0.07

BANKFULL WIDTH (BFW):
BFW = 14.5 FT. EXISTING UPSTREAM (OHW)
1.2 BFW = 17.4 FT.
5.83 FT. < 17.4 FT. PROPOSED BRIDGE SPAN

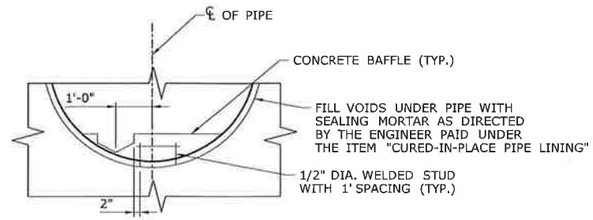
HYDRAULIC DATA	
DRAINAGE AREA	0.48 SQ. MILES
DESIGN FREQUENCY	50 YEAR
DESIGN DISCHARGE	290 C.F.S.
AVERAGE DAILY FLOW ELEVATION	247.69 FT ESTIMATED
UPSTREAM DESIGN WATER SURFACE ELEVATION	255.84 FT.
DOWNSTREAM DESIGN WATER SURFACE ELEVATION	234.72 FT.
(NOTE- NO SCOUR INFORMATION FOR HYDRAULIC DATA TABLE AS THIS IS A CULVERT	



TYPICAL BAFFLE NOTCH DETAIL
SCALE: ½" = 1'-0"



OUTLET BAFFLE DETAIL
SCALE: ½" = 1'-0"



INTERIOR BAFFLE DETAIL
SCALE: ½" = 1'-0"

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 24, 2018

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 11/2/2018

DESIGNER/DRAFTER: M. GREER
CHECKED BY: K. ELDER
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\04_Elevation and Section Plan.dgn

SIGNATURE/ BLOCK:

PROJECT TITLE: REHABILITATION OF BRIDGE NO. 06728, ROUTE 9 OVER POLE BRIDGE BROOK

TOWN: HADDAM

DRAWING TITLE: ELEVATION AND SECTION PLAN

PROJECT NO. 60-158
DRAWING NO. PMT-04
SHEET NO.

LEGEND

- STATE/FEDERAL WETLANDS
- ORDINARY HIGH WATER (OHW)
- SEDIMENTATION CONTROL SYSTEM (SCS)
- TEMPORARY-WATER-HANDLING-COFFERDAM

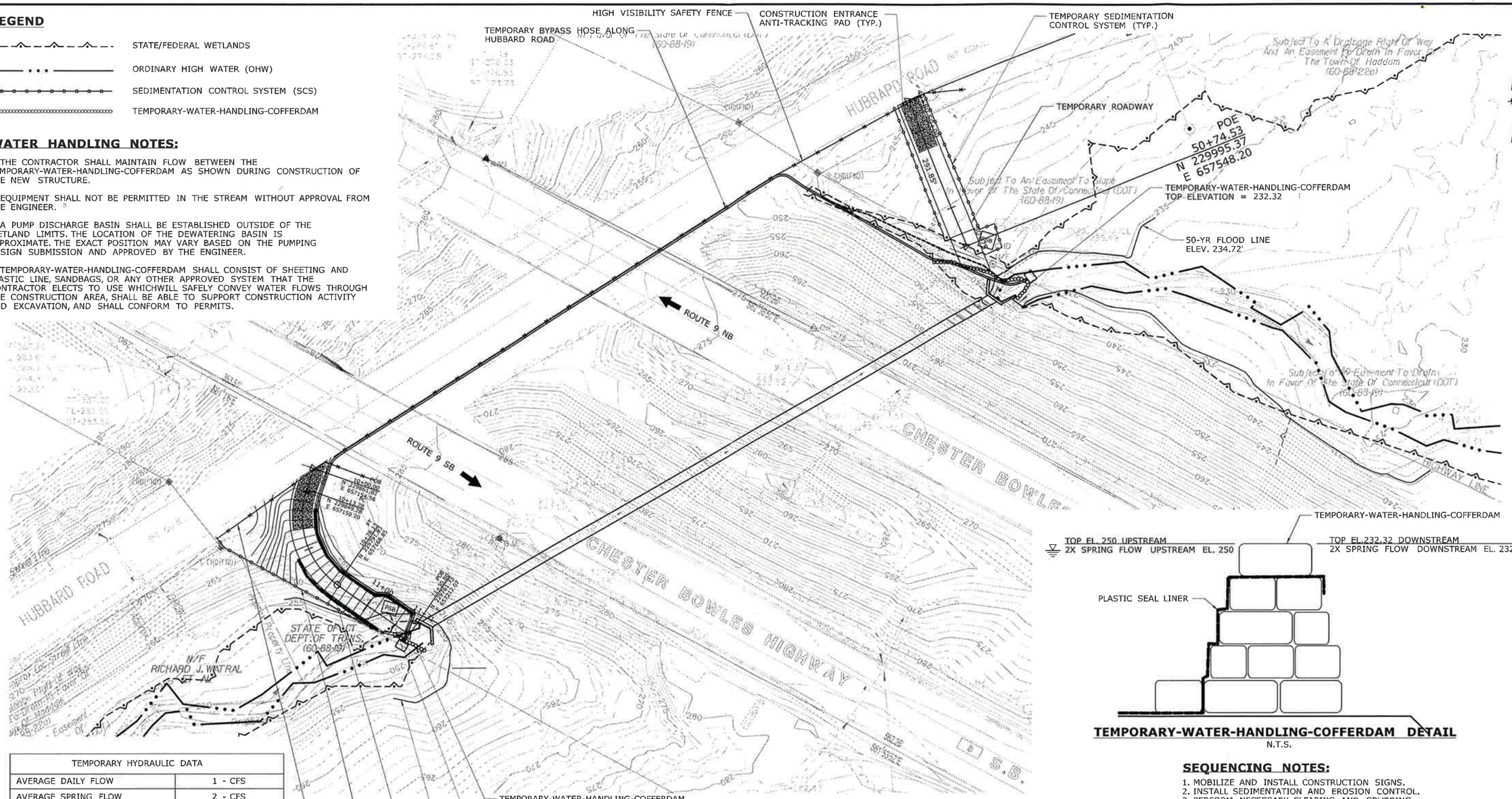
WATER HANDLING NOTES:

1. THE CONTRACTOR SHALL MAINTAIN FLOW BETWEEN THE TEMPORARY-WATER-HANDLING-COFFERDAM AS SHOWN DURING CONSTRUCTION OF THE NEW STRUCTURE.

2. EQUIPMENT SHALL NOT BE PERMITTED IN THE STREAM WITHOUT APPROVAL FROM THE ENGINEER.

3. A PUMP DISCHARGE BASIN SHALL BE ESTABLISHED OUTSIDE OF THE WETLAND LIMITS. THE LOCATION OF THE DEWATERING BASIN IS APPROXIMATE. THE EXACT POSITION MAY VARY BASED ON THE PUMPING DESIGN SUBMISSION AND APPROVED BY THE ENGINEER.

4. TEMPORARY-WATER-HANDLING-COFFERDAM SHALL CONSIST OF SHEETING AND PLASTIC LINE, SANDBAGS, OR ANY OTHER APPROVED SYSTEM THAT THE CONTRACTOR ELECTS TO USE WHICHWILL SAFELY CONVEY WATER FLOWS THROUGH THE CONSTRUCTION AREA, SHALL BE ABLE TO SUPPORT CONSTRUCTION ACTIVITY AND EXCAVATION, AND SHALL CONFORM TO PERMITS.



TEMPORARY HYDRAULIC DATA	
AVERAGE DAILY FLOW	1 - CFS
AVERAGE SPRING FLOW	2 - CFS
2-YR FREQUENCY DISCHARGE	30 - CFS
TEMPORARY DESIGN DISCHARGE	4 - CFS (1800 gpm)
TEMPORARY DESIGN FREQUENCY	2 x AVERAGE SPRING FLOW
TEMPORARY WATER SURFACE ELEVATION UPSTREAM	250 FT. (MAX. HEAD AT FLOW DIVERSION STRUCTURE)
TEMPORARY WATER SURFACE ELEVATION DOWNSTREAM	232.32 FT.

NOTE:
UPSTREAM TEMPORARY-WATER-HANDLING-COFFERDAM STRUCTURE TOP ELEVATION SHALL BE 2 FT ABOVE STREAMBED TO CREATE SUMP FOR PUMPING (TOP ELEVATION = 250').

SCALE 1" = 30'
60 30 0 60

HANDLING WATER CONCEPT
SCALE: 1" = 30'

TEMPORARY-WATER-HANDLING-COFFERDAM DETAIL
N.T.S.

SEQUENCING NOTES:

1. MOBILIZE AND INSTALL CONSTRUCTION SIGNS.
2. INSTALL SEDIMENTATION AND EROSION CONTROL.
3. PERFORM NECESSARY CLEARING AND GRUBBING.
4. CONSTRUCT TEMPORARY ROADWAY UPSTREAM AND DOWNSTREAM.
5. INSTALL TEMPORARY-WATER-HANDLING-COFFERDAM SYSTEM.
6. INSTALL TEMPORARY BYPASS HOSE AND PUMP POLE BRIDGE BROOK.
7. CLEAN AND RINSE INSIDE OF EXISTING 72" PIPE.
8. REPAIR AND RELINE THE EXISTING PIPE AND ENDWALLS.
9. REMOVE TEMPORARY-WATER-HANDLING-COFFERDAM AND TEMPORARY BYPASS HOSE.
10. PERFORM EMBANKMENT GRADING.
11. RESTORE STEAMBED AND SEED/PLANT PER PLAN.

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 24, 2018

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 11/2/2018

DESIGNER/DRAFTER: M. GREER
CHECKED BY: K. ELDER
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\05.Staging and Water Handling Plan.dgn

SIGNATURE/ BLOCK:

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 06728, ROUTE 9 OVER POLE BRIDGE BROOK

TOWN: HADDAM

DRAWING TITLE:
STAGING AND WATER HANDLING PLAN

PROJECT NO. 60-158
DRAWING NO. PMT-05
SHEET NO.

PERMIT PLANT LIST

KEY	BOTANICAL NAME	COMMON NAME	SIZE	QTY.	SPACING	WETLAND INDICATOR
Am.c.	Amelanchier canadensis	Shadblow Serviceberry	4'-5' Ht. B.B.	9	Field Locate	FAC
A.r.	Acer Rubrum	Red Maple	2 1/2" - 3" Cal. B.B.	7	Field Locate	FAC
A.r.w.	Acer Rubrum	Red Maple	3' - 4' Ht. Whips B.R.	38	Field Locate	FAC
C.s.	Cornus sericea	Redosier Dogwood	24"-36" Ht. Cont.	7	Field Locate	FACW
Q.r.w.	Quercus rubra	Northern Red Oak	24" - 36" Ht. No. 3 Cont.	38	Field Locate	FACU
V.d	Viburnum dentatum	Arrowwood Viburnum	24" - 36" Ht. No. 3 Cont.	10	Field Locate	FAC
	Control and Removal of Invasive Vegetation					
	Conservation Seeding for Slopes					
	Wetland Grass Establishment					
	Wood Chip Mulch					

NOTES

1. PLANTINGS ON THIS SHEET ARE FOR ENVIRONMENTAL PERMITTING. ANY CHANGES TO PERMIT PLANTINGS SHALL BE COORDINATED WITH THE DEPARTMENT'S OFFICE OF ENVIRONMENTAL PLANNING.

2. WOOD CHIP MULCH SHALL NOT BE PLACED IN THE WETLAND AREA.

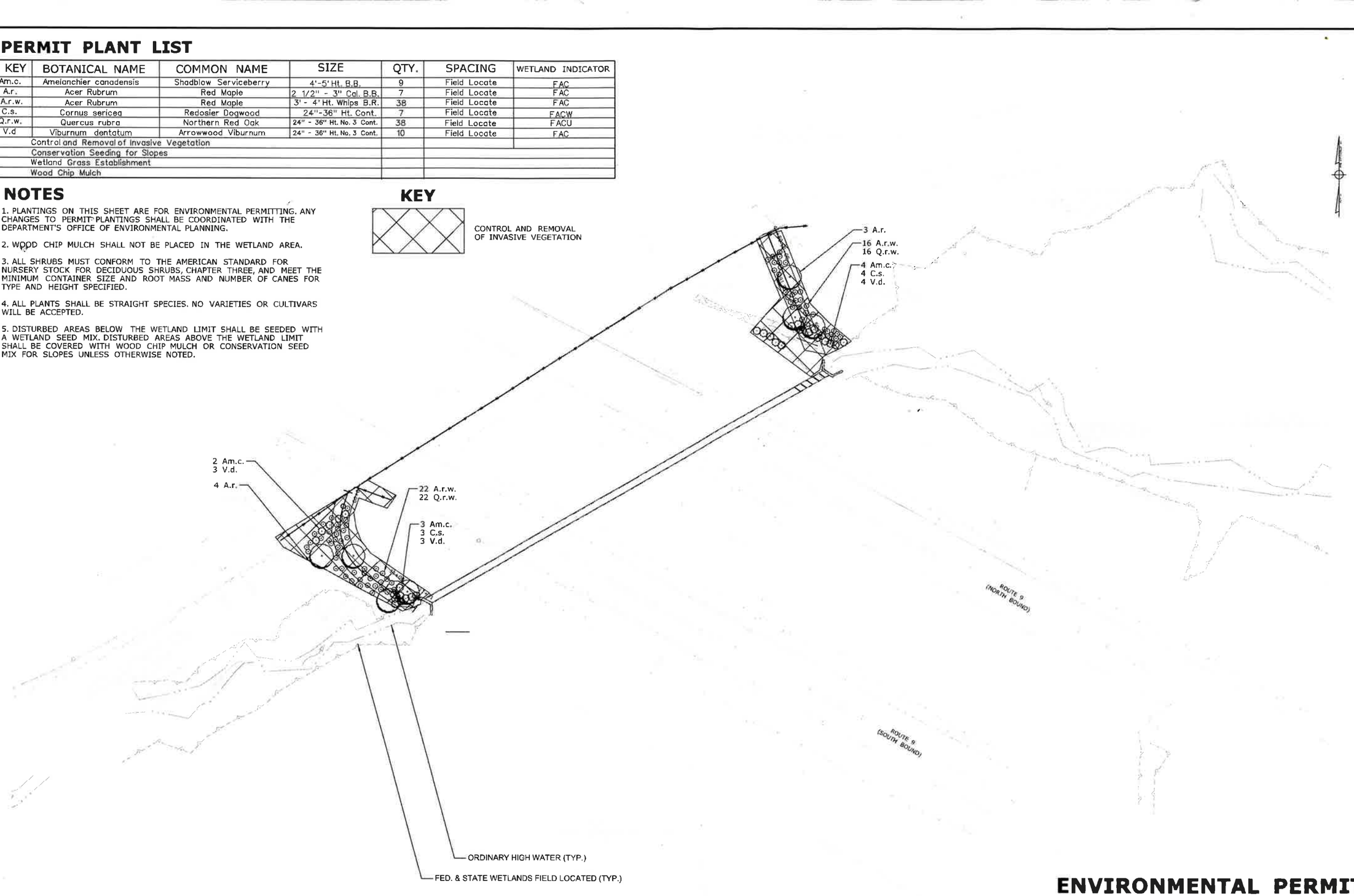
3. ALL SHRUBS MUST CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK FOR DECIDUOUS SHRUBS, CHAPTER THREE, AND MEET THE MINIMUM CONTAINER SIZE AND ROOT MASS AND NUMBER OF CANES FOR TYPE AND HEIGHT SPECIFIED.

4. ALL PLANTS SHALL BE STRAIGHT SPECIES. NO VARIETIES OR CULTIVARS WILL BE ACCEPTED.

5. DISTURBED AREAS BELOW THE WETLAND LIMIT SHALL BE SEEDED WITH A WETLAND SEED MIX. DISTURBED AREAS ABOVE THE WETLAND LIMIT SHALL BE COVERED WITH WOOD CHIP MULCH OR CONSERVATION SEED MIX FOR SLOPES UNLESS OTHERWISE NOTED.

KEY

CONTROL AND REMOVAL OF INVASIVE VEGETATION



ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 5, 2018

REV	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 10/5/2018

DESIGNER/DRAFTER: MV
CHECKED BY: EJ
SCALE IN FEET 0 40 80
SCALE 1"=40'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\HW.MSH.0060-0158.LDS.dgn

SIGNATURE/ BLOCK: OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE: REHABILITATION OF BRIDGE NO. 06728, ROUTE 9 OVER POLE BRIDGE BROOK

TOWN: HADDAM

DRAWING TITLE: PERMIT PLANTING PLAN

PROJECT NO. 60-158
DRAWING NO. PMT-06
SHEET NO

Attachment B: Environmental Report

Addendum for Department of the Army Permit

Applicant: State of Connecticut, Department of Transportation
Project No. 60-158 (Constr.), 60-158 (P.E.)
Rehabilitation of Bridge No. 06728 in Haddam
Route 9 over Pole Bridge Brook

List of Attachments

- Environmental Report, Bridge No. 06728
  Prepared by Fitzgerald & Halliday, Inc.
  Date: March 2018
  Revised August 2018

Technical Memorandum

Connecticut Bridge Program
Route 9 over Pole Bridge Brook
CTDOT Project # 60-158
Bridge Number 06728

Haddam, Connecticut

Environmental Report
(Baseline Conditions)

Prepared under contract to:

Close, Jensen and Miller, P.C.

For:

The Connecticut Department of Transportation

By:

FITZGERALD & HALLIDAY, INC.
416 Asylum Street
Hartford, CT 06103

March 2018
Revised August 2018

Table of Contents

1.0 INTRODUCTION 3
2.0 DESCRIPTION OF EXISTING WATER RESOURCES 3
3.0 NRCS MAPPED SOILS 11
4.0 FEDERAL AND STATE LISTED THREATENED AND ENDANGERED SPECIES AND HABITAT 13
5.0 INVASIVE PLANT SPECIES 14
REFERENCES 17

APPENDIX A: WETLAND PHOTOGRAPHS 18
APPENDIX B: WETLAND DETERMINATION FORMS 19
APPENDIX C: WETLAND FUNCTION-VALUE EVALUATION FORMS 20
APPENDIX D: USFWS CONSULTATION FORM 21

1.0 INTRODUCTION

Fitzgerald & Halliday, Inc. (FHI) was retained by Close, Jensen and Miller (CJMPC) to identify and characterize natural habitats and vegetation communities that may be impacted by work related to the reconstruction and rehabilitation of Bridge No. 06728, State Route 9 over Pole Bridge Brook in Haddam, Connecticut. These efforts were confined to the proposed limit of project investigation, as depicted in Figure 1.

The proposed project area was investigated in support of Connecticut Department of Transportation (CTDOT) Project No. 60-158. Habitat characterizations were conducted within the project area by FHI ecologists in October 2016.

2.0 DESCRIPTION OF EXISTING WATER RESOURCES

Existing wetland, watercourse, floodplain, and aquifer protection areas within the project study limits are described below.

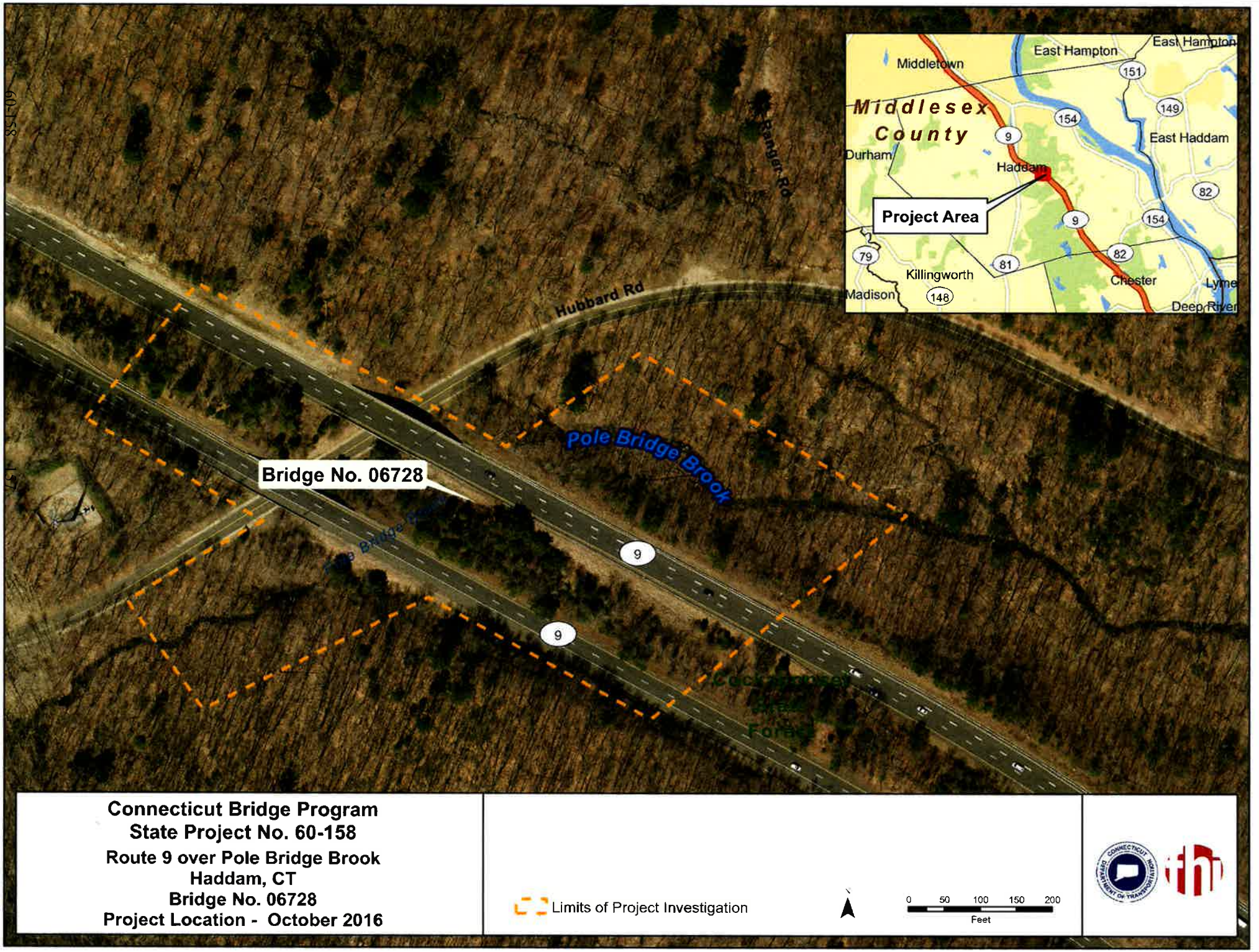
Wetlands & Watercourses

FHI's soil scientists flagged the boundaries of six wetlands, perennial watercourses, and four intermittent watercourses within the project study area, each identified by separate flag line(s), as depicted in Figure 2. Some of the delineated wetlands extend beyond the project study area and, therefore, are depicted as open polygons on project mapping. Where applicable, this is noted in the descriptions below. All identified wetland systems qualify as both state and federal resources.

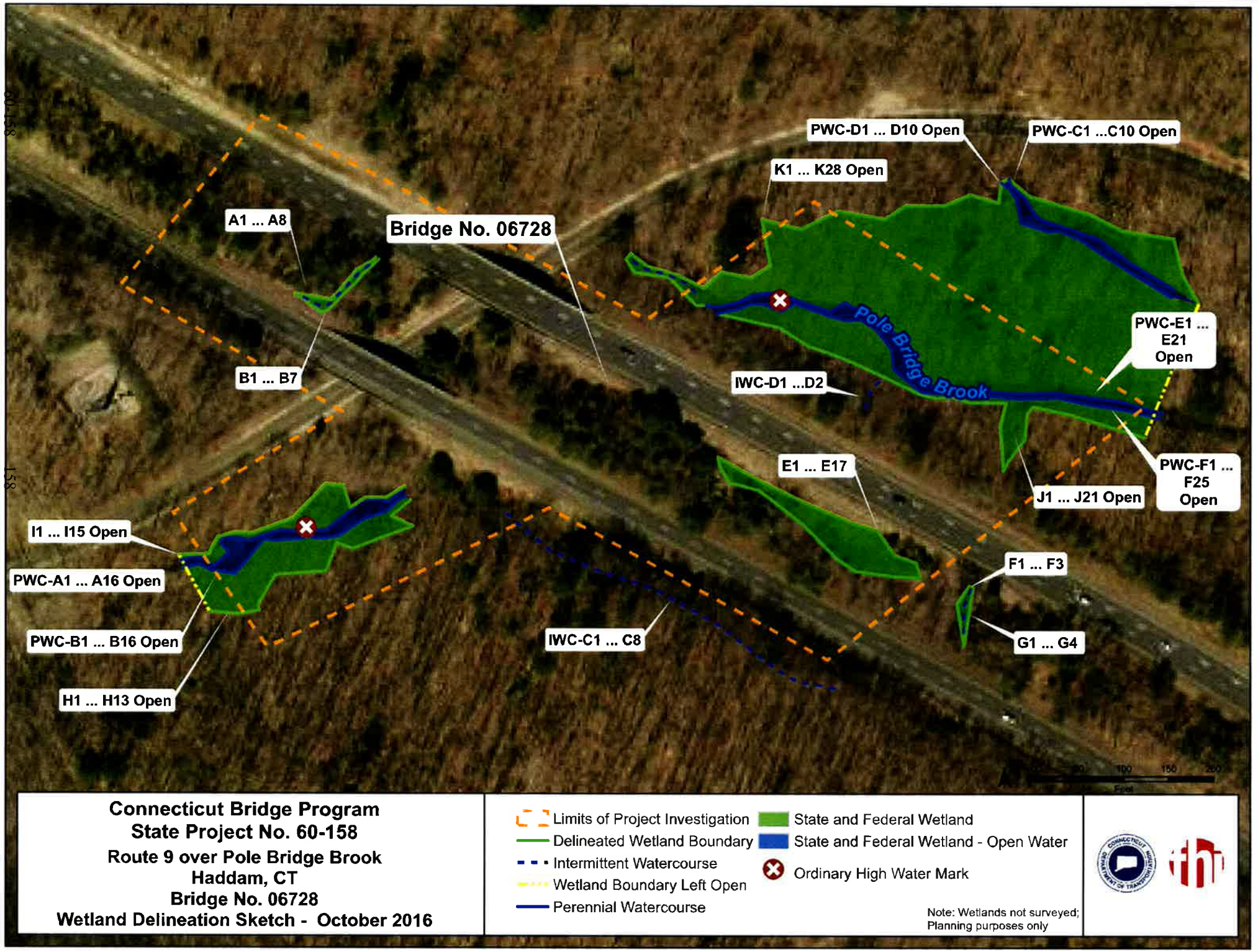
Detailed descriptions of the delineated wetland systems are presented below. The description includes: the approximate location of the flag series demarcating the wetland; the wetland's connectivity to watercourses and adjacent wetlands; dominant vegetation present within the wetland; the Cowardin classification of the wetland; and the wetlands functions and values. See Appendix A for photographs of the delineated wetlands.

Wetland AB [Flag Numbers A-1 to A-8 and B-1 to B-7 closed boundary]

Wetland AB is a palustrine forested (PFO) wetland located between the northbound and southbound lanes of Route 9, just to the northwest of Hubbard Road. An intermittent watercourse flows through this wetland from south to north and connects to a culvert at the southwest end. The intermittent watercourse flows into a culvert at the northeast end under Route 9 and eventually connects to Wetland JK.



Connecticut Bridge Program
State Project No. 60-158
Route 9 over Pole Bridge Brook
Haddam, CT
Bridge No. 06728
Project Location - October 2016


PWC-D1 ... D10 Open
PWC-C1 ...C10 Open
K1 ... K28 Open
A1 ... A8
Bridge No. 06728
Pole Bridge Brook
PWC-E1 ... E21 Open
B1 ... B7
IWC-D1 ...D2
E1 ... E17
PWC-F1 ... F25 Open
J1 ... J21 Open
I1 ... I15 Open
PWC-A1 ... A16 Open
F1 ... F3
PWC-B1 ... B16 Open
IWC-C1 ... C8
G1 ... G4
H1 ... H13 Open
Connecticut Bridge Program
State Project No. 60-158
Route 9 over Pole Bridge Brook
Haddam, CT
Bridge No. 06728
Wetland Delineation Sketch - October 2016
Limits of Project Investigation
Delineated Wetland Boundary
Intermittent Watercourse
Wetland Boundary Left Open
Perennial Watercourse
State and Federal Wetland
State and Federal Wetland - Open Water
Ordinary High Water Mark
Note: Wetlands not surveyed; Planning purposes only

This narrow, forested wetland is dominated by quaking aspen *(Populus tremuloides)* and white pine *(Pinus strobus)* in the overstory and black elderberry *(Sambucus nigra)*, multiflora rose (*Rosa multiflora)*, hemp dogbane *(Apocynum cannabinum)*, Oriental bittersweet *(Celastrus orbiculatus)*, and grape vines (*Vitis* spp.) in the understory. The NRCS mapped soil in, and adjacent to Wetland AB is Udorthent-Urban land complex. Within these mapped soil units are areas of saturation and/or flooding where hydric soil indicators were observed. The principal function and value of this wetland is sediment/toxicant retention from Route 9.

IWC B [Flag Numbers IWC-B1 to IWC-B4 closed boundary]

Intermittent Watercourse B originates from a culvert adjacent to the Route 9 southbound lane and discharges, via surface flow, into a culvert that is open to Pole Bridge Brook below. This IWC is comprised of gravel, compacted soils, and pavement and flows from southeast to northwest. The IWC has mixed deciduous trees on both sides but there is no vegetation within the defined channel.

Wetland E [Flag Numbers E-1 to E-17 closed boundary]

Wetland E is a palustrine emergent (PEM) wetland located between the northbound and southbound lanes of Route 9, just to the southeast of IWC B. This linear wetland is in a depression area that collects overland flow from both the northbound and southbound lanes on Route 9. There is no clearly defined inlet or outlet within this wetland.

This emergent wetland is dominated by switchgrass (*Panicum virgatum*), tussock sedge (*Carex stricta*), common reed (*Phragmites australis*), slender goldenrod (*Solidago erecta*), and jewelweed. Additionally, there are populations of autumn olive (*Elaeagnus umbellata*), speckled alder (*Alnus incana*), and northern bayberry (*Morella pensylvanica*) on the edges of the wetland. The NRCS mapped soil in, and adjacent to Wetland E is Udorthent-Urban land complex. Within these mapped soil units are areas of saturation and/or flooding where hydric soil indicators were observed. The principal functions and values of this wetland are sediment/toxicant retention from Route 9, groundwater recharge, and wildlife habitat for small mammals and birds.

Wetland FG [Flag Numbers F-1 to F-3 and G-1 to G-4 closed boundary]

Wetland FG is a PFO wetland located between the northbound and southbound lanes of Route 9, just to the southeast of Wetland E. This linear wetland forms the channel edges of an intermittent watercourse that flows from a culvert on the southwest end to a culvert on the northeast end. Within the intermittent watercourse there is an armored rocky substrate with vegetation growing among the rocks.

This forested wetland is dominated by red maple, green ash *(Fraxinus pennsylvanica)*, multiflora rose, Japanese barberry *(Berberis thunbergii)*, and Oriental bittersweet. The NRCS mapped soil in, and adjacent to Wetland FG is Udorthent-Urban land complex. Within these mapped soil units are areas of saturation and/or flooding were hydric soil indicators were observed. The principal function and value of this wetland is sediment/toxicant retention from Route 9.

Wetland HI [Flag Numbers H-1 to H-13 and I-1 to I-15, containing PWC-A1 to PWC-A16 and PWC-B1 to PWC-B16 open boundary]

Wetland HI is a PFO wetland at the southwest corner of Hubbard Road and the southbound lane of Route 9. This wetland, which forms the banks of Pole Bridge Brook, extends outside of the limits of project investigation to the southwest. Pole Bridge Brook, flows down gradient from the southwest to the northeast, where it passes through a large culvert under Route 9 into Wetland JK (described below). The "I" line of this wetland, located on the north side of the system, is located at the bottom of a steep slope leading up to Hubbard Road. The "H" line opens into an upland hardwood forest area to the south. There are scattered large rocks and boulders throughout the wetland and within the Brook.

This forested wetland is dominated by red maple, yellow birch (*Betula alleghaniensis*), northern spicebush (*Lindera benzoin*), American witch hazel (*Hamamelis virginiana*), coastal sweet pepperbush (*Clethra alnifolia*), sensitive fern (*Onoclea sensibilis*), Christmas fern (*Polystichum acrostichoides*), common reed, and skunk cabbage (*Symplocarpus foetidus*). The NRCS mapped soils in, and adjacent to Wetland HI are composed of the following two units: a Ridgebury, Leicester, and Whitman soil unit, and a Paxton and Montauk soil unit. Within these mapped soil units are areas of saturation and/or flooding where hydric soil indicators were observed. The principal functions and values of this wetland are wildlife habitat, shoreline stabilization, and floodflow alteration. There is also minor functionality of groundwater recharge in low lying areas.

IWC C [Flag Numbers IWC-C1 to IWC-C8 closed boundary]

Intermittent Watercourse C originates from a culvert adjacent to the Route 9 southbound lane and disperses into the rocky ground just east of Wetland HI. This IWC is comprised of compacted soils and flows from southeast to northwest. The IWC has mixed deciduous trees on both sides but there is no vegetation with the defined channel.

Wetland JK [Flag Numbers J-1 to J-21 and K-1 to K-28, containing PWC-C1 to PWC-C10, PWC-D1 to PWC-D10, PWC-E1 to PWC-E21, and PWC-F-1 to PWC-F25 open boundary]

Wetland JK is a PFO wetland at the southeast corner of Hubbard Road and the northbound lane of Route 9. This wetland, which forms the banks of Pole Bridge Brook at the southern end and an unnamed perennial watercourse at the northern end, extends outside of the limits of project investigation to the southeast. Pole Bridge Brook and the unnamed perennial watercourse both flow in a northwest to southeast direction. These streams eventually join and flow into the Mill River, outside of the limits of project investigation. Pole Bridge Brook emerges from under Route 9, from which it is connected to Wetland HI (described above). The "J" line, located at the southern end of the system, is situated at the base of the steep slope leading up to the northbound lane of Route 9. There are several culverts that lead into the wetland from Route 9. One of the culverts drains into IWC D (described below). The "K" line, located at the northern end of this system, is situated at the base of a slope leading up to Hubbard Road. There are scattered large rocks and boulders throughout the wetland and within the watercourses.

This forested wetland is dominated by red maple, northern spicebush, American witch hazel, coastal sweet pepperbush, sensitive fern, Christmas fern, and skunk cabbage. The NRCS soils in and adjacent to Wetland HI are mapped as the following units: Ridgebury, Leicester, and Whitman soils; and Paxton and Montauk soils. Within these mapped soil units are areas of saturation and/or flooding where hydric soil indicators were observed. The principal functions and values of this wetland are wildlife habitat, shoreline stabilization, groundwater recharge, and floodflow alteration.

IWC D [Flag Numbers IWC-D1 to IWC-D2 closed boundary]

Intermittent Watercourse D originates from a culvert adjacent to the Route 9 northbound lane and flows into Wetland JK (described above). This IWC is comprised of compacted soils and large stones and flows from south to north. The IWC has mixed deciduous trees on both sides, but there is no vegetation with the defined channel.

Within the study area, the undeveloped, non-wetland areas consist of mixed hardwood forested areas that can be classified as typical oak-hickory forests. These upland areas are surficially dominated by uneven, rock and boulder strewn Paxton and Montauk, extremely stony soils with gently undulating topography.

The vegetation within these upland forested areas is dominated by red oak (*Quercus rubra*), black oak (*Quercus velutina*), shagbark hickory (*Carya ovata*), red maple, sugar maple (*Acer saccharum*), mapleleaf viburnum (*Viburnum acerifolium*), roundleaf greenbrier

(*Smilax rotundifolia*), partridgeberry (*Mitchella repens*), and spotted wintergreen (*Chimaphila umbellata*).

Surface Water Quality

The entire study area is within Basin Number 4015-01-1 of the Subregional Drainage Basin of Mill Creek, which discharges to the Connecticut Main Stem Regional Basin of the Connecticut Major Basin. Pole Bridge Brook and the unnamed perennial watercourse at the northern end of the study area are both classified by the Connecticut Department of Energy & Environmental Protection (CT DEEP) as surface water quality classification "A". According to CT DEEP Surface Water Quality Standards (Effective October 2013), designated uses of "Class A" surface waters include "potential drinking water supply, fish and wildlife habitat, recreational uses, agricultural and industrial supply, and other legitimate uses including navigation". Discharge is restricted to "discharge from public or private drinking water treatment systems, dredging and dewatering, emergency and clean water discharges."

Ground Water Quality

Based on the review of the CT DEEP Aquifer Protection Area (APA) map for the area, the project is not within a designated APA.

The project area lies within an area classified by CT DEEP as having a ground water classification "GA". According to CT DEEP Ground Water Quality Standards (Effective October 2013), designated uses of "GA" ground waters include existing or potential public supply of water suitable for drinking without treatment; and base flow for hydraulically connected surface water bodies. Discharges are limited to treated domestic sewage, certain agricultural wastes, and certain water treatment wastewaters.

Floodplains

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) (Map Number 09007C0233G effective 8/28/2008) for the project area was reviewed. Based on review of the FIRM the project site is not within a designated flood area. See Figure 3: FEMA FIRM.

Figure 3

ne Flood Insurance Study report for this jurisdiction.

ce is available in this community, contact your insurance
d Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

METERS
0 150 300

PANEL 0233G

FIRM

FLOOD INSURANCE RATE MAP

MIDDLESEX COUNTY, CONNECTICUT

(ALL JURISDICTIONS)

PANEL 233 OF 450

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
HADDAM, TOWN OF	090066	0233	G

NATIONAL FLOOD INSURANCE PROGRAM

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
09007C0233G

EFFECTIVE DATE
AUGUST 28, 2008

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

3.0 NRCS MAPPED SOILS

The NRCS has published a series of soil surveys for most of the United States. The NRCS soil surveys are used to enhance the understanding of, and to help describe a particular geographic area. These surveys have recently been updated for the State of Connecticut and are available as a digital GIS layer. The soil surveys contain taxonomic descriptions of different soil series, as well as soil maps depicting soil map units.

NRCS soils classifications on the project site are depicted by their soils number in Figure 4 . Only those found on the project site are described below.

Ridgebury, Leicester, and Whitman Complex (3)

Ridgebury Series

The Ridgebury series consists of very deep, somewhat poorly and poorly drained soils formed in till derived mainly from granite, gneiss and schist. They are commonly shallow to a densic contact. They are nearly level to gently sloping soils in low areas in uplands. Slope ranges from 0 to 15 percent.

Commonly poorly drained but the range includes the wetter part of somewhat poorly drained. Runoff is negligible to medium.

Leicester Series

The Leicester series consists of very deep, poorly drained loamy soils formed in friable till. They are nearly level or gently sloping soils in drainageways and low-lying positions on hills. Slope ranges from 0 to 8 percent. Permeability is moderate or moderately rapid in the surface layer and subsoil and moderate to rapid in the substratum.

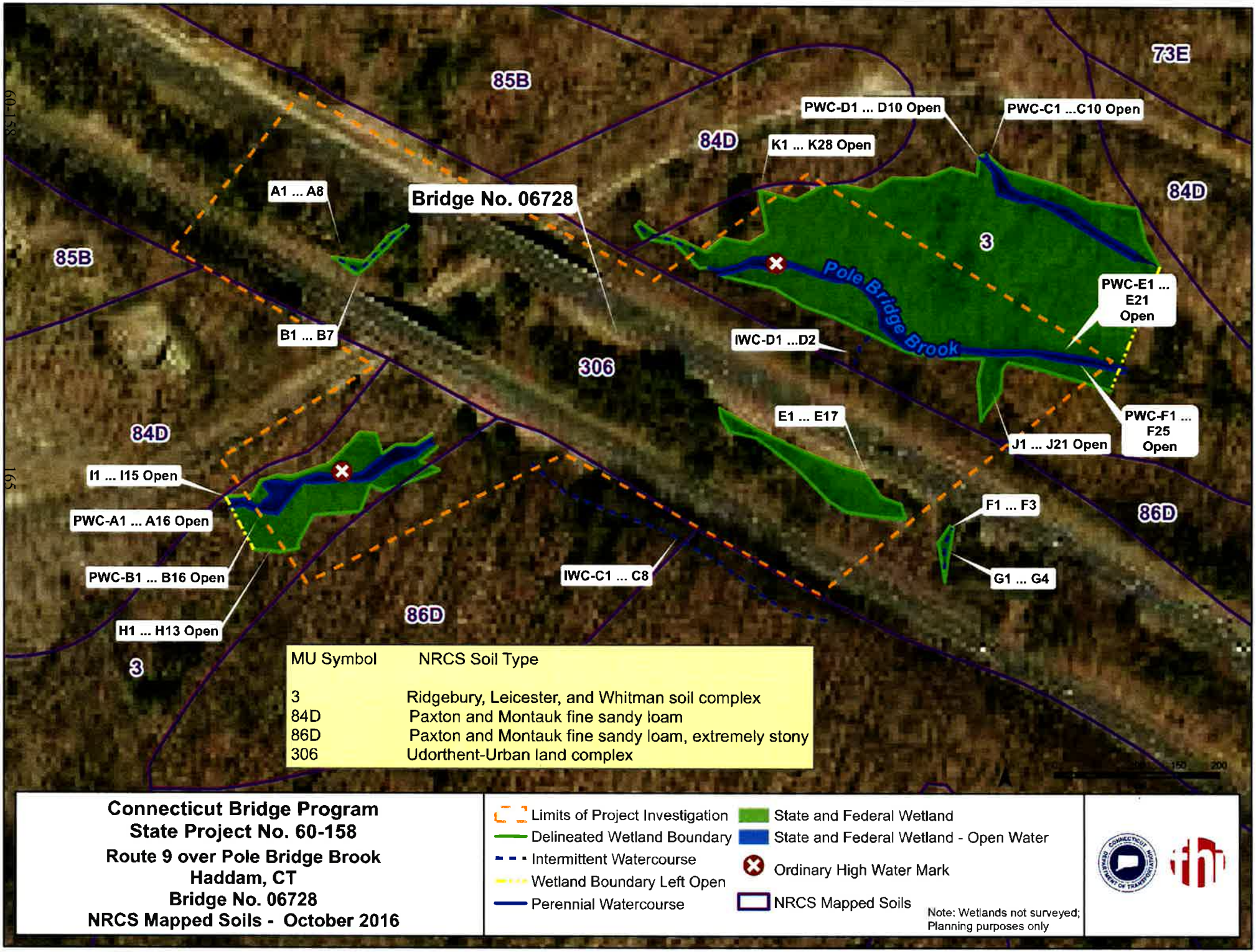
Whitman Series

The Whitman series consists of very deep, very poorly drained soils formed in lodgement till derived mainly from granite, gneiss, and schist. They are shallow to a densic contact. These soils are nearly level or gently sloping soils in depressions and drainageways on uplands. Slopes are typically 0 through 2 percent, but range up to 8 percent where wetness is due to seepage water.

Paxton and Montauk Fine Sandy Loam (84) & (86)

Paxton Fine Sandy Loam

The Paxton series consists of well drained loamy soils formed in lodgment till. The soils are very deep to bedrock and moderately deep to a densic contact. They are nearly level to steep soils on hills, drumlins, till plains, and ground moraines. Slope ranges from 0 to 45


85B
73E
84D
PWC-D1 ... D10 Open
PWC-C1 ...C10 Open
K1 ... K28 Open
84D
A1 ... A8
Bridge No. 06728
85B
3
Pole Bridge Brook
PWC-E1 ... E21 Open
B1 ... B7
IWC-D1 ...D2
306
84D
E1 ... E17
PWC-F1 ... F25 Open
J1 ... J21 Open
I1 ... I15 Open
PWC-A1 ... A16 Open
F1 ... F3
86D
PWC-B1 ... B16 Open
IWC-C1 ... C8
G1 ... G4
H1 ... H13 Open
86D
3
MU Symbol NRCS Soil Type
3 Ridgebury, Leicester, and Whitman soil complex
84D Paxton and Montauk fine sandy loam
86D Paxton and Montauk fine sandy loam, extremely stony
306 Udorthent-Urban land complex
Connecticut Bridge Program
State Project No. 60-158
Route 9 over Pole Bridge Brook
Haddam, CT
Bridge No. 06728
NRCS Mapped Soils - October 2016
Limits of Project Investigation
Delineated Wetland Boundary
Intermittent Watercourse
Wetland Boundary Left Open
Perennial Watercourse
State and Federal Wetland
State and Federal Wetland - Open Water
Ordinary High Water Mark
NRCS Mapped Soils
Note: Wetlands not surveyed; Planning purposes only

percent. Saturated hydraulic conductivity is moderately high or high in the surface layer and subsoil and low or moderately low in the substratum.

Depth to bedrock is commonly more than 1.5 meters. Rock fragments range from 5 through 35 percent by volume in the mineral soil. Except where the surface is stony, the fragments are mostly subrounded gravel and typically make up 60 percent or more of the total rock fragments.

Montauk Fine Sandy Loam

The Montauk series consists of well drained soils formed in lodgment or flow till derived primarily from granitic materials with lesser amounts of gneiss and schist. The soils are very deep to bedrock and moderately deep to a densic contact. These soils are on upland hills and moraines. Slope ranges from 0 to 35 percent. Rock fragments range from 3 to 35 percent in the solum and 5 to 50 percent in the substratum.

Udorthent-Urban Land Complex (306)

These map units consist of moderately sloping to steep areas where the original soil has been cut away or covered with a gravelly fill material. Most of these areas have been graded to a smooth surface with 4 to 10 inches of topsoil. This soil is commonly located on outwash plains and moraines, but occurs in a variety of landscape positions. Soil permeability varies from moderate to very rapid. They typically possess depths of greater than 5-6 feet to bedrock and groundwater.

Udorthents

A map unit consisting of well-drained to excessively well-drained soil composed of cut areas, filled areas, or both. They are often in association with urban areas. In areas that were cut, the surface layer has been removed and in fill areas, typically more than 20 inches of soil material has been placed on the surface. Often both cut and fill areas occur in close proximity as areas were often graded and smoothed forming a complex pattern of cuts and fills.

Urban Land

A unit which includes areas developed by buildings, roads, and other developments limiting the ability to inspect and map underlying soil types.

4.0 FEDERAL AND STATE LISTED THREATENED AND ENDANGERED SPECIES AND HABITAT

The CT Natural Diversity Database (NDDB) GIS records were mapped to assess if any Endangered, Threatened, or Special Concern (i.e., "rare") species are known to potentially

exist within the project area, based on past observations. Based on the most recent NDDB mapping, dated December 2017, the project area falls outside the NDDB area. Please refer to Figure 5 for the official CT DEEP NDDB Map.

The project has received funding from the Federal Highway Administration (FHWA), and as such has been submitted to the U.S. Fish and Wildlife Service (USFWS) under the Final 4(d) Rule for the Federally Threatened Northern Long-eared bat. Consultation was concluded on August 4, 2018. There are no documented hibernacula in Haddam or in the vicinity of the project. The Consultation Form is provided in Appendix D.

5.0 INVASIVE PLANT SPECIES

Within the project area the following invasive plant species were identified in sizable, non-individual populations: Garlic Mustard (*Allaria petiolata*), Japanese Barberry, Oriental Bittersweet, Autumn Olive, Japanese Stilt Grass (*Microstegium vimineum*), Common Reed, and Multiflora Rose (see Figure 6). These plant species primarily occurred closer to the disturbed areas associated with Route 9 and, to a lesser extent, Hubbard Road. Invasive species within the project limits will be controlled utilizing the CTDOT's Control and Removal of Invasive Vegetation specification.

Natural Diversity Data Base Areas

60-158

HADDAM, CT

December 2017

State and Federal Listed Species & Significant Natural Communities

Town Boundary

NOTE: This map shows general locations of State and Federal Listed Species and Significant Natural Communities. Information on listed species is collected and compiled by the Natural Diversity Data Base (NDDB) from a number of data sources . Exact locations of species have been buffered to produce the general locations. Exact locations of species and communities occur somewhere in the shaded areas, not necessarily in the center. A new mapping format is being employed that more accurately models important riparian and aquatic areas and eliminates the need for the upstream/downstream searches required in previous versions.

168

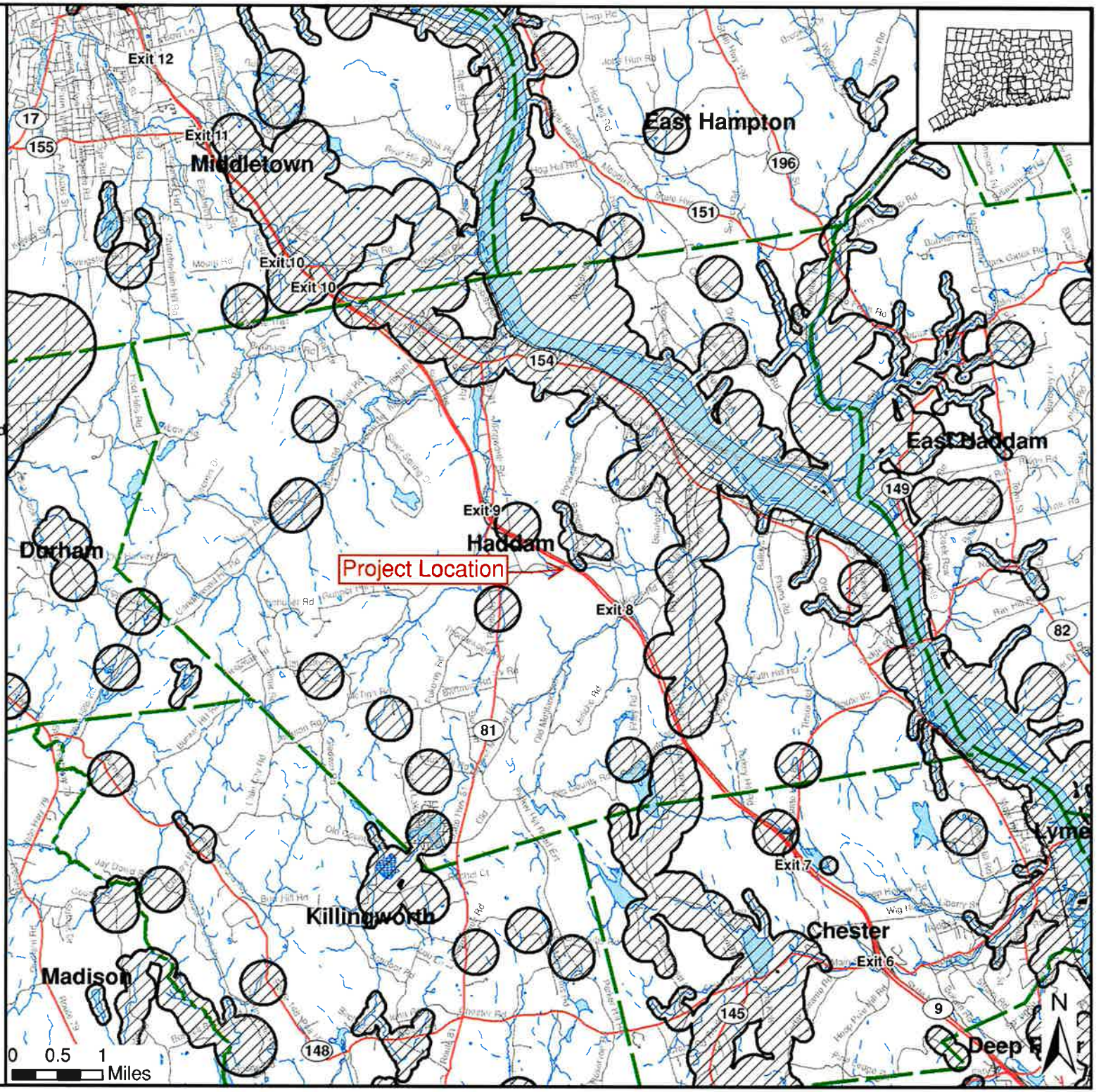
This map is intended for use as a preliminary screening tool for conducting a Natural Diversity Data Base Review Request. To use the map, locate the project boundaries and any additional affected areas. If the project is within a shaded area there may be a potential conflict with a listed species. For more information, complete a Request for Natural Diversity Data Base State Listed Species Review form (DEP-APP-007), and submit it to the NDDB along with the required maps and information. More detailed instructions are provided with the request form on our website.

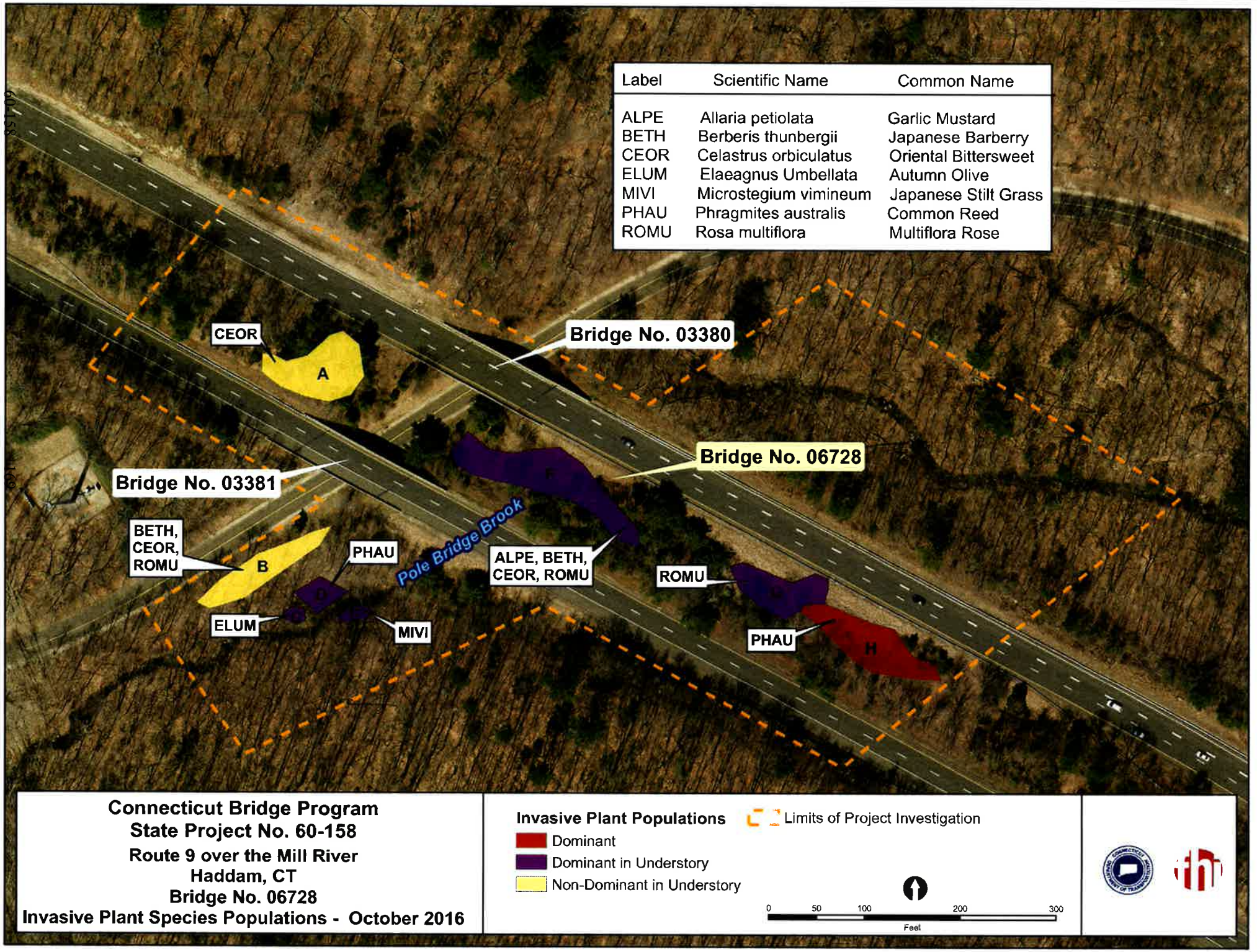
www.ct.gov/deep/nddbrequest

Use the CTECO Interactive Map Viewers at www.cteco.uconn.edu to more precisely search for and locate a site and to view aerial imagery with NDDB Areas.

QUESTIONS: Department of Energy and Environmental Protection (DEEP)
79 Elm St., Hartford CT 06106
Phone (860) 424-3011

Connecticut Department of Energy & Environmental Protection
Bureau of Natural Resources
Wildlife Division




60-158
109
Label | Scientific Name | Common Name
ALPE | Allaria petiolata | Garlic Mustard
BETH | Berberis thunbergii | Japanese Barberry
CEOR | Celastrus orbiculatus | Oriental Bittersweet
ELUM | Elaeagnus Umbellata | Autumn Olive
MIVI | Microstegium vimineum | Japanese Stilt Grass
PHAU | Phragmites australis | Common Reed
ROMU | Rosa multiflora | Multiflora Rose
CEOR
A
Bridge No. 03380
Bridge No. 06728
Bridge No. 03381
BETH, CEOR, ROMU
B
PHAU
Pole Bridge Brook
ALPE, BETH, CEOR, ROMU
ROMU
ELUM
MIVI
PHAU
H
Connecticut Bridge Program
State Project No. 60-158
Route 9 over the Mill River
Haddam, CT
Bridge No. 06728
Invasive Plant Species Populations - October 2016
Invasive Plant Populations
Limits of Project Investigation
Dominant
Dominant in Understory
Non-Dominant in Understory
0 50 100 200 300
Feet

REFERENCES

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APPENDIX A: WETLAND PHOTOGRAPHS

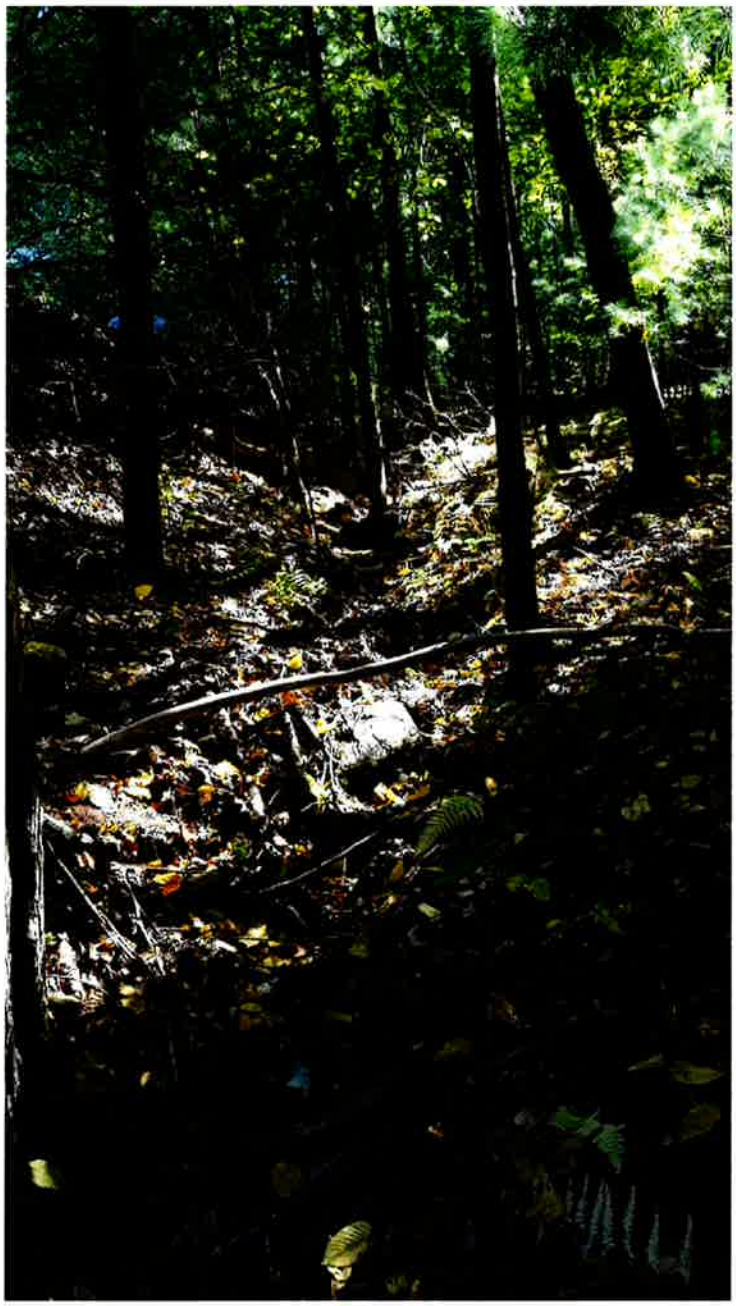
Wetland AB – facing southwest

IWC B – facing northwest

Wetland E – facing north

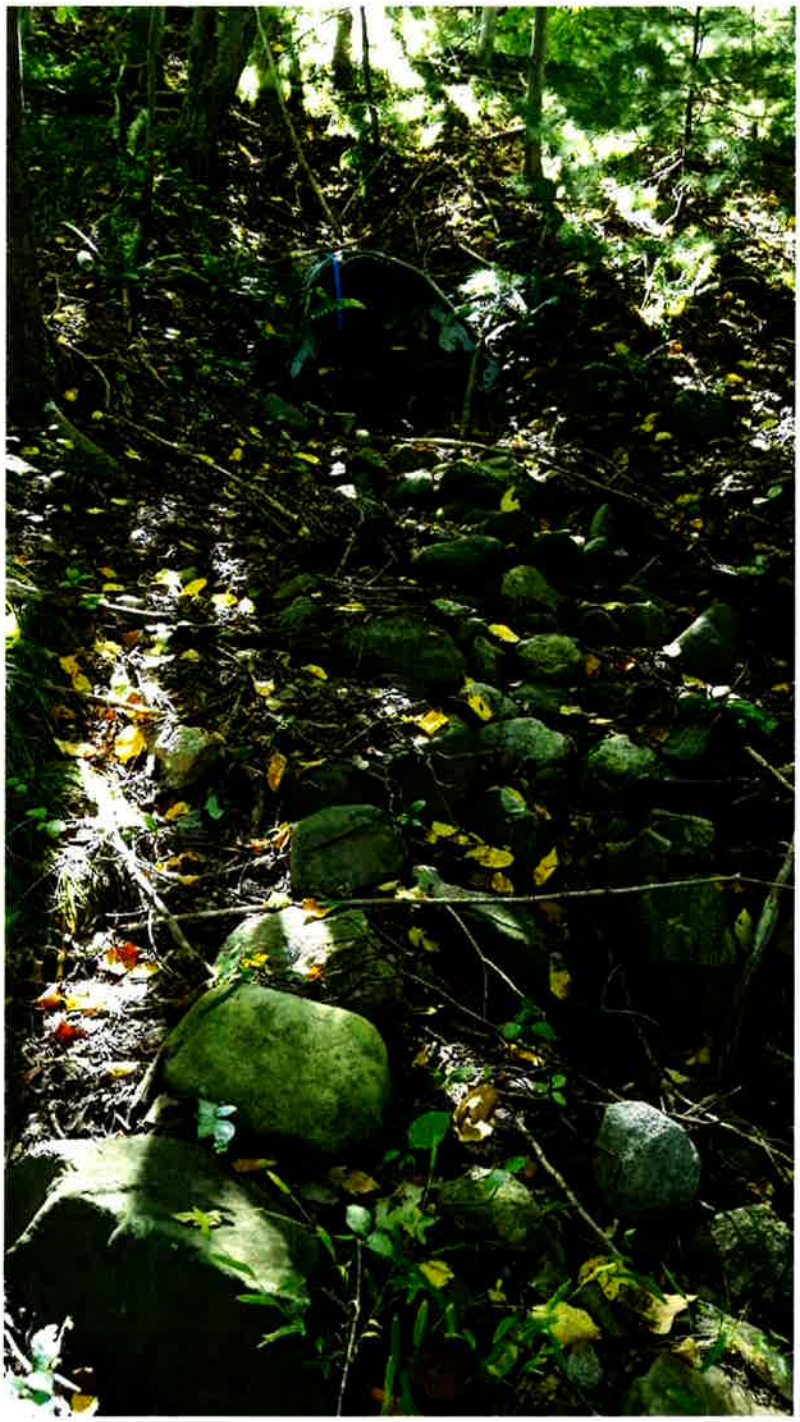
Wetland FG – facing south

Wetland HI – facing southwest



IWC C – facing southeast

Wetland JK – facing east



IWC D – facing southwest

APPENDIX B: WETLAND DETERMINATION FORMS

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: CT Bridge - Mill River Haddam City/County: Haddam, CT Sampling Date: 10/6/16

Applicant/Owner: CTDOT State: CT Sampling Point: HI-wet

Investigator(s): David Laiuppa, Josh Weiss Section, Township, Range:

Landform (hillside, terrace, etc.): wooded floodplain Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): LRR R Lat: Long: Datum: near I7

Soil Map Unit Name: Ridgebury, Leicester, Whitman NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation no , Soil no , or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation no , Soil no , or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**		
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	**Yes** X	**No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:	HI	

Remarks: (Explain alternative procedures here or in a separate report.)
Relatively flat woodland adjacent to small stream. Near base of slope leading up to road.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____		
Water Table Present?	Yes X	No ____	Depth (inches): 18		
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0	**Wetland Hydrology Present?**	**Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: HI-wet

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	75	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	75	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Clethra alnifolia*	15	Yes	FAC
2. *Rosa multiflora*	5	No	FACU
3. *Lindera benzoin*	5	No	FACW
4. *Berberis thunbergii*	2	No	FACU
5.			
6.			
7.			
	27	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Phragmites australis*	40	Yes	FACW
2. *Thelypteris palustris*	25	Yes	FACW
3. *Symplocarpus foetidus*	20	Yes	OBL
4. *Impatiens capensis*	5	No	FACW
5. *Onoclea sensibilis*	5	No	FACW
6. *Equisetum arvense*	5	No	FAC
7.			
8.			
9.			
10.			
11.			
12.			
	100	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Vitis labrusca*	20	Yes	FACU
2. *Smilax rotundifolia*	5	No	FAC
3. *Toxicodendron radicans*	2	No	FAC
4.			
	27	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	80	x 2 =	160
FAC species	102	x 3 =	306
FACU species	27	x 4 =	108
UPL species	0	x 5 =	0
Column Totals:	229 (A)		594 (B)
Prevalence Index = B/A =			2.59

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: HI-wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/3	90	10YR 4/6	10	C	M	Loamy/Clayey	
3-28	10YR 4/1	95	10YR 4/4	5	C	M	Loamy/Clayey	
28-34+	10YR 2/1	100					Mucky Loam/Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: CT Bridge - Mill River Haddam City/County: Haddam, CT Sampling Date: 10/6/16

Applicant/Owner: CTDOT State: CT Sampling Point: HI-up

Investigator(s): David Laiuppa, Josh Weiss Section, Township, Range:

Landform (hillside, terrace, etc.): sloping woodland Local relief (concave, convex, none): convex Slope (%): 25

Subregion (LRR or MLRA): LRR R Lat: Long: Datum: near I7

Soil Map Unit Name: Paxton & Montauk NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation no , Soil no , or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation no , Soil no , or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**	
Hydric Soil Present?	Yes ____	No X	**within a Wetland?**	**Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)
Sloping woodland leading down to small stream, from road.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: HI-up

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	45	Yes	FAC
2. *Populus deltoides*	30	Yes	FAC
3. *Picea pungens*	5	No	FACU
4.			
5.			
6.			
7.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Berberis thunbergii*	25	Yes	FACU
2. *Rosa multiflora*	25	Yes	FACU
3. *Pinus strobus*	5	No	FACU
4.			
5.			
6.			
7.			
	55	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Solidago canadensis*	15	Yes	FACU
2. *Eurybia divaricata*	10	Yes	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Celastrus orbiculatus*	15	Yes	UPL
2. *Parthenocissus quinquefolia*	10	Yes	FACU
3. *Vitis labrusca*	5	No	FACU
4.			
	30	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	75	x 3 =	225
FACU species	90	x 4 =	360
UPL species	25	x 5 =	125
Column Totals:	190 (A)		710 (B)
Prevalence Index = B/A =			3.74

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: HI-up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-6	10YR 4/3	100					Loamy/Clayey	
6								restriction

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K**, L)
- ___ Thin Dark Surface (S9) (**LRR K**, L)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: roots & rocks

Depth (inches): 6

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: CT Bridge - Mill River Haddam City/County: Haddam, CT Sampling Date: 10/6/16

Applicant/Owner: CTDOT State: CT Sampling Point: JK-wet

Investigator(s): David Laiuppa, Josh Weiss Section, Township, Range:

Landform (hillside, terrace, etc.): wooded floodplain Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): LRR R Lat: Long: Datum: near K10

Soil Map Unit Name: Ridgebury, Leicester, Whitman NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**		
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	**Yes** X	**No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:	JK	

Remarks: (Explain alternative procedures here or in a separate report.)
Relatively flat woodland adjacent to small stream. Near base of slope leading up to road.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 8

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: JK-wet

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	45	Yes	FAC
2. *Betula alleghaniensis*	15	No	FAC
3. *Betula nigra*	10	No	FACW
4. *Acer saccharum*	5	No	FACU
5. *Fraxinus pennsylvanica*	5	No	FACW
6.			
7.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Clethra alnifolia*	35	Yes	FAC
2. *Pinus strobus*	5	No	FACU
3. *Lindera benzoin*	5	No	FACW
4.			
5.			
6.			
7.			
	45	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Thelypteris palustris*	35	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Smilax rotundifolia*	5	Yes	FAC
2. *Parthenocissus quinquefolia*	2	Yes	FACU
3.			
4.			
	7	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	55	x 2 =	110
FAC species	100	x 3 =	300
FACU species	12	x 4 =	48
UPL species	0	x 5 =	0
Column Totals:	167 (A)		458 (B)

Prevalence Index = B/A = 2.74

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

_X_ 2 - Dominance Test is >50%

_X_ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** _X_ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: JK-wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-0		100						Oe
0-3	10YR 4/4	95	10YR 5/6	5	C	M	Loamy/Clayey	
3-8	10YR 2/1	100					Mucky Sand	
8-20	10YR 3/1	100					Sandy	
20-25+	10YR 5/2	88	10YR 5/6	10	C	M	Sandy	Prominent redox concentrations
			10YR 6/1	2	D	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- X Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: CT Bridge - Mill River Haddam City/County: Haddam, CT Sampling Date: 10/6/16

Applicant/Owner: CTDOT State: CT Sampling Point: JK-up

Investigator(s): David Laiuppa, Josh Weiss Section, Township, Range:

Landform (hillside, terrace, etc.): sloping woodland Local relief (concave, convex, none): convex Slope (%): 5

Subregion (LRR or MLRA): LRR R Lat: Long: Datum: near K10

Soil Map Unit Name: Ridgebury, Leicester, Whitman NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area**	
Hydric Soil Present?	Yes	No X	**within a Wetland?**	**Yes** **No X**
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)
Sloping woodland leading down to small stream, from road.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: JK-up

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	25	Yes	FACU
2. *Acer rubrum*	10	Yes	FAC
3. *Populus deltoides*	10	Yes	FAC
4. *Betula lenta*	5	No	FACU
5. *Pinus strobus*	5	No	FACU
6. *Fraxinus pennsylvanica*	2	No	FACW
7.			
	57	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Clethra alnifolia*	20	Yes	FAC
2. *Pinus strobus*	15	Yes	FACU
3			N/A
4.			
5.			
6.			
7.			
	50	=Total Cover	
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	2	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Celastrus orbiculatus*	15	Yes	UPL
2. *Vitis labrusca*	5	Yes	FACU
3.			
4.			
	20	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 43 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	2	x 2 =	4
FAC species	40	x 3 =	120
FACU species	55	x 4 =	220
UPL species	15	x 5 =	75
Column Totals:	112 (A)		419 (B)

Prevalence Index = B/A = 3.74

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: JK-up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 5/4	100					Loamy/Clayey	
8								restriction

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K,** L)
- ___ Thin Dark Surface (S9) (**LRR K,** L)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: roots & rocks

Depth (inches): 8

Hydric Soil Present? **Yes** ____ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

APPENDIX C: WETLAND FUNCTION-VALUE EVALUATION FORMS

Wetland Function-Value Evaluation Form

60-158

Total area of wetland_____ Human made? Yes Is wetland part of a wildlife corridor?_____ or a "habitat island"?_____

Adjacent land use Highway Distance to nearest roadway or other development ~ 15 ft

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? middle

How many tributaries contribute to the wetland? 2 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland AB

Latitude_____ Longitude_____

Prepared by: DWL Date Dec 2016

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N_____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	○	◉	4,7,15		minimal recharge opportunity near inlet
Floodflow Alteration	○	◉	3,4,5,7,8,9		minimal floodflow storage potential
Fish and Shellfish Habitat	○	◉	1,2		no perennial waters
Sediment/Toxicant Retention	◉	○	1,2,4,10,11,13,14,16	X	sed/tox retention potential from highway runoff
Nutrient Removal	○	◉	3,7,8		Little nutrients available
Production Export	○	◉	2,7		Minimal production occuring within wetland
Sediment/Shoreline Stabilization	○	◉	2,3,9,12,14		no expected erosive forces occurring within intermittent drainage area
Wildlife Habitat	○	◉	13		too small and isolated to provide adequate habitat
Recreation	○	◉			limited/unsafe access
Educational/Scientific Value	○	◉	14		limited/unsafe access
Uniqueness/Heritage	○	◉			limited/unsafe access
Visual Quality/Aesthetics	○	◉	6		limited/unsafe access
ES Endangered Species Habitat	○	◉	NA		None present in 2016 CT DEEP NDDB records
Other	○	◉			

193

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

60-158

Total area of wetland_____ Human made? No Is wetland part of a wildlife corridor?_____ or a "habitat island"?_____

Adjacent land use Highway Distance to nearest roadway or other development ~ 25 ft

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin?_____

How many tributaries contribute to the wetland?_____ Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland E

Latitude_____ Longitude_____

Prepared by: DWL Date Dec 2016

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N_____

194

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	◉	○	4,8,15	X	evidence of groundwater recharge
Floodflow Alteration	○	◉	3,4,5,7,8,9		no associated watercourse
Fish and Shellfish Habitat	○	◉	1,2		no perennial waters
Sediment/Toxicant Retention	◉	○	1,2,4,5,9	X	sed/tox retention potential from highway runoff
Nutrient Removal	◉	○	3,7,8,9,10		some nutrient removal potential
Production Export	◉	○	7,12		possible attenuation
Sediment/Shoreline Stabilization	○	◉	2,3,9		no associated watercourse
Wildlife Habitat	◉	○	7,13,14,21	X	potential habitat for small mammals and birds
Recreation	○	◉	5		limited/unsafe access
Educational/Scientific Value	○	◉	5,14		limited/unsafe access
Uniqueness/Heritage	○	◉			limited/unsafe access
Visual Quality/Aesthetics	○	◉	6,8		limited/unsafe access
ES Endangered Species Habitat	○	◉	NA		None present in 2016 CT DEEP NDDB records
Other	○	◉			

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

60-158

Total area of wetland_____ Human made? Yes Is wetland part of a wildlife corridor?_____ or a "habitat island"?_____

Adjacent land use Highway Distance to nearest roadway or other development ~ 25 ft

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? middle

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland FG

Latitude_____ Longitude_____

Prepared by: DWL Date Dec 2016

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N_____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	○	◉	4,7,15		minimal recharge opportunity
Floodflow Alteration	○	◉	3,4,5,7,8,9		minimal floodflow storage potential
Fish and Shellfish Habitat	○	◉	1,2		no perennial waters
Sediment/Toxicant Retention	◉	○	1,2,4,10,11,13,14,16	X	sed/tox retention potential from highway runoff
Nutrient Removal	○	◉	3,7,8		Little nutrients available
Production Export	○	◉	2,7		Minimal production occuring within wetland
Sediment/Shoreline Stabilization	◉	○	2,3,9,12,14		possibly small scale stabilization
Wildlife Habitat	○	◉	13		too small and isolated to provide adequate habitat
Recreation	○	◉			limited/unsafe access
Educational/Scientific Value	○	◉	14		limited/unsafe access
Uniqueness/Heritage	○	◉			limited/unsafe access
Visual Quality/Aesthetics	○	◉	6		limited/unsafe access
ES Endangered Species Habitat	○	◉	NA		None present in 2016 CT DEEP NDDB records
Other	○	◉			

195

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

60-158

Total area of wetland_____ Human made? No Is wetland part of a wildlife corridor? yes or a "habitat island"?_____

Adjacent land use Highway & local road Distance to nearest roadway or other development ~ 50 ft

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present Yes

Is the wetland a separate hydraulic system? no If not, where does the wetland lie in the drainage basin? middle

How many tributaries contribute to the wetland? 2 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland HI

Latitude_____ Longitude_____

Prepared by: DWL Date Dec 2016

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N_____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	◉	○	4,7,8,12,15		some evidence of groundwater recharge
Floodflow Alteration	◉	○	3,5,6,7,8,9,10,13	X	small scale floodflow alteration
Fish and Shellfish Habitat	◉	○	1,2,4,8,14,17		possible small populations of fish in fast flowing shallow water
Sediment/Toxicant Retention	◉	○	1,2,4,9,10		vegetation density not adequate for substantial retention
Nutrient Removal	○	◉	7		vegetation density not adequate for substantial retention
Production Export	○	◉	4		minimal production occuring within wetland
Sediment/Shoreline Stabilization	◉	○	2,3,6,7,9,14	X	wetland vegetation on banks of perennial watercourse
Wildlife Habitat	◉	○	4,7,8,10,11,14,15,19,2	X	adequate food and water for wildlife populations
Recreation	◉	○	1,4,5,6		adjacent to public and private lands
Educational/Scientific Value	◉	○	2,4,5,6,11,13		adjacent to public and private lands
Uniqueness/Heritage	◉	○	5,10,11,14,16,17,18,2		wetland not unique for the area
Visual Quality/Aesthetics	◉	○	7,8,9,11,12		wetland not unique for the area
ES Endangered Species Habitat	○	◉	NA		None present in 2016 CT DEEP NDDB records
Other	○	◉			

196

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

60-158

Total area of wetland_____ Human made? No Is wetland part of a wildlife corridor? yes or a "habitat island"?_____

Adjacent land use Highway & local road Distance to nearest roadway or other development ~ 25 ft

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present Yes

Is the wetland a separate hydraulic system? no If not, where does the wetland lie in the drainage basin? middle

How many tributaries contribute to the wetland? 4 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland JK

Latitude_____ Longitude_____

Prepared by: DWL Date Dec 2016

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N_____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	◉	○	4,7,8,12,15	X	strong evidence of groundwater recharge
Floodflow Alteration	◉	○	3,5,6,7,8,9,10,13	X	small scale floodflow alteration
Fish and Shellfish Habitat	◉	○	1,2,4,8,14,17		possible small populations of fish in fast flowing shallow water
Sediment/Toxicant Retention	◉	○	1,2,4,9,10		vegetation density not adequate for substantial retention
Nutrient Removal	○	◉	7		vegetation density not adequate for substantial retention
Production Export	○	◉	4		minimal production occuring within wetland
Sediment/Shoreline Stabilization	◉	○	2,3,6,7,9,14	X	wetland vegetation on banks of perennial watercourse
Wildlife Habitat	◉	○	4,7,8,10,11,14,15,19,2	X	adequate food and water for wildlife populations
Recreation	◉	○	1,4,5,6		adjacent to public and private lands
Educational/Scientific Value	◉	○	2,4,5,6,11,13		adjacent to public and private lands
Uniqueness/Heritage	◉	○	5,10,11,14,16,17,18,2		wetland not unique for the area
Visual Quality/Aesthetics	◉	○	7,8,9,11,12		wetland not unique for the area
ES Endangered Species Habitat	○	◉	NA		None present in 2016 CT DEEP NDDB records
Other	○	◉			

197

Notes:

* Refer to backup list of numbered considerations.

APPENDIX D: USFWS CONSULTATION FORM

Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form

Federal agencies should use this form for the optional streamlined consultation framework for the northern long-eared bat (NLEB). This framework allows federal agencies to rely upon the U.S. Fish and Wildlife Service's (USFWS) January 5, 2016, intra-Service Programmatic Biological Opinion (BO) on the final 4(d) rule for the NLEB for section 7(a)(2) compliance by: (1) notifying the USFWS that an action agency will use the streamlined framework; (2) describing the project with sufficient detail to support the required determination; and (3) enabling the USFWS to track effects and determine if reinitiation of consultation is required per 50 CFR 402.16.

This form is not necessary if an agency determines that a proposed action will have no effect to the NLEB or if the USFWS has concurred in writing with an agency's determination that a proposed action may affect, but is not likely to adversely affect the NLEB (i.e., the standard informal consultation process). Actions that may cause prohibited incidental take require separate formal consultation. Providing this information does not address section 7(a)(2) compliance for any other listed species.

Information to Determine 4(d) Rule Compliance:	**YES**	**NO**
1. Does the project occur wholly outside of the WNS Zone[1]?	☐	☑
2. Have you contacted the appropriate agency[2] to determine if your project is near known hibernacula or maternity roost trees?	☑	☐
3. Could the project disturb hibernating NLEBs in a known hibernaculum?	☐	☑
4. Could the project alter the entrance or interior environment of a known hibernaculum?	☐	☑
5. Does the project remove any trees within 0.25 miles of a known hibernaculum at any time of year?	☐	☑
6. Would the project cut or destroy known occupied maternity roost trees, or any other trees within a 150-foot radius from the maternity roost tree from June 1 through July 31.	☐	☑

You are eligible to use this form if you have answered yes to question #1 **or** yes to question #2 **and** no to questions 3, 4, 5 and 6. The remainder of the form will be used by the USFWS to track our assumptions in the BO.

Agency: FHWA – Connecticut Division

Applicant[3] (Name, Email, Phone No.):
Connecticut Department of Transportation
Amanda M. Saul, Office of Environmental Planning
DOT.NLEB@ct.gov, (860)594-2939

Project Name: CTDOT0060-0158

Project Location (include coordinates if known): Route 9 over the Pole Bridge Brook, Town of Haddam; 41.4641, -72.5401

Basic Project Description (provide narrative below or attach additional information):

Rehabilitation for Br 06728, Route 9 over Pole Bridge Brook in the Town of Haddam.

[1] http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf
[2] See http://www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html
[3] If applicable - only needed for federal actions with applicants (e.g., for a permit, etc.) who are party to the consultation.

General Project Information	YES	NO
Does the project occur within 0.25 miles of a known hibernaculum?	☐	☑
Does the project occur within 150 feet of a known maternity roost tree?	☐	☑
Does the project include forest conversion[4]? (if yes, report acreage below)	☑	☐
Estimated total acres of forest conversion	<0.5 ac	
If known, estimated acres[5] of forest conversion from April 1 to October 31		
If known, estimated acres of forest conversion from June 1 to July 31[6]		
Does the project include timber harvest? (if yes, report acreage below)	☐	☑
Estimated total acres of timber harvest		
If known, estimated acres of timber harvest from April 1 to October 31		
If known, estimated acres of timber harvest from June 1 to July 31		
Does the project include prescribed fire? (if yes, report acreage below)	☐	☑
Estimated total acres of prescribed fire		
If known, estimated acres of prescribed fire from April 1 to October 31		
If known, estimated acres of prescribed fire from June 1 to July 31		
Does the project install new wind turbines? (if yes, report capacity in MW below)	☐	☑
Estimated wind capacity (MW)		

Agency Determination:

By signing this form, the action agency determines that this project may affect the NLEB, but that any resulting incidental take of the NLEB is not prohibited by the final 4(d) rule.

If the USFWS does not respond within 30 days from submittal of this form, the action agency may presume that its determination is informed by the best available information and that its project responsibilities under 7(a)(2) with respect to the NLEB are fulfilled through the USFWS January 5, 2016, Programmatic BO. The action agency will update this determination annually for multi-year activities.

The action agency understands that the USFWS presumes that all activities are implemented as described herein. The action agency will promptly report any departures from the described activities to the appropriate USFWS Field Office. The action agency will provide the appropriate USFWS Field Office with the results of any surveys conducted for the NLEB. Involved parties will promptly notify the appropriate USFWS Field Office upon finding a dead, injured, or sick NLEB.

Signature: Amanda M. Saul Digitally signed by Amanda M. Saul DN: cn=Amanda M. Saul, o=Connecticut Department of Transportation, ou=Office of Environmental Planning, email=amanda.saul@ct.gov, c=US Date: 2018.07.02 15:58:19 -04'00'

Date Submitted: 7/2/2018

[4] Any activity that temporarily or permanently removes suitable forested habitat, including, but not limited to, tree removal from development, energy production and transmission, mining, agriculture, etc. (see page 48 of the BO).
[5] If the project removes less than 10 trees and the acreage is unknown, report the acreage as less than 0.1 acre.
[6] If the activity includes tree clearing in June and July, also include those acreage in April to October.

Attachment C: ACOE Pre-Construction Notification (PCN)

Addendum for Department of the Army Permit

Applicant: State of Connecticut, Department of Transportation
Project No. 60-158 (Constr.), 60-158 (P.E.)
Rehabilitation of Bridge No. 06728 in Haddam
Route 9 over Pole Bridge Brook

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-2931

November 5, 2018

Ms. Susan Lee
U.S. Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742-2751

Subject: State Bridge Program
Bridge No. 06728 in Haddam, CT
Route 9 over Pole Bridge Brook

Dear Ms. Lee:

Enclosed please find the Pre-Construction Notification Form for your review and approval. An application for the Connecticut Addendum Army Corps of Engineers General Permit State of Connecticut (CT GP) was previously submitted to the Connecticut Department of Energy and Environmental Protection under a separate cover letter for processing. The project has received funding from FHWA, and as such has been submitted to the USFWS under the final 4(d) rule for the Federally Threatened Northern Long-Eared bat. Consultation was concluded on August 4, 2018. There are no documented hibernacula in Haddam or in the vicinity of the project. Any questions pertaining to this application may be directed to Mr. Andrew H. Davis, Transportation Supervising Planner of my staff, at 860-594-2157.

Very truly yours,

Kimberly C. Lesay
Transportation Assistant Planning Director
Bureau of Policy and Planning

Attachments
cc: Nathan Margason – USEPA

Aija Zeidenbergs/az
bcc: Andrew H. Davis – Amanda M. Saul
Robert E. Obey – Eileen Ego, District 2
Theodore H. Nezames – Rabih M. Barakat – Louis D. Bacho – Lesgie M. Ruiz
Thomas M. Ryan – Mark F. Levesque (CJM)

Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form

Federal agencies should use this form for the optional streamlined consultation framework for the northern long-eared bat (NLEB). This framework allows federal agencies to rely upon the U.S. Fish and Wildlife Service's (USFWS) January 5, 2016, intra-Service Programmatic Biological Opinion (BO) on the final 4(d) rule for the NLEB for section 7(a)(2) compliance by: (1) notifying the USFWS that an action agency will use the streamlined framework; (2) describing the project with sufficient detail to support the required determination; and (3) enabling the USFWS to track effects and determine if reinitiation of consultation is required per 50 CFR 402.16.

This form is not necessary if an agency determines that a proposed action will have no effect to the NLEB or if the USFWS has concurred in writing with an agency's determination that a proposed action may affect, but is not likely to adversely affect the NLEB (i.e., the standard informal consultation process). Actions that may cause prohibited incidental take require separate formal consultation. Providing this information does not address section 7(a)(2) compliance for any other listed species.

Information to Determine 4(d) Rule Compliance:	**YES**	**NO**
1. Does the project occur wholly outside of the WNS Zone[1]?	☐	☑
2. Have you contacted the appropriate agency[2] to determine if your project is near known hibernacula or maternity roost trees?	☑	☐
3. Could the project disturb hibernating NLEBs in a known hibernaculum?	☐	☑
4. Could the project alter the entrance or interior environment of a known hibernaculum?	☐	☑
5. Does the project remove any trees within 0.25 miles of a known hibernaculum at any time of year?	☐	☑
6. Would the project cut or destroy known occupied maternity roost trees, or any other trees within a 150-foot radius from the maternity roost tree from June 1 through July 31.	☐	☑

You are eligible to use this form if you have answered yes to question #1 **or** yes to question #2 **and** no to questions 3, 4, 5 and 6. The remainder of the form will be used by the USFWS to track our assumptions in the BO.

Agency: FHWA – Connecticut Division

Applicant[3] (Name, Email, Phone No.):
Connecticut Department of Transportation
Amanda M. Saul, Office of Environmental Planning
DOT.NLEB@ct.gov, (860)594-2939

Project Name: CTDOT0060-0158

Project Location (include coordinates if known): Route 9 over the Pole Bridge Brook, Town of Haddam; 41.4641, -72.5401

Basic Project Description (provide narrative below or attach additional information):

Rehabilitation for Br 06728, Route 9 over Pole Bridge Brook in the Town of Haddam.

[1] http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf
[2] See http://www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html
[3] If applicable - only needed for federal actions with applicants (e.g., for a permit, etc.) who are party to the consultation.

General Project Information	YES	NO
Does the project occur within 0.25 miles of a known hibernaculum?	☐	☑
Does the project occur within 150 feet of a known maternity roost tree?	☐	☑
Does the project include forest conversion[4]? (if yes, report acreage below)	☑	☐
Estimated total acres of forest conversion	<0.5 ac	
If known, estimated acres[5] of forest conversion from April 1 to October 31		
If known, estimated acres of forest conversion from June 1 to July 31[6]		
Does the project include timber harvest? (if yes, report acreage below)	☐	☑
Estimated total acres of timber harvest		
If known, estimated acres of timber harvest from April 1 to October 31		
If known, estimated acres of timber harvest from June 1 to July 31		
Does the project include prescribed fire? (if yes, report acreage below)	☐	☑
Estimated total acres of prescribed fire		
If known, estimated acres of prescribed fire from April 1 to October 31		
If known, estimated acres of prescribed fire from June 1 to July 31		
Does the project install new wind turbines? (if yes, report capacity in MW below)	☐	☑
Estimated wind capacity (MW)		

Agency Determination:

By signing this form, the action agency determines that this project may affect the NLEB, but that any resulting incidental take of the NLEB is not prohibited by the final 4(d) rule.

If the USFWS does not respond within 30 days from submittal of this form, the action agency may presume that its determination is informed by the best available information and that its project responsibilities under 7(a)(2) with respect to the NLEB are fulfilled through the USFWS January 5, 2016, Programmatic BO. The action agency will update this determination annually for multi-year activities.

The action agency understands that the USFWS presumes that all activities are implemented as described herein. The action agency will promptly report any departures from the described activities to the appropriate USFWS Field Office. The action agency will provide the appropriate USFWS Field Office with the results of any surveys conducted for the NLEB. Involved parties will promptly notify the appropriate USFWS Field Office upon finding a dead, injured, or sick NLEB.

Signature: Amanda M. Saul Digitally signed by Amanda M. Saul DN: cn=Amanda M. Saul, o=Connecticut Department of Transportation, ou=Office of Environmental Planning, email=amanda.saul@ct.gov, c=US Date: 2018.07.02 15:58:19 -04'00' Date Submitted: 7/2/2018

[4] Any activity that temporarily or permanently removes suitable forested habitat, including, but not limited to, tree removal from development, energy production and transmission, mining, agriculture, etc. (see page 48 of the BO).
[5] If the project removes less than 10 trees and the acreage is unknown, report the acreage as less than 0.1 acre.
[6] If the activity includes tree clearing in June and July, also include those acreage in April to October.

U.S. Army Corps of Engineers (USACE)

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT

33 CFR 325. The proponent agency is CECW-CO-R.

Form Approved - OMB No. 0710-0003 Expires: 01-08-2018

The public reporting burden for this collection of information, OMB Control Number 0710-0003, is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR APPLICATION TO THE ABOVE EMAIL.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned. System of Record Notice (SORN). The information received is entered into our permit tracking database and a SORN has been completed (SORN #A1145b) and may be accessed at the following website: http://dpcld.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.aspx

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required)
First - Middle - Last -	First - Middle - Last -
Company - Connecticut Department of Transportation (CTDOT)	Company -
E-mail Address - kimberly.lesay@ct.gov	E-mail Address -
6. APPLICANT'S ADDRESS:	9. AGENT'S ADDRESS:
Address- 2800 Berlin Turnpike	Address-
City - Newington State - CT Zip - 06131 Country - USA	City - State - Zip - Country -
7. APPLICANT'S PHONE NOs. w/AREA CODE	10. AGENTS PHONE NOs. w/AREA CODE
a. Residence b. Business c. Fax	a. Residence b. Business c. Fax
N/A (860) 594-2931 (860) 594-3028	

STATEMENT OF AUTHORIZATION

11. I hereby authorize, _____ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

_____ _____

SIGNATURE OF APPLICANT DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)

State Project No. 60-158, Bridge No. 06728 in Haddam, Route 9 over Pole Bridge Brook

13. NAME OF WATERBODY, IF KNOWN (if applicable)	14. PROJECT STREET ADDRESS (if applicable)
Pole Bridge Brook	Address Route 9
15. LOCATION OF PROJECT	City - Haddam State- CT Zip- 06438
Latitude: °N 41° 27' 50.65" Longitude: °W 72° 32' 26.20"	

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)

State Tax Parcel ID Municipality

Section - Township - Range -

17. DIRECTIONS TO THE SITE

From Concord, Massachusetts: Take MA-2 West in Concord and continue for 6.6 miles. Take Exit 40A to merge onto Interstate 495 South toward Marlborough and Worcester and continue for 12.8 miles. Take Exit 25B for Interstate 290 toward Worcester and merge onto I-290 West. Continue for 19.8 miles and take Exit 7 for Interstate 90/Mass. Pike. Keep left at the fork, follow signs for I-90 W/Springfield/Albany and merge onto I-90 West. Continue for 11.6 miles and use right 2 lanes to take Exit 9 for Interstate 84 toward US-20/Hartford/New York City. Continue on I-84 for 40.9 miles then use the left 2 lanes to take Exit 57 for CT-15S toward Interstate 91/Charter Oak Bridge/N.Y. City. Continue for 1.9 miles on CT-15 South and take Exit 86 to merge onto I-91 South toward New Haven/New York City. Continue for 8.9 miles and use left lane to take Exit 22 South onto CT-9 S. Continue for 14.5 miles to the culvert crossing.

18. Nature of Activity (Description of project, include all features)

See Attachment A.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

Based on field inspection and engineering analysis of the structure, the existing culvert is structurally deficient. Its structural deficiency is primarily a result of the deteriorated condition of the corrugated metal pipe. The culvert has lost half of the asphaltic coating and the exposed steel plate exhibits heavy laminar rust and perforations throughout.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

Permanent impacts are the result of lining the culvert with concrete and the installation of baffles. Temporary impacts are as a result of water handling devices required to perform substructure repairs in the dry and access roads to access the site.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards
Concrete-20 CY		

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres See Attachment A.

or

Linear Feet

23. Description of Avoidance, Minimization, and Compensation (see instructions)

See Attachment A.

24. Is Any Portion of the Work Already Complete? ☐ Yes ☒ No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address- State of Connecticut Department of Energy and Environmental Protection, 79 Elm Street

City - Hartford State - CT Zip - 06106

b. Address- State of Connecticut Department of Transportation, 2800 Berlin Turnpike

City - Newington State - CT Zip - 06131

c. Address- Joseph N. Drexler Jr, 165 Nedobity Road

City - Higganum State - CT Zip - 06441

d. Address-

City - State - Zip -

e. Address-

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
DEEP IWRD	PGP Addendum		Concurrent		
DEEP IWRD	IW General		TBD		

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

Thomas J. Maziarz 11-6-2018

SIGNATURE OF APPLICANT DATE SIGNATURE OF AGENT DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

Attachment A: Additional Information

Application for Department of the Army Permit

Applicant: State of Connecticut, Department of Transportation
Project No. 60-158 (Constr.), 60-158 (P.E.)
Rehabilitation of Bridge No. 06728 in Haddam
Route 9 over Pole Bridge Brook

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18. NATURE OF ACTIVITY

Bridge No. 06728, built in 1966, carries 5 lanes of Route 9 over Pole Bridge Brook in the Town of Haddam. The structure is situated approximately 1.2 miles south of Route 81 and approximately 120 feet southeast of Bridge 03380 and Bridge 03381.

The existing structure consists of a 6-foot diameter (72-inch) asphalt coated corrugated steel plate pipe culvert with square edged concrete endwalls. The culvert carries two lanes of southbound traffic and three lanes of northbound traffic and a vegetated median separating the two roadways. The curb to curb roadway width is approximately 38 feet for Route 9 SB and 42 feet for Route 9 NB. The culvert is placed on a 30° skew to the travelway and has an overall length of 397 feet. There is approximately 28 feet of overburden to the roadway surface.

The culvert and wingwalls are in critical condition with an overall rating of 2. The corrugated metal pipe culvert has lost half of the asphaltic coating and the exposed steel plate exhibits heavy laminar rust and perforations throughout. The circumferential seam approximately 15 feet from the inlet is misaligned by approximately 1-½ inches at the top, though no ballast is visible. There is another circumferential seam located 150 feet from the inlet, which is dented downward at the crown by approximately 1-½ inches. The concrete end treatments exhibit areas of vertical and hairline cracking, and some spalls. The southeast wingwall exhibits severe scaling up to the waterline.

The channel is in satisfactory condition with an overall rating of 6. The channel flows from west to east and has minor to moderate streambed scour at the inlet and outlet exposing the cutoff walls up to 16 inches high by 8 feet long at the outlet. This scour has not exposed the wingwall footings. The water depths at the outlet on the southeast side range from 2 to 12 inches deep. The channel embankments exhibit moderate erosion exposing brush and tree roots upstream and downstream. There is moderate accumulation of tree limbs and debris in the channel upstream and downstream. There is light to moderate vegetative growth throughout the channel. Encroachment of the northwest embankment pushes the thread of the channel into the southwest wingwall. The estimated bank full width is approximately 10 feet both upstream and downstream.

The estimated 2015 Average Daily Traffic (ADT) over the Pole Bridge Brook is 27,300 vehicles, with 9% truck traffic.

The proposed rehabilitation consists of pressure grouting the existing corrugated metal pipe and relining of the barrel with a 2-inch maximum thickness cured-in-place structural pipe lining system. The cured-in-place pipe lining will be centrifugally cast in order to repair all perforations and other issues associated with this culvert. The lining will allow for waterproofing, sealing, corrosion protection of the corrugated pipe and structural reinforcing. The full diameter of the pipe will be lined. Post conditions will exhibit a minimum inside diameter 4-inches less than existing. Five 8 inch high baffles will be installed in the last 30

feet of the culvert for energy dissipation. Hubbard Road, located approximately 300 feet west of Bridge 06728, can be used to access the culvert. Pumping operations will be utilized to direct flow around the work area. Channel grading at the inlet and outlet is not proposed. Review of inspection reports indicates that the cutoff wall is exposed, with exposure measurements up to 16 inches. Images included in the inspection reports indicate that the large stones at the outlet and within the exit reach are generally stable.

It is anticipated that bypass pumping will be utilized to maintain a dry work area for the duration of the project. Discussion with the supplier and contractor qualified in the application of a cured-in-place pipe lining rehabilitation has indicated that it is possible to bypass flow through the barrel to be rehabilitated if necessary. To facilitate the pumping scheme, a water handling device will be installed upstream to pool the stream flow to a nominal depth of 2 feet. This pooling depth will be used to create a sump condition for bypass pumping. Construction is anticipated to begin in the spring of 2019 and last approximately four months.

The Pole Bridge Brook flows in an easterly direction at the bridge. The drainage area of Pole Bridge Brook at the Route 9 crossing was delineated to be 0.48 square miles. The regulated resources in the area include State Regulated Watercourse and Inland Wetlands, Federally Regulated Wetlands and Waters of the U.S.

According to the August 28, 2008, Panel 09007C0233G, Middlesex County, Flood Insurance Rate Map, the project is not located within a FEMA Flood Zone. Coordination has taken place with CT DEEP Fisheries Division and have indicated that the perched condition of the proposed rehabilitation is acceptable for this project in conjunction with the MOA included in Attachment D.

22. SURFACE AREA IN ACRES OF WETLANDS OR OTHER WATERS FILLED

Permanent impacts anticipated to the inland wetlands and watercourses will amount to approximately 2,385 sq. ft. (0.06 acres). Permanent impacts are a result of the concrete lining and the installation of baffles. Temporary impacts to inland wetlands and watercourses will amount to approximately 1,789 sq. ft. (0.04 acres). Temporary impacts are a result of the installation of water handling devices and access roads.

There are no permanent impacts to inland wetlands. Temporary impacts to the wetlands above the Ordinary High Water line will amount to approximately 1,263 sq. ft. (0.03 acres).

Permanent impacts below the Ordinary High Water line will amount to approximately 2,385 sq. ft. (0.06 acres). Temporary impacts below the Ordinary High Water line will amount to approximately 526 sq. ft. (0.01 acres).

23. DESCRIPTION OF AVOIDANCE, MINIMZATION AND COMPENSATION

Impacts to the stream will be minimized and water quality can be maintained through adherence to the Form 817 Section 1.10 Best Management Practices (BMP's) and the 2004 Stormwater Quality Manual. During construction, proper water handling measures will be implemented to allow work to occur in the areas confined within those water handling devices. Construction is anticipated to begin in the spring of 2019 and last approximately four months.

Sedimentation and Erosion Control Systems will be installed as necessary to limit disturbances to protect the wetlands and watercourses through adherence to the 2002

Connecticut Guidelines for Erosion and Sedimentation Control. Sedimentation and Erosion Control Systems include but are not limited to the following.

- Invasive control utilizing CTDOT Item#0952051A (as amanded) – Control and Removal of Invasive Vegetation.
- The restoration of temporarily impacted areas.
- Installation, use and maintenance of combined silt fencing and haybale erosion and sedimentation control around other work areas.
- Storage of contruction materials outside of wetlands and flood-prone areas.
- Vehicle re-fueling and servicing at a location outside of the wetland and watercourse.
- Proper care and maintenance of vehicles and equipment.

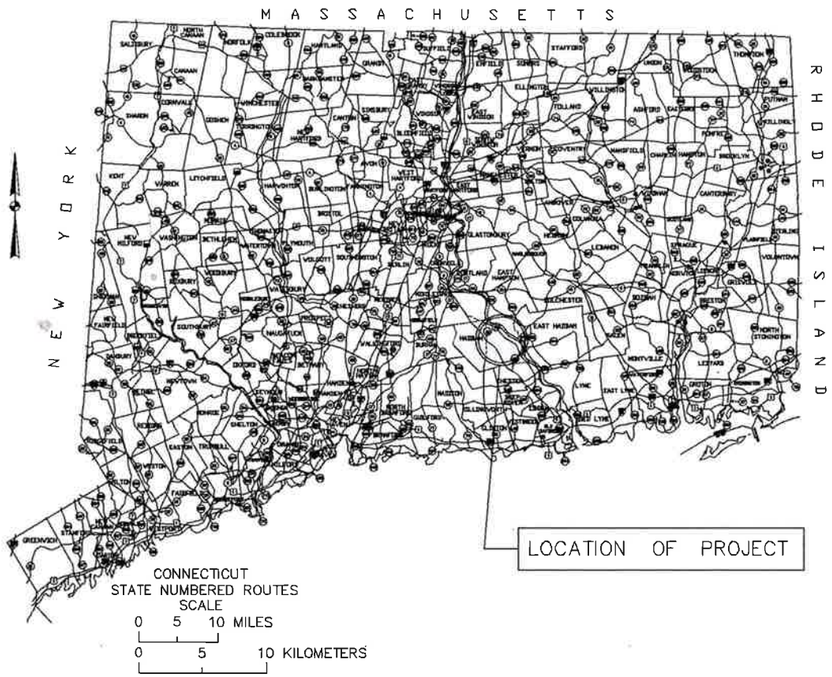
Attachment B: Plan Sheets and Drawings

Application for Department of the Army Permit

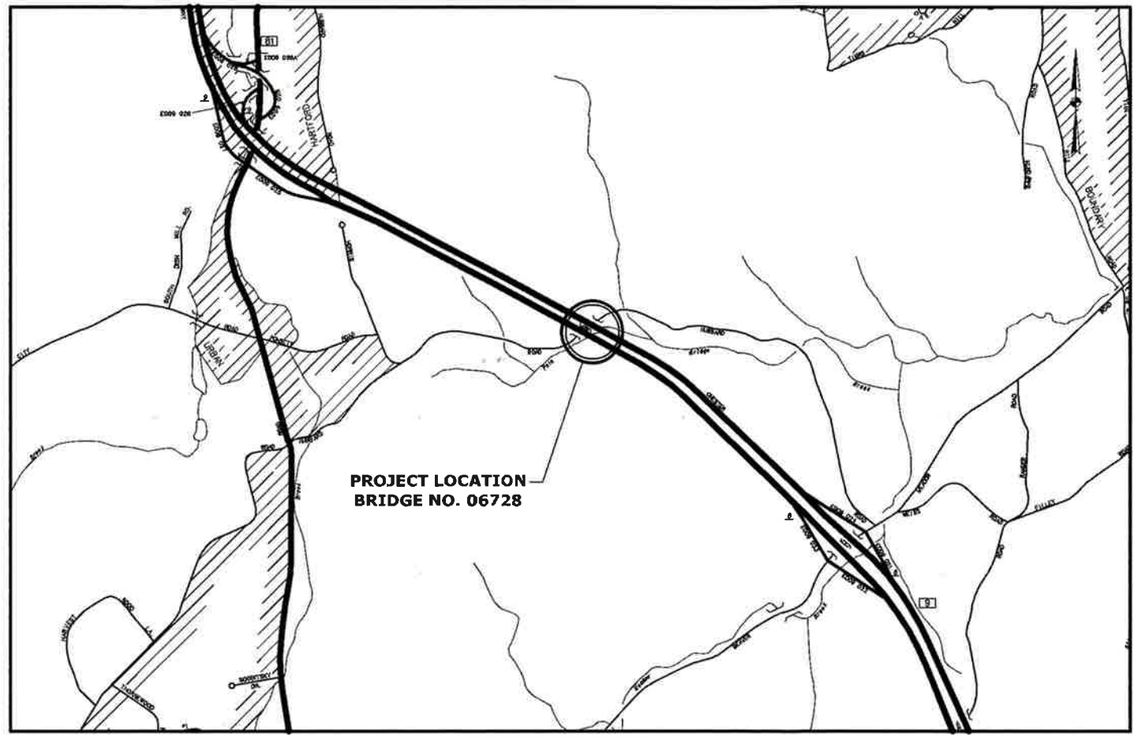
Applicant: State of Connecticut, Department of Transportation
Project No. 60-158 (Constr.), 60-158 (P.E.)
Rehabilitation of Bridge No. 06728 in Haddam
Route 9 over Pole Bridge Brook

List of Plan Sheets and Drawings

PMT-01	Title Sheet	October 2018
PMT-02	General Site Plan	October 2018
PMT-03	Wetland/Watercourse Impact Plan	October 2018
PMT-04	Elevation and Section Plan	October 2018
PMT-05	Staging and Water Handling Plan	October 2018
PMT-06	Seeding/Planting and Invasive Plan	October 2018



ENVIRONMENTAL PERMIT PLANS
STATE PROJECT NO. 60-158
REHABILITATION OF BRIDGE NO. 06728, ROUTE 9
IN THE TOWN OF HADDAM



LOCATION PLAN
SCALE: 1" = 1000'

GENERAL NOTES

1. THESE PLANS ARE INTENDED ONLY FOR ENVIRONMENTAL PERMITTING PURPOSES. THESE PLANS HOLD AUTHORITY FOR ALL ACTIVITIES CONCERNING THE REGULATED AREA. FOR DETAILED PLANIMETRIC INFORMATION AND PAYMENT REFER TO THE APPLICABLE CONTRACT DOCUMENTS.
2. THE DEPARTMENT OF TRANSPORTATION WILL ONLY SUBMIT REVISIONS TO DEEP AND USACE FOR CHANGES TO THE DESIGN THAT WILL AFFECT REGULATED AREAS.
3. FOR A DESCRIPTION OF THE WATERCOURSES, WETLANDS AND WETLAND SOILS SEE RELEVANT SECTIONS OF THE PERMIT APPLICATION.
4. 400 FOOT GRID BASED ON CONNECTICUT COORDINATE SYSTEM N.A.D. 1927. VERTICAL DATUM BASED ON NGVD 1929.
5. ALL CONSTRUCTION ACTIVITIES WILL BE CONDUCTED IN ACCORDANCE WITH THE DEPARTMENT'S STANDARD SPECIFICATIONS FOR ROADS, BRIDGE, AND INCIDENTAL CONSTRUCTION, FORM 817, SECTION 1.10 AND WILL ALSO FOLLOW REQUIRED BEST MANAGEMENT PRACTICES (BMPs) AND SEDIMENT AND EROSION CONTROL MEASURES IN ACCORDANCE WITH THE 2002 EROSION & SEDIMENTATION CONTROL GUIDELINES AND THE 2004 STORMWATER QUALITY MANUAL.
6. WETLANDS DELINEATION BY FHI ON OCTOBER 2016.

LIST OF DRAWINGS	
DRAWING NO.	TITLE
PMT-01	TITLE SHEET
PMT-02	GENERAL SITE PLAN
PMT-03	WETLAND /WATERCOURSE IMPACT PLAN
PMT-04	ELEVATION AND SECTION PLAN
PMT-05	STAGING AND WATER HANDLING PLAN 06840
PMT-06	SEEDING/PLANTING AND INVASIVE PLAN

DESIGNED BY:
WMC CONSULTING ENGINEERS
87 HOLMES ROAD
NEWINGTON CT 06111

PLAN DATE: OCTOBER 24, 2018

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

60-158

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 10/24/2018

DESIGNER/DRAFTER: M. GREER
CHECKED BY: K. ELDER
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\01. Title Sheet Environmental Permit Plans.dgn

222

SIGNATURE/ BLOCK:

WMC Consulting Engineers
87 Holmes Road
Newington, CT 06111

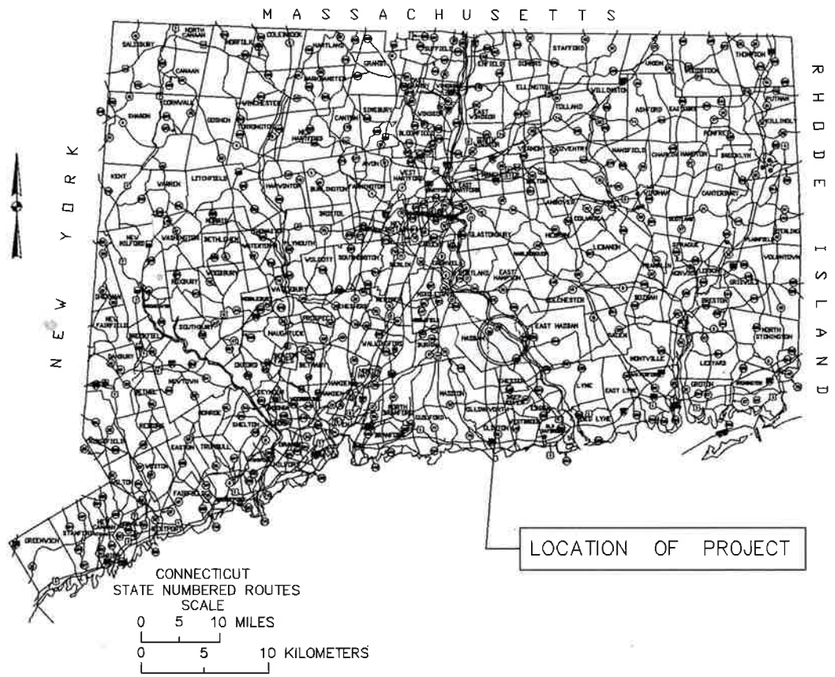
PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 06728, ROUTE 9 OVER POLE BRIDGE BROOK

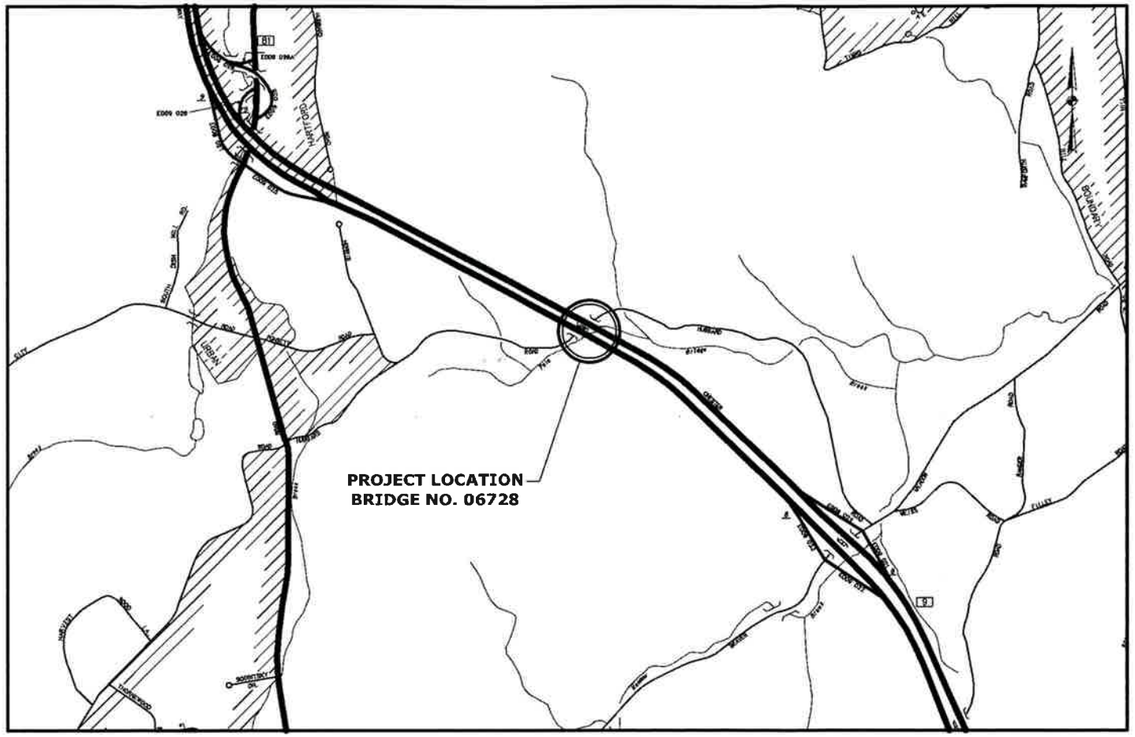
TOWN: HADDAM

DRAWING TITLE: TITLE SHEET

PROJECT NO. 60-158
DRAWING NO. PMT-01
SHEET NO.

ENVIRONMENTAL PERMIT PLANS
STATE PROJECT NO. 60-158
REHABILITATION OF BRIDGE NO. 06728, ROUTE 9
IN THE TOWN OF HADDAM





LOCATION PLAN
SCALE: 1" = 1000'

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PMT-06	SEEDING/PLANTING AND INVASIVE PLAN

DESIGNED BY:
WMC CONSULTING ENGINEERS
87 HOLMES ROAD
NEWINGTON CT 06111

PLAN DATE: OCTOBER 24, 2018

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

60-158

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Plotted Date: 10/24/2018

DESIGNER/DRAFTER: M. GREER
CHECKED BY: K. ELDER
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\01-Title Sheet Environmental Permit Plans.dgn

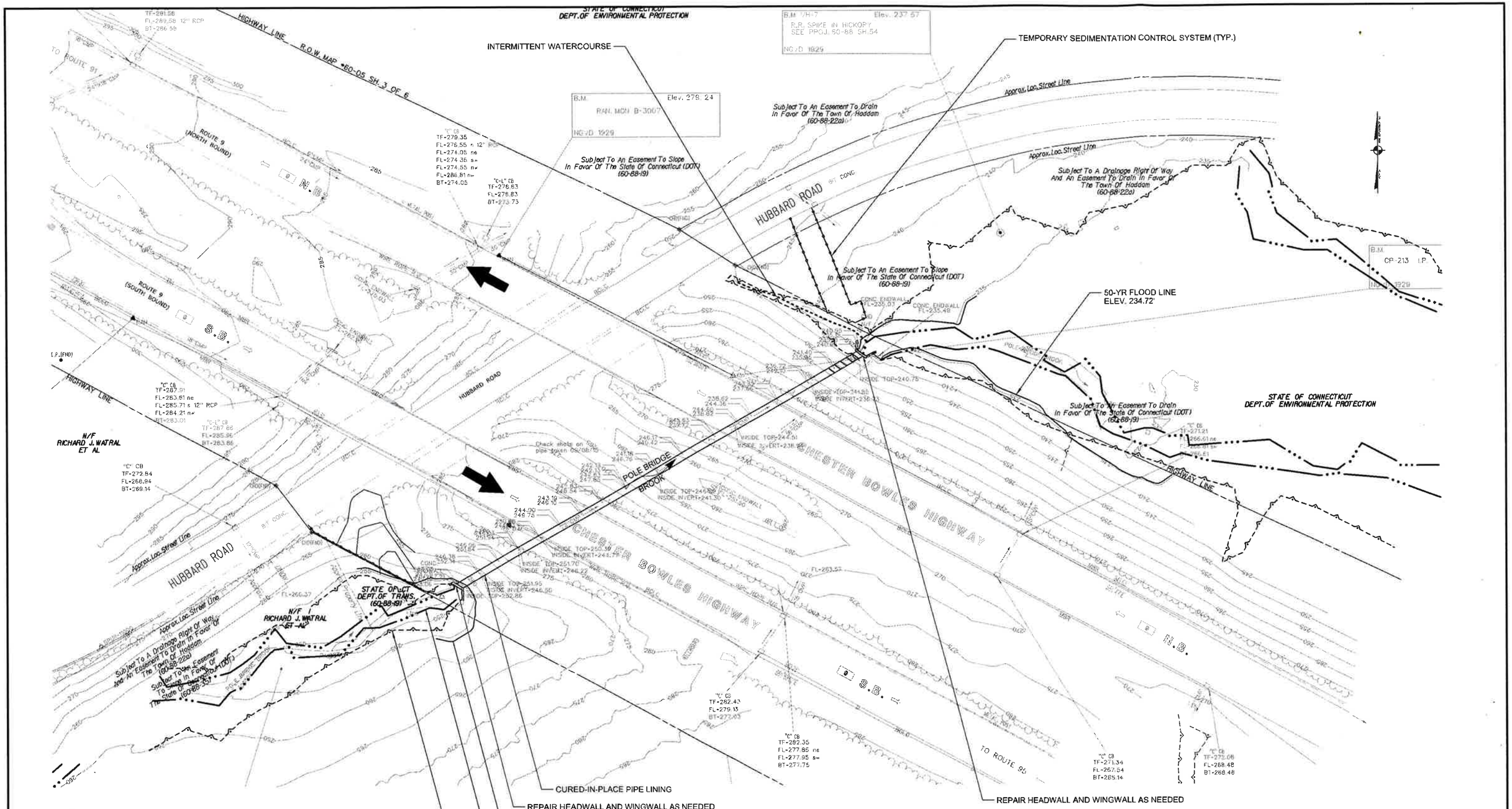
223

SIGNATURE/BLOCK:
WMC Consulting Engineers
87 Holmes Road
Newington, CT 06111

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 06728, ROUTE 9 OVER POLE BRIDGE BROOK

TOWN: **HADDAM**
DRAWING TITLE: **TITLE SHEET**

PROJECT NO. **60-158**
DRAWING NO. **PMT-01**
SHEET NO



LEGEND

- STATE/FEDERAL WETLANDS
- ORDINARY HIGH WATER (OHW)
- SEDIMENTATION CONTROL SYSTEM (SCS)

GENERAL SITE PLAN
SCALE: 1" = 40'

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 24, 2018

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

60-158

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Plotted Date: 10/24/2018

DESIGNER/DRAFTER: M. GREER
CHECKED BY: K. ELDER
SCALE IN FEET 0 40 80
SCALE 1"=40'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
224

Filename: ...\02_General Site Plan.dgn

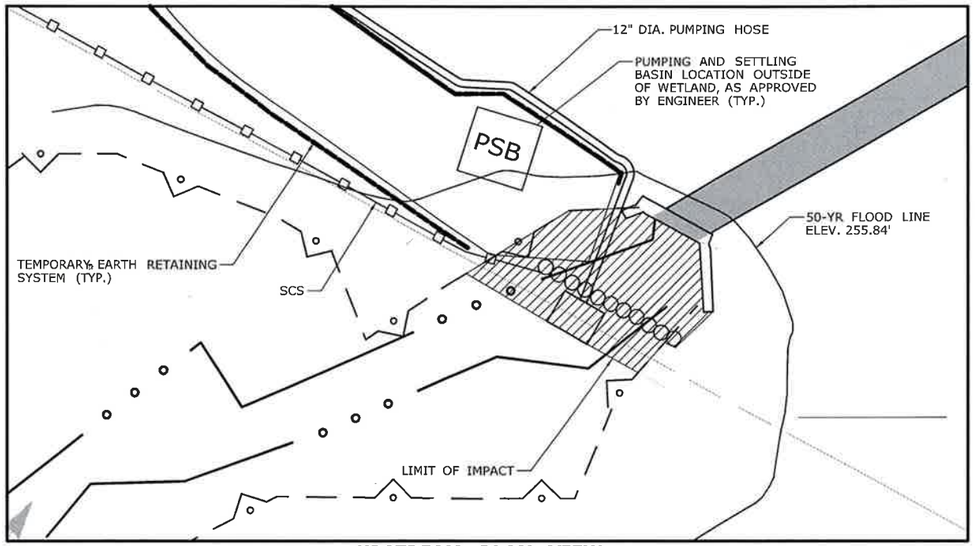
SIGNATURE/ BLOCK:

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 06728, ROUTE 9 OVER POLE BRIDGE BROOK

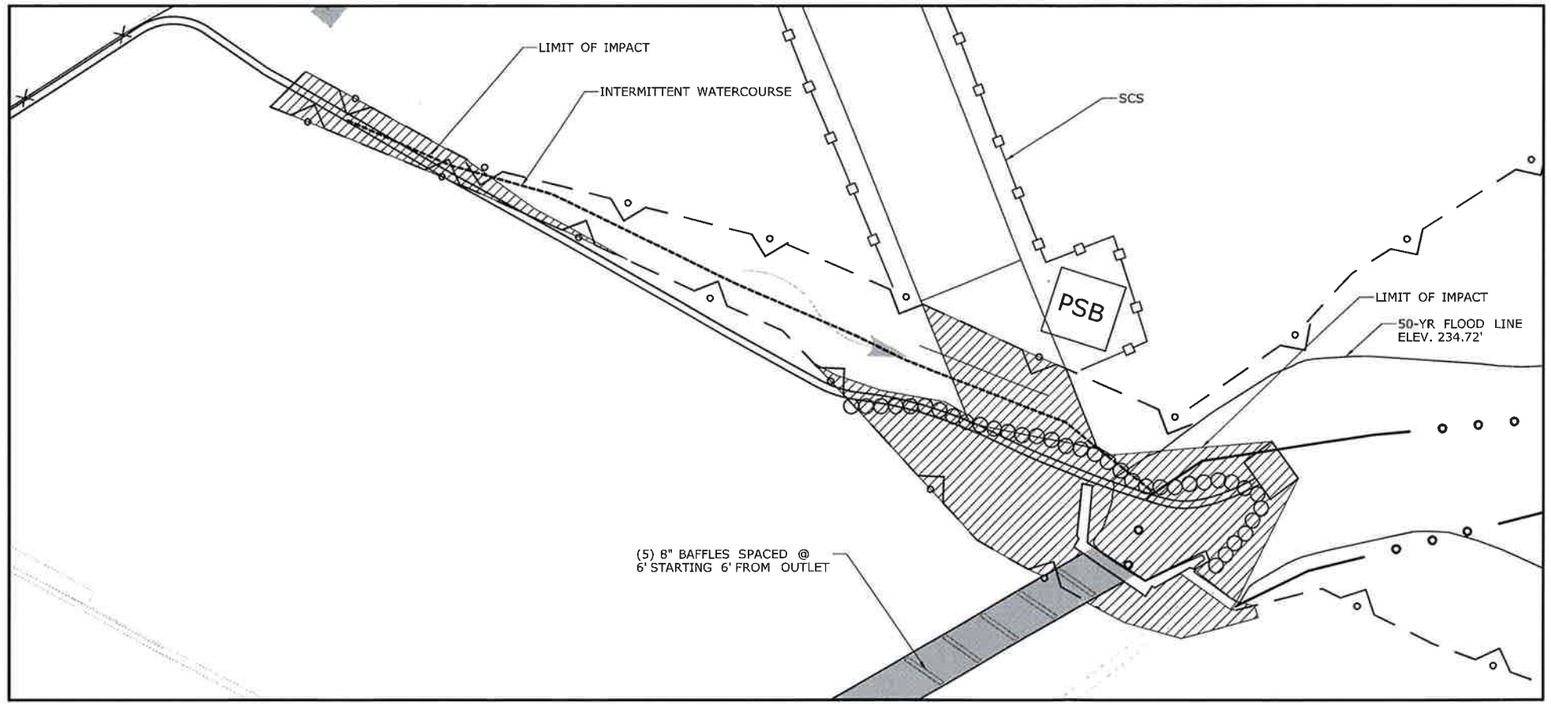
TOWN: HADDAM

DRAWING TITLE: GENERAL SITE PLAN

PROJECT NO. 60-158
DRAWING NO. PMT-02
SHEET NO.



UPSTREAM PLAN VIEW
SCALE: 1" = 10'



DOWNSTREAM PLAN VIEW
SCALE: 1" = 10'

SCALE 1" = 10'
20 10 0 10 20

LEGEND:

THE DEPARTMENT OF TRANSPORTATION WILL ONLY SUBMIT REVISIONS TO THE DEEP FOR CHANGES TO THE DESIGN THAT WILL EFFECT THE NOTED REGULATED AREAS.

- PERMANENT WETLAND IMPACTS
- TEMPORARY WETLAND IMPACTS
- STATE/FEDERAL WETLANDS
- ORDINARY HIGH WATER (OHW)
- SEDIMENTATION CONTROL SYSTEM (SCS)
- TEMPORARY-WATER-HANDLING-COFFERDAM

NOTE:
THE CONTRACTOR SHALL NOT WORK WITHIN THE LIMITS OF THE WETLANDS AND WATERCOURSE WITH THE EXCEPTION OF THOSE AREAS DELINEATED AS TEMPORARY OR PERMANENT IMPACTS TO THE WETLANDS AND WATERCOURSE. ALL DISTURBED AREAS SHALL BE RESTORED.

WETLAND IMPACT TABLE			
	WETLAND IMPACTS	WATERWAY IMPACTS	TOTAL
PERMANENT IMPACTS	0 S.F (0.000 AC.)	2,385 S.F (0.055 AC.)	2,385 S.F (0.055 AC.)
TEMPORARY IMPACTS	1,263 S.F (0.029 AC.)	526 S.F (0.012 AC.)	1,789 S.F (0.041 AC.)
TOTAL IMPACTS	1,263 S.F (0.029 AC.)	2,911 S.F (0.067 AC.)	4,174 S.F (0.096 AC.)

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 24, 2018

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 11/2/2018

DESIGNED/DRAFTER: M. GREER
CHECKED BY: K. ELDER
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\03_Wetland Watercourse Impact Plan.dgn

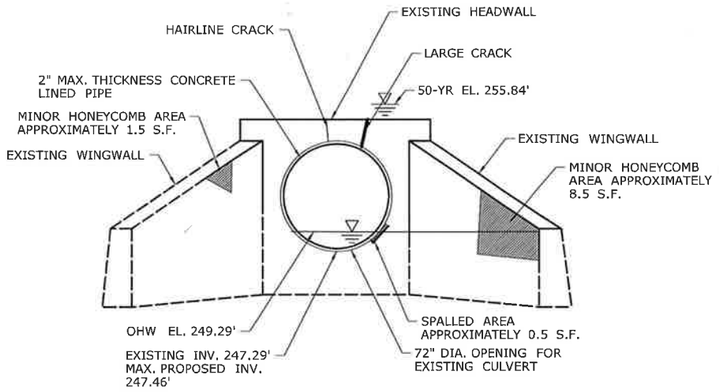
SIGNATURE/ BLOCK:

PROJECT TITLE: REHABILITATION OF BRIDGE NO. 06728, ROUTE 9 OVER POLE BRIDGE BROOK

TOWN: HADDAM

DRAWING TITLE: WETLAND/WATERCOURSE IMPACT PLAN

PROJECT NO. 60-158
DRAWING NO. PMT-03
SHEET NO.



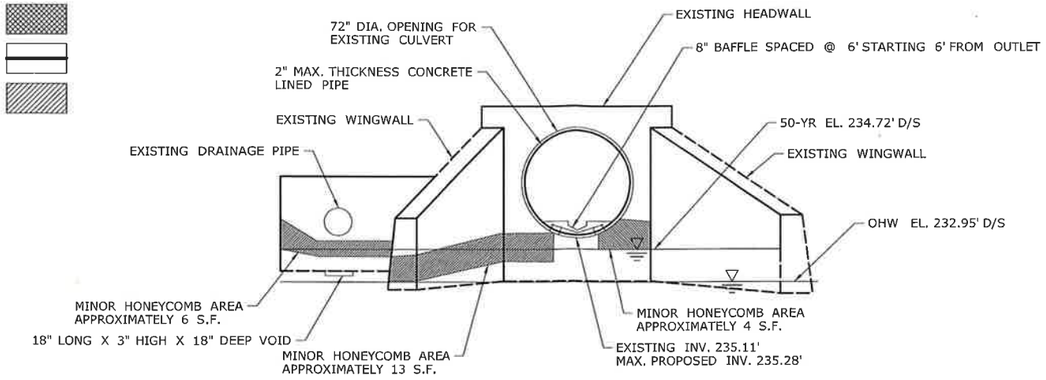
UPSTREAM ELEVATION
SCALE: ¼" = 1'-0"

LEGEND

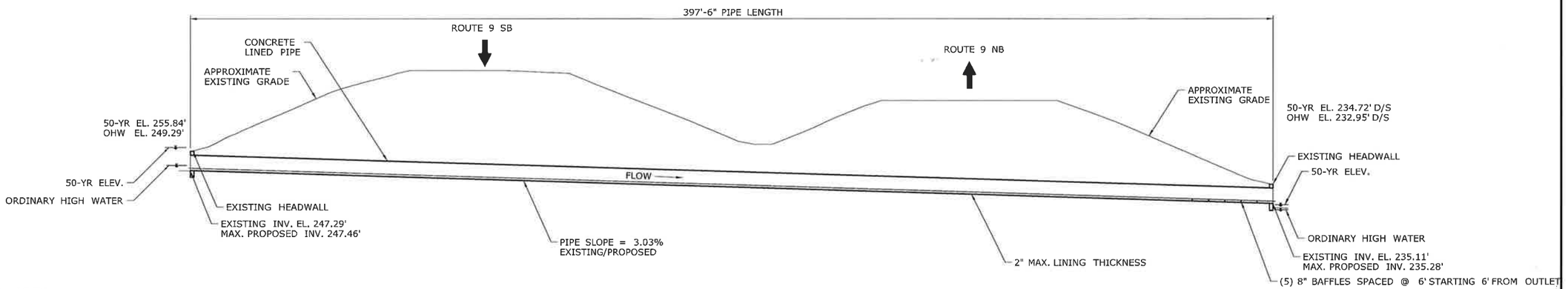
SPALLED AREA

CRACK

HONEYCOMB AREA



DOWNSTREAM ELEVATION
SCALE: ¼" = 1'-0"

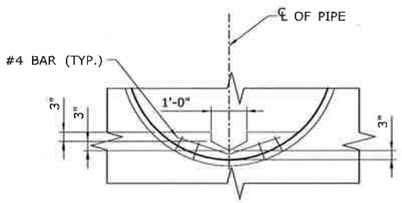


TYPICAL BRIDGE SECTION
SCALE: 1" = 20'

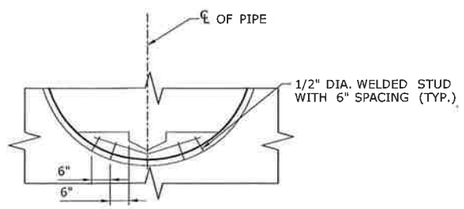
OPENNESS RATIO (OR):
OR = OPEN AREA / BRIDGE LENGTH
OR = 26.7 S.F / 396.5 L.F = 0.07

BANKFULL WIDTH (BFW):
BFW = 14.5 FT. EXISTING UPSTREAM (OHW)
1.2 BFW = 17.4 FT.
5.83 FT. < 17.4 FT. PROPOSED BRIDGE SPAN

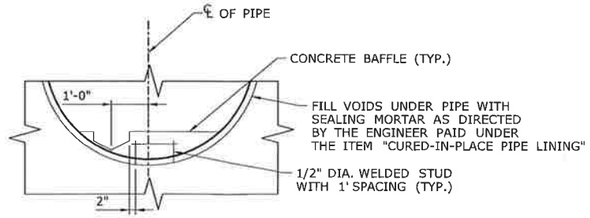
HYDRAULIC DATA	
DRAINAGE AREA	0.48 SQ. MILES
DESIGN FREQUENCY	50 YEAR
DESIGN DISCHARGE	290 C.F.S.
AVERAGE DAILY FLOW ELEVATION	247.69 FT ESTIMATED
UPSTREAM DESIGN WATER SURFACE ELEVATION	255.84 FT.
DOWNSTREAM DESIGN WATER SURFACE ELEVATION	234.72 FT.
(NOTE- NO SCOUR INFORMATION FOR HYDRAULIC DATA TABLE AS THIS IS A CULVERT	



TYPICAL BAFFLE NOTCH DETAIL
SCALE: ½" = 1'-0"



OUTLET BAFFLE DETAIL
SCALE: ½" = 1'-0"



INTERIOR BAFFLE DETAIL
SCALE: ½" = 1'-0"

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 24, 2018

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 11/2/2018

DESIGNER/DRAFTER: M. GREER
CHECKED BY: K. ELDER
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\04_Elevation and Section Plan.dgn

SIGNATURE/ BLOCK:

PROJECT TITLE: REHABILITATION OF BRIDGE NO. 06728, ROUTE 9 OVER POLE BRIDGE BROOK

TOWN: HADDAM

DRAWING TITLE: ELEVATION AND SECTION PLAN

PROJECT NO. 60-158
DRAWING NO. PMT-04
SHEET NO.

LEGEND

- STATE/FEDERAL WETLANDS
- ORDINARY HIGH WATER (OHW)
- SEDIMENTATION CONTROL SYSTEM (SCS)
- TEMPORARY-WATER-HANDLING-COFFERDAM

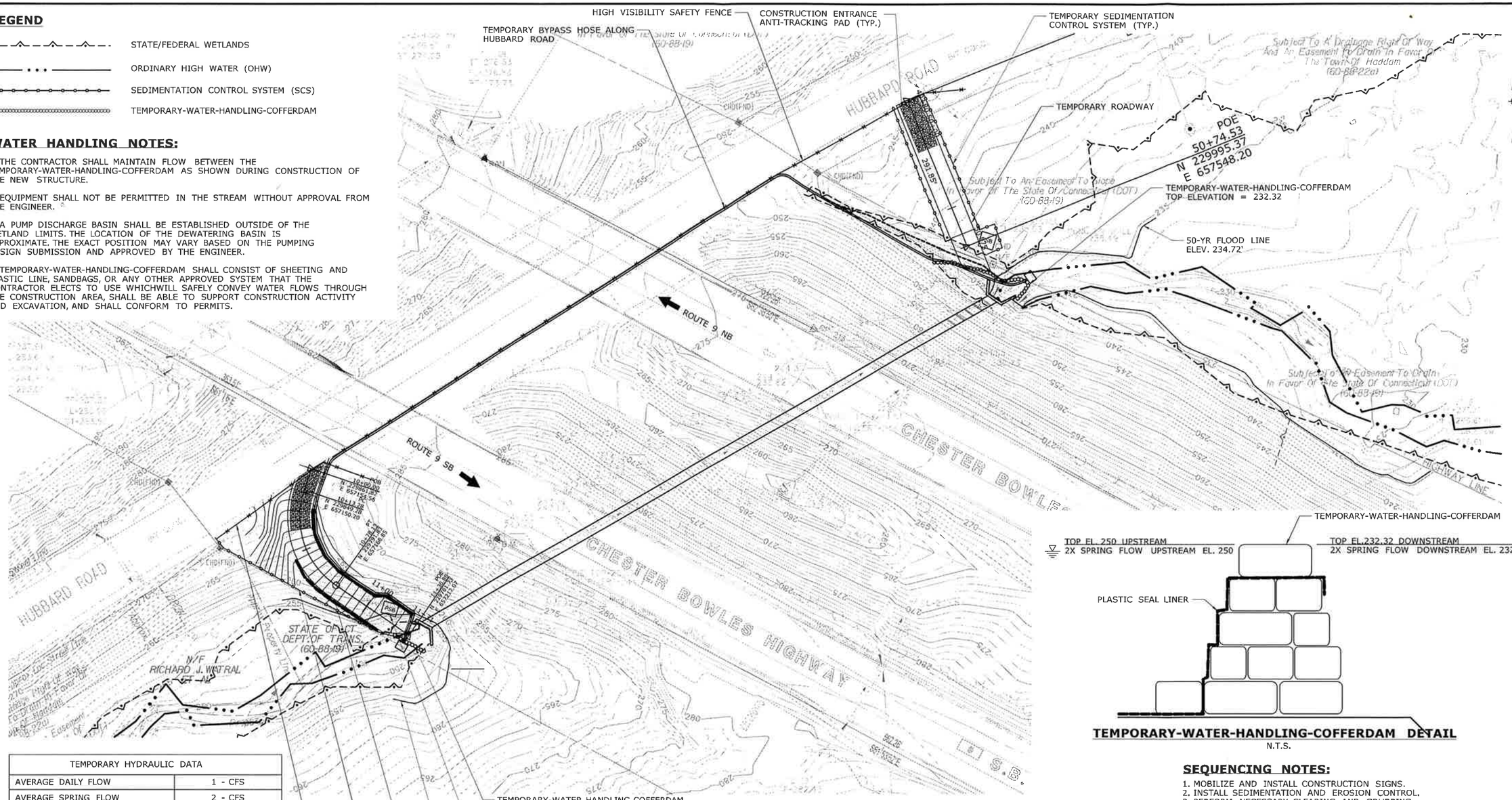
WATER HANDLING NOTES:

1. THE CONTRACTOR SHALL MAINTAIN FLOW BETWEEN THE TEMPORARY-WATER-HANDLING-COFFERDAM AS SHOWN DURING CONSTRUCTION OF THE NEW STRUCTURE.

2. EQUIPMENT SHALL NOT BE PERMITTED IN THE STREAM WITHOUT APPROVAL FROM THE ENGINEER.

3. A PUMP DISCHARGE BASIN SHALL BE ESTABLISHED OUTSIDE OF THE WETLAND LIMITS. THE LOCATION OF THE DEWATERING BASIN IS APPROXIMATE. THE EXACT POSITION MAY VARY BASED ON THE PUMPING DESIGN SUBMISSION AND APPROVED BY THE ENGINEER.

4. TEMPORARY-WATER-HANDLING-COFFERDAM SHALL CONSIST OF SHEETING AND PLASTIC LINE, SANDBAGS, OR ANY OTHER APPROVED SYSTEM THAT THE CONTRACTOR ELECTS TO USE WHICHWILL SAFELY CONVEY WATER FLOWS THROUGH THE CONSTRUCTION AREA, SHALL BE ABLE TO SUPPORT CONSTRUCTION ACTIVITY AND EXCAVATION, AND SHALL CONFORM TO PERMITS.



TEMPORARY HYDRAULIC DATA	
AVERAGE DAILY FLOW	1 - CFS
AVERAGE SPRING FLOW	2 - CFS
2-YR FREQUENCY DISCHARGE	30 - CFS
TEMPORARY DESIGN DISCHARGE	4 - CFS (1800 gpm)
TEMPORARY DESIGN FREQUENCY	2 x AVERAGE SPRING FLOW
TEMPORARY WATER SURFACE ELEVATION UPSTREAM	250 FT. (MAX. HEAD AT FLOW DIVERSION STRUCTURE)
TEMPORARY WATER SURFACE ELEVATION DOWNSTREAM	232.32 FT.

NOTE:
UPSTREAM TEMPORARY-WATER-HANDLING-COFFERDAM STRUCTURE TOP ELEVATION SHALL BE 2 FT ABOVE STREAMBED TO CREATE SUMP FOR PUMPING (TOP ELEVATION = 250').

SCALE 1" = 30'
60 30 0 60

HANDLING WATER CONCEPT
SCALE: 1" = 30'

TEMPORARY-WATER-HANDLING-COFFERDAM DETAIL
N.T.S.

SEQUENCING NOTES:

1. MOBILIZE AND INSTALL CONSTRUCTION SIGNS.
2. INSTALL SEDIMENTATION AND EROSION CONTROL.
3. PERFORM NECESSARY CLEARING AND GRUBBING.
4. CONSTRUCT TEMPORARY ROADWAY UPSTREAM AND DOWNSTREAM.
5. INSTALL TEMPORARY-WATER-HANDLING-COFFERDAM SYSTEM.
6. INSTALL TEMPORARY BYPASS HOSE AND PUMP POLE BRIDGE BROOK.
7. CLEAN AND RINSE INSIDE OF EXISTING 72" PIPE.
8. REPAIR AND RELINE THE EXISTING PIPE AND ENDWALLS.
9. REMOVE TEMPORARY-WATER-HANDLING-COFFERDAM AND TEMPORARY BYPASS HOSE.
10. PERFORM EMBANKMENT GRADING.
11. RESTORE STEAMBED AND SEED/PLANT PER PLAN.

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 24, 2018

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 11/2/2018

DESIGNER/DRAFTER: M. GREER
CHECKED BY: K. ELDER
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\05.Staging and Water Handling Plan.dgn

SIGNATURE/ BLOCK:

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 06728, ROUTE 9 OVER POLE BRIDGE BROOK

TOWN: HADDAM

DRAWING TITLE: STAGING AND WATER HANDLING PLAN

PROJECT NO. 60-158
DRAWING NO. PMT-05
SHEET NO.

PERMIT PLANT LIST

KEY	BOTANICAL NAME	COMMON NAME	SIZE	QTY.	SPACING	WETLAND INDICATOR
Am.c.	Amelanchier canadensis	Shadblow Serviceberry	4'-5' Ht. B.B.	9	Field Locate	FAC
A.r.	Acer Rubrum	Red Maple	2 1/2" - 3" Cal. B.B.	7	Field Locate	FAC
A.r.w.	Acer Rubrum	Red Maple	3' - 4' Ht. Whips B.R.	38	Field Locate	FAC
C.s.	Cornus sericea	Redosier Dogwood	24"-36" Ht. Cont.	7	Field Locate	FACW
Q.r.w.	Quercus rubra	Northern Red Oak	24" - 36" Ht. No. 3 Cont.	38	Field Locate	FACU
V.d	Viburnum dentatum	Arrowwood Viburnum	24" - 36" Ht. No. 3 Cont.	10	Field Locate	FAC
	Control and Removal of Invasive Vegetation					
	Conservation Seeding for Slopes					
	Wetland Grass Establishment					
	Wood Chip Mulch					

NOTES

1. PLANTINGS ON THIS SHEET ARE FOR ENVIRONMENTAL PERMITTING. ANY CHANGES TO PERMIT PLANTINGS SHALL BE COORDINATED WITH THE DEPARTMENT'S OFFICE OF ENVIRONMENTAL PLANNING.

2. WOOD CHIP MULCH SHALL NOT BE PLACED IN THE WETLAND AREA.

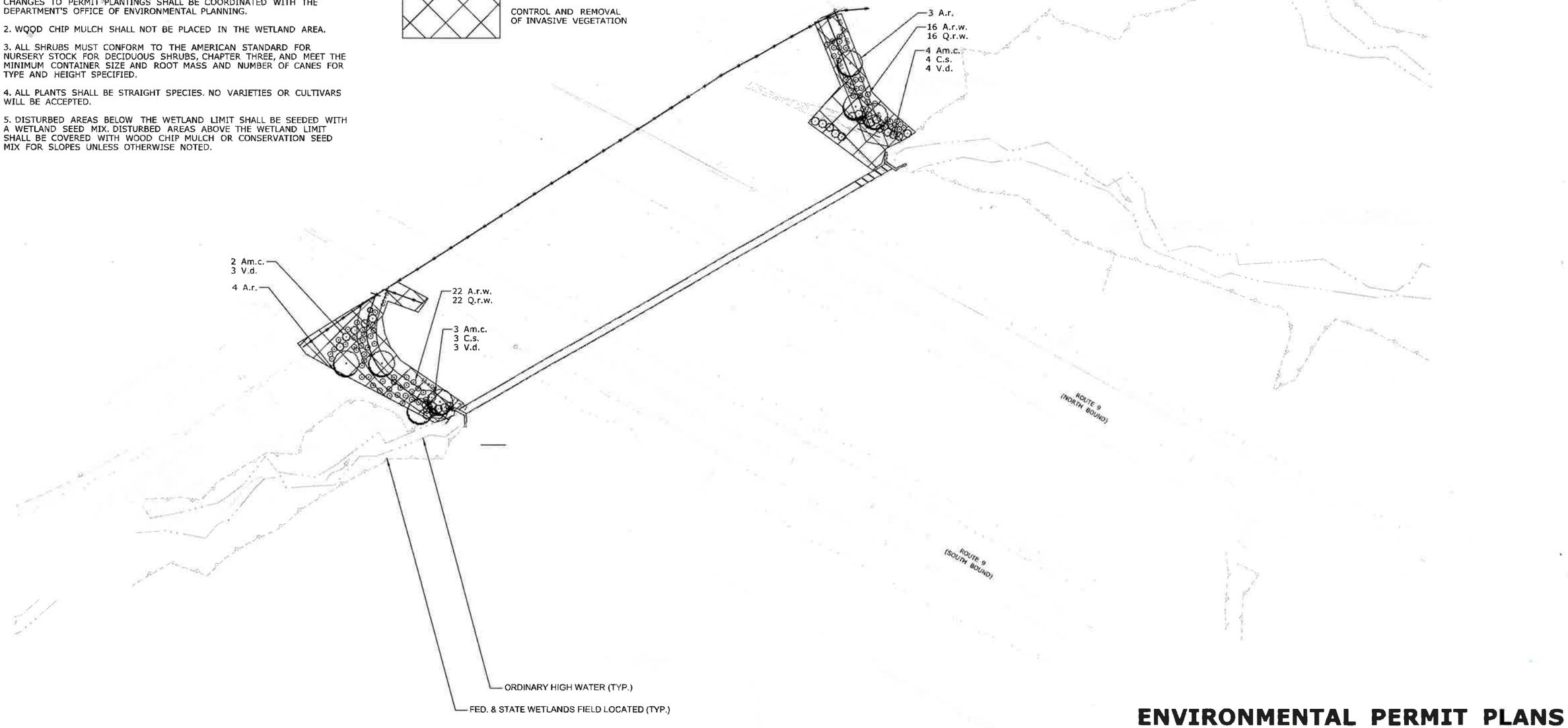
3. ALL SHRUBS MUST CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK FOR DECIDUOUS SHRUBS, CHAPTER THREE, AND MEET THE MINIMUM CONTAINER SIZE AND ROOT MASS AND NUMBER OF CANES FOR TYPE AND HEIGHT SPECIFIED.

4. ALL PLANTS SHALL BE STRAIGHT SPECIES. NO VARIETIES OR CULTIVARS WILL BE ACCEPTED.

5. DISTURBED AREAS BELOW THE WETLAND LIMIT SHALL BE SEEDED WITH A WETLAND SEED MIX. DISTURBED AREAS ABOVE THE WETLAND LIMIT SHALL BE COVERED WITH WOOD CHIP MULCH OR CONSERVATION SEED MIX FOR SLOPES UNLESS OTHERWISE NOTED.

KEY

CONTROL AND REMOVAL OF INVASIVE VEGETATION



ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 5, 2018

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 10/5/2018

DESIGNER/DRAFTER: MV
CHECKED BY: EJ
SCALE IN FEET 0 40 80
SCALE 1"=40'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\HW.MSH.0060-0158_LDS.dgn

SIGNATURE/ BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 06728, ROUTE 9 OVER POLE BRIDGE BROOK

TOWN: HADDAM

DRAWING TITLE: PERMIT PLANTING PLAN

PROJECT NO. 60-158
DRAWING NO PMT-06
SHEET NO

Attachment C: Environmental Report

Application for Department of the Army Permit

Applicant: State of Connecticut, Department of Transportation
Project No. 60-158 (Constr.), 60-158 (P.E.)
Rehabilitation of Bridge No. 06728 in Haddam
Route 9 over Pole Bridge Brook

List of Attachments

- Environmental Report, Bridge No. 06728
  Prepared by Fitzgerald & Halliday, Inc.
  Date: March 2018
  Revised August 2018

Technical Memorandum

Connecticut Bridge Program
Route 9 over Pole Bridge Brook
CTDOT Project # 60-158
Bridge Number 06728

Haddam, Connecticut

Environmental Report
(Baseline Conditions)

Prepared under contract to:

Close, Jensen and Miller, P.C.

For:

The Connecticut Department of Transportation

By:

FITZGERALD & HALLIDAY, INC.
416 Asylum Street
Hartford, CT 06103

March 2018
Revised August 2018

Table of Contents

1.0 INTRODUCTION 3
2.0 DESCRIPTION OF EXISTING WATER RESOURCES 3
3.0 NRCS MAPPED SOILS 11
4.0 FEDERAL AND STATE LISTED THREATENED AND ENDANGERED SPECIES AND HABITAT 13
5.0 INVASIVE PLANT SPECIES 14
REFERENCES 17

APPENDIX A: WETLAND PHOTOGRAPHS 18
APPENDIX B: WETLAND DETERMINATION FORMS 19
APPENDIX C: WETLAND FUNCTION-VALUE EVALUATION FORMS 20
APPENDIX D: USFWS CONSULTATION FORM 21

1.0 INTRODUCTION

Fitzgerald & Halliday, Inc. (FHI) was retained by Close, Jensen and Miller (CJMPC) to identify and characterize natural habitats and vegetation communities that may be impacted by work related to the reconstruction and rehabilitation of Bridge No. 06728, State Route 9 over Pole Bridge Brook in Haddam, Connecticut. These efforts were confined to the proposed limit of project investigation, as depicted in Figure 1.

The proposed project area was investigated in support of Connecticut Department of Transportation (CTDOT) Project No. 60-158. Habitat characterizations were conducted within the project area by FHI ecologists in October 2016.

2.0 DESCRIPTION OF EXISTING WATER RESOURCES

Existing wetland, watercourse, floodplain, and aquifer protection areas within the project study limits are described below.

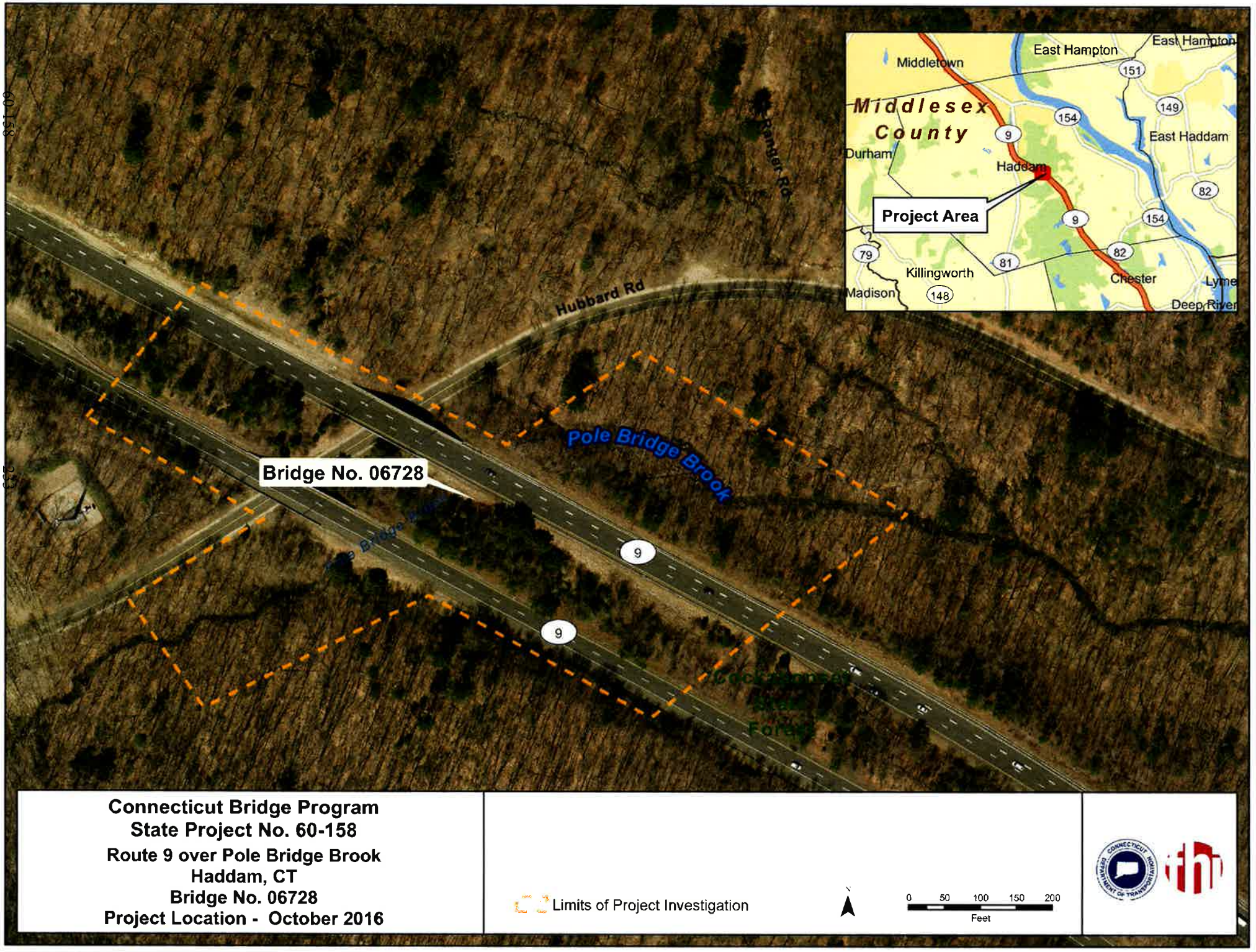
Wetlands & Watercourses

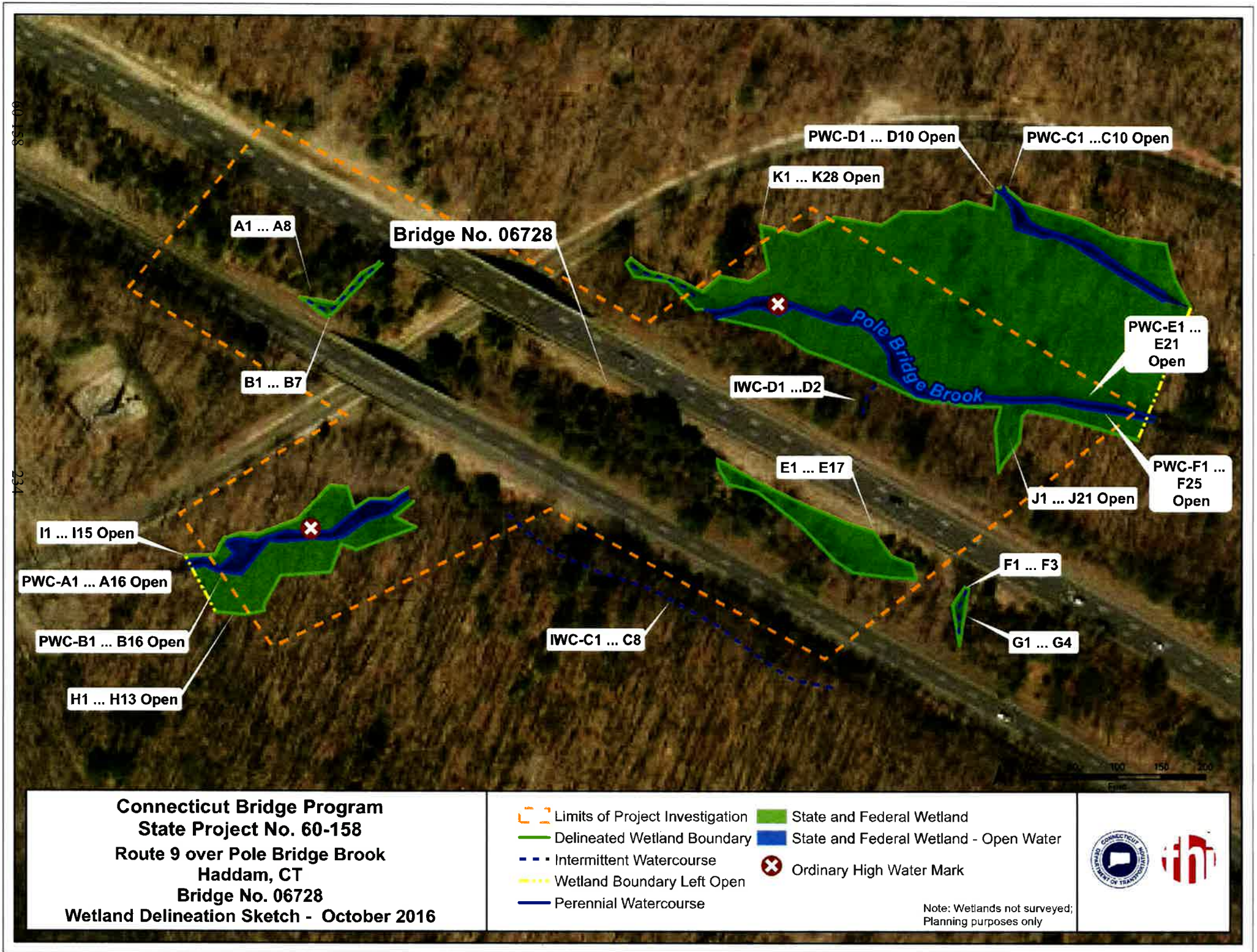
FHI's soil scientists flagged the boundaries of six wetlands, perennial watercourses, and four intermittent watercourses within the project study area, each identified by separate flag line(s), as depicted in Figure 2. Some of the delineated wetlands extend beyond the project study area and, therefore, are depicted as open polygons on project mapping. Where applicable, this is noted in the descriptions below. All identified wetland systems qualify as both state and federal resources.

Detailed descriptions of the delineated wetland systems are presented below. The description includes: the approximate location of the flag series demarcating the wetland; the wetland's connectivity to watercourses and adjacent wetlands; dominant vegetation present within the wetland; the Cowardin classification of the wetland; and the wetlands functions and values. See Appendix A for photographs of the delineated wetlands.

Wetland AB [Flag Numbers A-1 to A-8 and B-1 to B-7 closed boundary]

Wetland AB is a palustrine forested (PFO) wetland located between the northbound and southbound lanes of Route 9, just to the northwest of Hubbard Road. An intermittent watercourse flows through this wetland from south to north and connects to a culvert at the southwest end. The intermittent watercourse flows into a culvert at the northeast end under Route 9 and eventually connects to Wetland JK.


60-158
223
Middletown
East Hampton
East Hampton
Middlesex County
151
149
154
9
East Haddam
Durham
Haddam
82
Project Area
9
154
79
81
82
Killingworth
Chester
Lyme
Madison
148
Deep River
Ranger Rd
Hubbard Rd
Pole Bridge Brook
Bridge No. 06728
9
9
Cockaponset State Forest
Connecticut Bridge Program
State Project No. 60-158
Route 9 over Pole Bridge Brook
Haddam, CT
Bridge No. 06728
Project Location - October 2016
Limits of Project Investigation
0 50 100 150 200
Feet


60-158
234
PWC-D1 ... D10 Open
PWC-C1 ...C10 Open
K1 ... K28 Open
A1 ... A8
Bridge No. 06728
Pole Bridge Brook
PWC-E1 ... E21 Open
B1 ... B7
IWC-D1 ...D2
E1 ... E17
PWC-F1 ... F25 Open
J1 ... J21 Open
I1 ... I15 Open
PWC-A1 ... A16 Open
F1 ... F3
PWC-B1 ... B16 Open
IWC-C1 ... C8
G1 ... G4
H1 ... H13 Open
Connecticut Bridge Program
State Project No. 60-158
Route 9 over Pole Bridge Brook
Haddam, CT
Bridge No. 06728
Wetland Delineation Sketch - October 2016
Limits of Project Investigation
Delineated Wetland Boundary
Intermittent Watercourse
Wetland Boundary Left Open
Perennial Watercourse
State and Federal Wetland
State and Federal Wetland - Open Water
Ordinary High Water Mark
Note: Wetlands not surveyed;
Planning purposes only

This narrow, forested wetland is dominated by quaking aspen *(Populus tremuloides)* and white pine *(Pinus strobus)* in the overstory and black elderberry *(Sambucus nigra)*, multiflora rose (*Rosa multiflora)*, hemp dogbane *(Apocynum cannabinum)*, Oriental bittersweet *(Celastrus orbiculatus)*, and grape vines (*Vitis* spp.) in the understory. The NRCS mapped soil in, and adjacent to Wetland AB is Udorthent-Urban land complex. Within these mapped soil units are areas of saturation and/or flooding where hydric soil indicators were observed. The principal function and value of this wetland is sediment/toxicant retention from Route 9.

IWC B [Flag Numbers IWC-B1 to IWC-B4 closed boundary]

Intermittent Watercourse B originates from a culvert adjacent to the Route 9 southbound lane and discharges, via surface flow, into a culvert that is open to Pole Bridge Brook below. This IWC is comprised of gravel, compacted soils, and pavement and flows from southeast to northwest. The IWC has mixed deciduous trees on both sides but there is no vegetation within the defined channel.

Wetland E [Flag Numbers E-1 to E-17 closed boundary]

Wetland E is a palustrine emergent (PEM) wetland located between the northbound and southbound lanes of Route 9, just to the southeast of IWC B. This linear wetland is in a depression area that collects overland flow from both the northbound and southbound lanes on Route 9. There is no clearly defined inlet or outlet within this wetland.

This emergent wetland is dominated by switchgrass (*Panicum virgatum*), tussock sedge (*Carex stricta*), common reed (*Phragmites australis*), slender goldenrod (*Solidago erecta*), and jewelweed. Additionally, there are populations of autumn olive (*Elaeagnus umbellata*), speckled alder (*Alnus incana*), and northern bayberry (*Morella pensylvanica*) on the edges of the wetland. The NRCS mapped soil in, and adjacent to Wetland E is Udorthent-Urban land complex. Within these mapped soil units are areas of saturation and/or flooding where hydric soil indicators were observed. The principal functions and values of this wetland are sediment/toxicant retention from Route 9, groundwater recharge, and wildlife habitat for small mammals and birds.

Wetland FG [Flag Numbers F-1 to F-3 and G-1 to G-4 closed boundary]

Wetland FG is a PFO wetland located between the northbound and southbound lanes of Route 9, just to the southeast of Wetland E. This linear wetland forms the channel edges of an intermittent watercourse that flows from a culvert on the southwest end to a culvert on the northeast end. Within the intermittent watercourse there is an armored rocky substrate with vegetation growing among the rocks.

This forested wetland is dominated by red maple, green ash *(Fraxinus pennsylvanica)*, multiflora rose, Japanese barberry *(Berberis thunbergii)*, and Oriental bittersweet. The NRCS mapped soil in, and adjacent to Wetland FG is Udorthent-Urban land complex. Within these mapped soil units are areas of saturation and/or flooding were hydric soil indicators were observed. The principal function and value of this wetland is sediment/toxicant retention from Route 9.

Wetland HI [Flag Numbers H-1 to H-13 and I-1 to I-15, containing PWC-A1 to PWC-A16 and PWC-B1 to PWC-B16 open boundary]

Wetland HI is a PFO wetland at the southwest corner of Hubbard Road and the southbound lane of Route 9. This wetland, which forms the banks of Pole Bridge Brook, extends outside of the limits of project investigation to the southwest. Pole Bridge Brook, flows down gradient from the southwest to the northeast, where it passes through a large culvert under Route 9 into Wetland JK (described below). The "I" line of this wetland, located on the north side of the system, is located at the bottom of a steep slope leading up to Hubbard Road. The "H" line opens into an upland hardwood forest area to the south. There are scattered large rocks and boulders throughout the wetland and within the Brook.

This forested wetland is dominated by red maple, yellow birch (*Betula alleghaniensis*), northern spicebush (*Lindera benzoin*), American witch hazel (*Hamamelis virginiana*), coastal sweet pepperbush (*Clethra alnifolia*), sensitive fern (*Onoclea sensibilis*), Christmas fern (*Polystichum acrostichoides*), common reed, and skunk cabbage (*Symplocarpus foetidus*). The NRCS mapped soils in, and adjacent to Wetland HI are composed of the following two units: a Ridgebury, Leicester, and Whitman soil unit, and a Paxton and Montauk soil unit. Within these mapped soil units are areas of saturation and/or flooding where hydric soil indicators were observed. The principal functions and values of this wetland are wildlife habitat, shoreline stabilization, and floodflow alteration. There is also minor functionality of groundwater recharge in low lying areas.

IWC C [Flag Numbers IWC-C1 to IWC-C8 closed boundary]

Intermittent Watercourse C originates from a culvert adjacent to the Route 9 southbound lane and disperses into the rocky ground just east of Wetland HI. This IWC is comprised of compacted soils and flows from southeast to northwest. The IWC has mixed deciduous trees on both sides but there is no vegetation with the defined channel.

Wetland JK [Flag Numbers J-1 to J-21 and K-1 to K-28, containing PWC-C1 to PWC-C10, PWC-D1 to PWC-D10, PWC-E1 to PWC-E21, and PWC-F-1 to PWC-F25 open boundary]

Wetland JK is a PFO wetland at the southeast corner of Hubbard Road and the northbound lane of Route 9. This wetland, which forms the banks of Pole Bridge Brook at the southern end and an unnamed perennial watercourse at the northern end, extends outside of the limits of project investigation to the southeast. Pole Bridge Brook and the unnamed perennial watercourse both flow in a northwest to southeast direction. These streams eventually join and flow into the Mill River, outside of the limits of project investigation. Pole Bridge Brook emerges from under Route 9, from which it is connected to Wetland HI (described above). The "J" line, located at the southern end of the system, is situated at the base of the steep slope leading up to the northbound lane of Route 9. There are several culverts that lead into the wetland from Route 9. One of the culverts drains into IWC D (described below). The "K" line, located at the northern end of this system, is situated at the base of a slope leading up to Hubbard Road. There are scattered large rocks and boulders throughout the wetland and within the watercourses.

This forested wetland is dominated by red maple, northern spicebush, American witch hazel, coastal sweet pepperbush, sensitive fern, Christmas fern, and skunk cabbage. The NRCS soils in and adjacent to Wetland HI are mapped as the following units: Ridgebury, Leicester, and Whitman soils; and Paxton and Montauk soils. Within these mapped soil units are areas of saturation and/or flooding where hydric soil indicators were observed. The principal functions and values of this wetland are wildlife habitat, shoreline stabilization, groundwater recharge, and floodflow alteration.

IWC D [Flag Numbers IWC-D1 to IWC-D2 closed boundary]

Intermittent Watercourse D originates from a culvert adjacent to the Route 9 northbound lane and flows into Wetland JK (described above). This IWC is comprised of compacted soils and large stones and flows from south to north. The IWC has mixed deciduous trees on both sides, but there is no vegetation with the defined channel.

Within the study area, the undeveloped, non-wetland areas consist of mixed hardwood forested areas that can be classified as typical oak-hickory forests. These upland areas are surficially dominated by uneven, rock and boulder strewn Paxton and Montauk, extremely stony soils with gently undulating topography.

The vegetation within these upland forested areas is dominated by red oak (*Quercus rubra*), black oak (*Quercus velutina*), shagbark hickory (*Carya ovata*), red maple, sugar maple (*Acer saccharum*), mapleleaf viburnum (*Viburnum acerifolium*), roundleaf greenbrier

(*Smilax rotundifolia*), partridgeberry (*Mitchella repens*), and spotted wintergreen (*Chimaphila umbellata*).

Surface Water Quality

The entire study area is within Basin Number 4015-01-1 of the Subregional Drainage Basin of Mill Creek, which discharges to the Connecticut Main Stem Regional Basin of the Connecticut Major Basin. Pole Bridge Brook and the unnamed perennial watercourse at the northern end of the study area are both classified by the Connecticut Department of Energy & Environmental Protection (CT DEEP) as surface water quality classification "A". According to CT DEEP Surface Water Quality Standards (Effective October 2013), designated uses of "Class A" surface waters include "potential drinking water supply, fish and wildlife habitat, recreational uses, agricultural and industrial supply, and other legitimate uses including navigation". Discharge is restricted to "discharge from public or private drinking water treatment systems, dredging and dewatering, emergency and clean water discharges."

Ground Water Quality

Based on the review of the CT DEEP Aquifer Protection Area (APA) map for the area, the project is not within a designated APA.

The project area lies within an area classified by CT DEEP as having a ground water classification "GA". According to CT DEEP Ground Water Quality Standards (Effective October 2013), designated uses of "GA" ground waters include existing or potential public supply of water suitable for drinking without treatment; and base flow for hydraulically connected surface water bodies. Discharges are limited to treated domestic sewage, certain agricultural wastes, and certain water treatment wastewaters.

Floodplains

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) (Map Number 09007C0233G effective 8/28/2008) for the project area was reviewed. Based on review of the FIRM the project site is not within a designated flood area. See Figure 3: FEMA FIRM.

Figure 3

he Flood Insurance Study report for this jurisdiction.

ce is available in this community, contact your insurance
d Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

METERS
0 150 300

NATIONAL FLOOD INSURANCE PROGRAM FIP

PANEL 0233G

FIRM
FLOOD INSURANCE RATE MAP
MIDDLESEX COUNTY, CONNECTICUT
(ALL JURISDICTIONS)

PANEL 233 OF 450
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
HADDAM, TOWN OF	090066	0233	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
09007C0233G

EFFECTIVE DATE
AUGUST 28, 2008

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

3.0 NRCS MAPPED SOILS

The NRCS has published a series of soil surveys for most of the United States. The NRCS soil surveys are used to enhance the understanding of, and to help describe a particular geographic area. These surveys have recently been updated for the State of Connecticut and are available as a digital GIS layer. The soil surveys contain taxonomic descriptions of different soil series, as well as soil maps depicting soil map units.

NRCS soils classifications on the project site are depicted by their soils number in Figure 4 . Only those found on the project site are described below.

Ridgebury, Leicester, and Whitman Complex (3)

Ridgebury Series

The Ridgebury series consists of very deep, somewhat poorly and poorly drained soils formed in till derived mainly from granite, gneiss and schist. They are commonly shallow to a densic contact. They are nearly level to gently sloping soils in low areas in uplands. Slope ranges from 0 to 15 percent.

Commonly poorly drained but the range includes the wetter part of somewhat poorly drained. Runoff is negligible to medium.

Leicester Series

The Leicester series consists of very deep, poorly drained loamy soils formed in friable till. They are nearly level or gently sloping soils in drainageways and low-lying positions on hills. Slope ranges from 0 to 8 percent. Permeability is moderate or moderately rapid in the surface layer and subsoil and moderate to rapid in the substratum.

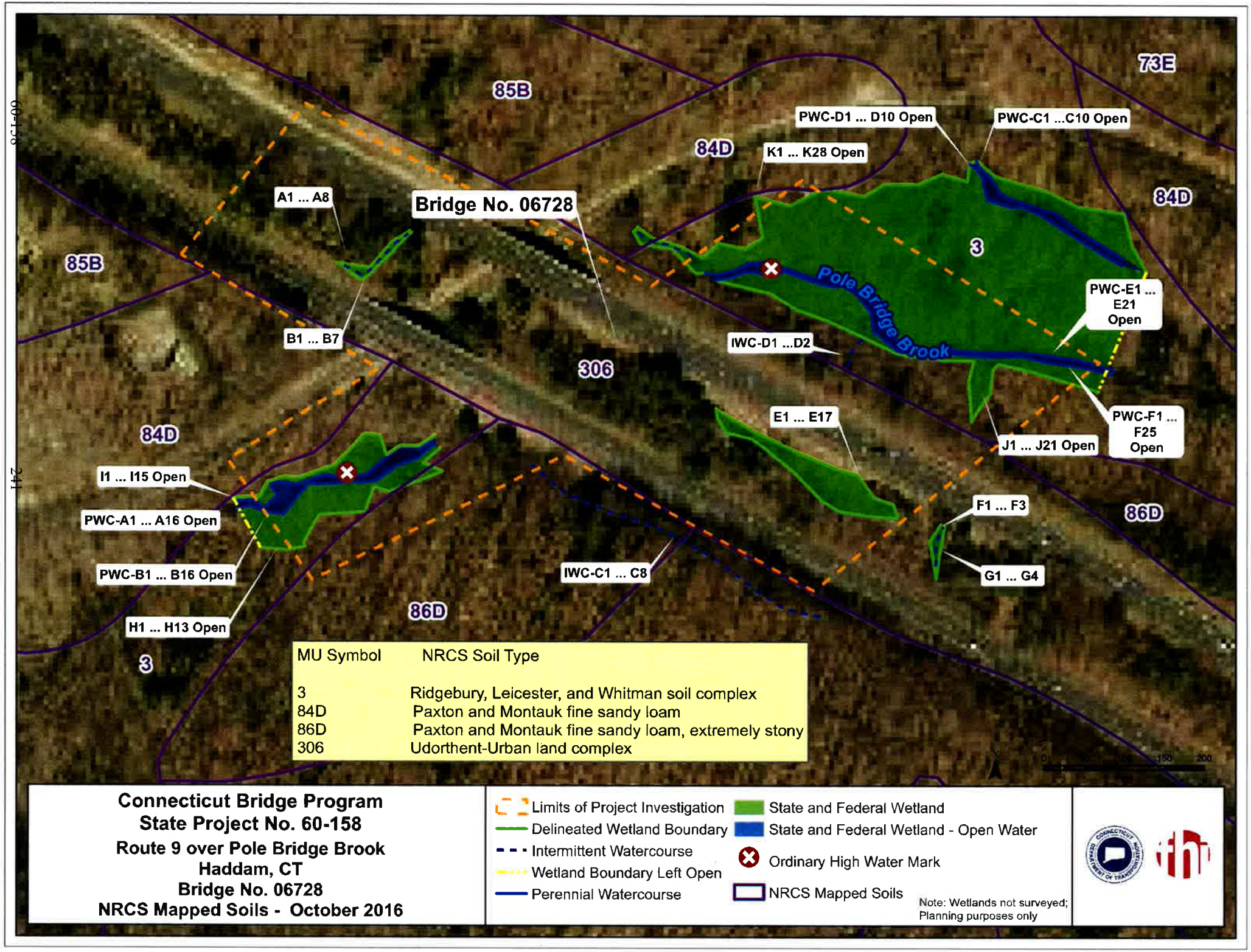
Whitman Series

The Whitman series consists of very deep, very poorly drained soils formed in lodgement till derived mainly from granite, gneiss, and schist. They are shallow to a densic contact. These soils are nearly level or gently sloping soils in depressions and drainageways on uplands. Slopes are typically 0 through 2 percent, but range up to 8 percent where wetness is due to seepage water.

Paxton and Montauk Fine Sandy Loam (84) & (86)

Paxton Fine Sandy Loam

The Paxton series consists of well drained loamy soils formed in lodgment till. The soils are very deep to bedrock and moderately deep to a densic contact. They are nearly level to steep soils on hills, drumlins, till plains, and ground moraines. Slope ranges from 0 to 45


60-158
241
85B
73E
84D
PWC-D1 ... D10 Open
PWC-C1 ...C10 Open
K1 ... K28 Open
A1 ... A8
Bridge No. 06728
84D
85B
3
Pole Bridge Brook
PWC-E1 ... E21 Open
B1 ... B7
IWC-D1 ...D2
306
E1 ... E17
PWC-F1 ... F25 Open
J1 ... J21 Open
84D
I1 ... I15 Open
PWC-A1 ... A16 Open
F1 ... F3
86D
PWC-B1 ... B16 Open
IWC-C1 ... C8
G1 ... G4
86D
H1 ... H13 Open
3
MU Symbol NRCS Soil Type
3 Ridgebury, Leicester, and Whitman soil complex
84D Paxton and Montauk fine sandy loam
86D Paxton and Montauk fine sandy loam, extremely stony
306 Udorthent-Urban land complex
Connecticut Bridge Program
State Project No. 60-158
Route 9 over Pole Bridge Brook
Haddam, CT
Bridge No. 06728
NRCS Mapped Soils - October 2016
Limits of Project Investigation
Delineated Wetland Boundary
Intermittent Watercourse
Wetland Boundary Left Open
Perennial Watercourse
State and Federal Wetland
State and Federal Wetland - Open Water
Ordinary High Water Mark
NRCS Mapped Soils
Note: Wetlands not surveyed; Planning purposes only

percent. Saturated hydraulic conductivity is moderately high or high in the surface layer and subsoil and low or moderately low in the substratum.

Depth to bedrock is commonly more than 1.5 meters. Rock fragments range from 5 through 35 percent by volume in the mineral soil. Except where the surface is stony, the fragments are mostly subrounded gravel and typically make up 60 percent or more of the total rock fragments.

Montauk Fine Sandy Loam

The Montauk series consists of well drained soils formed in lodgment or flow till derived primarily from granitic materials with lesser amounts of gneiss and schist. The soils are very deep to bedrock and moderately deep to a densic contact. These soils are on upland hills and moraines. Slope ranges from 0 to 35 percent. Rock fragments range from 3 to 35 percent in the solum and 5 to 50 percent in the substratum.

Udorthent-Urban Land Complex (306)

These map units consist of moderately sloping to steep areas where the original soil has been cut away or covered with a gravelly fill material. Most of these areas have been graded to a smooth surface with 4 to 10 inches of topsoil. This soil is commonly located on outwash plains and moraines, but occurs in a variety of landscape positions. Soil permeability varies from moderate to very rapid. They typically possess depths of greater than 5-6 feet to bedrock and groundwater.

Udorthents

A map unit consisting of well-drained to excessively well-drained soil composed of cut areas, filled areas, or both. They are often in association with urban areas. In areas that were cut, the surface layer has been removed and in fill areas, typically more than 20 inches of soil material has been placed on the surface. Often both cut and fill areas occur in close proximity as areas were often graded and smoothed forming a complex pattern of cuts and fills.

Urban Land

A unit which includes areas developed by buildings, roads, and other developments limiting the ability to inspect and map underlying soil types.

4.0 FEDERAL AND STATE LISTED THREATENED AND ENDANGERED SPECIES AND HABITAT

The CT Natural Diversity Database (NDDB) GIS records were mapped to assess if any Endangered, Threatened, or Special Concern (i.e., "rare") species are known to potentially

exist within the project area, based on past observations. Based on the most recent NDDB mapping, dated December 2017, the project area falls outside the NDDB area. Please refer to Figure 5 for the official CT DEEP NDDB Map.

The project has received funding from the Federal Highway Administration (FHWA), and as such has been submitted to the U.S. Fish and Wildlife Service (USFWS) under the Final 4(d) Rule for the Federally Threatened Northern Long-eared bat. Consultation was concluded on August 4, 2018. There are no documented hibernacula in Haddam or in the vicinity of the project. The Consultation Form is provided in Appendix D.

5.0 INVASIVE PLANT SPECIES

Within the project area the following invasive plant species were identified in sizable, non-individual populations: Garlic Mustard (*Allaria petiolata*), Japanese Barberry, Oriental Bittersweet, Autumn Olive, Japanese Stilt Grass (*Microstegium vimineum*), Common Reed, and Multiflora Rose (see Figure 6). These plant species primarily occurred closer to the disturbed areas associated with Route 9 and, to a lesser extent, Hubbard Road. Invasive species within the project limits will be controlled utilizing the CTDOT's Control and Removal of Invasive Vegetation specification.

Natural Diversity Data Base Areas

60-158

HADDAM, CT

December 2017

State and Federal Listed Species & Significant Natural Communities

Town Boundary

NOTE: This map shows general locations of State and Federal Listed Species and Significant Natural Communities. Information on listed species is collected and compiled by the Natural Diversity Data Base (NDDB) from a number of data sources . Exact locations of species have been buffered to produce the general locations. Exact locations of species and communities occur somewhere in the shaded areas, not necessarily in the center. A new mapping format is being employed that more accurately models important riparian and aquatic areas and eliminates the need for the upstream/downstream searches required in previous versions.

244

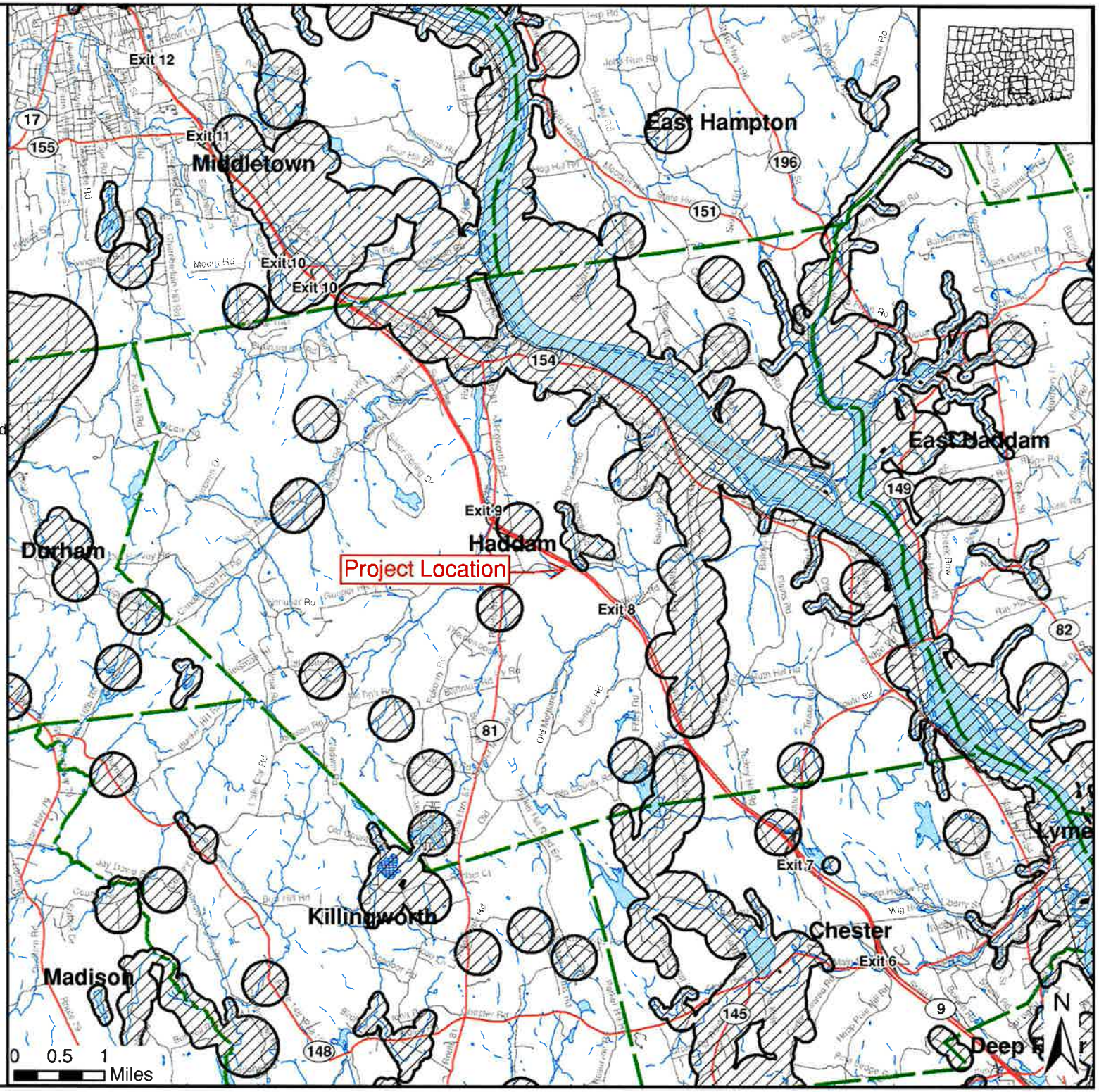
This map is intended for use as a preliminary screening tool for conducting a Natural Diversity Data Base Review Request. To use the map, locate the project boundaries and any additional affected areas. If the project is within a shaded area there may be a potential conflict with a listed species. For more information, complete a Request for Natural Diversity Data Base State Listed Species Review form (DEP-APP-007), and submit it to the NDDB along with the required maps and information. More detailed instructions are provided with the request form on our website.

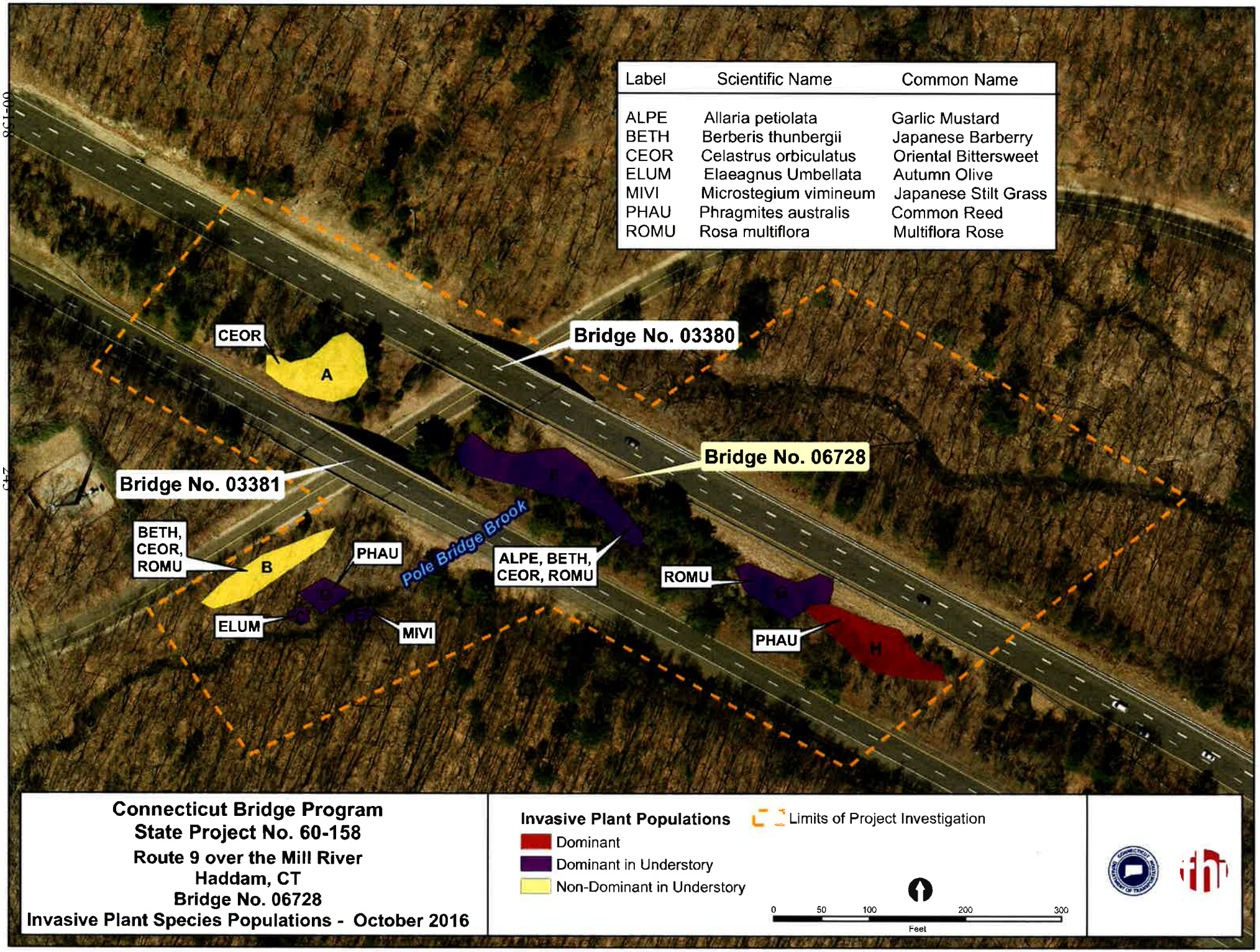
www.ct.gov/deep/nddbrequest

Use the CTECO Interactive Map Viewers at www.cteco.uconn.edu to more precisely search for and locate a site and to view aerial imagery with NDDB Areas.

QUESTIONS: Department of Energy and Environmental Protection (DEEP)
79 Elm St., Hartford CT 06106
Phone (860) 424-3011

Connecticut Department of Energy & Environmental Protection
Bureau of Natural Resources
Wildlife Division




60-158
245
Label | Scientific Name | Common Name
ALPE | Allaria petiolata | Garlic Mustard
BETH | Berberis thunbergii | Japanese Barberry
CEOR | Celastrus orbiculatus | Oriental Bittersweet
ELUM | Elaeagnus Umbellata | Autumn Olive
MIVI | Microstegium vimineum | Japanese Stilt Grass
PHAU | Phragmites australis | Common Reed
ROMU | Rosa multiflora | Multiflora Rose
CEOR
A
Bridge No. 03380
Bridge No. 06728
Bridge No. 03381
BETH, CEOR, ROMU
B
PHAU
Pole Bridge Brook
ALPE, BETH, CEOR, ROMU
ROMU
ELUM
MIVI
PHAU
H
Connecticut Bridge Program
State Project No. 60-158
Route 9 over the Mill River
Haddam, CT
Bridge No. 06728
Invasive Plant Species Populations - October 2016
Invasive Plant Populations
Dominant
Dominant in Understory
Non-Dominant in Understory
Limits of Project Investigation
0 50 100 200 300
Feet

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APPENDIX A: WETLAND PHOTOGRAPHS

Wetland AB – facing southwest

IWC B – facing northwest

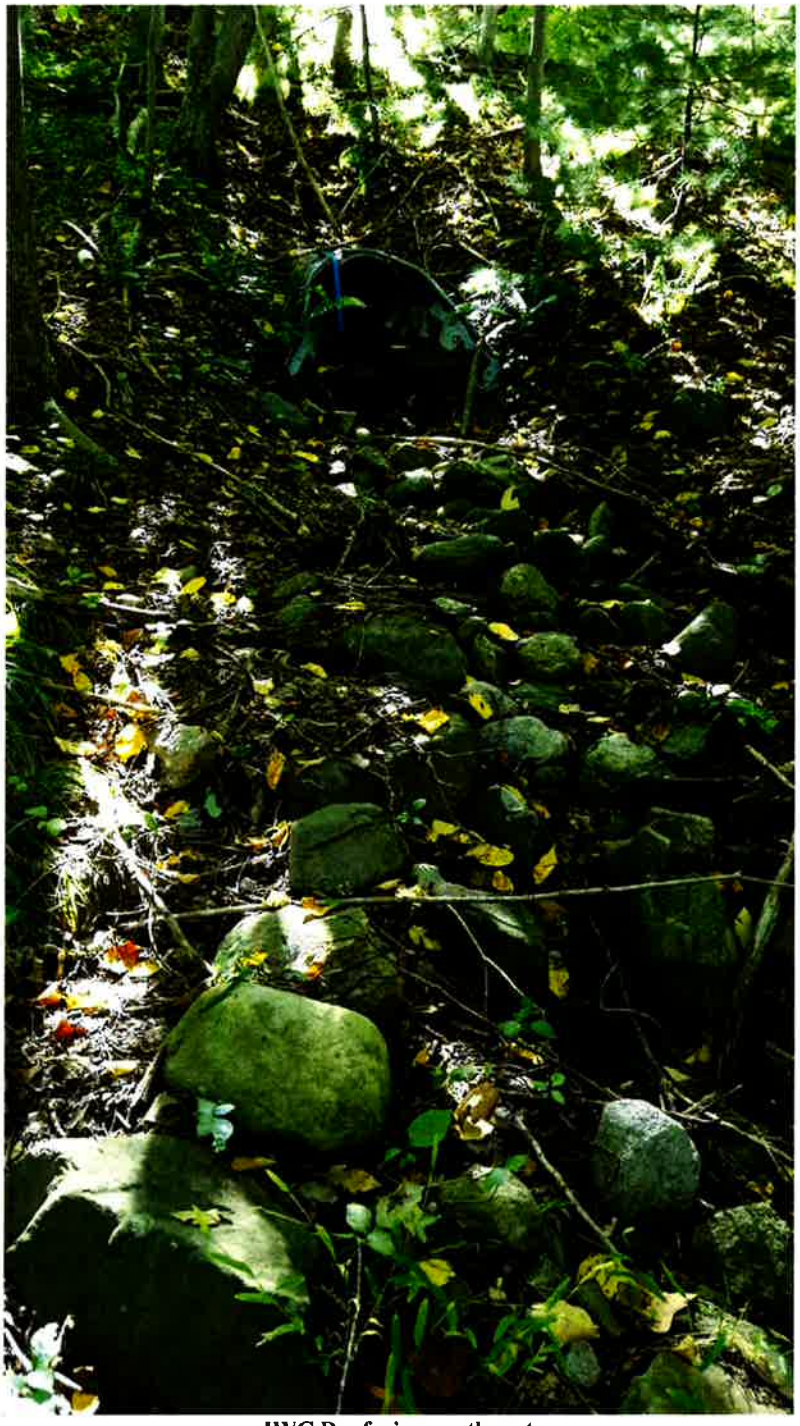
Wetland E – facing north

Wetland FG – facing south

Wetland HI – facing southwest

IWC C – facing southeast

Wetland JK – facing east



IWC D – facing southwest

APPENDIX B: WETLAND DETERMINATION FORMS

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: CT Bridge - Mill River Haddam City/County: Haddam, CT Sampling Date: 10/6/16

Applicant/Owner: CTDOT State: CT Sampling Point: HI-wet

Investigator(s): David Laiuppa, Josh Weiss Section, Township, Range:

Landform (hillside, terrace, etc.): wooded floodplain Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): LRR R Lat: Long: Datum: near I7

Soil Map Unit Name: Ridgebury, Leicester, Whitman NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**		
Hydric Soil Present?	Yes X	No	**within a Wetland?**	**Yes** X	**No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID:	HI	

Remarks: (Explain alternative procedures here or in a separate report.)
Relatively flat woodland adjacent to small stream. Near base of slope leading up to road.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):	
Water Table Present?	Yes X	No	Depth (inches):	18
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches):	0

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: HI-wet

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	75	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	75	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Clethra alnifolia*	15	Yes	FAC
2. *Rosa multiflora*	5	No	FACU
3. *Lindera benzoin*	5	No	FACW
4. *Berberis thunbergii*	2	No	FACU
5.			
6.			
7.			
	27	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Phragmites australis*	40	Yes	FACW
2. *Thelypteris palustris*	25	Yes	FACW
3. *Symplocarpus foetidus*	20	Yes	OBL
4. *Impatiens capensis*	5	No	FACW
5. *Onoclea sensibilis*	5	No	FACW
6. *Equisetum arvense*	5	No	FAC
7.			
8.			
9.			
10.			
11.			
12.			
	100	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Vitis labrusca*	20	Yes	FACU
2. *Smilax rotundifolia*	5	No	FAC
3. *Toxicodendron radicans*	2	No	FAC
4.			
	27	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	80	x 2 =	160
FAC species	102	x 3 =	306
FACU species	27	x 4 =	108
UPL species	0	x 5 =	0
Column Totals:	229 (A)		594 (B)

Prevalence Index = B/A = 2.59

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

_X_ 2 - Dominance Test is >50%

_X_ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** _X_ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: HI-wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/3	90	10YR 4/6	10	C	M	Loamy/Clayey	
3-28	10YR 4/1	95	10YR 4/4	5	C	M	Loamy/Clayey	
28-34+	10YR 2/1	100					Mucky Loam/Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: CT Bridge - Mill River Haddam City/County: Haddam, CT Sampling Date: 10/6/16

Applicant/Owner: CTDOT State: CT Sampling Point: HI-up

Investigator(s): David Laiuppa, Josh Weiss Section, Township, Range:

Landform (hillside, terrace, etc.): sloping woodland Local relief (concave, convex, none): convex Slope (%): 25

Subregion (LRR or MLRA): LRR R Lat: Long: Datum: near I7

Soil Map Unit Name: Paxton & Montauk NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No X**
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Sloping woodland leading down to small stream, from road.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: HI-up

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	45	Yes	FAC
2. *Populus deltoides*	30	Yes	FAC
3. *Picea pungens*	5	No	FACU
4.			
5.			
6.			
7.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Berberis thunbergii*	25	Yes	FACU
2. *Rosa multiflora*	25	Yes	FACU
3. *Pinus strobus*	5	No	FACU
4.			
5.			
6.			
7.			
	55	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Solidago canadensis*	15	Yes	FACU
2. *Eurybia divaricata*	10	Yes	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Celastrus orbiculatus*	15	Yes	UPL
2. *Parthenocissus quinquefolia*	10	Yes	FACU
3. *Vitis labrusca*	5	No	FACU
4.			
	30	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	75	x 3 =	225
FACU species	90	x 4 =	360
UPL species	25	x 5 =	125
Column Totals:	190 (A)		710 (B)

Prevalence Index = B/A = 3.74

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: HI-up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/3	100					Loamy/Clayey	
6								restriction

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: roots & rocks

Depth (inches): 6

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: CT Bridge - Mill River Haddam City/County: Haddam, CT Sampling Date: 10/6/16

Applicant/Owner: CTDOT State: CT Sampling Point: JK-wet

Investigator(s): David Laiuppa, Josh Weiss Section, Township, Range:

Landform (hillside, terrace, etc.): wooded floodplain Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): LRR R Lat: Long: Datum: near K10

Soil Map Unit Name: Ridgebury, Leicester, Whitman NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**		
Hydric Soil Present?	Yes X	No	**within a Wetland?**	**Yes** X	**No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID:	JK	

Remarks: (Explain alternative procedures here or in a separate report.)
Relatively flat woodland adjacent to small stream. Near base of slope leading up to road.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	X Drainage Patterns (B10)
X Saturation (A3)	___ Marl Deposits (B15)	___ Moss Trim Lines (B16)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Dry-Season Water Table (C2)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Crayfish Burrows (C8)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Saturation Visible on Aerial Imagery (C9)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Stunted or Stressed Plants (D1)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	X Geomorphic Position (D2)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	___ Shallow Aquitard (D3)
___ Sparsely Vegetated Concave Surface (B8)		___ Microtopographic Relief (D4)
		X FAC-Neutral Test (D5)

Secondary Indicators (minimum of two required)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):	
Water Table Present?	Yes	No X	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches): 8	

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: JK-wet

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	45	Yes	FAC
2. *Betula alleghaniensis*	15	No	FAC
3. *Betula nigra*	10	No	FACW
4. *Acer saccharum*	5	No	FACU
5. *Fraxinus pennsylvanica*	5	No	FACW
6.			
7.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Clethra alnifolia*	35	Yes	FAC
2. *Pinus strobus*	5	No	FACU
3. *Lindera benzoin*	5	No	FACW
4.			
5.			
6.			
7.			
	45	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Thelypteris palustris*	35	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Smilax rotundifolia*	5	Yes	FAC
2. *Parthenocissus quinquefolia*	2	Yes	FACU
3.			
4.			
	7	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	55	x 2 =	110
FAC species	100	x 3 =	300
FACU species	12	x 4 =	48
UPL species	0	x 5 =	0
Column Totals:	167 (A)		458 (B)

Prevalence Index = B/A = 2.74

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: JK-wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-0		100						Oe
0-3	10YR 4/4	95	10YR 5/6	5	C	M	Loamy/Clayey	
3-8	10YR 2/1	100					Mucky Sand	
8-20	10YR 3/1	100					Sandy	
20-25+	10YR 5/2	88	10YR 5/6	10	C	M	Sandy	Prominent redox concentrations
			10YR 6/1	2	D	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- X Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: CT Bridge - Mill River Haddam City/County: Haddam, CT Sampling Date: 10/6/16

Applicant/Owner: CTDOT State: CT Sampling Point: JK-up

Investigator(s): David Laiuppa, Josh Weiss Section, Township, Range:

Landform (hillside, terrace, etc.): sloping woodland Local relief (concave, convex, none): convex Slope (%): 5

Subregion (LRR or MLRA): LRR R Lat: Long: Datum: near K10

Soil Map Unit Name: Ridgebury, Leicester, Whitman NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation no , Soil no , or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation no , Soil no , or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**		
Hydric Soil Present?	Yes ____	No X	**within a Wetland?**	**Yes** ____	**No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:		

Remarks: (Explain alternative procedures here or in a separate report.)
Sloping woodland leading down to small stream, from road.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: JK-up

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	25	Yes	FACU
2. *Acer rubrum*	10	Yes	FAC
3. *Populus deltoides*	10	Yes	FAC
4. *Betula lenta*	5	No	FACU
5. *Pinus strobus*	5	No	FACU
6. *Fraxinus pennsylvanica*	2	No	FACW
7.			
	57	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Clethra alnifolia*	20	Yes	FAC
2. *Pinus strobus*	15	Yes	FACU
3			N/A
4.			
5.			
6.			
7.			
	50	=Total Cover	
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	2	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Celastrus orbiculatus*	15	Yes	UPL
2. *Vitis labrusca*	5	Yes	FACU
3.			
4.			
	20	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 43 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	2	x 2 =	4
FAC species	40	x 3 =	120
FACU species	55	x 4 =	220
UPL species	15	x 5 =	75
Column Totals:	112 (A)		419 (B)
Prevalence Index = B/A =			3.74

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: JK-up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 5/4	100					Loamy/Clayey	
8								restriction

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: roots & rocks

Depth (inches): 8

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

APPENDIX C: WETLAND FUNCTION-VALUE EVALUATION FORMS

Wetland Function-Value Evaluation Form

60-158

Total area of wetland_____ Human made? Yes Is wetland part of a wildlife corridor?_____ or a "habitat island"?_____

Adjacent land use Highway Distance to nearest roadway or other development ~ 15 ft

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? middle

How many tributaries contribute to the wetland? 2 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland AB

Latitude_____ Longitude_____

Prepared by: DWL Date Dec 2016

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	○	◉	4,7,15		minimal recharge opportunity near inlet
Floodflow Alteration	○	◉	3,4,5,7,8,9		minimal floodflow storage potential
Fish and Shellfish Habitat	○	◉	1,2		no perennial waters
Sediment/Toxicant Retention	◉	○	1,2,4,10,11,13,14,16	X	sed/tox retention potential from highway runoff
Nutrient Removal	○	◉	3,7,8		Little nutrients available
Production Export	○	◉	2,7		Minimal production occuring within wetland
Sediment/Shoreline Stabilization	○	◉	2,3,9,12,14		no expected erosive forces occurring within intermittent drainage area
Wildlife Habitat	○	◉	13		too small and isolated to provide adequate habitat
Recreation	○	◉			limited/unsafe access
Educational/Scientific Value	○	◉	14		limited/unsafe access
Uniqueness/Heritage	○	◉			limited/unsafe access
Visual Quality/Aesthetics	○	◉	6		limited/unsafe access
ES Endangered Species Habitat	○	◉	NA		None present in 2016 CT DEEP NDDB records
Other	○	◉			

269

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

60-158

Total area of wetland_____ Human made? No Is wetland part of a wildlife corridor?_____ or a "habitat island"?_____

Adjacent land use Highway Distance to nearest roadway or other development ~ 25 ft

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin?_____

How many tributaries contribute to the wetland?_____ Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland E

Latitude_____ Longitude_____

Prepared by: DWL Date Dec 2016

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N_____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	◉	○	4,8,15	X	evidence of groundwater recharge
Floodflow Alteration	○	◉	3,4,5,7,8,9		no associated watercourse
Fish and Shellfish Habitat	○	◉	1,2		no perennial waters
Sediment/Toxicant Retention	◉	○	1,2,4,5,9	X	sed/tox retention potential from highway runoff
Nutrient Removal	◉	○	3,7,8,9,10		some nutrient removal potential
Production Export	◉	○	7,12		possible attenuation
Sediment/Shoreline Stabilization	○	◉	2,3,9		no associated watercourse
Wildlife Habitat	◉	○	7,13,14,21	X	potential habitat for small mammals and birds
Recreation	○	◉	5		limited/unsafe access
Educational/Scientific Value	○	◉	5,14		limited/unsafe access
Uniqueness/Heritage	○	◉			limited/unsafe access
Visual Quality/Aesthetics	○	◉	6,8		limited/unsafe access
ES Endangered Species Habitat	○	◉	NA		None present in 2016 CT DEEP NDDB records
Other	○	◉			

270

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

60-158

Total area of wetland_____ Human made? Yes Is wetland part of a wildlife corridor?_____ or a "habitat island"?_____

Adjacent land use Highway Distance to nearest roadway or other development ~ 25 ft

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? middle

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland FG

Latitude_____ Longitude_____

Prepared by: DWL Date Dec 2016

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N_____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	○	◉	4,7,15		minimal recharge opportunity
Floodflow Alteration	○	◉	3,4,5,7,8,9		minimal floodflow storage potential
Fish and Shellfish Habitat	○	◉	1,2		no perennial waters
Sediment/Toxicant Retention	◉	○	1,2,4,10,11,13,14,16	X	sed/tox retention potential from highway runoff
Nutrient Removal	○	◉	3,7,8		Little nutrients available
Production Export	○	◉	2,7		Minimal production occuring within wetland
Sediment/Shoreline Stabilization	◉	○	2,3,9,12,14		possibly small scale stabilization
Wildlife Habitat	○	◉	13		too small and isolated to provide adequate habitat
Recreation	○	◉			limited/unsafe access
Educational/Scientific Value	○	◉	14		limited/unsafe access
Uniqueness/Heritage	○	◉			limited/unsafe access
Visual Quality/Aesthetics	○	◉	6		limited/unsafe access
ES Endangered Species Habitat	○	◉	NA		None present in 2016 CT DEEP NDDB records
Other	○	◉			

271

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

60-158

Total area of wetland_____ Human made? No Is wetland part of a wildlife corridor? yes or a "habitat island"?_____

Adjacent land use Highway & local road Distance to nearest roadway or other development ~ 50 ft

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present Yes

Is the wetland a separate hydraulic system? no If not, where does the wetland lie in the drainage basin? middle

How many tributaries contribute to the wetland? 2 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland HI

Latitude_____ Longitude_____

Prepared by: DWL Date Dec 2016

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N_____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	◉	○	4,7,8,12,15		some evidence of groundwater recharge
Floodflow Alteration	◉	○	3,5,6,7,8,9,10,13	X	small scale floodflow alteration
Fish and Shellfish Habitat	◉	○	1,2,4,8,14,17		possible small populations of fish in fast flowing shallow water
Sediment/Toxicant Retention	◉	○	1,2,4,9,10		vegetation density not adequate for substantial retention
Nutrient Removal	○	◉	7		vegetation density not adequate for substantial retention
Production Export	○	◉	4		minimal production occuring within wetland
Sediment/Shoreline Stabilization	◉	○	2,3,6,7,9,14	X	wetland vegetation on banks of perennial watercourse
Wildlife Habitat	◉	○	4,7,8,10,11,14,15,19,2	X	adequate food and water for wildlife populations
Recreation	◉	○	1,4,5,6		adjacent to public and private lands
Educational/Scientific Value	◉	○	2,4,5,6,11,13		adjacent to public and private lands
Uniqueness/Heritage	◉	○	5,10,11,14,16,17,18,2		wetland not unique for the area
Visual Quality/Aesthetics	◉	○	7,8,9,11,12		wetland not unique for the area
ES Endangered Species Habitat	○	◉	NA		None present in 2016 CT DEEP NDDB records
Other	○	◉			

272

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

60-158

Total area of wetland_____ Human made? No Is wetland part of a wildlife corridor? yes or a "habitat island"?_____

Adjacent land use Highway & local road Distance to nearest roadway or other development ~ 25 ft

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present Yes

Is the wetland a separate hydraulic system? no If not, where does the wetland lie in the drainage basin? middle

How many tributaries contribute to the wetland? 4 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland JK

Latitude_____ Longitude_____

Prepared by: DWL Date Dec 2016

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N_____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	◉	○	4,7,8,12,15	X	strong evidence of groundwater recharge
Floodflow Alteration	◉	○	3,5,6,7,8,9,10,13	X	small scale floodflow alteration
Fish and Shellfish Habitat	◉	○	1,2,4,8,14,17		possible small populations of fish in fast flowing shallow water
Sediment/Toxicant Retention	◉	○	1,2,4,9,10		vegetation density not adequate for substantial retention
Nutrient Removal	○	◉	7		vegetation density not adequate for substantial retention
Production Export	○	◉	4		minimal production occuring within wetland
Sediment/Shoreline Stabilization	◉	○	2,3,6,7,9,14	X	wetland vegetation on banks of perennial watercourse
Wildlife Habitat	◉	○	4,7,8,10,11,14,15,19,2	X	adequate food and water for wildlife populations
Recreation	◉	○	1,4,5,6		adjacent to public and private lands
Educational/Scientific Value	◉	○	2,4,5,6,11,13		adjacent to public and private lands
Uniqueness/Heritage	◉	○	5,10,11,14,16,17,18,2		wetland not unique for the area
Visual Quality/Aesthetics	◉	○	7,8,9,11,12		wetland not unique for the area
ES Endangered Species Habitat	○	◉	NA		None present in 2016 CT DEEP NDDB records
Other	○	◉			

273

Notes:

* Refer to backup list of numbered considerations.

APPENDIX D: USFWS CONSULTATION FORM

Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form

Federal agencies should use this form for the optional streamlined consultation framework for the northern long-eared bat (NLEB). This framework allows federal agencies to rely upon the U.S. Fish and Wildlife Service's (USFWS) January 5, 2016, intra-Service Programmatic Biological Opinion (BO) on the final 4(d) rule for the NLEB for section 7(a)(2) compliance by: (1) notifying the USFWS that an action agency will use the streamlined framework; (2) describing the project with sufficient detail to support the required determination; and (3) enabling the USFWS to track effects and determine if reinitiation of consultation is required per 50 CFR 402.16.

This form is not necessary if an agency determines that a proposed action will have no effect to the NLEB or if the USFWS has concurred in writing with an agency's determination that a proposed action may affect, but is not likely to adversely affect the NLEB (i.e., the standard informal consultation process). Actions that may cause prohibited incidental take require separate formal consultation. Providing this information does not address section 7(a)(2) compliance for any other listed species.

Information to Determine 4(d) Rule Compliance:	**YES**	**NO**
1. Does the project occur wholly outside of the WNS Zone[1]?	☐	☑
2. Have you contacted the appropriate agency[2] to determine if your project is near known hibernacula or maternity roost trees?	☑	☐
3. Could the project disturb hibernating NLEBs in a known hibernaculum?	☐	☑
4. Could the project alter the entrance or interior environment of a known hibernaculum?	☐	☑
5. Does the project remove any trees within 0.25 miles of a known hibernaculum at any time of year?	☐	☑
6. Would the project cut or destroy known occupied maternity roost trees, or any other trees within a 150-foot radius from the maternity roost tree from June 1 through July 31.	☐	☑

You are eligible to use this form if you have answered yes to question #1 **or** yes to question #2 **and** no to questions 3, 4, 5 and 6. The remainder of the form will be used by the USFWS to track our assumptions in the BO.

Agency: FHWA – Connecticut Division

Applicant[3] (Name, Email, Phone No.):
Connecticut Department of Transportation
Amanda M. Saul, Office of Environmental Planning
DOT.NLEB@ct.gov, (860)594-2939

Project Name: CTDOT0060-0158

Project Location (include coordinates if known): Route 9 over the Pole Bridge Brook, Town of Haddam; 41.4641, -72.5401

Basic Project Description (provide narrative below or attach additional information):

Rehabilitation for Br 06728, Route 9 over Pole Bridge Brook in the Town of Haddam.

[1] http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf
[2] See http://www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html
[3] If applicable - only needed for federal actions with applicants (e.g., for a permit, etc.) who are party to the consultation.

General Project Information	YES	NO
Does the project occur within 0.25 miles of a known hibernaculum?	☐	☑
Does the project occur within 150 feet of a known maternity roost tree?	☐	☑
Does the project include forest conversion[4]? (if yes, report acreage below)	☑	☐
Estimated total acres of forest conversion	<0.5 ac	
If known, estimated acres[5] of forest conversion from April 1 to October 31		
If known, estimated acres of forest conversion from June 1 to July 31[6]		
Does the project include timber harvest? (if yes, report acreage below)	☐	☑
Estimated total acres of timber harvest		
If known, estimated acres of timber harvest from April 1 to October 31		
If known, estimated acres of timber harvest from June 1 to July 31		
Does the project include prescribed fire? (if yes, report acreage below)	☐	☑
Estimated total acres of prescribed fire		
If known, estimated acres of prescribed fire from April 1 to October 31		
If known, estimated acres of prescribed fire from June 1 to July 31		
Does the project install new wind turbines? (if yes, report capacity in MW below)	☐	☑
Estimated wind capacity (MW)		

Agency Determination:

By signing this form, the action agency determines that this project may affect the NLEB, but that any resulting incidental take of the NLEB is not prohibited by the final 4(d) rule.

If the USFWS does not respond within 30 days from submittal of this form, the action agency may presume that its determination is informed by the best available information and that its project responsibilities under 7(a)(2) with respect to the NLEB are fulfilled through the USFWS January 5, 2016, Programmatic BO. The action agency will update this determination annually for multi-year activities.

The action agency understands that the USFWS presumes that all activities are implemented as described herein. The action agency will promptly report any departures from the described activities to the appropriate USFWS Field Office. The action agency will provide the appropriate USFWS Field Office with the results of any surveys conducted for the NLEB. Involved parties will promptly notify the appropriate USFWS Field Office upon finding a dead, injured, or sick NLEB.

Signature: Amanda M. Saul Digitally signed by Amanda M. Saul DN: cn=Amanda M. Saul, o=Connecticut Department of Transportation, ou=Office of Environmental Planning, email=amanda.saul@ct.gov, c=US Date: 2018.07.02 15:58:19 -04'00'

Date Submitted: 7/2/2018

[4] Any activity that temporarily or permanently removes suitable forested habitat, including, but not limited to, tree removal from development, energy production and transmission, mining, agriculture, etc. (see page 48 of the BO).
[5] If the project removes less than 10 trees and the acreage is unknown, report the acreage as less than 0.1 acre.
[6] If the activity includes tree clearing in June and July, also include those acreage in April to October.

Attachment D: Other Information

Application for Department of the Army Permit

Applicant: State of Connecticut, Department of Transportation
Project No. 60-158 (Constr.), 60-158 (P.E.)
Rehabilitation of Bridge No. 06728 in Haddam
Route 9 over Pole Bridge Brook

List of Attachments

- Flood Insurance Rate Map Panel 09007C0233G, for Middlesex County. Dated: August 28, 2008
- Natural Diversity Data Base Area map of Haddam dated December 2017.
- Letter from the State of Connecticut Department of Transportation, Office of Environmental Planning dated February 2, 2017 with a determination that the project exempt from Section 106 review and no further consultation with SHPO is necessary.
- Email from FHWA CT Division, Environmental Protection Specialist Chris Hansen dated February 2, 2017, stating tribal consultation would not be required for this project.
- Initial Inland Fisheries Coordination memo submitted to OEP dated March 21, 2016.
- Memorandum of Agreement between the Department of Energy and Environmental Protection and the Department of Transportation for a project entitled *"Fisheries Mitigation – Br. No. 06728, Route 9 over Pole Bridge Brook, Haddam, State Project 60-158"*, signed 10/10/17.
- DEEP/DOT Regulatory Coordination Project Meeting Notes, May 26, 2016.
- Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form dated 7/2/2018.
- Site Photos

National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0233G

FIRM

FLOOD INSURANCE RATE MAP

MIDDLESEX COUNTY, CONNECTICUT

(ALL JURISDICTIONS)

PANEL 233 OF 450

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
HADDAM, TOWN OF	090066	0233	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
09007C0233G

EFFECTIVE DATE
AUGUST 28, 2008

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Natural Diversity Data Base Areas

HADDAM, CT

December 2017

60-158

State and Federal Listed Species & Significant Natural Communities

Town Boundary

NOTE: This map shows general locations of State and Federal Listed Species and Significant Natural Communities. Information on listed species is collected and compiled by the Natural Diversity Data Base (NDDB) from a number of data sources . Exact locations of species have been buffered to produce the general locations. Exact locations of species and communities occur somewhere in the shaded areas, not necessarily in the center. A new mapping format is being employed that more accurately models important riparian and aquatic areas and eliminates the need for the upstream/downstream searches required in previous versions.

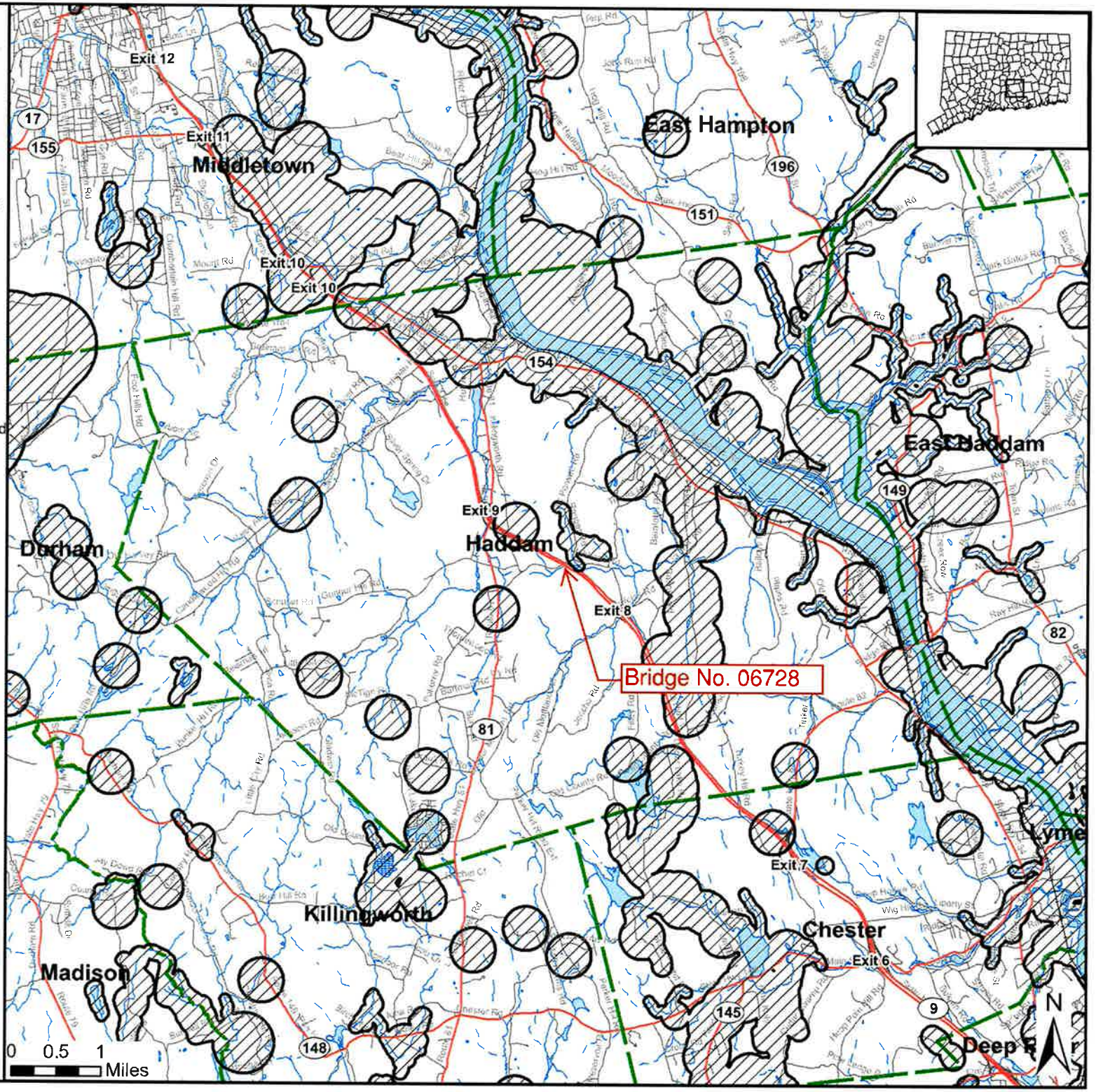
This map is intended for use as a preliminary screening tool for conducting a Natural Diversity Data Base Review Request. To use the map, locate the project boundaries and any additional affected areas. If the project is within a shaded area there may be a potential conflict with a listed species. For more information, complete a Request for Natural Diversity Data Base State Listed Species Review form (DEP-APP-007), and submit it to the NDDB along with the required maps and information. More detailed instructions are provided with the request form on our website.

www.ct.gov/deep/nddbrequest

Use the CTECO Interactive Map Viewers at www.cteco.uconn.edu to more precisely search for and locate a site and to view aerial imagery with NDDB Areas.

QUESTIONS: Department of Energy and Environmental Protection (DEEP)
79 Elm St., Hartford CT 06106
Phone (860) 424-3011

Connecticut Department of Energy & Environmental Protection
Bureau of Natural Resources
Wildlife Division



STATE OF CONNECTICUT

DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546

Determination of Exemption for Historic Properties

Author:	Mark McMillan	**Date:** February 2, 2017
Project:	State No.:	60-158
	F.A.P. No.:	TBD
	Project Title:	Rehabilitation of Culvert #06728 Route 9 over Mill River
	Town:	Haddam
Category of Exemption:	**Appendix B *"Screened Undertakings…"***	

Project Description

Using federal and state funds, the Connecticut Department of Transportation (CTDOT) proposes to rehabilitate Culvert #06728, which conveys the Mill River under Route 9 in Haddam. Recent inspections by CTDOT's Bridge Safety and Inspection unit have determined the culvert to be in Critical condition due to the failure of its steel pipe lining. Under the proposed scope of work, a new lining will be installed within the existing pipe. Protections for the concrete headwalls will be installed at either end of the culvert.

The project anticipates minor interruptions to traffic. Temporary off-peak lane closures will be needed to accommodate delivery of materials and equipment to the site. Final design in scheduled for August 2018 with construction commencing in the fall of the same year.

Technical Review of Project

Culvert #06728 consists of a single asphalt-coated corrugated metal pipe (ACCMP) that is 6 feet in diameter and 397 feet long. When this segment of Route 9 was constructed, the culvert was installed at grade to the natural topography. The roadway of Route 9 is built on a raised roadbed of introduced soils (Image 1). In total, there is 28 feet of ballast between the top of the culvert pipe and the roadway. At either end of the pipe are reinforced concrete headwalls (Image 2). The outlet wall at the east features an additional 18" diameter pipe set into the culvert's wingwall. This discharges water from a catch basin located between the north and southbound lanes of Route 9. Culvert #06728 was built in 1966 and has not undergone any alterations. It is categorized as Not Eligible for the National Register of Historic Places.

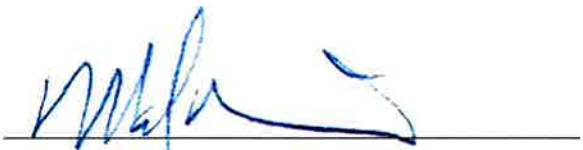
Under the proposed scope of work, the pipe will be cleaned of debris and then pressure grouted. A cured-in-place pipe lining system will then be installed within the existing pipe. This system will centrifugally cast a 2-½" thick cementitious coating over the existing steel liner. This will create a waterproof seal within the pipe and reduce future corrosion of the liner. The exposed walls at the ends of the culvert will be repaired by a combination of channel grading and the installation of riprap.

The equipment and materials required to perform the culvert repairs will be brought from Hubbard Road. Construction will likely require constructing temporary gravel access roads at each end of the culvert. Because these will occur within the existing right of way of Route 9, no acquisitions or easements of private property will be required.

The sediments surrounding the culvert are characterized as Udorthents-Urban Land Complex, which have a Poor archaeological sensitivity. Beyond this band of previously disturbed soils are a variety of soils that are all described as "Extremely Stony". Predictive models find such soils to have variable archaeological sensitivity, though this is reduced by the steep topography and stony conditions. Further, aerial photography of the project site shows extensive soil disturbance during the construction of Route 9. For these reasons, it is the professional opinion of the archaeology staff that there is very limited likelihood of intact archaeological properties being present within the project's area of potential effect.

Determination

Culvert #06728 is not eligible for the National Register of Historic Places. It is surrounded by sediments that have been previously disturbed by the construction of Route 9 and that are unlikely to contain any intact archaeological resources. Qualified cultural resource staff have screened this undertaking and found that the proposed rehabilitation work meets the criteria of a "Bridge/Culvert Related Project" as defined in Appendix B "*Screened Undertakings Not Requiring Connecticut SHPO Review*" of the Section 106 Programmatic Agreement[1]. Appendix B lists the types of undertakings that, due to their limited potential to impact historic resources, are exempt from Section 106 review. No further consultation with the SHPO is necessary. A copy of this finding will be included in the quarterly report of Minor Transportation Projects that is submitted to the SHPO.



Mark McMillan
National Register Specialist
Office of Environmental Planning
Connecticut Department of Transportation

[1] *Programmatic Agreement among the Federal Highway Administration, the Connecticut Department of Transportation, the Connecticut State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding Implementation of Minor Transportation Projects*, signed October 26, 2012. Accessible online at: www.ct.gov/culturalresources

From: Hansen, Christopher (FHWA) <christopher.hansen@dot.gov>
Sent: Thursday, February 02, 2017 1:36 PM
To: McMillan, Mark J.
Subject: RE: Tribal Consultation: Project #60-158 Haddam (Culvert #06728 Rehab., Route 9 over Mill River)

Mark,

I have carefully reviewed CTDOT's proposed project #0060-0158 to rehabilitate culvert 06728. As per the THPO Section 106 Agreements with FHWA-CT Division, dated January 4, 2012 and May 14, 2013, this project would fall within the categories of "resurfacing or repair of existing ramps or roadways within the previously disturbed right-of-way".

With this email, and taking all these items into consideration, the FHWA-CT Division has determined that tribal consultation would not be required for this project. Should any changes be made to the scope of work for this project that would involve additional ground disturbance beyond what is currently proposed, tribal consultation would have to be reconsidered.

Thanks,
Chris

Chris Hansen
Environmental Protection Specialist
Federal Highway Administration
Connecticut Division
860.494.7577
christopher.hansen@dot.gov

From: Mark.McMillan@ct.gov [mailto:Mark.McMillan@ct.gov]
Sent: Wednesday, February 01, 2017 2:07 PM
To: Hansen, Christopher (FHWA)
Subject: Tribal Consultation: Project #60-158 Haddam (Culvert #06728 Rehab., Route 9 over Mill River)

You have received 2 secure files from Mark.McMillan@ct.gov.
Use the secure links below to download.

Chris,

Attached is a Determination of Exemption for State Project #60-158 in Haddam. The undertaking will reline a culvert beneath Route 9. The only ground distrubance anticipated will be that created by bringing equipment and materials to the culvert ends, all of which is within the existing road ROW. Given the previous disturbance created by the construction of Route 9, I do not believe tribal consultation is warranted.

Mark

Mark McMillan
National Register Specialist
Office of Environmental Planning
Connecticut Department of Transportation
2800 Berlin Turnpike
Newington, CT 06131
☎ (860) 594-2135
☎ *(860) 594-3028 - Fax*
✉ mark.mcmillan@ct.gov

Secure File Downloads:

Available until: **03 March 2017**

Click links to download:

60-158 ER Request Haddam.pdf
1.86 MB, Fingerprint: 0d61ac0c0663442fedb6bf0df0e60c8b (What is this?)

ExemptFormB_Haddam60-158_20170201.pdf
686.90 KB, Fingerprint: 880817ac9854424beb72ad8f85dad18e (What is this?)

You have received attachment link(s) within this email sent via Accellion Secure File Transfer. To retrieve the attachment(s), please click on the link(s). To learn how your company can benefit from Accellion Secure File Transfer, please visit http://www.accellion.com

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CTDEEP INLAND/MARINE FISHERIES DIVISION COORDINATION TRANSMITTAL MEMORANDUM

DOT Project #: 60-158 **Town:** Haddam **Bridge #: 06728**
Waterway: Mill River **Drainage Basin Name & Number:** 4015, Mill Creek
Project Description / Scope of work: Reline the existing pipe with a cured-in-place pipe lining system.
Design contact: Emma Lane **Town Initiated Project? No**

nitial Coordination

The following information is provided as required:

Plan /submittal date : 3/21/16

X Legible location map with project site clearly marked
X Description of scope of work and if developed, pertinent ½ scale plans as deemed relevant.
X Area photographs

To be completed by CTDEEP Fisheries Division and returned to DOT Environmental Planning Division

__ Affect of proposal on our program interests is negligible. No further review is warranted.
__ Additional information is required, a list of requested information is attached.
__ Comments and recommendations are attached.

_____ Initials
_____ Date

tructure Type Agreement

The following information is provided as required:

Plan date: _____

__ Copies of previous correspondence from Fisheries Division
__ If previous recommendations cannot be incorporated, provide narrative explaining why.
__ ½ scale plans of pertinent plan sheets including plan view, elevation view, profile and details as deemed relevant.

To be completed by CTDEEP Fisheries Division and returned to DOT Environmental Planning Division

__ DEEP Fisheries agrees to the structure type presented in the plans.
__ Unconfined in-stream work must be limited to _____
__ Other comments and recommendations are attached.

_____ Initials
_____ Date

inal Fisheries Sign-Off

____ ***Check here if project is not FM MOU eligible and will be finalized through DEEP IWRD.***

The following information is provided as required:

Plan date: _____

__ Copies of all previous correspondence from Fisheries Division
__ If previous recommendations cannot be incorporated, provide narrative explaining why.
__ ½ scale plans of pertinent plan sheets including plan view, elevation view, profile and details as deemed relevant.

To be completed by CTDEEP Fisheries Division and returned to DOT Environmental Planning Division

__ DEEP Fisheries comments have been adequately incorporated into project plans
__ The attached Special Conditions must be incorporated into the contract language

_____ _____
DEEP Fisheries Biologist Date

To be provided by Sponsoring Agency		
PS#	**Core CT Contract #**	**PO#**

MEMORANDUM OF AGREEMENT
BETWEEN THE
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION AND
THE DEPARTMENT OF TRANSPORTATION

This Memorandum of Agreement (MOA) is entered into by the Department of Energy and Environmental Protection (DEEP) and the Department of Transportation (DOT) for the purpose of undertaking a project of mutual interest.

1. **Duration**: The period of this MOA shall begin upon execution and shall expire when all conditions have been met but in any case no later than two years from the transfer of funds from DOT to DEEP.

2. **Title**: This project is entitled: *"Fisheries Mitigation – Br. No. 06728, Route 9 over Pole Bridge Brook, Haddam; State Project 60-158"*.

3. **Total Project Costs** for the period of this MOA shall not exceed **$60,000.**

4. **Project Directors**: The following individuals are designated to serve as Project Directors (or Project Managers or Principal Investigators):

For the DOT
Andrew H. Davis
Transportation Supervising Planner
Office of Environmental Planning
Department of Transportation
2800 Berlin Turnpike
Newington, CT 06131
Email: andrew.h.davis@ct.gov
Phone: (860)594-2157

For the DEEP
Roger Wolfe
Environmental Analyst III
DEEP – Bureau of Natural Resources
Wildlife Division
391 Route 32
North Franklin, CT 06242
Email: roger.wolfe@ct.gov
Phone: (860) 418-5987

5. **Business Contacts**: The following individuals are designated to serve as contacts for business matters:

For the DOT:
Mark F. Carlino
Transportation Planning Director

Department of Transportation
2800 Berlin Turnpike
PO Box 317546
Newington, CT 06131
email: mark.carlino@ct.gov
Phone: 860-594-2099

For the DEEP:
Sharon Gdovin
Fiscal Administrative Officer

DEEP - FSS – Financial Management Division
79 Elm Street
Hartford, CT 06106-5127
email: sharon.gdovin@ct.gov
Phone (860) 418-5969
Fax (860) 424-4070

6. **General Supervision**: Primary responsibility for general supervision of all activities and compliance with all applicable laws and standards and the terms of this MOA rests with the DEEP.

7. **Description:** This MOA will cover work which will be conducted by the DEEP Wildlife Division for a fisheries project within the Haddam Meadows Marsh system (hereinafter called "restoration project"). The Haddam Meadows Marsh system has been used since 1975 for the production of northern pike for introduction for sport fisheries into the State's waterways. The restoration project involves management activities to clear channels of vegetation and accumulated sediments within the marsh system to allow for

adequate water depth for adult and juvenile Pike to emigrate out of the marsh when water levels are lowered. In addition to allowing free passage, increase in conveyance of waters into the marsh will restore the wetland functions to pre-Tropical Storm Irene levels (the cause of the increased sedimentation). The restoration project will be conducted by DEEP staff from the Wetland Habitat and Mosquito Management unit (WHAMM) of the Wildlife Division. DEEP Fisheries Division has obtained all required state/federal permits for the project.

The selected restoration project has been chosen as off-site mitigation for DOT Project 60-158 which involves the rehabilitation of culvert #06728 through a centrifugally cast-in-place pipe lining. The project has been flagged as requiring mitigation due to the fact that the existing culvert is a barrier to fish passage, and no retrofit options would provide passage of the rehabilitated culvert. The Haddam Meadows restoration project has been discussed with DEEP Land and Water Reuse Division (LWRD) and LWRD staff are in agreement with the suitability of this project as adequate mitigation for Project 60-158 (See Appendix A).

8. **Project Location:** DOT Project 60-158 is located in Haddam; Bridge #06728 carries Route 9 over Pole Bridge Brook. The off-site mitigation project is located on State property within the boundary of Haddam Meadows State Park in Haddam.

9. **Deliverables**:

A. By the DOT-

1) DOT will secure funding to support the mitigation project (See Appendix B).

2) A transfer of funds from DOT to DEEP to reimburse DEEP costs for the restoration project will take place following the receipt of invoices for said work. DEEP shall invoice the DOT for costs not to exceed $60,000 and in accordance with the cost estimate in Appendix C. Costs above this amount may be considered for reimbursement but are subject to eligibility restrictions and available funds.

B. By the DEEP-

1) Construction machinery, equipment, and personnel to complete the restoration work on the marshes.

2) Provide summary report and presentation to DOT following schedule in Paragraph 11 below.

3) Upon completion of the work, DEEP will provide an invoice for actual expenses incurred

10. **Budget**: A total of up to $60,000 in incurred expenses will be reimbursed by the DOT pursuant to the terms of the MOA. Project estimate given to DOT by DEEP at the time of the agreement for the cost of the work was $59,763.00 (Refer to Appendix C for cost estimate).

11. **Schedule of Reports**:

A. **Project Completion Report:** Upon completion of the restoration work, DEEP will provide a summary report of the completed activities to DOT. Summary report will include a presentation to the DOT. Such summaries should be submitted to the DOT no later than 3 months following project completion.

12. **Schedule of Activities**: Upon formal authorization of construction activities to commence from DOT to DEEP, the restoration activities will be scheduled and completed by DEEP. Timing of the restoration work to be determined by DEEP so as to not impact ongoing/active pike rearing activities in the marsh but shall be completed as expeditiously as practical. Invoicing and reimbursement for actual expenses will occur after work is completed.

13. **Cancellation**: Either party may propose to terminate this MOA. The party proposing termination must notify the other party of the MOA explaining the reasons for termination and afford at least ninety (90) days to

consult and seek alternatives to termination. Should such consultation fail, the MOA will be terminated. In the event that the DOT is the proponent of the cancellation after the transfer of the funds has been completed, or should DOT project 60-158 not proceed, the completed mitigation work will be transferrable to a future DOT project requiring off-site fisheries mitigation.

14. **Extensions/Amendments:** This MOA may be modified by the mutual agreement of the DOT and the DEEP. Revisions may include but not limited to:

    a. timing of the restoration work,
    b. any other agreement revisions determined material by either agency.

15. **Use of Funds:** The DEEP agrees to limit expenses and efforts to the quoted scope and cost estimate solely for the purpose of the restoration work at Haddam Meadows and accepts the terms of this MOA.

16. **CFDA Number is 20.205**. (Include if federal funding is used)

17. **Approved by:**

DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION	**DEPARTMENT OF TRANSPORTATION**
APPROVED	APPROVED
Date: 10/12/17	Date: Thomas J Maziarz
By: _____	By: 9-28-2017
Authorized Signature	Authorized Signature

Chartfield Distributions For Sponsor Agency use only.

Amount	Dept	Fund	SID	Program	Project	Activity	Bud Ref	Agency CF 1	Agency CF 2	Account
	DOT57191	12062	22108	34001	DOT0060158PE	PE0000		PE155		51210

APPENDIX - A

Saul, Amanda M

From: Saul, Amanda M
Sent: Wednesday, August 30, 2017 11:08 AM
To: Saul, Amanda M
Subject: FW: Fisheries Mitigation Project for CTDOT Project 60-158 (Bridge #06728)

From: Gilmore, Robert
Sent: Thursday, January 05, 2017 7:39 AM
To: Murphy, Brian
Subject: RE: Fisheries Mitigation Project for CTDOT Project 60-158 (Bridge #06728)

I support the proposed Haddam Meadows Marsh Project as acceptable mitigation for the DOT Pole Bridge Brook culvert slip lining project –at bridge #06728, Haddam.

Bob Gilmore, Supervisor
Regulatory – North Region
Land & Water Resources Division
Bureau of Water Protection & Land Reuse
Connecticut Department of Energy and Environmental Protection
79 Elm St, Hartford, CT 06106-5127
(860) 424-3866
robert.gilmore@ct.gov

From: Murphy, Brian
Sent: Wednesday, January 04, 2017 11:39 AM
To: Gilmore, Robert <Robert.Gilmore@ct.gov>
Subject: Fisheries Mitigation Project for CTDOT Project 60-158 (Bridge #06728)

Hi Bob,

Happy New Year! After the last DOT PMM/Lean Meeting in December you and I briefly discussed the use of the Haddam Meadows Marsh Project as mitigation for the DOT Pole Bridge Brook sliplining project. For reference I have attached an email on this issue I sent to you in late November. In essence, you mentioned you would send me an email that confirms that Land and Water Resources staff has agreed with the use of this project as suitable mitigation. Appreciate if you could send me a brief email that documents this opinion so that I could include it within my Fisheries review for the Pole Bridge Project. Thanks much.

Regards,
Brian D. Murphy, Senior Fisheries Habitat Biologist
Inland Fisheries Division
Habitat Conservation and Enhancement Program
Connecticut Department of Energy and Environmental Protection
Eastern District Headquarters
209 Hebron Road
Marlborough, CT 06447
P: 860.295-9523 | F: 860.295.8175 | brian.murphy@ct.gov

APPENDIX - B

Saul, Amanda M

From:	Bacho, Louis D
Sent:	Thursday, August 17, 2017 10:23 AM
To:	Nezames, Theodore H; Barakat, Rabih M; Ruiz, Lesgie M; Saul, Amanda M; Davis, Andrew H; Trio, Jennifer N
Cc:	Meyers, Darren E
Subject:	FW: 60-158 Off-Site Mitigation for DEEP MOA

All,

I spoke with Ted Aldieri this morning and he is OK going forward with our off-site mitigation project with DEEP. At Ted's direction I will write a brief public interest finding paper for our records explaining why it is in the public's best interest to hire DEEP to perform this work as opposed to contracting this out via the bidding process.

Also we just submitted the design approval this morning for review and signatures.

Thanks all for your help,

Lou

Louis D. Bacho
Transportation Supervising Engineer
CT Department of Transportation
Consultant Design – Bridge
2800 Berlin Turnpike
Newington, CT
Phone: (860) 594-3212
Email: louis.bacho@ct.gov

From: Aldieri, Ted (FHWA) [mailto:Ted.Aldieri@dot.gov]
Sent: Thursday, August 17, 2017 10:15 AM
To: Bacho, Louis D
Cc: Meyers, Darren E
Subject: RE: 60-158 Off-Site Mitigation for DEEP MOA

Hi Lou,

FHWA takes no exception to how CT DOT would like to proceed with this mitigation as in the MOA and prior to the CN phase, we consider this as stage construction and is eligible for federal-aid.

I would like to make you aware that we consider DEEP as a State Force or work done by any municipal force or agency, and therefore requires a PIF. This PIF approval action as shown in the O&A page 13 Table 4 has been delegated to the State.

I discussed my few comments on the MOA with you but will leave that up to CT DOT to manage.

Feel free to contact me if you have any further questions.

Please let me know when mitigation work will commence as if time allows I would like to perform a field visit to the operation.

Thanks,

Ted

Ted J. Aldieri, S.E.T.
Division Structural Engineer/
Bridge Program Manager

Federal Highway Administration
Connecticut Division
628-2 Hebron Avenue
Suite 303
Glastonbury, CT 06033

Office No. 860-494-7582
Fax No. 860-659-6724
Ted.Aldieri@dot.gov

From: Bacho, Louis D [mailto:Louis.Bacho@ct.gov]
Sent: Thursday, August 17, 2017 9:54 AM
To: Aldieri, Ted (FHWA) <Ted.Aldieri@dot.gov>
Subject: FW: 60-158 Off-Site Mitigation for DEEP MOA

FYI

Louis D. Bacho
Transportation Supervising Engineer
CT Department of Transportation
Consultant Design – Bridge
2800 Berlin Turnpike
Newington, CT
Phone: (860) 594-3212
Email: louis.bacho@ct.gov

From: Meyers, Darren E
Sent: Thursday, August 17, 2017 8:05 AM
To: Saul, Amanda M; Bacho, Louis D
Cc: Ruiz, Lesgie M; Davis, Andrew H
Subject: RE: 60-158 Off-Site Mitigation for DEEP MOA

Hi Amanda,
I reviewed the draft MOA and formulated some comments that are intended to better clarify the purpose & need of this work and MOA. I looked at it from the perspective that FHWA agrees to eligibility & participation, and this cost would be paid out of the PE project with federal funds. Also, I changed some wording to reflect

our reimbursement of DEEP's actual expenses versus a transfer of funds. Please see my comments for items 7, 9A, 10, 12, 13, 15 and 16.

I saw Lou's email to FHWA and understand we are still awaiting their determination on eligibility of the work under PE(PD) as well as using DEEP forces.

Lou – with the existing POs for WMC and CJM there is insufficient funding under PE(PD) for this MOA. We would need to process the PE(PD) mod you requested or include this cost in the PE(FD) estimate. DA was scheduled for 8/6; I'm presuming we will see this very soon.

Please let me know if there are questions. Until we hear back from FHWA, I'd say this issue is on hold.
Darren

Darren Meyers - Highways Capital Planning 594-2973

Be brief! Here's why: http://emailcharter.org

From: Saul, Amanda M
Sent: Tuesday, July 18, 2017 1:22 PM
To: Meyers, Darren E
Cc: Bacho, Louis D; Ruiz, Lesgie M; Davis, Andrew H
Subject: 60-158 Off-Site Mitigation for DEEP MOA

Darren,

Attached is the latest draft MOA for your review...Items 7 & 13 are of particular interest in that they include the provisions which we have written in to protect the departments interests.

If you have any comments or proposed changes please let me know. Also attached is the construction estimate/scope provided by DEEP and a copy of an email from Bob Gilmore indicating that the mitigation is suitable for the project.

Amanda

Amanda M. Saul
Transportation Planner 2
Connecticut DOT Office of Environmental Planning
Bureau of Policy and Planning
p: 860.594.2939
f: 860.594.3028
Amanda.Saul@ct.gov

Saul, Amanda M

To: Saul, Amanda M
Subject: FW: #60-158, Haddam; Off-site Fisheries Mitigation

From: Bacho, Louis D
Sent: Wednesday, July 19, 2017 11:43 AM
To: 'ted.aldieri@dot.gov'
Cc: Nezames, Theodore H; Barakat, Rabih M; Ruiz, Lesgie M; Meyers, Darren E; Saul, Amanda M; Davis, Andrew H
Subject: #60-158, Haddam; Off-site Fisheries Mitigation

Good morning Ted,

We have a culvert lining project in Haddam (project #60-158, bridge no. 06728) that requires off-site mitigation because our culvert is a barrier to fish passage and no retrofit options would provide passage of the slip-lined culvert. Our current schedule shows an FDP of 8-28-2018 which equates to a spring 2019 construction start.

The Wetland Habitat and Mosquito Management unit (WHAMM) from DEEP has located a suitable site nearby next to the Connecticut River that is within the Haddam Meadows marsh and has been used for production of northern pike for introduction into the State's waterways. The restoration project would clear the existing spawning channels of vegetation and sediment to allow adequate water depth for the adult and juvenile pike to pass. The cost of the mitigation is not to exceed $60,000 and DEEP will invoice the DOT as the work and/or equipment is completed or used.

DEEP would like to perform the mitigation this year ahead of the spring 2018 pike spawning season and not wait until our project is in construction in 2019. Therefore the funding would come out of design monies, either PD or FD (we are currently a month or two away from design approval). This is not the usual way off-site mitigation is handled as we generally utilize construction monies since the mitigation is done during construction, however CE Bridge believes this is a good candidate to perform the mitigation now as we would not lose one or possibly two spawning seasons if we wait.

We have a draft MOA which is close to being finalized (copy attached) that has provisions written in to protect the department interests in the unlikely event that the culvert project is cancelled.

Therefore we are asking FHWA's concurrence to proceed with off-site mitigation utilizing PD or FD funding.

I will call you later this afternoon to discuss but wanted to give you a heads up on what this mitigation entails.

Thanks,
Lou

Louis D. Bacho

Transportation Supervising Engineer
CT Department of Transportation
Consultant Design – Bridge
2800 Berlin Turnpike
Newington, CT
Phone: (860) 594-3212
Email: louis.bacho@ct.gov

Haddam Meadows Marsh

Excavation costs (est.) for Northern pike habitat restoration (equipment use only)

Work performed by CT DEEP Wildlife Div., WHAMM Program

Prepared by Roger Wolfe, Env. Analyst, WHAMM Program

Date: 11/28/16

Site preparation:	
Mowing, Marsh Master with brush mower: 2 days @$990/da	$1980
Excavation (low ground pressure equipment):	
Volvo lgp excavator: 12 days @ $1300/da	$15,600
Kobelco lgp excavator: 12 days @ $1000/da	$12,000
Spoil management: shuttling, spreading, grading	
Pisten Bully 100AS with dozer blade: 10 days @ $1383/da	$13,830
Mobilzation/demobilization: $550/da/piece (8 days)	$4,400
Additional 25% overhead charge	11,953
Total cost:	**$59,763**

DEEP / DOT
REGULATORY COORDINATION
Project Meeting Notes

Meeting Date(s): May 26, 2016
DOT Project Number: 0060-0158
Project Description: Bridge 06728, culvert relining of existing 72" asphalt coated CMP
Route: Route 9 over Mill River (A.K.A. Pole Bridge Brook)
Town(s): Haddam
Fisheries Correspondences Status: Pending review
NDDB Correspondence Status: Pending review
Department Priority: Anticipate construction Spring 2019
Current FDP: August 22, 2018
DOT Design Contact: Project Manager: Louis Bacho
Project Engineer: Susan Morneault
Project Designers: CJM

Project Purpose & Need:

The existing structure consists of a 397' long 72" diameter asphalt coated corrugated steel pipe. The culvert and wing walls are in poor condition with an overall rating of 2. The CMP has lost half the asphalt coating and the exposed steel exhibits heavy rust and perforations throughout. Inspection noted a couple seams within the pipe are dented downward 1 ½". The concrete end treatments exhibit areas of hairline cracking and some efflorescence. The cut-off wall is exposed 13" x 8' at the outlet creating a hanging outlet.

Due to the condition of the CMP and end walls, repairs are necessary for the safety and support of the roadway, as well as to prohibit any further deterioration of the drainage way.

Presentation & Discussion:

CJM, CTDOT's consultant, gave a PowerPoint presentation which shows the current condition and proposed method of relining the culvert.

The culvert is buried approximately 35' below the roadway. The drainage area for the culvert is less than 1 sq. mile (0.46 sq. mi.). The culvert slope is steep and velocities of 15-20 fps. Erosion/scour has caused a hanging outlet. This culvert was originally part of an original "List 21" group of culverts in need for rehabilitation.

The proposed project will involve a centrifugally cast-in-place concrete re-lining of the existing culvert. The hydraulic capacity of the culvert will remain adequate after the re-lining, however velocities may increase.

Transaction & Determinations:

The culvert will be centrifugally grouted with a bypass pipe used simultaneously in the pipe for water handling. The designer has considered baffles inside the culvert, but due to the steep slope and high velocity, it is expected the baffles will not have any longevity. It was suggested to review the possibility of including ripples with the relining to reduce the velocities within the culvert. Andy Davis (OEP) suggested including rock weirs at the outlet to show Brian Murphy (DEEP Fisheries).

The consultant designer stated that the Project RSR cannot be signed off without a Fisheries determination. It was discussed that this project had previously been proposed by the Department, but that there was not agreement between the two Departments on mitigation proposals. For this project, agreement is sought with DEEP fisheries regarding satisfactory and reasonable incorporation of fisheries improvements and/or mitigation.

The LEAN PowerPoint presentation is attached.

Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form

Federal agencies should use this form for the optional streamlined consultation framework for the northern long-eared bat (NLEB). This framework allows federal agencies to rely upon the U.S. Fish and Wildlife Service's (USFWS) January 5, 2016, intra-Service Programmatic Biological Opinion (BO) on the final 4(d) rule for the NLEB for section 7(a)(2) compliance by: (1) notifying the USFWS that an action agency will use the streamlined framework; (2) describing the project with sufficient detail to support the required determination; and (3) enabling the USFWS to track effects and determine if reinitiation of consultation is required per 50 CFR 402.16.

This form is not necessary if an agency determines that a proposed action will have no effect to the NLEB or if the USFWS has concurred in writing with an agency's determination that a proposed action may affect, but is not likely to adversely affect the NLEB (i.e., the standard informal consultation process). Actions that may cause prohibited incidental take require separate formal consultation. Providing this information does not address section 7(a)(2) compliance for any other listed species.

Information to Determine 4(d) Rule Compliance:	**YES**	**NO**
1. Does the project occur wholly outside of the WNS Zone[1]?	☐	☑
2. Have you contacted the appropriate agency[2] to determine if your project is near known hibernacula or maternity roost trees?	☑	☐
3. Could the project disturb hibernating NLEBs in a known hibernaculum?	☐	☑
4. Could the project alter the entrance or interior environment of a known hibernaculum?	☐	☑
5. Does the project remove any trees within 0.25 miles of a known hibernaculum at any time of year?	☐	☑
6. Would the project cut or destroy known occupied maternity roost trees, or any other trees within a 150-foot radius from the maternity roost tree from June 1 through July 31.	☐	☑

You are eligible to use this form if you have answered yes to question #1 **or** yes to question #2 **and** no to questions 3, 4, 5 and 6. The remainder of the form will be used by the USFWS to track our assumptions in the BO.

Agency: FHWA – Connecticut Division

Applicant[3] (Name, Email, Phone No.):
Connecticut Department of Transportation
Amanda M. Saul, Office of Environmental Planning
DOT.NLEB@ct.gov, (860)594-2939

Project Name: CTDOT0060-0158

Project Location (include coordinates if known): Route 9 over the Pole Bridge Brook, Town of Haddam; 41.4641, -72.5401

Basic Project Description (provide narrative below or attach additional information):

Rehabilitation for Br 06728, Route 9 over Pole Bridge Brook in the Town of Haddam.

[1] http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf
[2] See http://www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html
[3] If applicable - only needed for federal actions with applicants (e.g., for a permit, etc.) who are party to the consultation.

General Project Information	YES	NO
Does the project occur within 0.25 miles of a known hibernaculum?	☐	☑
Does the project occur within 150 feet of a known maternity roost tree?	☐	☑
Does the project include forest conversion[4]? (if yes, report acreage below)	☑	☐
Estimated total acres of forest conversion	<0.5 ac	
If known, estimated acres[5] of forest conversion from April 1 to October 31		
If known, estimated acres of forest conversion from June 1 to July 31[6]		
Does the project include timber harvest? (if yes, report acreage below)	☐	☑
Estimated total acres of timber harvest		
If known, estimated acres of timber harvest from April 1 to October 31		
If known, estimated acres of timber harvest from June 1 to July 31		
Does the project include prescribed fire? (if yes, report acreage below)	☐	☑
Estimated total acres of prescribed fire		
If known, estimated acres of prescribed fire from April 1 to October 31		
If known, estimated acres of prescribed fire from June 1 to July 31		
Does the project install new wind turbines? (if yes, report capacity in MW below)	☐	☑
Estimated wind capacity (MW)		

Agency Determination:

By signing this form, the action agency determines that this project may affect the NLEB, but that any resulting incidental take of the NLEB is not prohibited by the final 4(d) rule.

If the USFWS does not respond within 30 days from submittal of this form, the action agency may presume that its determination is informed by the best available information and that its project responsibilities under 7(a)(2) with respect to the NLEB are fulfilled through the USFWS January 5, 2016, Programmatic BO. The action agency will update this determination annually for multi-year activities.

The action agency understands that the USFWS presumes that all activities are implemented as described herein. The action agency will promptly report any departures from the described activities to the appropriate USFWS Field Office. The action agency will provide the appropriate USFWS Field Office with the results of any surveys conducted for the NLEB. Involved parties will promptly notify the appropriate USFWS Field Office upon finding a dead, injured, or sick NLEB.

Signature: Amanda M. Saul Digitally signed by Amanda M. Saul DN: cn=Amanda M. Saul, o=Connecticut Department of Transportation, ou=Office of Environmental Planning, email=amanda.saul@ct.gov, c=US Date: 2018.07.02 15:58:19 -04'00'

Date Submitted: 7/2/2018

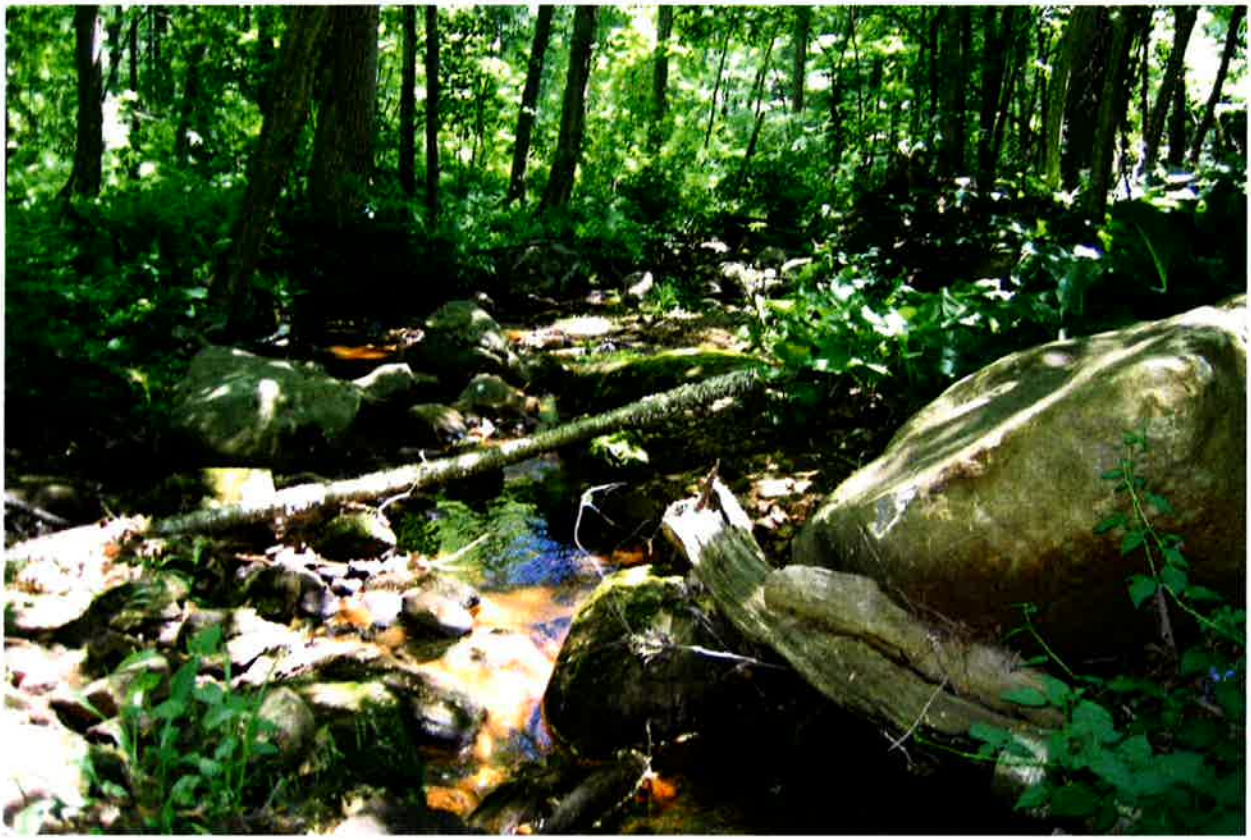
[4] Any activity that temporarily or permanently removes suitable forested habitat, including, but not limited to, tree removal from development, energy production and transmission, mining, agriculture, etc. (see page 48 of the BO).
[5] If the project removes less than 10 trees and the acreage is unknown, report the acreage as less than 0.1 acre.
[6] If the activity includes tree clearing in June and July, also include those acreage in April to October.

1. Looking North on Route 9 Southbound

2. Looking South on Route 9 Southbound

3. Looking North on Route 9 Northbound (By Google Maps)

4. Looking South on Route 9 Northbound (By Google Maps)



5. Looking East (Downstream)

6. Looking West (Upstream)

7. East Elevation (Downstream)

8. West Elevation (Upstream)

Attachment D: Other Information

Addendum for Department of the Army Permit

Applicant: State of Connecticut, Department of Transportation
Project No. 60-158 (Constr.), 60-158 (P.E.)
Rehabilitation of Bridge No. 06728 in Haddam
Route 9 over Pole Bridge Brook

List of Attachments

- Initial Inland Fisheries Coordination memo submitted to OEP dated March 21, 2016.
- Memorandum of Agreement between the Department of Energy and Environmental Protection and the Department of Transportation for a project entitled *"Fisheries Mitigation – Br. No. 06728, Route 9 over Pole Bridge Brook, Haddam, State Project 60-158"*, signed 10/10/17
- DEEP/DOT Regulatory Coordination Project Meeting Notes, May 26, 2016.
- Natural Diversity Data Base Area map of Haddam dated December 2017.

CTDEEP INLAND/MARINE FISHERIES DIVISION COORDINATION TRANSMITTAL MEMORANDUM

DOT Project #: 60-158 **Town:** Haddam **Bridge #: 06728**
Waterway: Mill River **Drainage Basin Name & Number:** 4015, Mill Creek
Project Description / Scope of work: Reline the existing pipe with a cured-in-place pipe lining system.
Design contact: Emma Lane **Town Initiated Project? No**

nitial Coordination

The following information is provided as required:

Plan /submittal date : 3/21/16

X Legible location map with project site clearly marked
X Description of scope of work and if developed, pertinent ½ scale plans as deemed relevant.
X Area photographs

To be completed by CTDEEP Fisheries Division and returned to DOT Environmental Planning Division

__ Affect of proposal on our program interests is negligible. No further review is warranted.
__ Additional information is required, a list of requested information is attached.
__ Comments and recommendations are attached.

_____ Initials
_____ Date

tructure Type Agreement

The following information is provided as required:

Plan date: _____

__ Copies of previous correspondence from Fisheries Division
__ If previous recommendations cannot be incorporated, provide narrative explaining why.
__ ½ scale plans of pertinent plan sheets including plan view, elevation view, profile and details as deemed relevant.

To be completed by CTDEEP Fisheries Division and returned to DOT Environmental Planning Division

__ DEEP Fisheries agrees to the structure type presented in the plans.
__ Unconfined in-stream work must be limited to _____
__ Other comments and recommendations are attached.

_____ Initials
_____ Date

inal Fisheries Sign-Off

____ ***Check here if project is not FM MOU eligible and will be finalized through DEEP IWRD.***

The following information is provided as required:

Plan date: _____

__ Copies of all previous correspondence from Fisheries Division
__ If previous recommendations cannot be incorporated, provide narrative explaining why.
__ ½ scale plans of pertinent plan sheets including plan view, elevation view, profile and details as deemed relevant.

To be completed by CTDEEP Fisheries Division and returned to DOT Environmental Planning Division

__ DEEP Fisheries comments have been adequately incorporated into project plans
__ The attached Special Conditions must be incorporated into the contract language

_____ _____
DEEP Fisheries Biologist Date

To be provided by Sponsoring Agency		
PS#	**Core CT Contract #**	**PO#**

MEMORANDUM OF AGREEMENT
BETWEEN THE
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION AND
THE DEPARTMENT OF TRANSPORTATION

This Memorandum of Agreement (MOA) is entered into by the Department of Energy and Environmental Protection (DEEP) and the Department of Transportation (DOT) for the purpose of undertaking a project of mutual interest.

1. **Duration**: The period of this MOA shall begin upon execution and shall expire when all conditions have been met but in any case no later than two years from the transfer of funds from DOT to DEEP.

2. **Title**: This project is entitled: *"Fisheries Mitigation – Br. No. 06728, Route 9 over Pole Bridge Brook, Haddam; State Project 60-158".*

3. **Total Project Costs** for the period of this MOA shall not exceed **$60,000.**

4. **Project Directors**: The following individuals are designated to serve as Project Directors (or Project Managers or Principal Investigators):

For the DOT
Andrew H. Davis
Transportation Supervising Planner
Office of Environmental Planning
Department of Transportation
2800 Berlin Turnpike
Newington, CT 06131
Email: andrew.h.davis@ct.gov
Phone: (860)594-2157

For the DEEP
Roger Wolfe
Environmental Analyst III
DEEP – Bureau of Natural Resources
Wildlife Division
391 Route 32
North Franklin, CT 06242
Email: roger.wolfe@ct.gov
Phone: (860) 418-5987

5. **Business Contacts**: The following individuals are designated to serve as contacts for business matters:

For the DOT:
Mark F. Carlino
Transportation Planning Director

Department of Transportation
2800 Berlin Turnpike
PO Box 317546
Newington, CT 06131
email: mark.carlino@ct.gov
Phone: 860-594-2099

For the DEEP:
Sharon Gdovin
Fiscal Administrative Officer

DEEP - FSS – Financial Management Division
79 Elm Street
Hartford, CT 06106-5127
email: sharon.gdovin@ct.gov
Phone (860) 418-5969
Fax (860) 424-4070

6. **General Supervision**: Primary responsibility for general supervision of all activities and compliance with all applicable laws and standards and the terms of this MOA rests with the DEEP.

7. **Description:** This MOA will cover work which will be conducted by the DEEP Wildlife Division for a fisheries project within the Haddam Meadows Marsh system (hereinafter called "restoration project"). The Haddam Meadows Marsh system has been used since 1975 for the production of northern pike for introduction for sport fisheries into the State's waterways. The restoration project involves management activities to clear channels of vegetation and accumulated sediments within the marsh system to allow for

adequate water depth for adult and juvenile Pike to emigrate out of the marsh when water levels are lowered. In addition to allowing free passage, increase in conveyance of waters into the marsh will restore the wetland functions to pre-Tropical Storm Irene levels (the cause of the increased sedimentation). The restoration project will be conducted by DEEP staff from the Wetland Habitat and Mosquito Management unit (WHAMM) of the Wildlife Division. DEEP Fisheries Division has obtained all required state/federal permits for the project.

The selected restoration project has been chosen as off-site mitigation for DOT Project 60-158 which involves the rehabilitation of culvert #06728 through a centrifugally cast-in-place pipe lining. The project has been flagged as requiring mitigation due to the fact that the existing culvert is a barrier to fish passage, and no retrofit options would provide passage of the rehabilitated culvert. The Haddam Meadows restoration project has been discussed with DEEP Land and Water Reuse Division (LWRD) and LWRD staff are in agreement with the suitability of this project as adequate mitigation for Project 60-158 (See Appendix A).

8. **Project Location:** DOT Project 60-158 is located in Haddam; Bridge #06728 carries Route 9 over Pole Bridge Brook. The off-site mitigation project is located on State property within the boundary of Haddam Meadows State Park in Haddam.

9. **Deliverables**:

A. By the DOT-

1) DOT will secure funding to support the mitigation project (See Appendix B).

2) A transfer of funds from DOT to DEEP to reimburse DEEP costs for the restoration project will take place following the receipt of invoices for said work. DEEP shall invoice the DOT for costs not to exceed $60,000 and in accordance with the cost estimate in Appendix C. Costs above this amount may be considered for reimbursement but are subject to eligibility restrictions and available funds.

B. By the DEEP-

1) Construction machinery, equipment, and personnel to complete the restoration work on the marshes.

2) Provide summary report and presentation to DOT following schedule in Paragraph 11 below.

3) Upon completion of the work, DEEP will provide an invoice for actual expenses incurred

10. **Budget**: A total of up to $60,000 in incurred expenses will be reimbursed by the DOT pursuant to the terms of the MOA. Project estimate given to DOT by DEEP at the time of the agreement for the cost of the work was $59,763.00 (Refer to Appendix C for cost estimate).

11. **Schedule of Reports**:

A. **Project Completion Report:** Upon completion of the restoration work, DEEP will provide a summary report of the completed activities to DOT. Summary report will include a presentation to the DOT. Such summaries should be submitted to the DOT no later than 3 months following project completion.

12. **Schedule of Activities**: Upon formal authorization of construction activities to commence from DOT to DEEP, the restoration activities will be scheduled and completed by DEEP. Timing of the restoration work to be determined by DEEP so as to not impact ongoing/active pike rearing activities in the marsh but shall be completed as expeditiously as practical. Invoicing and reimbursement for actual expenses will occur after work is completed.

13. **Cancellation**: Either party may propose to terminate this MOA. The party proposing termination must notify the other party of the MOA explaining the reasons for termination and afford at least ninety (90) days to

consult and seek alternatives to termination. Should such consultation fail, the MOA will be terminated. In the event that the DOT is the proponent of the cancellation after the transfer of the funds has been completed, or should DOT project 60-158 not proceed, the completed mitigation work will be transferrable to a future DOT project requiring off-site fisheries mitigation.

14. **Extensions/Amendments:** This MOA may be modified by the mutual agreement of the DOT and the DEEP. Revisions may include but not limited to:

    a. timing of the restoration work,
    b. any other agreement revisions determined material by either agency.

15. **Use of Funds:** The DEEP agrees to limit expenses and efforts to the quoted scope and cost estimate solely for the purpose of the restoration work at Haddam Meadows and accepts the terms of this MOA.

16. **CFDA Number is 20.205**. (Include if federal funding is used)

17. **Approved by:**

DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION	**DEPARTMENT OF TRANSPORTATION**
APPROVED	APPROVED
Date: 10/12/17	Date: Thomas J Maziarz
By: _____	By: 9-28-2017
Authorized Signature	Authorized Signature

Chartfield Distributions For Sponsor Agency use only.

Amount	Dept	Fund	SID	Program	Project	Activity	Bud Ref	Agency CF 1	Agency CF 2	Account
	DOT57191	12062	22108	34001	DOT0060158PE	PE0000		PE155		51210

APPENDIX - A

Saul, Amanda M

From: Saul, Amanda M
Sent: Wednesday, August 30, 2017 11:08 AM
To: Saul, Amanda M
Subject: FW: Fisheries Mitigation Project for CTDOT Project 60-158 (Bridge #06728)

From: Gilmore, Robert
Sent: Thursday, January 05, 2017 7:39 AM
To: Murphy, Brian
Subject: RE: Fisheries Mitigation Project for CTDOT Project 60-158 (Bridge #06728)

I support the proposed Haddam Meadows Marsh Project as acceptable mitigation for the DOT Pole Bridge Brook culvert slip lining project –at bridge #06728, Haddam.

Bob Gilmore, Supervisor
Regulatory – North Region
Land & Water Resources Division
Bureau of Water Protection & Land Reuse
Connecticut Department of Energy and Environmental Protection
79 Elm St, Hartford, CT 06106-5127
(860) 424-3866
robert.gilmore@ct.gov

From: Murphy, Brian
Sent: Wednesday, January 04, 2017 11:39 AM
To: Gilmore, Robert <Robert.Gilmore@ct.gov>
Subject: Fisheries Mitigation Project for CTDOT Project 60-158 (Bridge #06728)

Hi Bob,

Happy New Year! After the last DOT PMM/Lean Meeting in December you and I briefly discussed the use of the Haddam Meadows Marsh Project as mitigation for the DOT Pole Bridge Brook sliplining project. For reference I have attached an email on this issue I sent to you in late November. In essence, you mentioned you would send me an email that confirms that Land and Water Resources staff has agreed with the use of this project as suitable mitigation. Appreciate if you could send me a brief email that documents this opinion so that I could include it within my Fisheries review for the Pole Bridge Project. Thanks much.

Regards,
Brian D. Murphy, Senior Fisheries Habitat Biologist
Inland Fisheries Division
Habitat Conservation and Enhancement Program
Connecticut Department of Energy and Environmental Protection
Eastern District Headquarters
209 Hebron Road
Marlborough, CT 06447
P: 860.295-9523 | F: 860.295.8175 | brian.murphy@ct.gov

APPENDIX - B

Saul, Amanda M

From: Bacho, Louis D
Sent: Thursday, August 17, 2017 10:23 AM
To: Nezames, Theodore H; Barakat, Rabih M; Ruiz, Lesgie M; Saul, Amanda M; Davis, Andrew H; Trio, Jennifer N
Cc: Meyers, Darren E
Subject: FW: 60-158 Off-Site Mitigation for DEEP MOA

All,

I spoke with Ted Aldieri this morning and he is OK going forward with our off-site mitigation project with DEEP. At Ted's direction I will write a brief public interest finding paper for our records explaining why it is in the public's best interest to hire DEEP to perform this work as opposed to contracting this out via the bidding process.

Also we just submitted the design approval this morning for review and signatures.

Thanks all for your help,

Lou

Louis D. Bacho
Transportation Supervising Engineer
CT Department of Transportation
Consultant Design – Bridge
2800 Berlin Turnpike
Newington, CT
Phone: (860) 594-3212
Email: louis.bacho@ct.gov

From: Aldieri, Ted (FHWA) [mailto:Ted.Aldieri@dot.gov]
Sent: Thursday, August 17, 2017 10:15 AM
To: Bacho, Louis D
Cc: Meyers, Darren E
Subject: RE: 60-158 Off-Site Mitigation for DEEP MOA

Hi Lou,

FHWA takes no exception to how CT DOT would like to proceed with this mitigation as in the MOA and prior to the CN phase, we consider this as stage construction and is eligible for federal-aid.

I would like to make you aware that we consider DEEP as a State Force or work done by any municipal force or agency, and therefore requires a PIF. This PIF approval action as shown in the O&A page 13 Table 4 has been delegated to the State.

I discussed my few comments on the MOA with you but will leave that up to CT DOT to manage.

Feel free to contact me if you have any further questions.

Please let me know when mitigation work will commence as if time allows I would like to perform a field visit to the operation.

Thanks,

Ted

Ted J. Aldieri, S.E.T.
Division Structural Engineer/
Bridge Program Manager

Federal Highway Administration
Connecticut Division
628-2 Hebron Avenue
Suite 303
Glastonbury, CT 06033

Office No. 860-494-7582
Fax No. 860-659-6724
Ted.Aldieri@dot.gov

From: Bacho, Louis D [mailto:Louis.Bacho@ct.gov]
Sent: Thursday, August 17, 2017 9:54 AM
To: Aldieri, Ted (FHWA) <Ted.Aldieri@dot.gov>
Subject: FW: 60-158 Off-Site Mitigation for DEEP MOA

FYI

Louis D. Bacho
Transportation Supervising Engineer
CT Department of Transportation
Consultant Design – Bridge
2800 Berlin Turnpike
Newington, CT
Phone: (860) 594-3212
Email: louis.bacho@ct.gov

From: Meyers, Darren E
Sent: Thursday, August 17, 2017 8:05 AM
To: Saul, Amanda M; Bacho, Louis D
Cc: Ruiz, Lesgle M; Davis, Andrew H
Subject: RE: 60-158 Off-Site Mitigation for DEEP MOA

Hi Amanda,
I reviewed the draft MOA and formulated some comments that are intended to better clarify the purpose & need of this work and MOA. I looked at it from the perspective that FHWA agrees to eligibility & participation, and this cost would be paid out of the PE project with federal funds. Also, I changed some wording to reflect

our reimbursement of DEEP's actual expenses versus a transfer of funds. Please see my comments for items 7, 9A, 10, 12, 13, 15 and 16.

I saw Lou's email to FHWA and understand we are still awaiting their determination on eligibility of the work under PE(PD) as well as using DEEP forces.

Lou – with the existing POs for WMC and CJM there is insufficient funding under PE(PD) for this MOA. We would need to process the PE(PD) mod you requested or include this cost in the PE(FD) estimate. DA was scheduled for 8/6; I'm presuming we will see this very soon.

Please let me know if there are questions. Until we hear back from FHWA, I'd say this issue is on hold.
Darren

Darren Meyers - Highways Capital Planning 594-2973

Be brief! Here's why: http://emailcharter.org

From: Saul, Amanda M
Sent: Tuesday, July 18, 2017 1:22 PM
To: Meyers, Darren E
Cc: Bacho, Louis D; Ruiz, Lesgie M; Davis, Andrew H
Subject: 60-158 Off-Site Mitigation for DEEP MOA

Darren,

Attached is the latest draft MOA for your review...Items 7 & 13 are of particular interest in that they include the provisions which we have written in to protect the departments interests.

If you have any comments or proposed changes please let me know. Also attached is the construction estimate/scope provided by DEEP and a copy of an email from Bob Gilmore indicating that the mitigation is suitable for the project.

Amanda

Amanda M. Saul
Transportation Planner 2
Connecticut DOT Office of Environmental Planning
Bureau of Policy and Planning
p: 860.594.2939
f: 860.594.3028
Amanda.Saul@ct.gov

Saul, Amanda M

To: Saul, Amanda M
Subject: FW: #60-158, Haddam; Off-site Fisheries Mitigation

From: Bacho, Louis D
Sent: Wednesday, July 19, 2017 11:43 AM
To: 'ted.aldierl@dot.gov'
Cc: Nezames, Theodore H; Barakat, Rabih M; Ruiz, Lesgle M; Meyers, Darren E; Saul, Amanda M; Davis, Andrew H
Subject: #60-158, Haddam; Off-site Fisheries Mitigation

Good morning Ted,

We have a culvert lining project in Haddam (project #60-158, bridge no. 06728) that requires off-site mitigation because our culvert is a barrier to fish passage and no retrofit options would provide passage of the slip-lined culvert. Our current schedule shows an FDP of 8-28-2018 which equates to a spring 2019 construction start.

The Wetland Habitat and Mosquito Management unit (WHAMM) from DEEP has located a suitable site nearby next to the Connecticut River that is within the Haddam Meadows marsh and has been used for production of northern pike for introduction into the State's waterways. The restoration project would clear the existing spawning channels of vegetation and sediment to allow adequate water depth for the adult and juvenile pike to pass. The cost of the mitigation is not to exceed $60,000 and DEEP will invoice the DOT as the work and/or equipment is completed or used.

DEEP would like to perform the mitigation this year ahead of the spring 2018 pike spawning season and not wait until our project is in construction in 2019. Therefore the funding would come out of design monies, either PD or FD (we are currently a month or two away from design approval). This is not the usual way off-site mitigation is handled as we generally utilize construction monies since the mitigation is done during construction, however CE Bridge believes this is a good candidate to perform the mitigation now as we would not lose one or possibly two spawning seasons if we wait.

We have a draft MOA which is close to being finalized (copy attached) that has provisions written in to protect the department interests in the unlikely event that the culvert project is cancelled.

Therefore we are asking FHWA's concurrence to proceed with off-site mitigation utilizing PD or FD funding.

I will call you later this afternoon to discuss but wanted to give you a heads up on what this mitigation entails.

Thanks,
Lou

Louis D. Bacho

Transportation Supervising Engineer
CT Department of Transportation
Consultant Design – Bridge
2800 Berlin Turnpike
Newington, CT
Phone: (860) 594-3212
Email: louis.bacho@ct.gov

Haddam Meadows Marsh

Excavation costs (est.) for Northern pike habitat restoration (equipment use only)

Work performed by CT DEEP Wildlife Div., WHAMM Program

Prepared by Roger Wolfe, Env. Analyst, WHAMM Program

Date: 11/28/16

Site preparation:	
Mowing, Marsh Master with brush mower: 2 days @$990/da	$1980
Excavation (low ground pressure equipment):	
Volvo lgp excavator: 12 days @ $1300/da	$15,600
Kobelco lgp excavator: 12 days @ $1000/da	$12,000
Spoil management: shuttling, spreading, grading	
Pisten Bully 100AS with dozer blade: 10 days @ $1383/da	$13,830
Mobilzation/demobilization: $550/da/piece (8 days)	$4,400
Additional 25% overhead charge	11,953
Total cost:	**$59,763**

DEEP / DOT
REGULATORY COORDINATION
Project Meeting Notes

Meeting Date(s): May 26, 2016
DOT Project Number: 0060-0158
Project Description: Bridge 06728, culvert relining of existing 72" asphalt coated CMP
Route: Route 9 over Mill River (A.K.A. Pole Bridge Brook)
Town(s): Haddam
Fisheries Correspondences Status: Pending review
NDDB Correspondence Status: Pending review
Department Priority: Anticipate construction Spring 2019
Current FDP: August 22, 2018
DOT Design Contact: Project Manager: Louis Bacho
Project Engineer: Susan Morneault
Project Designers: CJM

Project Purpose & Need:

The existing structure consists of a 397' long 72" diameter asphalt coated corrugated steel pipe. The culvert and wing walls are in poor condition with an overall rating of 2. The CMP has lost half the asphalt coating and the exposed steel exhibits heavy rust and perforations throughout. Inspection noted a couple seams within the pipe are dented downward 1 ½". The concrete end treatments exhibit areas of hairline cracking and some efflorescence. The cut-off wall is exposed 13" x 8' at the outlet creating a hanging outlet.

Due to the condition of the CMP and end walls, repairs are necessary for the safety and support of the roadway, as well as to prohibit any further deterioration of the drainage way.

Presentation & Discussion:

CJM, CTDOT's consultant, gave a PowerPoint presentation which shows the current condition and proposed method of relining the culvert.

The culvert is buried approximately 35' below the roadway. The drainage area for the culvert is less than 1 sq. mile (0.46 sq. mi.). The culvert slope is steep and velocities of 15-20 fps. Erosion/scour has caused a hanging outlet. This culvert was originally part of an original "List 21" group of culverts in need for rehabilitation.

The proposed project will involve a centrifugally cast-in-place concrete re-lining of the existing culvert. The hydraulic capacity of the culvert will remain adequate after the re-lining, however velocities may increase.

Transaction & Determinations:

The culvert will be centrifugally grouted with a bypass pipe used simultaneously in the pipe for water handling. The designer has considered baffles inside the culvert, but due to the steep slope and high velocity, it is expected the baffles will not have any longevity. It was suggested to review the possibility of including ripples with the relining to reduce the velocities within the culvert. Andy Davis (OEP) suggested including rock weirs at the outlet to show Brian Murphy (DEEP Fisheries).

The consultant designer stated that the Project RSR cannot be signed off without a Fisheries determination. It was discussed that this project had previously been proposed by the Department, but that there was not agreement between the two Departments on mitigation proposals. For this project, agreement is sought with DEEP fisheries regarding satisfactory and reasonable incorporation of fisheries improvements and/or mitigation.

The LEAN PowerPoint presentation is attached.

Natural Diversity Data Base Areas

60-158

HADDAM, CT

December 2017

State and Federal Listed Species & Significant Natural Communities

Town Boundary

NOTE: This map shows general locations of State and Federal Listed Species and Significant Natural Communities. Information on listed species is collected and compiled by the Natural Diversity Data Base (NDDB) from a number of data sources . Exact locations of species have been buffered to produce the general locations. Exact locations of species and communities occur somewhere in the shaded areas, not necessarily in the center. A new mapping format is being employed that more accurately models important riparian and aquatic areas and eliminates the need for the upstream/downstream searches required in previous versions.

317

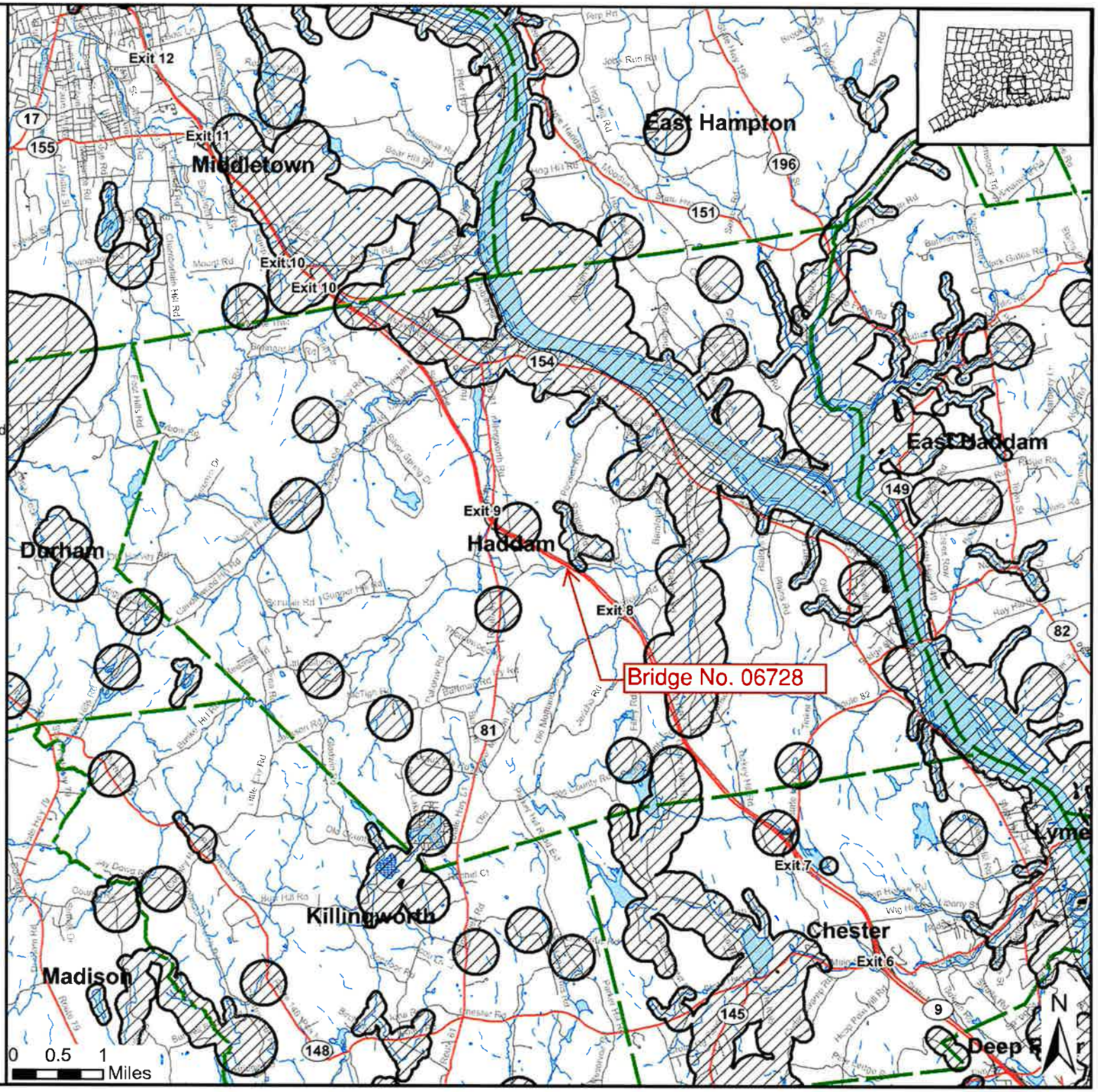
This map is intended for use as a preliminary screening tool for conducting a Natural Diversity Data Base Review Request. To use the map, locate the project boundaries and any additional affected areas. If the project is within a shaded area there may be a potential conflict with a listed species. For more information, complete a Request for Natural Diversity Data Base State Listed Species Review form (DEP-APP-007), and submit it to the NDDB along with the required maps and information. More detailed instructions are provided with the request form on our website.

www.ct.gov/deep/nddbrequest

Use the CTECO Interactive Map Viewers at www.cteco.uconn.edu to more precisely search for and locate a site and to view aerial imagery with NDDB Areas.

QUESTIONS: Department of Energy and Environmental Protection (DEEP)
79 Elm St., Hartford CT 06106
Phone (860) 424-3011

Connecticut Department of Energy & Environmental Protection
Bureau of Natural Resources
Wildlife Division



STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-2931

November 5, 2018

Ms. Susan Lee
U.S. Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742-2751

Subject: State Bridge Program
Bridge No. 06728 in Haddam, CT
Route 9 over Pole Bridge Brook

Dear Ms. Lee:

Enclosed please find the Pre-Construction Notification Form for your review and approval. An application for the Connecticut Addendum Army Corps of Engineers General Permit State of Connecticut (CT GP) was previously submitted to the Connecticut Department of Energy and Environmental Protection under a separate cover letter for processing. The project has received funding from FHWA, and as such has been submitted to the USFWS under the final 4(d) rule for the Federally Threatened Northern Long-Eared bat. Consultation was concluded on August 4, 2018. There are no documented hibernacula in Haddam or in the vicinity of the project. Any questions pertaining to this application may be directed to Mr. Andrew H. Davis, Transportation Supervising Planner of my staff, at 860-594-2157.

Very truly yours,

Kimberly C. Lesay
Transportation Assistant Planning Director
Bureau of Policy and Planning

Attachments
cc: Nathan Margason – USEPA

Aija Zeidenbergs/az
bcc: Andrew H. Davis – Amanda M. Saul
Robert E. Obey – Eileen Ego, District 2
Theodore H. Nezames – Rabih M. Barakat – Louis D. Bacho – Lesgie M. Ruiz
Thomas M. Ryan – Mark F. Levesque (CJM)

Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form

Federal agencies should use this form for the optional streamlined consultation framework for the northern long-eared bat (NLEB). This framework allows federal agencies to rely upon the U.S. Fish and Wildlife Service's (USFWS) January 5, 2016, intra-Service Programmatic Biological Opinion (BO) on the final 4(d) rule for the NLEB for section 7(a)(2) compliance by: (1) notifying the USFWS that an action agency will use the streamlined framework; (2) describing the project with sufficient detail to support the required determination; and (3) enabling the USFWS to track effects and determine if reinitiation of consultation is required per 50 CFR 402.16.

This form is not necessary if an agency determines that a proposed action will have no effect to the NLEB or if the USFWS has concurred in writing with an agency's determination that a proposed action may affect, but is not likely to adversely affect the NLEB (i.e., the standard informal consultation process). Actions that may cause prohibited incidental take require separate formal consultation. Providing this information does not address section 7(a)(2) compliance for any other listed species.

Information to Determine 4(d) Rule Compliance:	**YES**	**NO**
1. Does the project occur wholly outside of the WNS Zone[1]?	☐	☑
2. Have you contacted the appropriate agency[2] to determine if your project is near known hibernacula or maternity roost trees?	☑	☐
3. Could the project disturb hibernating NLEBs in a known hibernaculum?	☐	☑
4. Could the project alter the entrance or interior environment of a known hibernaculum?	☐	☑
5. Does the project remove any trees within 0.25 miles of a known hibernaculum at any time of year?	☐	☑
6. Would the project cut or destroy known occupied maternity roost trees, or any other trees within a 150-foot radius from the maternity roost tree from June 1 through July 31.	☐	☑

You are eligible to use this form if you have answered yes to question #1 **or** yes to question #2 **and** no to questions 3, 4, 5 and 6. The remainder of the form will be used by the USFWS to track our assumptions in the BO.

Agency: FHWA – Connecticut Division

Applicant[3] (Name, Email, Phone No.):
Connecticut Department of Transportation
Amanda M. Saul, Office of Environmental Planning
DOT.NLEB@ct.gov, (860)594-2939

Project Name: CTDOT0060-0158

Project Location (include coordinates if known): Route 9 over the Pole Bridge Brook, Town of Haddam; 41.4641, -72.5401

Basic Project Description (provide narrative below or attach additional information):

Rehabilitation for Br 06728, Route 9 over Pole Bridge Brook in the Town of Haddam.

[1] http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf
[2] See http://www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html
[3] If applicable - only needed for federal actions with applicants (e.g., for a permit, etc.) who are party to the consultation.

General Project Information	YES	NO
Does the project occur within 0.25 miles of a known hibernaculum?	☐	☑
Does the project occur within 150 feet of a known maternity roost tree?	☐	☑
Does the project include forest conversion[4]? (if yes, report acreage below)	☑	☐
Estimated total acres of forest conversion	<0.5 ac	
If known, estimated acres[5] of forest conversion from April 1 to October 31		
If known, estimated acres of forest conversion from June 1 to July 31[6]		
Does the project include timber harvest? (if yes, report acreage below)	☐	☑
Estimated total acres of timber harvest		
If known, estimated acres of timber harvest from April 1 to October 31		
If known, estimated acres of timber harvest from June 1 to July 31		
Does the project include prescribed fire? (if yes, report acreage below)	☐	☑
Estimated total acres of prescribed fire		
If known, estimated acres of prescribed fire from April 1 to October 31		
If known, estimated acres of prescribed fire from June 1 to July 31		
Does the project install new wind turbines? (if yes, report capacity in MW below)	☐	☑
Estimated wind capacity (MW)		

Agency Determination:

By signing this form, the action agency determines that this project may affect the NLEB, but that any resulting incidental take of the NLEB is not prohibited by the final 4(d) rule.

If the USFWS does not respond within 30 days from submittal of this form, the action agency may presume that its determination is informed by the best available information and that its project responsibilities under 7(a)(2) with respect to the NLEB are fulfilled through the USFWS January 5, 2016, Programmatic BO. The action agency will update this determination annually for multi-year activities.

The action agency understands that the USFWS presumes that all activities are implemented as described herein. The action agency will promptly report any departures from the described activities to the appropriate USFWS Field Office. The action agency will provide the appropriate USFWS Field Office with the results of any surveys conducted for the NLEB. Involved parties will promptly notify the appropriate USFWS Field Office upon finding a dead, injured, or sick NLEB.

Signature: Amanda M. Saul Digitally signed by Amanda M. Saul DN: cn=Amanda M. Saul, o=Connecticut Department of Transportation, ou=Office of Environmental Planning, email=amanda.saul@ct.gov, c=US Date: 2018.07.02 15:58:19 -04'00'

Date Submitted: 7/2/2018

[4] Any activity that temporarily or permanently removes suitable forested habitat, including, but not limited to, tree removal from development, energy production and transmission, mining, agriculture, etc. (see page 48 of the BO).
[5] If the project removes less than 10 trees and the acreage is unknown, report the acreage as less than 0.1 acre.
[6] If the activity includes tree clearing in June and July, also include those acreage in April to October.

U.S. Army Corps of Engineers (USACE)

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT

33 CFR 325. The proponent agency is CECW-CO-R.

Form Approved - OMB No. 0710-0003 Expires: 01-08-2018

The public reporting burden for this collection of information, OMB Control Number 0710-0003, is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR APPLICATION TO THE ABOVE EMAIL.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned. System of Record Notice (SORN). The information received is entered into our permit tracking database and a SORN has been completed (SORN #A1145b) and may be accessed at the following website: http://dpcld.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.aspx

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required)
First - Middle - Last -	First - Middle - Last -
Company - Connecticut Department of Transportation (CTDOT)	Company -
E-mail Address - kimberly.lesay@ct.gov	E-mail Address -
6. APPLICANT'S ADDRESS:	9. AGENT'S ADDRESS:
Address- 2800 Berlin Turnpike	Address-
City - Newington State - CT Zip - 06131 Country - USA	City - State - Zip - Country -
7. APPLICANT'S PHONE NOs. w/AREA CODE	10. AGENTS PHONE NOs. w/AREA CODE
a. Residence b. Business c. Fax	a. Residence b. Business c. Fax
N/A (860) 594-2931 (860) 594-3028	

STATEMENT OF AUTHORIZATION

11. I hereby authorize, _____ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

_____ _____

SIGNATURE OF APPLICANT DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)

State Project No. 60-158, Bridge No. 06728 in Haddam, Route 9 over Pole Bridge Brook

13. NAME OF WATERBODY, IF KNOWN (if applicable)	14. PROJECT STREET ADDRESS (if applicable)
Pole Bridge Brook	Address Route 9
15. LOCATION OF PROJECT	City - Haddam State- CT Zip- 06438
Latitude: °N 41° 27' 50.65" Longitude: °W 72° 32' 26.20"	

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)

State Tax Parcel ID Municipality

Section - Township - Range -

17. DIRECTIONS TO THE SITE

From Concord, Massachusetts: Take MA-2 West in Concord and continue for 6.6 miles. Take Exit 40A to merge onto Interstate 495 South toward Marlborough and Worcester and continue for 12.8 miles. Take Exit 25B for Interstate 290 toward Worcester and merge onto I-290 West. Continue for 19.8 miles and take Exit 7 for Interstate 90/Mass. Pike. Keep left at the fork, follow signs for I-90 W/Springfield/Albany and merge onto I-90 West. Continue for 11.6 miles and use right 2 lanes to take Exit 9 for Interstate 84 toward US-20/Hartford/New York City. Continue on I-84 for 40.9 miles then use the left 2 lanes to take Exit 57 for CT-15S toward Interstate 91/Charter Oak Bridge/N.Y. City. Continue for 1.9 miles on CT-15 South and take Exit 86 to merge onto I-91 South toward New Haven/New York City. Continue for 8.9 miles and use left lane to take Exit 22 South onto CT-9 S. Continue for 14.5 miles to the culvert crossing.

18. Nature of Activity (Description of project, include all features)

See Attachment A.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

Based on field inspection and engineering analysis of the structure, the existing culvert is structurally deficient. Its structural deficiency is primarily a result of the deteriorated condition of the corrugated metal pipe. The culvert has lost half of the asphaltic coating and the exposed steel plate exhibits heavy laminar rust and perforations throughout.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

Permanent impacts are the result of lining the culvert with concrete and the installation of baffles. Temporary impacts are as a result of water handling devices required to perform substructure repairs in the dry and access roads to access the site.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards
Concrete-20 CY		

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres See Attachment A.

or

Linear Feet

23. Description of Avoidance, Minimization, and Compensation (see instructions)

See Attachment A.

24. Is Any Portion of the Work Already Complete? ☐ Yes ☒ No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address- State of Connecticut Department of Energy and Environmental Protection, 79 Elm Street

City - Hartford State - CT Zip - 06106

b. Address- State of Connecticut Department of Transportation, 2800 Berlin Turnpike

City - Newington State - CT Zip - 06131

c. Address- Joseph N. Drexler Jr, 165 Nedobity Road

City - Higganum State - CT Zip - 06441

d. Address-

City - State - Zip -

e. Address-

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
DEEP IWRD	PGP Addendum		Concurrent		
DEEP IWRD	IW General		TBD		

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

Thomas J. Maziarz 11-6-2018

SIGNATURE OF APPLICANT DATE SIGNATURE OF AGENT DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

Attachment A: Additional Information

Application for Department of the Army Permit

Applicant: State of Connecticut, Department of Transportation
Project No. 60-158 (Constr.), 60-158 (P.E.)
Rehabilitation of Bridge No. 06728 in Haddam
Route 9 over Pole Bridge Brook

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18. NATURE OF ACTIVITY

Bridge No. 06728, built in 1966, carries 5 lanes of Route 9 over Pole Bridge Brook in the Town of Haddam. The structure is situated approximately 1.2 miles south of Route 81 and approximately 120 feet southeast of Bridge 03380 and Bridge 03381.

The existing structure consists of a 6-foot diameter (72-inch) asphalt coated corrugated steel plate pipe culvert with square edged concrete endwalls. The culvert carries two lanes of southbound traffic and three lanes of northbound traffic and a vegetated median separating the two roadways. The curb to curb roadway width is approximately 38 feet for Route 9 SB and 42 feet for Route 9 NB. The culvert is placed on a 30° skew to the travelway and has an overall length of 397 feet. There is approximately 28 feet of overburden to the roadway surface.

The culvert and wingwalls are in critical condition with an overall rating of 2. The corrugated metal pipe culvert has lost half of the asphaltic coating and the exposed steel plate exhibits heavy laminar rust and perforations throughout. The circumferential seam approximately 15 feet from the inlet is misaligned by approximately 1-½ inches at the top, though no ballast is visible. There is another circumferential seam located 150 feet from the inlet, which is dented downward at the crown by approximately 1-½ inches. The concrete end treatments exhibit areas of vertical and hairline cracking, and some spalls. The southeast wingwall exhibits severe scaling up to the waterline.

The channel is in satisfactory condition with an overall rating of 6. The channel flows from west to east and has minor to moderate streambed scour at the inlet and outlet exposing the cutoff walls up to 16 inches high by 8 feet long at the outlet. This scour has not exposed the wingwall footings. The water depths at the outlet on the southeast side range from 2 to 12 inches deep. The channel embankments exhibit moderate erosion exposing brush and tree roots upstream and downstream. There is moderate accumulation of tree limbs and debris in the channel upstream and downstream. There is light to moderate vegetative growth throughout the channel. Encroachment of the northwest embankment pushes the thread of the channel into the southwest wingwall. The estimated bank full width is approximately 10 feet both upstream and downstream.

The estimated 2015 Average Daily Traffic (ADT) over the Pole Bridge Brook is 27,300 vehicles, with 9% truck traffic.

The proposed rehabilitation consists of pressure grouting the existing corrugated metal pipe and relining of the barrel with a 2-inch maximum thickness cured-in-place structural pipe lining system. The cured-in-place pipe lining will be centrifugally cast in order to repair all perforations and other issues associated with this culvert. The lining will allow for waterproofing, sealing, corrosion protection of the corrugated pipe and structural reinforcing. The full diameter of the pipe will be lined. Post conditions will exhibit a minimum inside diameter 4-inches less than existing. Five 8 inch high baffles will be installed in the last 30

feet of the culvert for energy dissipation. Hubbard Road, located approximately 300 feet west of Bridge 06728, can be used to access the culvert. Pumping operations will be utilized to direct flow around the work area. Channel grading at the inlet and outlet is not proposed. Review of inspection reports indicates that the cutoff wall is exposed, with exposure measurements up to 16 inches. Images included in the inspection reports indicate that the large stones at the outlet and within the exit reach are generally stable.

It is anticipated that bypass pumping will be utilized to maintain a dry work area for the duration of the project. Discussion with the supplier and contractor qualified in the application of a cured-in-place pipe lining rehabilitation has indicated that it is possible to bypass flow through the barrel to be rehabilitated if necessary. To facilitate the pumping scheme, a water handling device will be installed upstream to pool the stream flow to a nominal depth of 2 feet. This pooling depth will be used to create a sump condition for bypass pumping. Construction is anticipated to begin in the spring of 2019 and last approximately four months.

The Pole Bridge Brook flows in an easterly direction at the bridge. The drainage area of Pole Bridge Brook at the Route 9 crossing was delineated to be 0.48 square miles. The regulated resources in the area include State Regulated Watercourse and Inland Wetlands, Federally Regulated Wetlands and Waters of the U.S.

According to the August 28, 2008, Panel 09007C0233G, Middlesex County, Flood Insurance Rate Map, the project is not located within a FEMA Flood Zone. Coordination has taken place with CT DEEP Fisheries Division and have indicated that the perched condition of the proposed rehabilitation is acceptable for this project in conjunction with the MOA included in Attachment D.

22. SURFACE AREA IN ACRES OF WETLANDS OR OTHER WATERS FILLED

Permanent impacts anticipated to the inland wetlands and watercourses will amount to approximately 2,385 sq. ft. (0.06 acres). Permanent impacts are a result of the concrete lining and the installation of baffles. Temporary impacts to inland wetlands and watercourses will amount to approximately 1,789 sq. ft. (0.04 acres). Temporary impacts are a result of the installation of water handling devices and access roads.

There are no permanent impacts to inland wetlands. Temporary impacts to the wetlands above the Ordinary High Water line will amount to approximately 1,263 sq. ft. (0.03 acres).

Permanent impacts below the Ordinary High Water line will amount to approximately 2,385 sq. ft. (0.06 acres). Temporary impacts below the Ordinary High Water line will amount to approximately 526 sq. ft. (0.01 acres).

23. DESCRIPTION OF AVOIDANCE, MINIMZATION AND COMPENSATION

Impacts to the stream will be minimized and water quality can be maintained through adherence to the Form 817 Section 1.10 Best Management Practices (BMP's) and the 2004 Stormwater Quality Manual. During construction, proper water handling measures will be implemented to allow work to occur in the areas confined within those water handling devices. Construction is anticipated to begin in the spring of 2019 and last approximately four months.

Sedimentation and Erosion Control Systems will be installed as necessary to limit disturbances to protect the wetlands and watercourses through adherence to the 2002

Connecticut Guidelines for Erosion and Sedimentation Control. Sedimentation and Erosion Control Systems include but are not limited to the following.

- Invasive control utilizing CTDOT Item#0952051A (as amanded) – Control and Removal of Invasive Vegetation.
- The restoration of temporarily impacted areas.
- Installation, use and maintenance of combined silt fencing and haybale erosion and sedimentation control around other work areas.
- Storage of contruction materials outside of wetlands and flood-prone areas.
- Vehicle re-fueling and servicing at a location outside of the wetland and watercourse.
- Proper care and maintenance of vehicles and equipment.

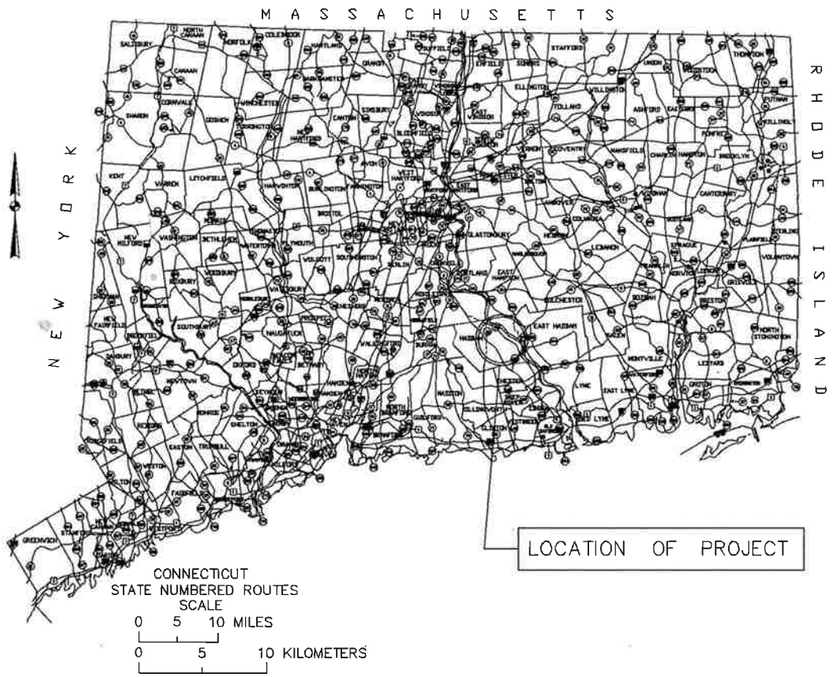
Attachment B: Plan Sheets and Drawings

Application for Department of the Army Permit

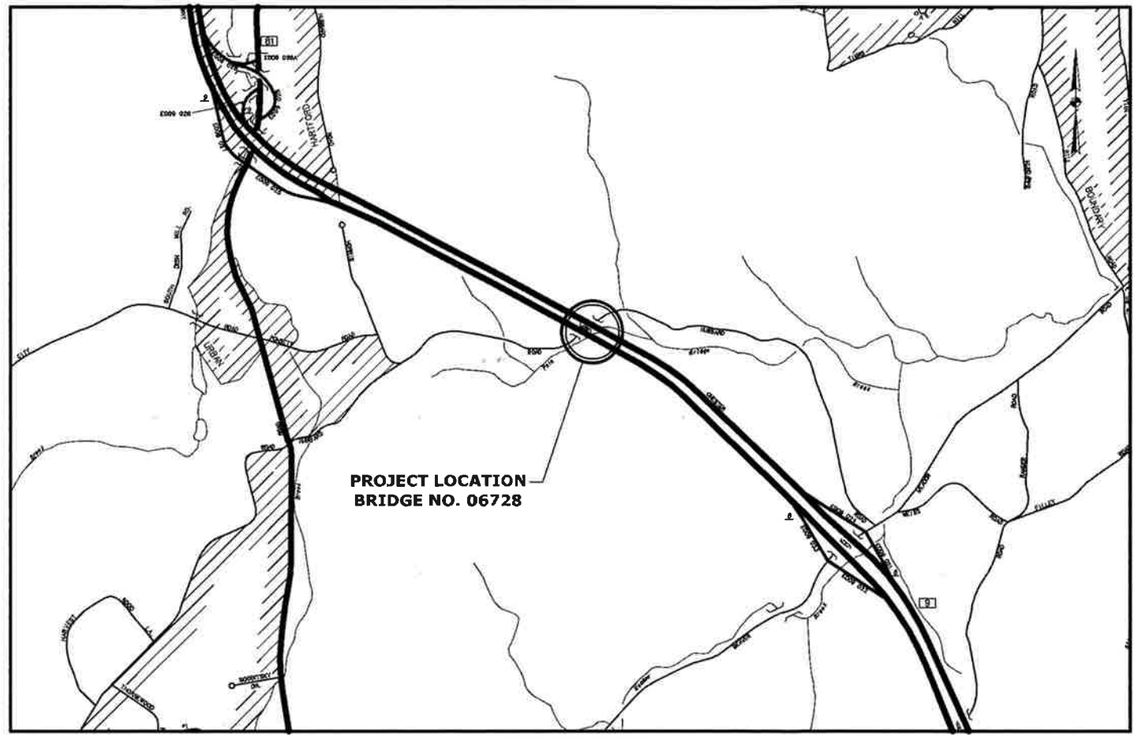
Applicant: State of Connecticut, Department of Transportation
Project No. 60-158 (Constr.), 60-158 (P.E.)
Rehabilitation of Bridge No. 06728 in Haddam
Route 9 over Pole Bridge Brook

List of Plan Sheets and Drawings

PMT-01	Title Sheet	October 2018
PMT-02	General Site Plan	October 2018
PMT-03	Wetland/Watercourse Impact Plan	October 2018
PMT-04	Elevation and Section Plan	October 2018
PMT-05	Staging and Water Handling Plan	October 2018
PMT-06	Seeding/Planting and Invasive Plan	October 2018



ENVIRONMENTAL PERMIT PLANS
STATE PROJECT NO. 60-158
REHABILITATION OF BRIDGE NO. 06728, ROUTE 9
IN THE TOWN OF HADDAM



LOCATION PLAN
SCALE: 1" = 1000'

GENERAL NOTES

1. THESE PLANS ARE INTENDED ONLY FOR ENVIRONMENTAL PERMITTING PURPOSES. THESE PLANS HOLD AUTHORITY FOR ALL ACTIVITIES CONCERNING THE REGULATED AREA. FOR DETAILED PLANIMETRIC INFORMATION AND PAYMENT REFER TO THE APPLICABLE CONTRACT DOCUMENTS.
2. THE DEPARTMENT OF TRANSPORTATION WILL ONLY SUBMIT REVISIONS TO DEEP AND USACE FOR CHANGES TO THE DESIGN THAT WILL AFFECT REGULATED AREAS.
3. FOR A DESCRIPTION OF THE WATERCOURSES, WETLANDS AND WETLAND SOILS SEE RELEVANT SECTIONS OF THE PERMIT APPLICATION.
4. 400 FOOT GRID BASED ON CONNECTICUT COORDINATE SYSTEM N.A.D. 1927. VERTICAL DATUM BASED ON NGVD 1929.
5. ALL CONSTRUCTION ACTIVITIES WILL BE CONDUCTED IN ACCORDANCE WITH THE DEPARTMENT'S STANDARD SPECIFICATIONS FOR ROADS, BRIDGE, AND INCIDENTAL CONSTRUCTION, FORM 817, SECTION 1.10 AND WILL ALSO FOLLOW REQUIRED BEST MANAGEMENT PRACTICES (BMPs) AND SEDIMENT AND EROSION CONTROL MEASURES IN ACCORDANCE WITH THE 2002 EROSION & SEDIMENTATION CONTROL GUIDELINES AND THE 2004 STORMWATER QUALITY MANUAL.
6. WETLANDS DELINEATION BY FHI ON OCTOBER 2016.

LIST OF DRAWINGS	
DRAWING NO.	TITLE
PMT-01	TITLE SHEET
PMT-02	GENERAL SITE PLAN
PMT-03	WETLAND /WATERCOURSE IMPACT PLAN
PMT-04	ELEVATION AND SECTION PLAN
PMT-05	STAGING AND WATER HANDLING PLAN 06840
PMT-06	SEEDING/PLANTING AND INVASIVE PLAN

DESIGNED BY:
WMC CONSULTING ENGINEERS
87 HOLMES ROAD
NEWINGTON CT 06111

PLAN DATE: OCTOBER 24, 2018

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

60-158

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 10/24/2018

DESIGNER/DRAFTER: M. GREER
CHECKED BY: K. ELDER
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\01_Title Sheet Environmental Permit Plans.dgn

329

SIGNATURE/ BLOCK:

WMC Consulting Engineers
87 Holmes Road
Newington, CT 06111

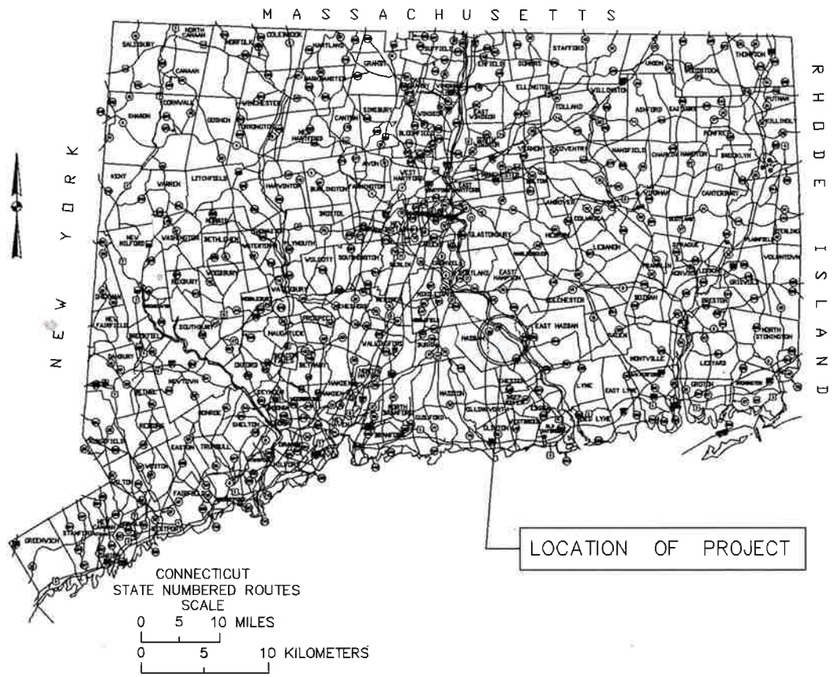
PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 06728, ROUTE 9 OVER POLE BRIDGE BROOK

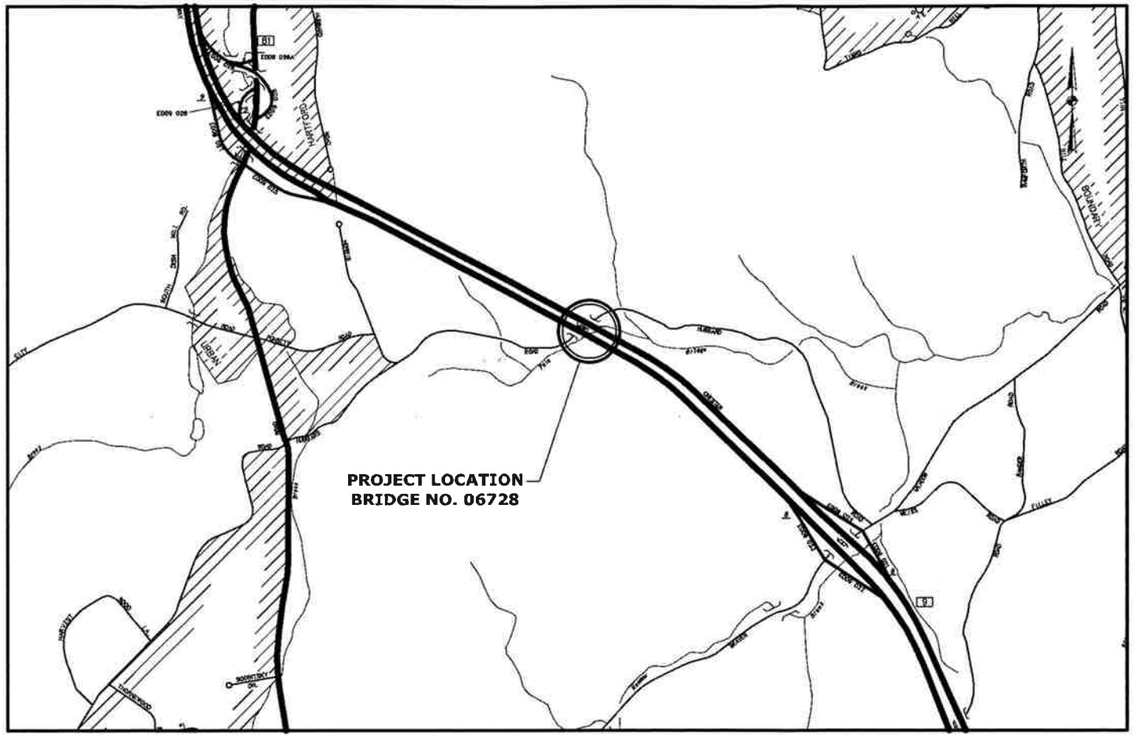
TOWN: HADDAM

DRAWING TITLE: TITLE SHEET

PROJECT NO. 60-158
DRAWING NO. PMT-01
SHEET NO.

ENVIRONMENTAL PERMIT PLANS
STATE PROJECT NO. 60-158
REHABILITATION OF BRIDGE NO. 06728, ROUTE 9
IN THE TOWN OF HADDAM





LOCATION PLAN
SCALE: 1" = 1000'

GENERAL NOTES

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2. THE DEPARTMENT OF TRANSPORTATION WILL ONLY SUBMIT REVISIONS TO DEEP AND USACE FOR CHANGES TO THE DESIGN THAT WILL AFFECT REGULATED AREAS.
3. FOR A DESCRIPTION OF THE WATERCOURSES, WETLANDS AND WETLAND SOILS SEE RELEVANT SECTIONS OF THE PERMIT APPLICATION.
4. 400 FOOT GRID BASED ON CONNECTICUT COORDINATE SYSTEM N.A.D. 1927. VERTICAL DATUM BASED ON NGVD 1929.
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6. WETLANDS DELINEATION BY FHI ON OCTOBER 2016.

LIST OF DRAWINGS	
DRAWING NO.	TITLE
PMT-01	TITLE SHEET
PMT-02	GENERAL SITE PLAN
PMT-03	WETLAND /WATERCOURSE IMPACT PLAN
PMT-04	ELEVATION AND SECTION PLAN
PMT-05	STAGING AND WATER HANDLING PLAN 06840
PMT-06	SEEDING/PLANTING AND INVASIVE PLAN

DESIGNED BY:
WMC CONSULTING ENGINEERS
87 HOLMES ROAD
NEWINGTON CT 06111

PLAN DATE: OCTOBER 24, 2018

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

60-158

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Plotted Date: 10/24/2018

DESIGNER/DRAFTER: M. GREER
CHECKED BY: K. ELDER
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

330

Filename: ...\01-Title Sheet Environmental Permit Plans.dgn

SIGNATURE/BLOCK:

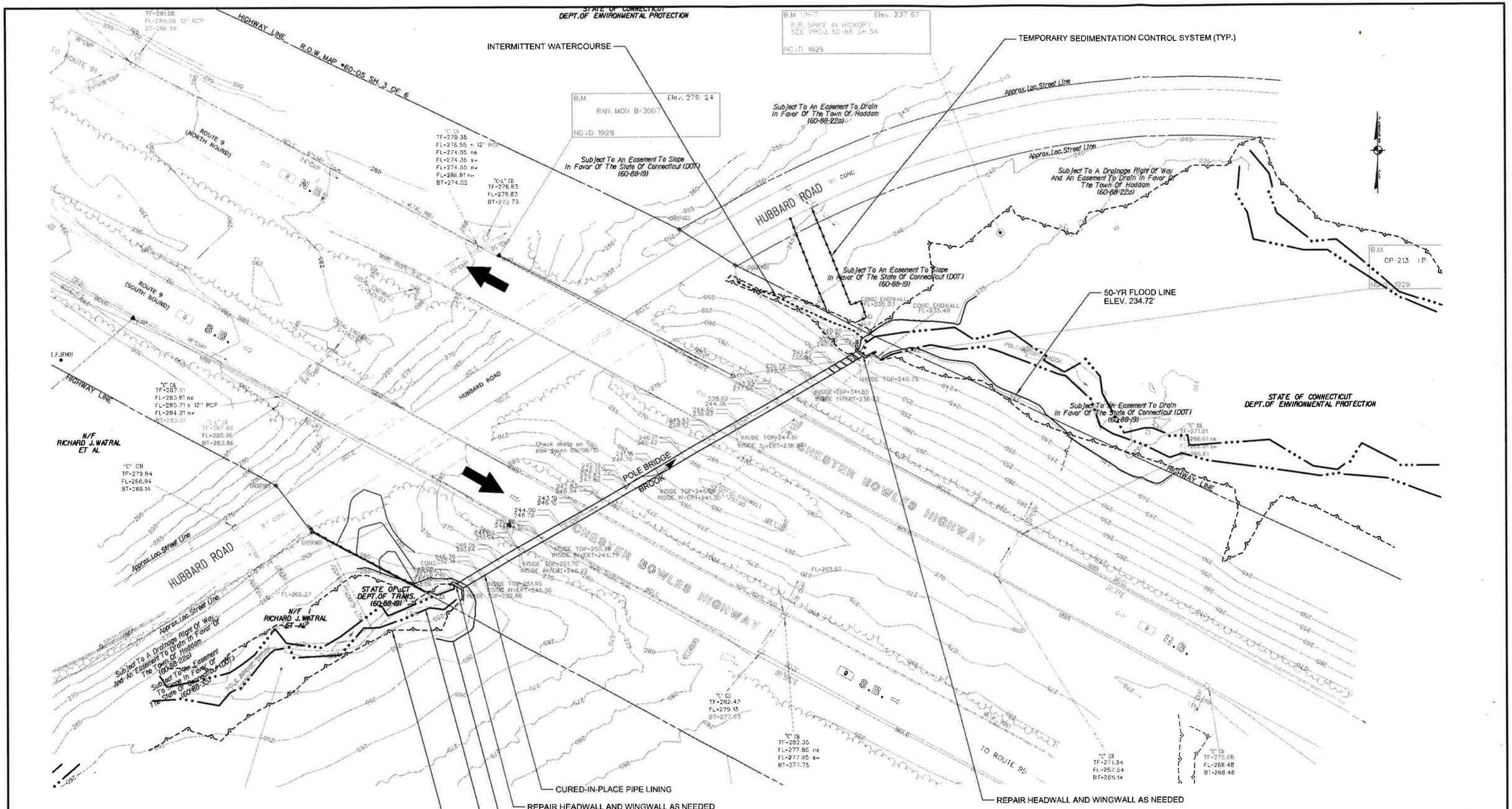
WMC Consulting Engineers
87 Holmes Road
Newington, CT 06111

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 06728, ROUTE 9 OVER POLE BRIDGE BROOK

TOWN: HADDAM

DRAWING TITLE: TITLE SHEET

PROJECT NO. 60-158
DRAWING NO. PMT-01
SHEET NO



LEGEND

- STATE/FEDERAL WETLANDS
- ORDINARY HIGH WATER (OHW)
- SEDIMENTATION CONTROL SYSTEM (SCS)

GENERAL SITE PLAN
SCALE: 1" = 40'

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 24, 2018

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

60-158

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Plotted Date: 10/24/2018

DESIGNER/DRAFTER: M. GREER
CHECKED BY: K. ELDER
SCALE IN FEET 0 40 80
SCALE 1"=40'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
331

Filename: ...\02_General Site Plan.dgn

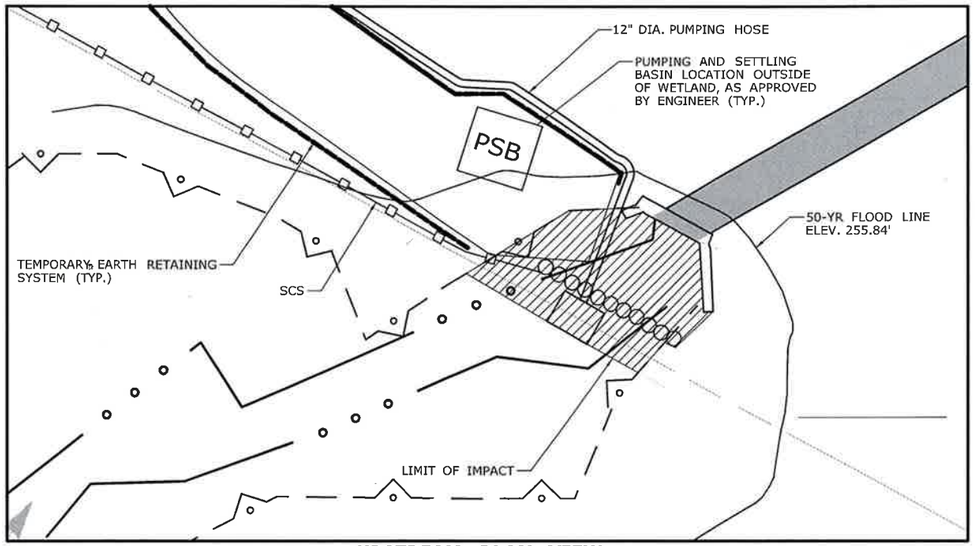
SIGNATURE/ BLOCK:

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 06728, ROUTE 9 OVER POLE BRIDGE BROOK

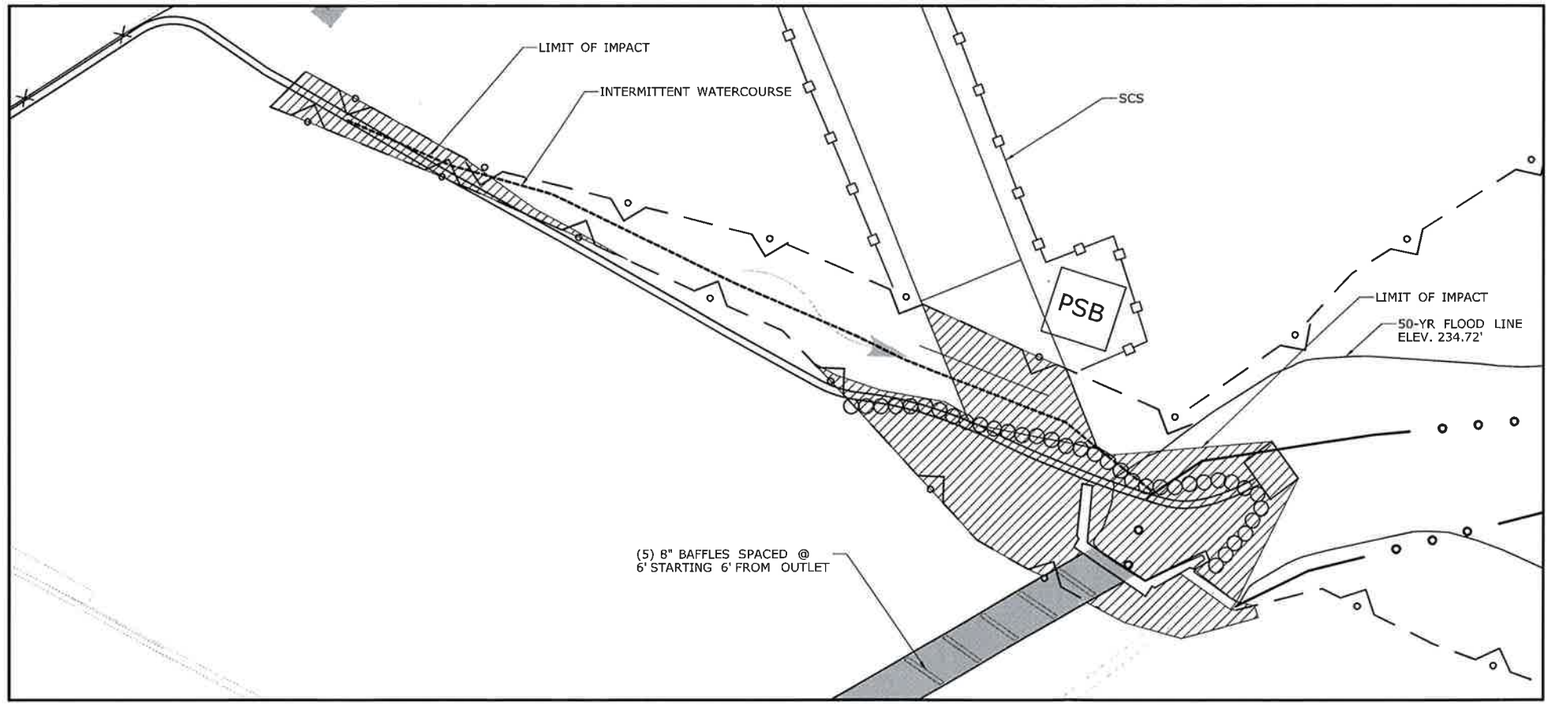
TOWN: HADDAM

DRAWING TITLE: GENERAL SITE PLAN

PROJECT NO. 60-158
DRAWING NO. PMT-02
SHEET NO.



UPSTREAM PLAN VIEW
SCALE: 1" = 10'



DOWNSTREAM PLAN VIEW
SCALE: 1" = 10'

SCALE 1" = 10'
20 10 0 10 20

LEGEND:

THE DEPARTMENT OF TRANSPORTATION WILL ONLY SUBMIT REVISIONS TO THE DEEP FOR CHANGES TO THE DESIGN THAT WILL EFFECT THE NOTED REGULATED AREAS.

- PERMANENT WETLAND IMPACTS
- TEMPORARY WETLAND IMPACTS
- STATE/FEDERAL WETLANDS
- ORDINARY HIGH WATER (OHW)
- SEDIMENTATION CONTROL SYSTEM (SCS)
- TEMPORARY-WATER-HANDLING-COFFERDAM

NOTE:
THE CONTRACTOR SHALL NOT WORK WITHIN THE LIMITS OF THE WETLANDS AND WATERCOURSE WITH THE EXCEPTION OF THOSE AREAS DELINEATED AS TEMPORARY OR PERMANENT IMPACTS TO THE WETLANDS AND WATERCOURSE. ALL DISTURBED AREAS SHALL BE RESTORED.

WETLAND IMPACT TABLE			
	WETLAND IMPACTS	WATERWAY IMPACTS	TOTAL
PERMANENT IMPACTS	0 S.F (0.000 AC.)	2,385 S.F (0.055 AC.)	2,385 S.F (0.055 AC.)
TEMPORARY IMPACTS	1,263 S.F (0.029 AC.)	526 S.F (0.012 AC.)	1,789 S.F (0.041 AC.)
TOTAL IMPACTS	1,263 S.F (0.029 AC.)	2,911 S.F (0.067 AC.)	4,174 S.F (0.096 AC.)

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 24, 2018

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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Plotted Date: 11/2/2018

DESIGNED/DRAFTER: M. GREER
CHECKED BY: K. ELDER
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\03_Wetland Watercourse Impact Plan.dgn

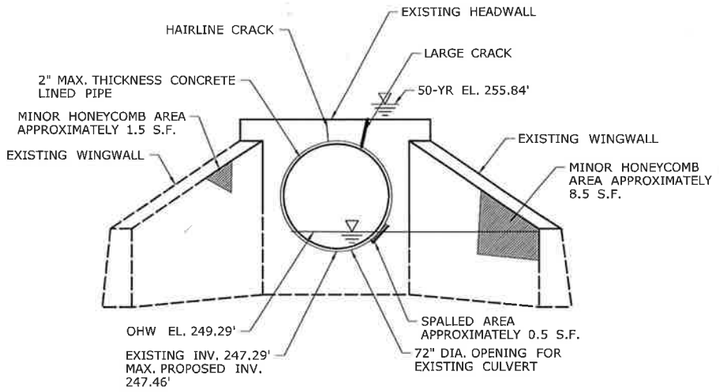
SIGNATURE/ BLOCK:

PROJECT TITLE: REHABILITATION OF BRIDGE NO. 06728, ROUTE 9 OVER POLE BRIDGE BROOK

TOWN: HADDAM

DRAWING TITLE: WETLAND/WATERCOURSE IMPACT PLAN

PROJECT NO. 60-158
DRAWING NO. PMT-03
SHEET NO.



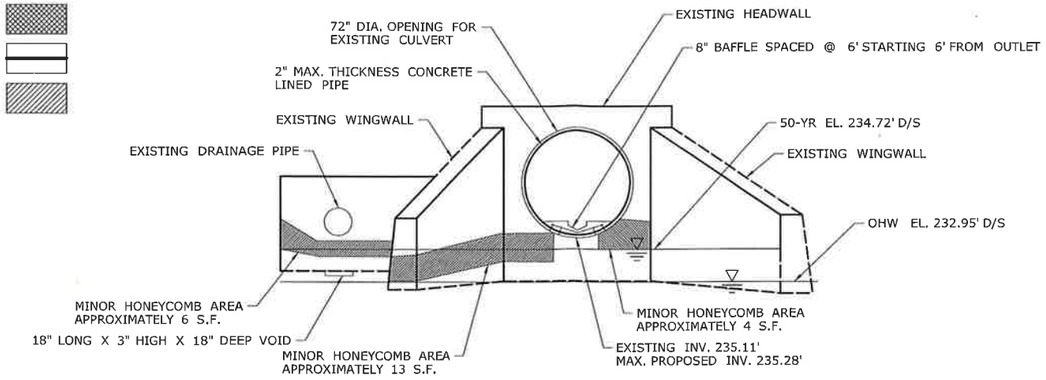
UPSTREAM ELEVATION
SCALE: ¼" = 1'-0"

LEGEND

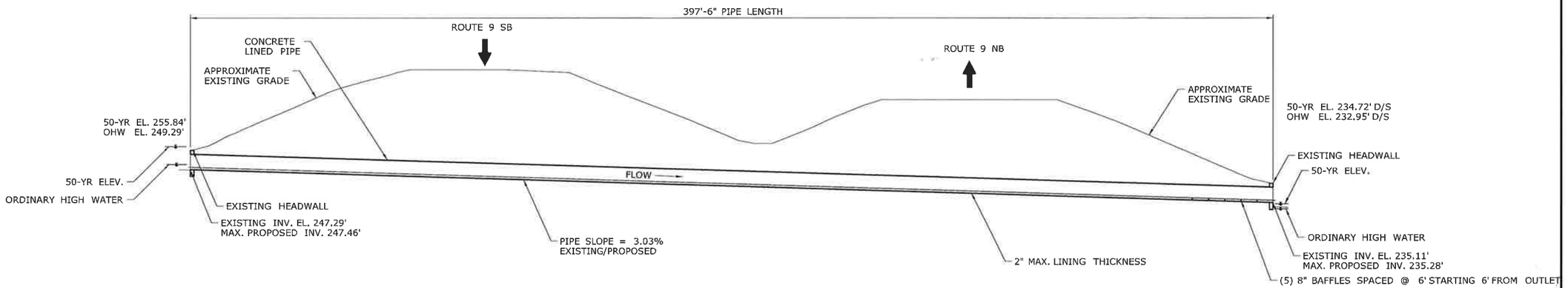
SPALLED AREA

CRACK

HONEYCOMB AREA



DOWNSTREAM ELEVATION
SCALE: ¼" = 1'-0"

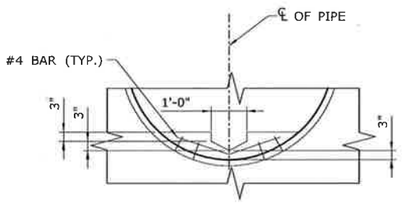


TYPICAL BRIDGE SECTION
SCALE: 1" = 20'

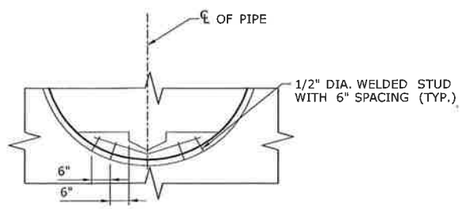
OPENNESS RATIO (OR):
OR = OPEN AREA / BRIDGE LENGTH
OR = 26.7 S.F / 396.5 L.F = 0.07

BANKFULL WIDTH (BFW):
BFW = 14.5 FT. EXISTING UPSTREAM (OHW)
1.2 BFW = 17.4 FT.
5.83 FT. < 17.4 FT. PROPOSED BRIDGE SPAN

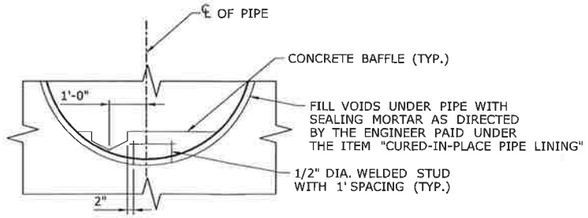
HYDRAULIC DATA	
DRAINAGE AREA	0.48 SQ. MILES
DESIGN FREQUENCY	50 YEAR
DESIGN DISCHARGE	290 C.F.S.
AVERAGE DAILY FLOW ELEVATION	247.69 FT ESTIMATED
UPSTREAM DESIGN WATER SURFACE ELEVATION	255.84 FT.
DOWNSTREAM DESIGN WATER SURFACE ELEVATION	234.72 FT.
(NOTE- NO SCOUR INFORMATION FOR HYDRAULIC DATA TABLE AS THIS IS A CULVERT	



TYPICAL BAFFLE NOTCH DETAIL
SCALE: ½" = 1'-0"



OUTLET BAFFLE DETAIL
SCALE: ½" = 1'-0"



INTERIOR BAFFLE DETAIL
SCALE: ½" = 1'-0"

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 24, 2018

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 11/2/2018

DESIGNER/DRAFTER: M. GREER
CHECKED BY: K. ELDER
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\04_Elevation and Section Plan.dgn

SIGNATURE/ BLOCK:

PROJECT TITLE: REHABILITATION OF BRIDGE NO. 06728, ROUTE 9 OVER POLE BRIDGE BROOK

TOWN: HADDAM

DRAWING TITLE: ELEVATION AND SECTION PLAN

PROJECT NO. 60-158
DRAWING NO. PMT-04
SHEET NO.

LEGEND

- STATE/FEDERAL WETLANDS
- ORDINARY HIGH WATER (OHW)
- SEDIMENTATION CONTROL SYSTEM (SCS)
- TEMPORARY-WATER-HANDLING-COFFERDAM

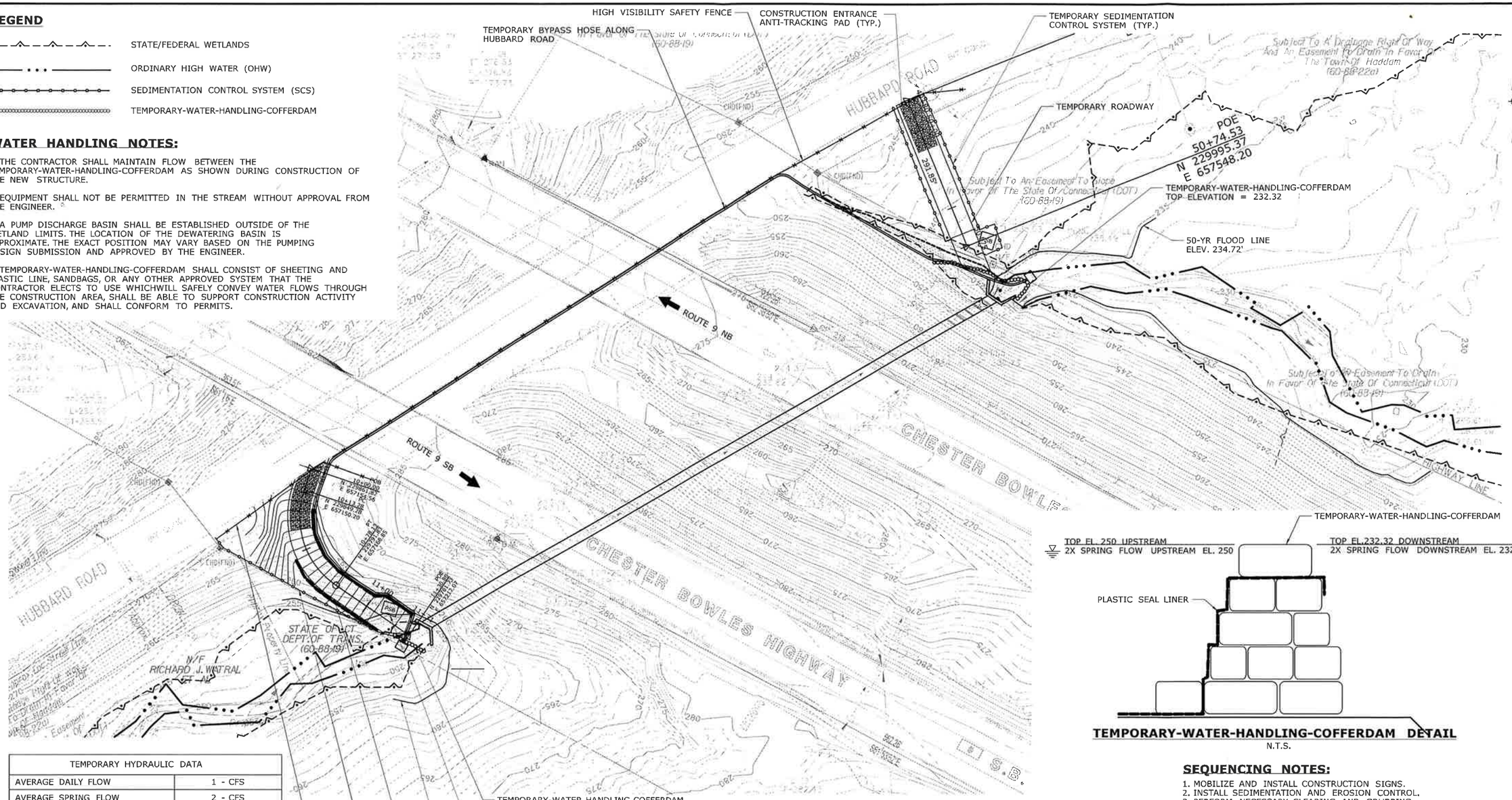
WATER HANDLING NOTES:

1. THE CONTRACTOR SHALL MAINTAIN FLOW BETWEEN THE TEMPORARY-WATER-HANDLING-COFFERDAM AS SHOWN DURING CONSTRUCTION OF THE NEW STRUCTURE.

2. EQUIPMENT SHALL NOT BE PERMITTED IN THE STREAM WITHOUT APPROVAL FROM THE ENGINEER.

3. A PUMP DISCHARGE BASIN SHALL BE ESTABLISHED OUTSIDE OF THE WETLAND LIMITS. THE LOCATION OF THE DEWATERING BASIN IS APPROXIMATE. THE EXACT POSITION MAY VARY BASED ON THE PUMPING DESIGN SUBMISSION AND APPROVED BY THE ENGINEER.

4. TEMPORARY-WATER-HANDLING-COFFERDAM SHALL CONSIST OF SHEETING AND PLASTIC LINE, SANDBAGS, OR ANY OTHER APPROVED SYSTEM THAT THE CONTRACTOR ELECTS TO USE WHICHWILL SAFELY CONVEY WATER FLOWS THROUGH THE CONSTRUCTION AREA, SHALL BE ABLE TO SUPPORT CONSTRUCTION ACTIVITY AND EXCAVATION, AND SHALL CONFORM TO PERMITS.



TEMPORARY HYDRAULIC DATA	
AVERAGE DAILY FLOW	1 - CFS
AVERAGE SPRING FLOW	2 - CFS
2-YR FREQUENCY DISCHARGE	30 - CFS
TEMPORARY DESIGN DISCHARGE	4 - CFS (1800 gpm)
TEMPORARY DESIGN FREQUENCY	2 x AVERAGE SPRING FLOW
TEMPORARY WATER SURFACE ELEVATION UPSTREAM	250 FT. (MAX. HEAD AT FLOW DIVERSION STRUCTURE)
TEMPORARY WATER SURFACE ELEVATION DOWNSTREAM	232.32 FT.

NOTE:
UPSTREAM TEMPORARY-WATER-HANDLING-COFFERDAM STRUCTURE TOP ELEVATION SHALL BE 2 FT ABOVE STREAMBED TO CREATE SUMP FOR PUMPING (TOP ELEVATION = 250').

SCALE 1" = 30'
60 30 0 60

HANDLING WATER CONCEPT
SCALE: 1" = 30'

TEMPORARY-WATER-HANDLING-COFFERDAM DETAIL
N.T.S.

SEQUENCING NOTES:

1. MOBILIZE AND INSTALL CONSTRUCTION SIGNS.
2. INSTALL SEDIMENTATION AND EROSION CONTROL.
3. PERFORM NECESSARY CLEARING AND GRUBBING.
4. CONSTRUCT TEMPORARY ROADWAY UPSTREAM AND DOWNSTREAM.
5. INSTALL TEMPORARY-WATER-HANDLING-COFFERDAM SYSTEM.
6. INSTALL TEMPORARY BYPASS HOSE AND PUMP POLE BRIDGE BROOK.
7. CLEAN AND RINSE INSIDE OF EXISTING 72" PIPE.
8. REPAIR AND RELINE THE EXISTING PIPE AND ENDWALLS.
9. REMOVE TEMPORARY-WATER-HANDLING-COFFERDAM AND TEMPORARY BYPASS HOSE.
10. PERFORM EMBANKMENT GRADING.
11. RESTORE STEAMBED AND SEED/PLANT PER PLAN.

ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 24, 2018

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 11/2/2018

DESIGNER/DRAFTER: M. GREER
CHECKED BY: K. ELDER
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\05.Staging and Water Handling Plan.dgn

SIGNATURE/ BLOCK:

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 06728, ROUTE 9 OVER POLE BRIDGE BROOK

TOWN: HADDAM

DRAWING TITLE: STAGING AND WATER HANDLING PLAN

PROJECT NO. 60-158
DRAWING NO. PMT-05
SHEET NO.

PERMIT PLANT LIST

KEY	BOTANICAL NAME	COMMON NAME	SIZE	QTY.	SPACING	WETLAND INDICATOR
Am.c.	Amelanchier canadensis	Shadblow Serviceberry	4'-5' Ht. B.B.	9	Field Locate	FAC
A.r.	Acer Rubrum	Red Maple	2 1/2" - 3" Cal. B.B.	7	Field Locate	FAC
A.r.w.	Acer Rubrum	Red Maple	3' - 4' Ht. Whips B.R.	38	Field Locate	FAC
C.s.	Cornus sericea	Redosier Dogwood	24"-36" Ht. Cont.	7	Field Locate	FACW
Q.r.w.	Quercus rubra	Northern Red Oak	24" - 36" Ht. No. 3 Cont.	38	Field Locate	FACU
V.d	Viburnum dentatum	Arrowwood Viburnum	24" - 36" Ht. No. 3 Cont.	10	Field Locate	FAC
	Control and Removal of Invasive Vegetation					
	Conservation Seeding for Slopes					
	Wetland Grass Establishment					
	Wood Chip Mulch					

NOTES

1. PLANTINGS ON THIS SHEET ARE FOR ENVIRONMENTAL PERMITTING. ANY CHANGES TO PERMIT PLANTINGS SHALL BE COORDINATED WITH THE DEPARTMENT'S OFFICE OF ENVIRONMENTAL PLANNING.

2. WOOD CHIP MULCH SHALL NOT BE PLACED IN THE WETLAND AREA.

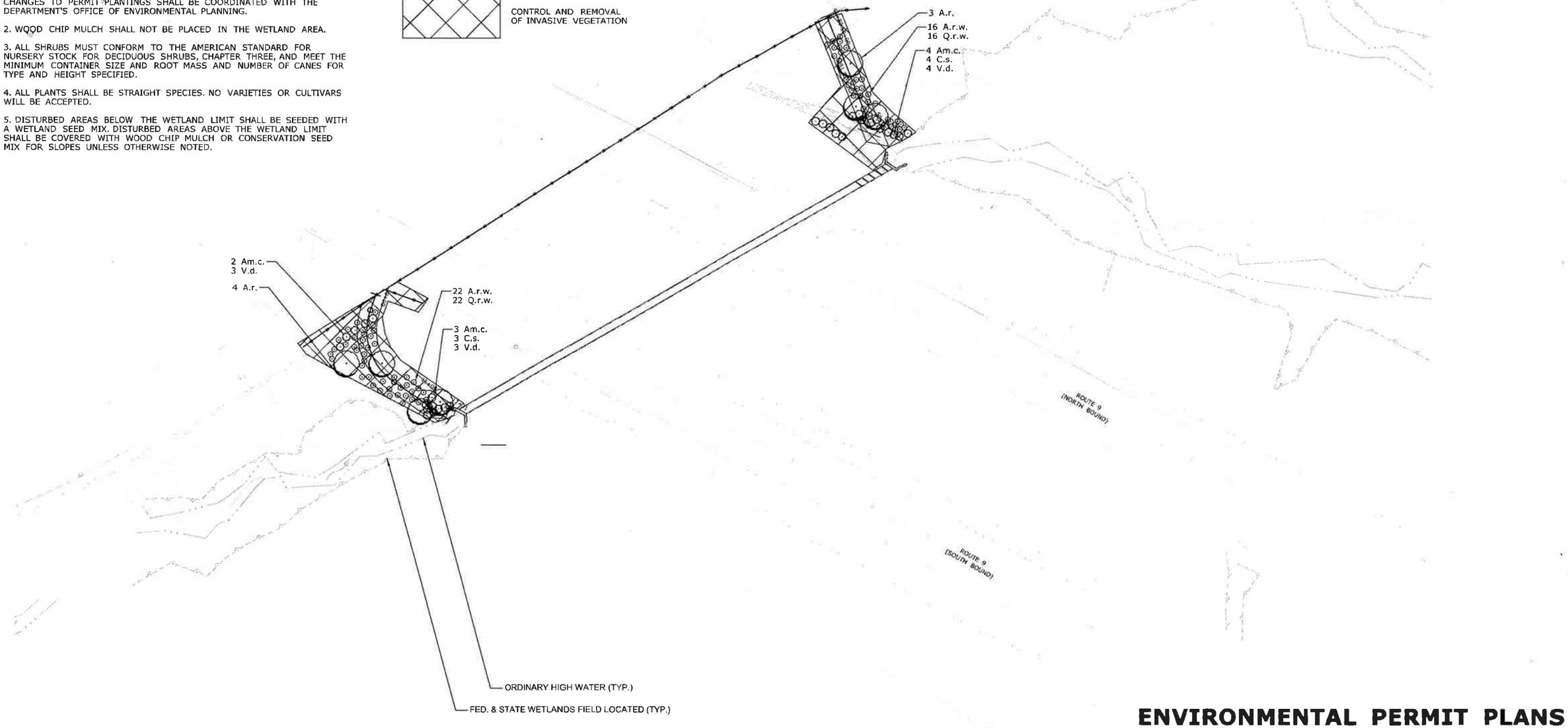
3. ALL SHRUBS MUST CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK FOR DECIDUOUS SHRUBS, CHAPTER THREE, AND MEET THE MINIMUM CONTAINER SIZE AND ROOT MASS AND NUMBER OF CANES FOR TYPE AND HEIGHT SPECIFIED.

4. ALL PLANTS SHALL BE STRAIGHT SPECIES. NO VARIETIES OR CULTIVARS WILL BE ACCEPTED.

5. DISTURBED AREAS BELOW THE WETLAND LIMIT SHALL BE SEEDED WITH A WETLAND SEED MIX. DISTURBED AREAS ABOVE THE WETLAND LIMIT SHALL BE COVERED WITH WOOD CHIP MULCH OR CONSERVATION SEED MIX FOR SLOPES UNLESS OTHERWISE NOTED.

KEY

CONTROL AND REMOVAL OF INVASIVE VEGETATION



ENVIRONMENTAL PERMIT PLANS

PLAN DATE: OCTOBER 5, 2018

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

60-158

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 10/5/2018

DESIGNER/DRAFTER: MV
CHECKED BY: EJ
SCALE IN FEET 0 40 80
SCALE 1"=40'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

Filename: ...\HW.MSH.0060-0158_LDS.dgn

335

SIGNATURE/ BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:

PROJECT TITLE:
REHABILITATION OF BRIDGE NO. 06728, ROUTE 9 OVER POLE BRIDGE BROOK

TOWN: HADDAM

DRAWING TITLE: PERMIT PLANTING PLAN

PROJECT NO. 60-158
DRAWING NO PMT-06
SHEET NO

Attachment C: Environmental Report

Application for Department of the Army Permit

Applicant: State of Connecticut, Department of Transportation
Project No. 60-158 (Constr.), 60-158 (P.E.)
Rehabilitation of Bridge No. 06728 in Haddam
Route 9 over Pole Bridge Brook

List of Attachments

- Environmental Report, Bridge No. 06728
  Prepared by Fitzgerald & Halliday, Inc.
  Date: March 2018
  Revised August 2018

Technical Memorandum

Connecticut Bridge Program
Route 9 over Pole Bridge Brook
CTDOT Project # 60-158
Bridge Number 06728

Haddam, Connecticut

Environmental Report
(Baseline Conditions)

Prepared under contract to:

Close, Jensen and Miller, P.C.

For:

The Connecticut Department of Transportation

By:

FITZGERALD & HALLIDAY, INC.
416 Asylum Street
Hartford, CT 06103

March 2018
Revised August 2018

Table of Contents

1.0 INTRODUCTION 3
2.0 DESCRIPTION OF EXISTING WATER RESOURCES 3
3.0 NRCS MAPPED SOILS 11
4.0 FEDERAL AND STATE LISTED THREATENED AND ENDANGERED SPECIES AND HABITAT 13
5.0 INVASIVE PLANT SPECIES 14
REFERENCES 17

APPENDIX A: WETLAND PHOTOGRAPHS 18
APPENDIX B: WETLAND DETERMINATION FORMS 19
APPENDIX C: WETLAND FUNCTION-VALUE EVALUATION FORMS 20
APPENDIX D: USFWS CONSULTATION FORM 21

1.0 INTRODUCTION

Fitzgerald & Halliday, Inc. (FHI) was retained by Close, Jensen and Miller (CJMPC) to identify and characterize natural habitats and vegetation communities that may be impacted by work related to the reconstruction and rehabilitation of Bridge No. 06728, State Route 9 over Pole Bridge Brook in Haddam, Connecticut. These efforts were confined to the proposed limit of project investigation, as depicted in Figure 1.

The proposed project area was investigated in support of Connecticut Department of Transportation (CTDOT) Project No. 60-158. Habitat characterizations were conducted within the project area by FHI ecologists in October 2016.

2.0 DESCRIPTION OF EXISTING WATER RESOURCES

Existing wetland, watercourse, floodplain, and aquifer protection areas within the project study limits are described below.

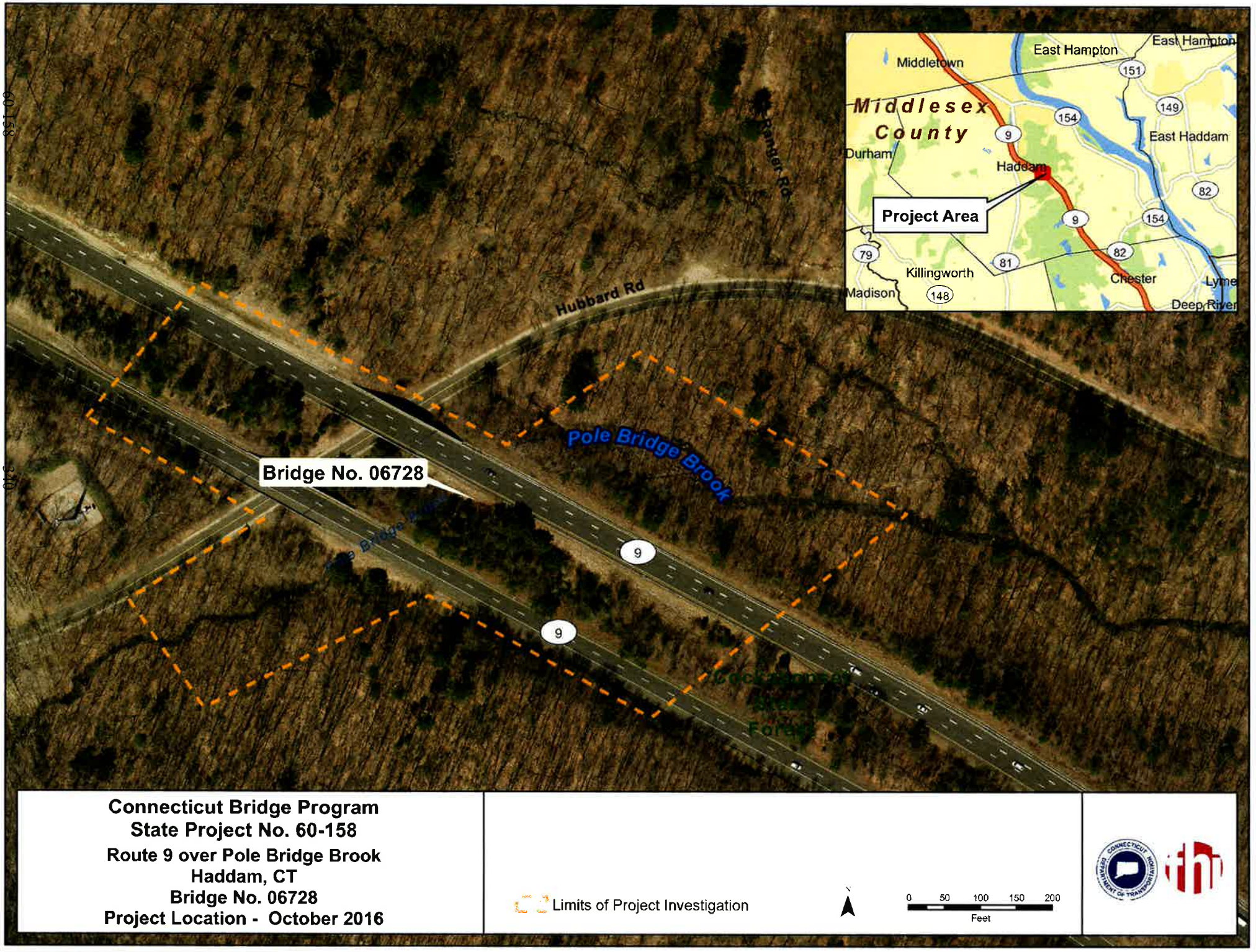
Wetlands & Watercourses

FHI's soil scientists flagged the boundaries of six wetlands, perennial watercourses, and four intermittent watercourses within the project study area, each identified by separate flag line(s), as depicted in Figure 2. Some of the delineated wetlands extend beyond the project study area and, therefore, are depicted as open polygons on project mapping. Where applicable, this is noted in the descriptions below. All identified wetland systems qualify as both state and federal resources.

Detailed descriptions of the delineated wetland systems are presented below. The description includes: the approximate location of the flag series demarcating the wetland; the wetland's connectivity to watercourses and adjacent wetlands; dominant vegetation present within the wetland; the Cowardin classification of the wetland; and the wetlands functions and values. See Appendix A for photographs of the delineated wetlands.

Wetland AB [Flag Numbers A-1 to A-8 and B-1 to B-7 closed boundary]

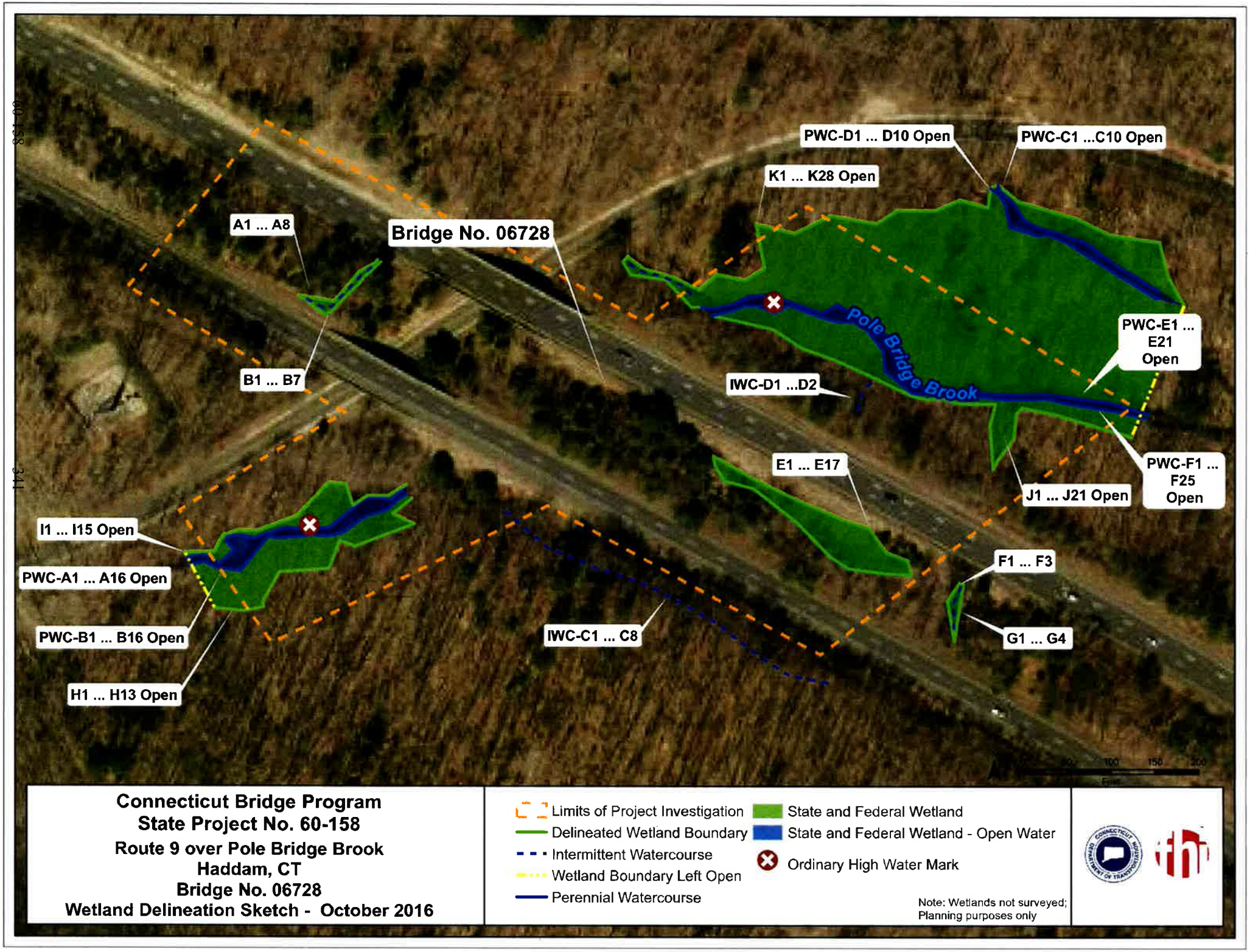
Wetland AB is a palustrine forested (PFO) wetland located between the northbound and southbound lanes of Route 9, just to the northwest of Hubbard Road. An intermittent watercourse flows through this wetland from south to north and connects to a culvert at the southwest end. The intermittent watercourse flows into a culvert at the northeast end under Route 9 and eventually connects to Wetland JK.



Connecticut Bridge Program
State Project No. 60-158
Route 9 over Pole Bridge Brook
Haddam, CT
Bridge No. 06728
Project Location - October 2016

Limits of Project Investigation

0 50 100 150 200
Feet


60-158
341
PWC-D1 ... D10 Open
PWC-C1 ...C10 Open
K1 ... K28 Open
A1 ... A8
Bridge No. 06728
Pole Bridge Brook
PWC-E1 ... E21 Open
B1 ... B7
IWC-D1 ...D2
E1 ... E17
PWC-F1 ... F25 Open
J1 ... J21 Open
I1 ... I15 Open
PWC-A1 ... A16 Open
F1 ... F3
PWC-B1 ... B16 Open
IWC-C1 ... C8
G1 ... G4
H1 ... H13 Open
Connecticut Bridge Program
State Project No. 60-158
Route 9 over Pole Bridge Brook
Haddam, CT
Bridge No. 06728
Wetland Delineation Sketch - October 2016
Limits of Project Investigation
Delineated Wetland Boundary
Intermittent Watercourse
Wetland Boundary Left Open
Perennial Watercourse
State and Federal Wetland
State and Federal Wetland - Open Water
Ordinary High Water Mark
Note: Wetlands not surveyed;
Planning purposes only

This narrow, forested wetland is dominated by quaking aspen *(Populus tremuloides)* and white pine *(Pinus strobus)* in the overstory and black elderberry *(Sambucus nigra)*, multiflora rose (*Rosa multiflora)*, hemp dogbane *(Apocynum cannabinum)*, Oriental bittersweet *(Celastrus orbiculatus)*, and grape vines (*Vitis* spp.) in the understory. The NRCS mapped soil in, and adjacent to Wetland AB is Udorthent-Urban land complex. Within these mapped soil units are areas of saturation and/or flooding where hydric soil indicators were observed. The principal function and value of this wetland is sediment/toxicant retention from Route 9.

IWC B [Flag Numbers IWC-B1 to IWC-B4 closed boundary]

Intermittent Watercourse B originates from a culvert adjacent to the Route 9 southbound lane and discharges, via surface flow, into a culvert that is open to Pole Bridge Brook below. This IWC is comprised of gravel, compacted soils, and pavement and flows from southeast to northwest. The IWC has mixed deciduous trees on both sides but there is no vegetation within the defined channel.

Wetland E [Flag Numbers E-1 to E-17 closed boundary]

Wetland E is a palustrine emergent (PEM) wetland located between the northbound and southbound lanes of Route 9, just to the southeast of IWC B. This linear wetland is in a depression area that collects overland flow from both the northbound and southbound lanes on Route 9. There is no clearly defined inlet or outlet within this wetland.

This emergent wetland is dominated by switchgrass (*Panicum virgatum*), tussock sedge (*Carex stricta*), common reed (*Phragmites australis*), slender goldenrod (*Solidago erecta*), and jewelweed. Additionally, there are populations of autumn olive (*Elaeagnus umbellata*), speckled alder (*Alnus incana*), and northern bayberry (*Morella pensylvanica*) on the edges of the wetland. The NRCS mapped soil in, and adjacent to Wetland E is Udorthent-Urban land complex. Within these mapped soil units are areas of saturation and/or flooding where hydric soil indicators were observed. The principal functions and values of this wetland are sediment/toxicant retention from Route 9, groundwater recharge, and wildlife habitat for small mammals and birds.

Wetland FG [Flag Numbers F-1 to F-3 and G-1 to G-4 closed boundary]

Wetland FG is a PFO wetland located between the northbound and southbound lanes of Route 9, just to the southeast of Wetland E. This linear wetland forms the channel edges of an intermittent watercourse that flows from a culvert on the southwest end to a culvert on the northeast end. Within the intermittent watercourse there is an armored rocky substrate with vegetation growing among the rocks.

This forested wetland is dominated by red maple, green ash *(Fraxinus pennsylvanica)*, multiflora rose, Japanese barberry *(Berberis thunbergii)*, and Oriental bittersweet. The NRCS mapped soil in, and adjacent to Wetland FG is Udorthent-Urban land complex. Within these mapped soil units are areas of saturation and/or flooding were hydric soil indicators were observed. The principal function and value of this wetland is sediment/toxicant retention from Route 9.

Wetland HI [Flag Numbers H-1 to H-13 and I-1 to I-15, containing PWC-A1 to PWC-A16 and PWC-B1 to PWC-B16 open boundary]

Wetland HI is a PFO wetland at the southwest corner of Hubbard Road and the southbound lane of Route 9. This wetland, which forms the banks of Pole Bridge Brook, extends outside of the limits of project investigation to the southwest. Pole Bridge Brook, flows down gradient from the southwest to the northeast, where it passes through a large culvert under Route 9 into Wetland JK (described below). The "I" line of this wetland, located on the north side of the system, is located at the bottom of a steep slope leading up to Hubbard Road. The "H" line opens into an upland hardwood forest area to the south. There are scattered large rocks and boulders throughout the wetland and within the Brook.

This forested wetland is dominated by red maple, yellow birch (*Betula alleghaniensis*), northern spicebush (*Lindera benzoin*), American witch hazel (*Hamamelis virginiana*), coastal sweet pepperbush (*Clethra alnifolia*), sensitive fern (*Onoclea sensibilis*), Christmas fern (*Polystichum acrostichoides*), common reed, and skunk cabbage (*Symplocarpus foetidus*). The NRCS mapped soils in, and adjacent to Wetland HI are composed of the following two units: a Ridgebury, Leicester, and Whitman soil unit, and a Paxton and Montauk soil unit. Within these mapped soil units are areas of saturation and/or flooding where hydric soil indicators were observed. The principal functions and values of this wetland are wildlife habitat, shoreline stabilization, and floodflow alteration. There is also minor functionality of groundwater recharge in low lying areas.

IWC C [Flag Numbers IWC-C1 to IWC-C8 closed boundary]

Intermittent Watercourse C originates from a culvert adjacent to the Route 9 southbound lane and disperses into the rocky ground just east of Wetland HI. This IWC is comprised of compacted soils and flows from southeast to northwest. The IWC has mixed deciduous trees on both sides but there is no vegetation with the defined channel.

Wetland JK [Flag Numbers J-1 to J-21 and K-1 to K-28, containing PWC-C1 to PWC-C10, PWC-D1 to PWC-D10, PWC-E1 to PWC-E21, and PWC-F-1 to PWC-F25 open boundary]

Wetland JK is a PFO wetland at the southeast corner of Hubbard Road and the northbound lane of Route 9. This wetland, which forms the banks of Pole Bridge Brook at the southern end and an unnamed perennial watercourse at the northern end, extends outside of the limits of project investigation to the southeast. Pole Bridge Brook and the unnamed perennial watercourse both flow in a northwest to southeast direction. These streams eventually join and flow into the Mill River, outside of the limits of project investigation. Pole Bridge Brook emerges from under Route 9, from which it is connected to Wetland HI (described above). The "J" line, located at the southern end of the system, is situated at the base of the steep slope leading up to the northbound lane of Route 9. There are several culverts that lead into the wetland from Route 9. One of the culverts drains into IWC D (described below). The "K" line, located at the northern end of this system, is situated at the base of a slope leading up to Hubbard Road. There are scattered large rocks and boulders throughout the wetland and within the watercourses.

This forested wetland is dominated by red maple, northern spicebush, American witch hazel, coastal sweet pepperbush, sensitive fern, Christmas fern, and skunk cabbage. The NRCS soils in and adjacent to Wetland HI are mapped as the following units: Ridgebury, Leicester, and Whitman soils; and Paxton and Montauk soils. Within these mapped soil units are areas of saturation and/or flooding where hydric soil indicators were observed. The principal functions and values of this wetland are wildlife habitat, shoreline stabilization, groundwater recharge, and floodflow alteration.

IWC D [Flag Numbers IWC-D1 to IWC-D2 closed boundary]

Intermittent Watercourse D originates from a culvert adjacent to the Route 9 northbound lane and flows into Wetland JK (described above). This IWC is comprised of compacted soils and large stones and flows from south to north. The IWC has mixed deciduous trees on both sides, but there is no vegetation with the defined channel.

Within the study area, the undeveloped, non-wetland areas consist of mixed hardwood forested areas that can be classified as typical oak-hickory forests. These upland areas are surficially dominated by uneven, rock and boulder strewn Paxton and Montauk, extremely stony soils with gently undulating topography.

The vegetation within these upland forested areas is dominated by red oak (*Quercus rubra*), black oak (*Quercus velutina*), shagbark hickory (*Carya ovata*), red maple, sugar maple (*Acer saccharum*), mapleleaf viburnum (*Viburnum acerifolium*), roundleaf greenbrier

(*Smilax rotundifolia*), partridgeberry (*Mitchella repens*), and spotted wintergreen (*Chimaphila umbellata*).

Surface Water Quality

The entire study area is within Basin Number 4015-01-1 of the Subregional Drainage Basin of Mill Creek, which discharges to the Connecticut Main Stem Regional Basin of the Connecticut Major Basin. Pole Bridge Brook and the unnamed perennial watercourse at the northern end of the study area are both classified by the Connecticut Department of Energy & Environmental Protection (CT DEEP) as surface water quality classification "A". According to CT DEEP Surface Water Quality Standards (Effective October 2013), designated uses of "Class A" surface waters include "potential drinking water supply, fish and wildlife habitat, recreational uses, agricultural and industrial supply, and other legitimate uses including navigation". Discharge is restricted to "discharge from public or private drinking water treatment systems, dredging and dewatering, emergency and clean water discharges."

Ground Water Quality

Based on the review of the CT DEEP Aquifer Protection Area (APA) map for the area, the project is not within a designated APA.

The project area lies within an area classified by CT DEEP as having a ground water classification "GA". According to CT DEEP Ground Water Quality Standards (Effective October 2013), designated uses of "GA" ground waters include existing or potential public supply of water suitable for drinking without treatment; and base flow for hydraulically connected surface water bodies. Discharges are limited to treated domestic sewage, certain agricultural wastes, and certain water treatment wastewaters.

Floodplains

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) (Map Number 09007C0233G effective 8/28/2008) for the project area was reviewed. Based on review of the FIRM the project site is not within a designated flood area. See Figure 3: FEMA FIRM.

Figure 3

he Flood Insurance Study report for this jurisdiction.

ce is available in this community, contact your insurance
d Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

METERS
0 150 300

NATIONAL FLOOD INSURANCE PROGRAM FIP

PANEL 0233G

FIRM

FLOOD INSURANCE RATE MAP

MIDDLESEX COUNTY, CONNECTICUT

(ALL JURISDICTIONS)

PANEL 233 OF 450

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
HADDAM, TOWN OF	090066	0233	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
09007C0233G

EFFECTIVE DATE
AUGUST 28, 2008

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

3.0 NRCS MAPPED SOILS

The NRCS has published a series of soil surveys for most of the United States. The NRCS soil surveys are used to enhance the understanding of, and to help describe a particular geographic area. These surveys have recently been updated for the State of Connecticut and are available as a digital GIS layer. The soil surveys contain taxonomic descriptions of different soil series, as well as soil maps depicting soil map units.

NRCS soils classifications on the project site are depicted by their soils number in Figure 4 . Only those found on the project site are described below.

Ridgebury, Leicester, and Whitman Complex (3)

Ridgebury Series

The Ridgebury series consists of very deep, somewhat poorly and poorly drained soils formed in till derived mainly from granite, gneiss and schist. They are commonly shallow to a densic contact. They are nearly level to gently sloping soils in low areas in uplands. Slope ranges from 0 to 15 percent.

Commonly poorly drained but the range includes the wetter part of somewhat poorly drained. Runoff is negligible to medium.

Leicester Series

The Leicester series consists of very deep, poorly drained loamy soils formed in friable till. They are nearly level or gently sloping soils in drainageways and low-lying positions on hills. Slope ranges from 0 to 8 percent. Permeability is moderate or moderately rapid in the surface layer and subsoil and moderate to rapid in the substratum.

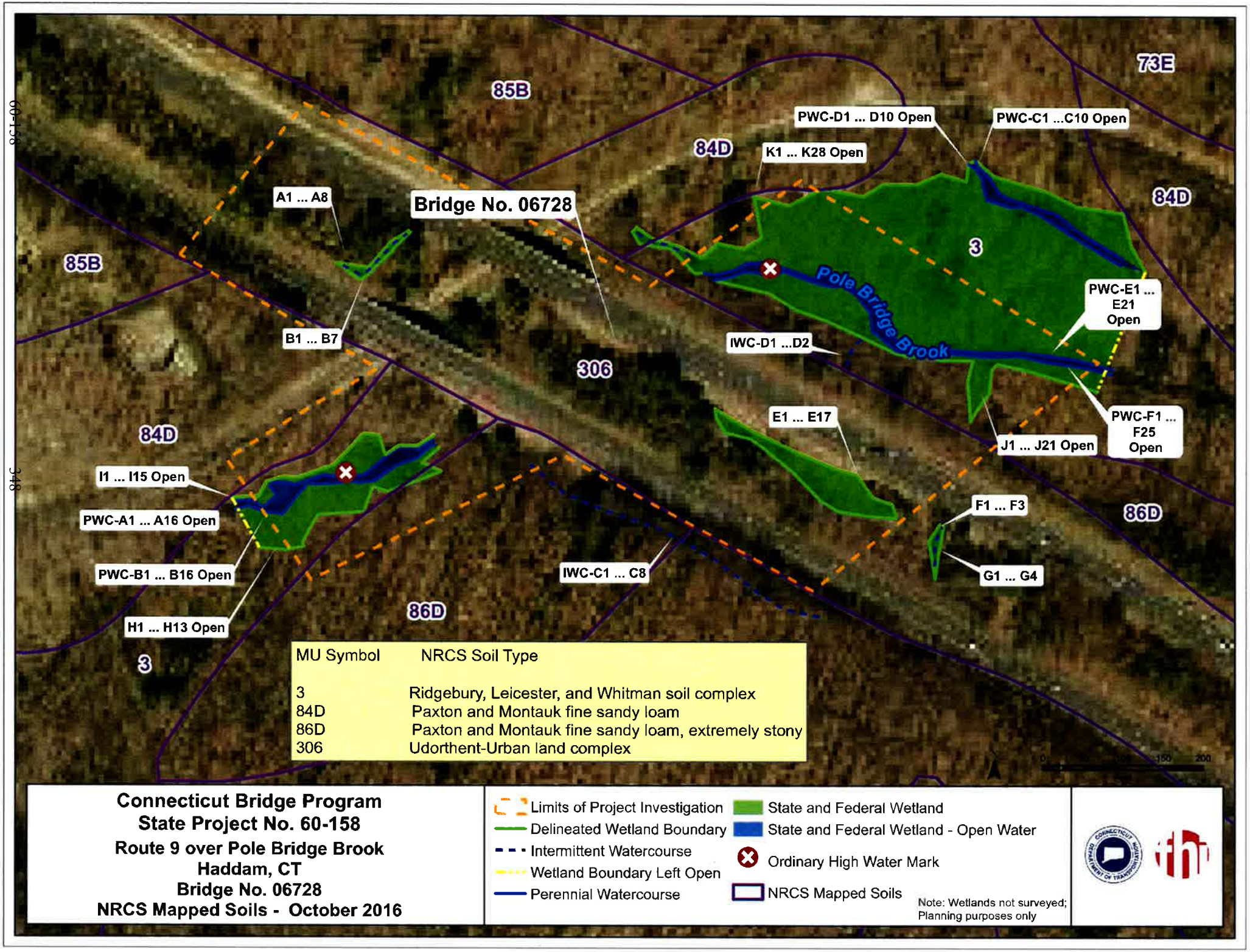
Whitman Series

The Whitman series consists of very deep, very poorly drained soils formed in lodgement till derived mainly from granite, gneiss, and schist. They are shallow to a densic contact. These soils are nearly level or gently sloping soils in depressions and drainageways on uplands. Slopes are typically 0 through 2 percent, but range up to 8 percent where wetness is due to seepage water.

Paxton and Montauk Fine Sandy Loam (84) & (86)

Paxton Fine Sandy Loam

The Paxton series consists of well drained loamy soils formed in lodgment till. The soils are very deep to bedrock and moderately deep to a densic contact. They are nearly level to steep soils on hills, drumlins, till plains, and ground moraines. Slope ranges from 0 to 45


60-158
348
85B
73E
84D
PWC-D1 ... D10 Open
PWC-C1 ...C10 Open
K1 ... K28 Open
A1 ... A8
Bridge No. 06728
84D
85B
3
Pole Bridge Brook
PWC-E1 ... E21 Open
B1 ... B7
IWC-D1 ...D2
306
E1 ... E17
PWC-F1 ... F25 Open
J1 ... J21 Open
84D
I1 ... I15 Open
PWC-A1 ... A16 Open
F1 ... F3
86D
PWC-B1 ... B16 Open
IWC-C1 ... C8
G1 ... G4
H1 ... H13 Open
86D
3
MU Symbol NRCS Soil Type
3 Ridgebury, Leicester, and Whitman soil complex
84D Paxton and Montauk fine sandy loam
86D Paxton and Montauk fine sandy loam, extremely stony
306 Udorthent-Urban land complex
0 150 200
Connecticut Bridge Program
State Project No. 60-158
Route 9 over Pole Bridge Brook
Haddam, CT
Bridge No. 06728
NRCS Mapped Soils - October 2016
Limits of Project Investigation
Delineated Wetland Boundary
Intermittent Watercourse
Wetland Boundary Left Open
Perennial Watercourse
State and Federal Wetland
State and Federal Wetland - Open Water
Ordinary High Water Mark
NRCS Mapped Soils
Note: Wetlands not surveyed; Planning purposes only

percent. Saturated hydraulic conductivity is moderately high or high in the surface layer and subsoil and low or moderately low in the substratum.

Depth to bedrock is commonly more than 1.5 meters. Rock fragments range from 5 through 35 percent by volume in the mineral soil. Except where the surface is stony, the fragments are mostly subrounded gravel and typically make up 60 percent or more of the total rock fragments.

Montauk Fine Sandy Loam

The Montauk series consists of well drained soils formed in lodgment or flow till derived primarily from granitic materials with lesser amounts of gneiss and schist. The soils are very deep to bedrock and moderately deep to a densic contact. These soils are on upland hills and moraines. Slope ranges from 0 to 35 percent. Rock fragments range from 3 to 35 percent in the solum and 5 to 50 percent in the substratum.

Udorthent-Urban Land Complex (306)

These map units consist of moderately sloping to steep areas where the original soil has been cut away or covered with a gravelly fill material. Most of these areas have been graded to a smooth surface with 4 to 10 inches of topsoil. This soil is commonly located on outwash plains and moraines, but occurs in a variety of landscape positions. Soil permeability varies from moderate to very rapid. They typically possess depths of greater than 5-6 feet to bedrock and groundwater.

Udorthents

A map unit consisting of well-drained to excessively well-drained soil composed of cut areas, filled areas, or both. They are often in association with urban areas. In areas that were cut, the surface layer has been removed and in fill areas, typically more than 20 inches of soil material has been placed on the surface. Often both cut and fill areas occur in close proximity as areas were often graded and smoothed forming a complex pattern of cuts and fills.

Urban Land

A unit which includes areas developed by buildings, roads, and other developments limiting the ability to inspect and map underlying soil types.

4.0 FEDERAL AND STATE LISTED THREATENED AND ENDANGERED SPECIES AND HABITAT

The CT Natural Diversity Database (NDDB) GIS records were mapped to assess if any Endangered, Threatened, or Special Concern (i.e., "rare") species are known to potentially

exist within the project area, based on past observations. Based on the most recent NDDB mapping, dated December 2017, the project area falls outside the NDDB area. Please refer to Figure 5 for the official CT DEEP NDDB Map.

The project has received funding from the Federal Highway Administration (FHWA), and as such has been submitted to the U.S. Fish and Wildlife Service (USFWS) under the Final 4(d) Rule for the Federally Threatened Northern Long-eared bat. Consultation was concluded on August 4, 2018. There are no documented hibernacula in Haddam or in the vicinity of the project. The Consultation Form is provided in Appendix D.

5.0 INVASIVE PLANT SPECIES

Within the project area the following invasive plant species were identified in sizable, non-individual populations: Garlic Mustard (*Allaria petiolata*), Japanese Barberry, Oriental Bittersweet, Autumn Olive, Japanese Stilt Grass (*Microstegium vimineum*), Common Reed, and Multiflora Rose (see Figure 6). These plant species primarily occurred closer to the disturbed areas associated with Route 9 and, to a lesser extent, Hubbard Road. Invasive species within the project limits will be controlled utilizing the CTDOT's Control and Removal of Invasive Vegetation specification.

Natural Diversity Data Base Areas

60-158

HADDAM, CT

December 2017

State and Federal Listed Species & Significant Natural Communities

Town Boundary

NOTE: This map shows general locations of State and Federal Listed Species and Significant Natural Communities. Information on listed species is collected and compiled by the Natural Diversity Data Base (NDDB) from a number of data sources . Exact locations of species have been buffered to produce the general locations. Exact locations of species and communities occur somewhere in the shaded areas, not necessarily in the center. A new mapping format is being employed that more accurately models important riparian and aquatic areas and eliminates the need for the upstream/downstream searches required in previous versions.

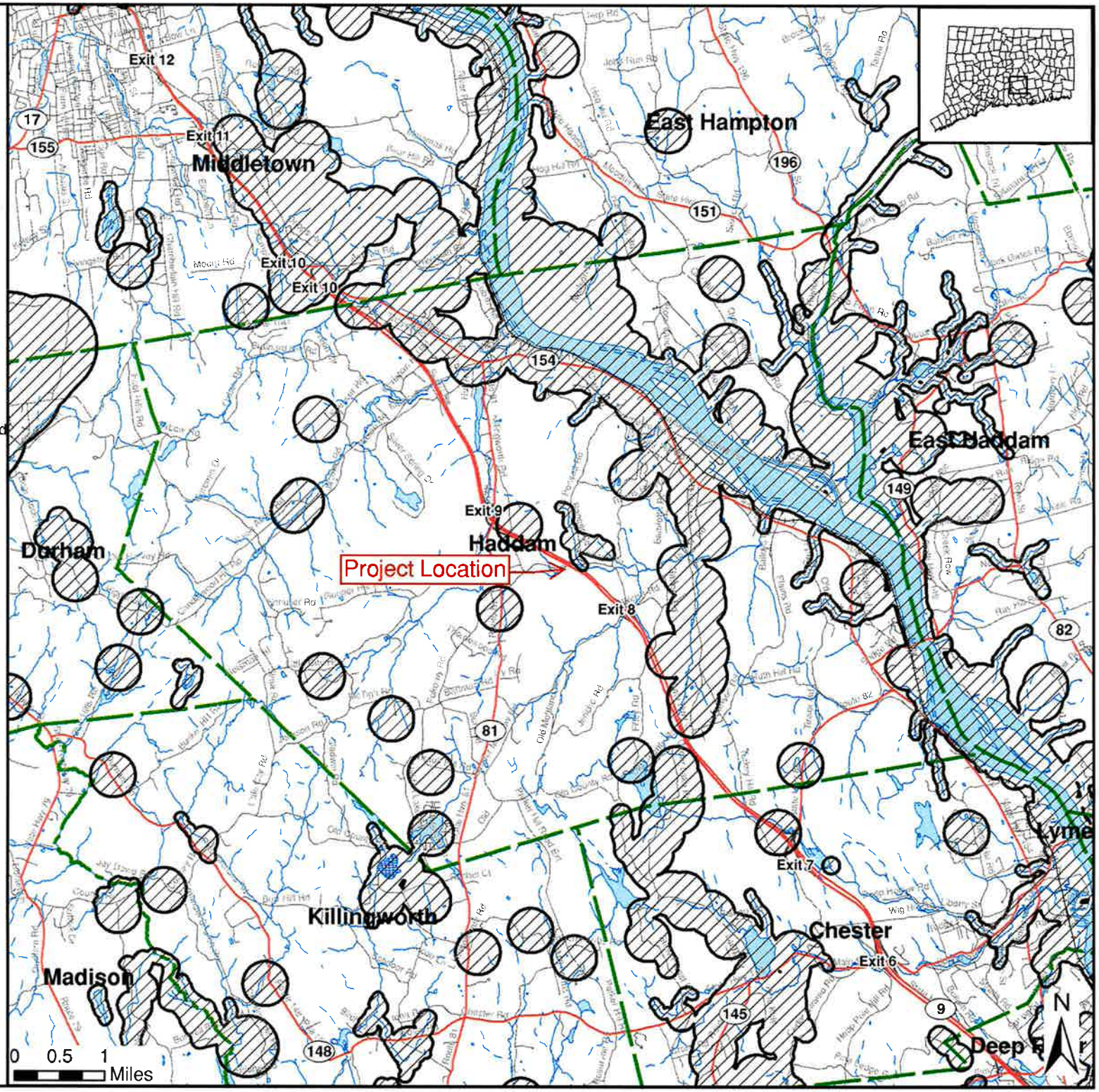
This map is intended for use as a preliminary screening tool for conducting a Natural Diversity Data Base Review Request. To use the map, locate the project boundaries and any additional affected areas. If the project is within a shaded area there may be a potential conflict with a listed species. For more information, complete a Request for Natural Diversity Data Base State Listed Species Review form (DEP-APP-007), and submit it to the NDDB along with the required maps and information. More detailed instructions are provided with the request form on our website.

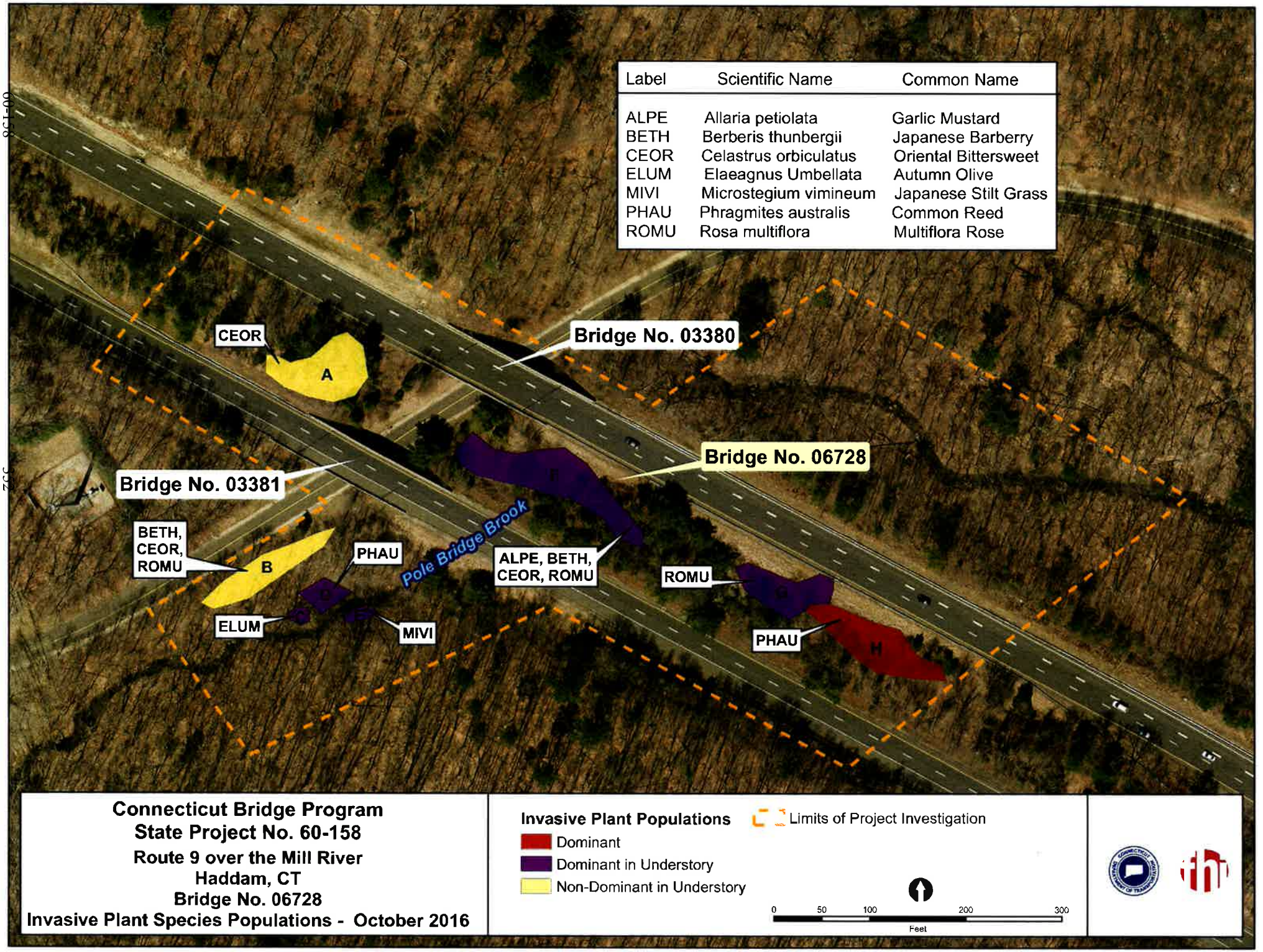
www.ct.gov/deep/nddbrequest

Use the CTECO Interactive Map Viewers at www.cteco.uconn.edu to more precisely search for and locate a site and to view aerial imagery with NDDB Areas.

QUESTIONS: Department of Energy and Environmental Protection (DEEP)
79 Elm St., Hartford CT 06106
Phone (860) 424-3011

Connecticut Department of Energy & Environmental Protection
Bureau of Natural Resources
Wildlife Division




060-158
322
Label | Scientific Name | Common Name
ALPE | Allaria petiolata | Garlic Mustard
BETH | Berberis thunbergii | Japanese Barberry
CEOR | Celastrus orbiculatus | Oriental Bittersweet
ELUM | Elaeagnus Umbellata | Autumn Olive
MIVI | Microstegium vimineum | Japanese Stilt Grass
PHAU | Phragmites australis | Common Reed
ROMU | Rosa multiflora | Multiflora Rose
CEOR
A
Bridge No. 03380
Bridge No. 06728
Bridge No. 03381
BETH, CEOR, ROMU
B
PHAU
Pole Bridge Brook
ALPE, BETH, CEOR, ROMU
ROMU
ELUM
MIVI
PHAU
H
Connecticut Bridge Program
State Project No. 60-158
Route 9 over the Mill River
Haddam, CT
Bridge No. 06728
Invasive Plant Species Populations - October 2016
Invasive Plant Populations
Dominant
Dominant in Understory
Non-Dominant in Understory
Limits of Project Investigation
0 50 100 200 300
Feet

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Cowardin, L.M., V. Carter, F.C. Golet, and E.T. Laroe, 1979, *Classifications of Wetlands and Deepwater Habitats of the United States*, U.S. Department of the Interior, Office of Biological Services, Fish and Wildlife Services: Washington, DC.

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APPENDIX A: WETLAND PHOTOGRAPHS

Wetland AB – facing southwest

IWC B – facing northwest

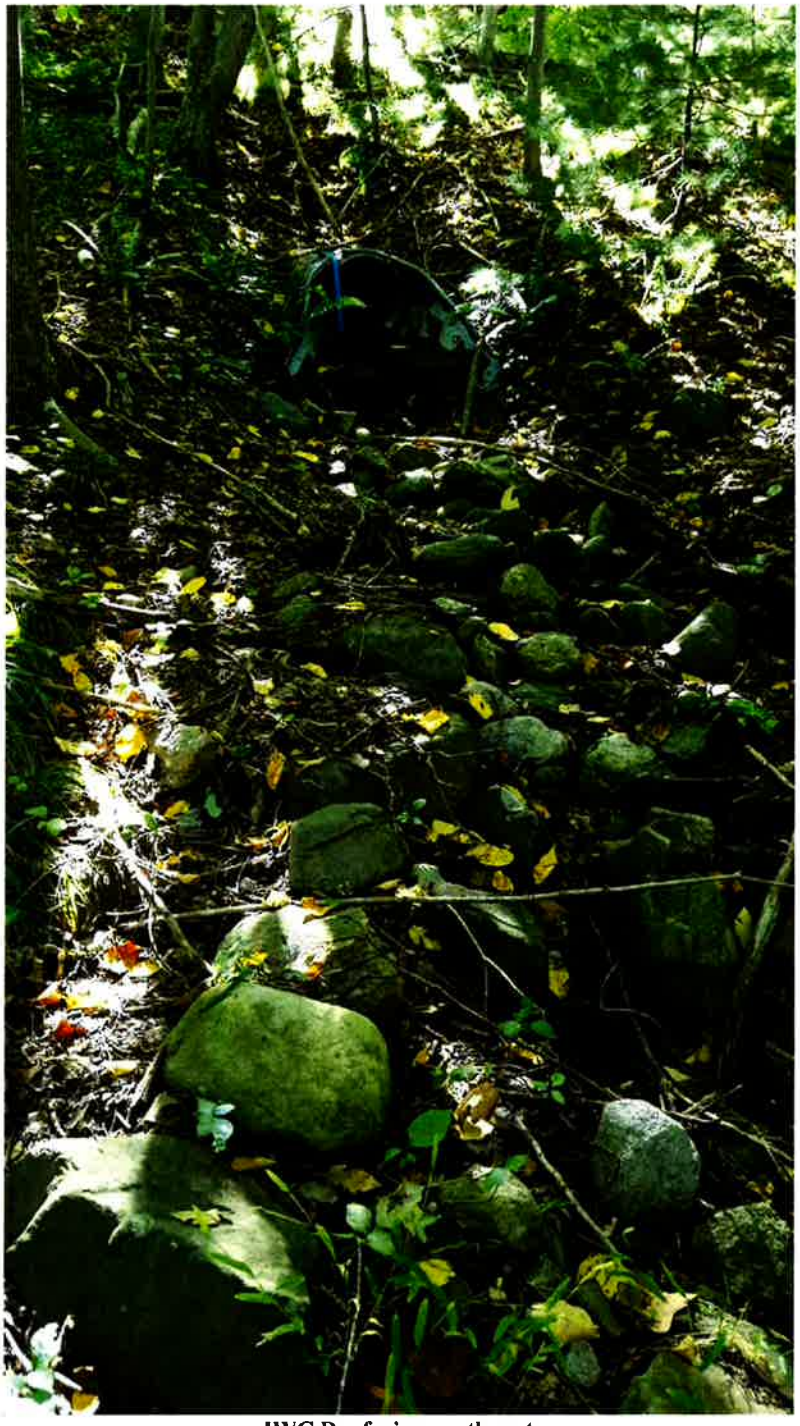
Wetland E – facing north

Wetland FG – facing south

Wetland HI – facing southwest

IWC C – facing southeast

Wetland JK – facing east



IWC D – facing southwest

APPENDIX B: WETLAND DETERMINATION FORMS

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: CT Bridge - Mill River Haddam City/County: Haddam, CT Sampling Date: 10/6/16

Applicant/Owner: CTDOT State: CT Sampling Point: HI-wet

Investigator(s): David Laiuppa, Josh Weiss Section, Township, Range:

Landform (hillside, terrace, etc.): wooded floodplain Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): LRR R Lat: Long: Datum: near I7

Soil Map Unit Name: Ridgebury, Leicester, Whitman NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**		
Hydric Soil Present?	Yes X	No	**within a Wetland?**	**Yes** X	**No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID:	HI	

Remarks: (Explain alternative procedures here or in a separate report.)
Relatively flat woodland adjacent to small stream. Near base of slope leading up to road.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):	
Water Table Present?	Yes X	No	Depth (inches):	18
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches):	0

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: HI-wet

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	75	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	75	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Clethra alnifolia*	15	Yes	FAC
2. *Rosa multiflora*	5	No	FACU
3. *Lindera benzoin*	5	No	FACW
4. *Berberis thunbergii*	2	No	FACU
5.			
6.			
7.			
	27	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Phragmites australis*	40	Yes	FACW
2. *Thelypteris palustris*	25	Yes	FACW
3. *Symplocarpus foetidus*	20	Yes	OBL
4. *Impatiens capensis*	5	No	FACW
5. *Onoclea sensibilis*	5	No	FACW
6. *Equisetum arvense*	5	No	FAC
7.			
8.			
9.			
10.			
11.			
12.			
	100	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Vitis labrusca*	20	Yes	FACU
2. *Smilax rotundifolia*	5	No	FAC
3. *Toxicodendron radicans*	2	No	FAC
4.			
	27	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	80	x 2 =	160
FAC species	102	x 3 =	306
FACU species	27	x 4 =	108
UPL species	0	x 5 =	0
Column Totals:	229 (A)		594 (B)

Prevalence Index = B/A = 2.59

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

_X_ 2 - Dominance Test is >50%

_X_ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** _X_ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: HI-wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/3	90	10YR 4/6	10	C	M	Loamy/Clayey	
3-28	10YR 4/1	95	10YR 4/4	5	C	M	Loamy/Clayey	
28-34+	10YR 2/1	100					Mucky Loam/Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: CT Bridge - Mill River Haddam City/County: Haddam, CT Sampling Date: 10/6/16

Applicant/Owner: CTDOT State: CT Sampling Point: HI-up

Investigator(s): David Laiuppa, Josh Weiss Section, Township, Range:

Landform (hillside, terrace, etc.): sloping woodland Local relief (concave, convex, none): convex Slope (%): 25

Subregion (LRR or MLRA): LRR R Lat: Long: Datum: near I7

Soil Map Unit Name: Paxton & Montauk NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No X**
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Sloping woodland leading down to small stream, from road.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: HI-up

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	45	Yes	FAC
2. *Populus deltoides*	30	Yes	FAC
3. *Picea pungens*	5	No	FACU
4.			
5.			
6.			
7.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Berberis thunbergii*	25	Yes	FACU
2. *Rosa multiflora*	25	Yes	FACU
3. *Pinus strobus*	5	No	FACU
4.			
5.			
6.			
7.			
	55	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Solidago canadensis*	15	Yes	FACU
2. *Eurybia divaricata*	10	Yes	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Celastrus orbiculatus*	15	Yes	UPL
2. *Parthenocissus quinquefolia*	10	Yes	FACU
3. *Vitis labrusca*	5	No	FACU
4.			
	30	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	75	x 3 =	225
FACU species	90	x 4 =	360
UPL species	25	x 5 =	125
Column Totals:	190 (A)		710 (B)

Prevalence Index = B/A = 3.74

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: HI-up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/3	100					Loamy/Clayey	
6								restriction

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: roots & rocks

Depth (inches): 6

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: CT Bridge - Mill River Haddam City/County: Haddam, CT Sampling Date: 10/6/16

Applicant/Owner: CTDOT State: CT Sampling Point: JK-wet

Investigator(s): David Laiuppa, Josh Weiss Section, Township, Range:

Landform (hillside, terrace, etc.): wooded floodplain Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): LRR R Lat: Long: Datum: near K10

Soil Map Unit Name: Ridgebury, Leicester, Whitman NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**		
Hydric Soil Present?	Yes X	No	**within a Wetland?**	**Yes** X	**No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID:	JK	

Remarks: (Explain alternative procedures here or in a separate report.)
Relatively flat woodland adjacent to small stream. Near base of slope leading up to road.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)	Secondary Indicators (minimum of two required)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Surface Soil Cracks (B6)
X Saturation (A3)	___ Marl Deposits (B15)	X Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	X Geomorphic Position (D2)
___ Sparsely Vegetated Concave Surface (B8)		___ Shallow Aquitard (D3)
		___ Microtopographic Relief (D4)
		X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):	
Water Table Present?	Yes	No X	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches): 8	**Wetland Hydrology Present?** **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: JK-wet

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	45	Yes	FAC
2. *Betula alleghaniensis*	15	No	FAC
3. *Betula nigra*	10	No	FACW
4. *Acer saccharum*	5	No	FACU
5. *Fraxinus pennsylvanica*	5	No	FACW
6.			
7.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Clethra alnifolia*	35	Yes	FAC
2. *Pinus strobus*	5	No	FACU
3. *Lindera benzoin*	5	No	FACW
4.			
5.			
6.			
7.			
	45	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Thelypteris palustris*	35	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Smilax rotundifolia*	5	Yes	FAC
2. *Parthenocissus quinquefolia*	2	Yes	FACU
3.			
4.			
	7	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	55	x 2 =	110
FAC species	100	x 3 =	300
FACU species	12	x 4 =	48
UPL species	0	x 5 =	0
Column Totals:	167 (A)		458 (B)

Prevalence Index = B/A = 2.74

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: JK-wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-0		100						Oe
0-3	10YR 4/4	95	10YR 5/6	5	C	M	Loamy/Clayey	
3-8	10YR 2/1	100					Mucky Sand	
8-20	10YR 3/1	100					Sandy	
20-25+	10YR 5/2	88	10YR 5/6	10	C	M	Sandy	Prominent redox concentrations
			10YR 6/1	2	D	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- X Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: CT Bridge - Mill River Haddam City/County: Haddam, CT Sampling Date: 10/6/16

Applicant/Owner: CTDOT State: CT Sampling Point: JK-up

Investigator(s): David Laiuppa, Josh Weiss Section, Township, Range:

Landform (hillside, terrace, etc.): sloping woodland Local relief (concave, convex, none): convex Slope (%): 5

Subregion (LRR or MLRA): LRR R Lat: Long: Datum: near K10

Soil Map Unit Name: Ridgebury, Leicester, Whitman NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**		
Hydric Soil Present?	Yes ____	No X	**within a Wetland?**	**Yes** ____	**No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:		

Remarks: (Explain alternative procedures here or in a separate report.)
Sloping woodland leading down to small stream, from road.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: JK-up

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	25	Yes	FACU
2. *Acer rubrum*	10	Yes	FAC
3. *Populus deltoides*	10	Yes	FAC
4. *Betula lenta*	5	No	FACU
5. *Pinus strobus*	5	No	FACU
6. *Fraxinus pennsylvanica*	2	No	FACW
7.			
	57	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Clethra alnifolia*	20	Yes	FAC
2. *Pinus strobus*	15	Yes	FACU
3			N/A
4.			
5.			
6.			
7.			
	50	=Total Cover	
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	2	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Celastrus orbiculatus*	15	Yes	UPL
2. *Vitis labrusca*	5	Yes	FACU
3.			
4.			
	20	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 43 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	2	x 2 =	4
FAC species	40	x 3 =	120
FACU species	55	x 4 =	220
UPL species	15	x 5 =	75
Column Totals:	112 (A)		419 (B)
Prevalence Index = B/A =			3.74

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: JK-up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 5/4	100					Loamy/Clayey	
8								restriction

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: roots & rocks

Depth (inches): 8

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

APPENDIX C: WETLAND FUNCTION-VALUE EVALUATION FORMS

Wetland Function-Value Evaluation Form

60-158

Total area of wetland_____ Human made? Yes Is wetland part of a wildlife corridor?_____ or a "habitat island"?_____

Adjacent land use Highway Distance to nearest roadway or other development ~ 15 ft

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? middle

How many tributaries contribute to the wetland? 2 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland AB

Latitude_____ Longitude_____

Prepared by: DWL Date Dec 2016

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	○	◉	4,7,15		minimal recharge opportunity near inlet
Floodflow Alteration	○	◉	3,4,5,7,8,9		minimal floodflow storage potential
Fish and Shellfish Habitat	○	◉	1,2		no perennial waters
Sediment/Toxicant Retention	◉	○	1,2,4,10,11,13,14,16	X	sed/tox retention potential from highway runoff
Nutrient Removal	○	◉	3,7,8		Little nutrients available
Production Export	○	◉	2,7		Minimal production occuring within wetland
Sediment/Shoreline Stabilization	○	◉	2,3,9,12,14		no expected erosive forces occurring within intermittent drainage area
Wildlife Habitat	○	◉	13		too small and isolated to provide adequate habitat
Recreation	○	◉			limited/unsafe access
Educational/Scientific Value	○	◉	14		limited/unsafe access
Uniqueness/Heritage	○	◉			limited/unsafe access
Visual Quality/Aesthetics	○	◉	6		limited/unsafe access
ES Endangered Species Habitat	○	◉	NA		None present in 2016 CT DEEP NDDB records
Other	○	◉			

376

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

60-158

Total area of wetland_____ Human made? No Is wetland part of a wildlife corridor?_____ or a "habitat island"?_____

Adjacent land use Highway Distance to nearest roadway or other development ~ 25 ft

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin?_____

How many tributaries contribute to the wetland?_____ Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland E

Latitude_____ Longitude_____

Prepared by: DWL Date Dec 2016

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N_____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	◉	○	4,8,15	X	evidence of groundwater recharge
Floodflow Alteration	○	◉	3,4,5,7,8,9		no associated watercourse
Fish and Shellfish Habitat	○	◉	1,2		no perennial waters
Sediment/Toxicant Retention	◉	○	1,2,4,5,9	X	sed/tox retention potential from highway runoff
Nutrient Removal	◉	○	3,7,8,9,10		some nutrient removal potential
Production Export	◉	○	7,12		possible attenuation
Sediment/Shoreline Stabilization	○	◉	2,3,9		no associated watercourse
Wildlife Habitat	◉	○	7,13,14,21	X	potential habitat for small mammals and birds
Recreation	○	◉	5		limited/unsafe access
Educational/Scientific Value	○	◉	5,14		limited/unsafe access
Uniqueness/Heritage	○	◉			limited/unsafe access
Visual Quality/Aesthetics	○	◉	6,8		limited/unsafe access
ES Endangered Species Habitat	○	◉	NA		None present in 2016 CT DEEP NDDB records
Other	○	◉			

377

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

60-158

Total area of wetland_____ Human made? Yes Is wetland part of a wildlife corridor?_____ or a "habitat island"?_____

Adjacent land use Highway Distance to nearest roadway or other development ~ 25 ft

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? middle

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland FG

Latitude_____ Longitude_____

Prepared by: DWL Date Dec 2016

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N_____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	○	◉	4,7,15		minimal recharge opportunity
Floodflow Alteration	○	◉	3,4,5,7,8,9		minimal floodflow storage potential
Fish and Shellfish Habitat	○	◉	1,2		no perennial waters
Sediment/Toxicant Retention	◉	○	1,2,4,10,11,13,14,16	X	sed/tox retention potential from highway runoff
Nutrient Removal	○	◉	3,7,8		Little nutrients available
Production Export	○	◉	2,7		Minimal production occuring within wetland
Sediment/Shoreline Stabilization	◉	○	2,3,9,12,14		possibly small scale stabilization
Wildlife Habitat	○	◉	13		too small and isolated to provide adequate habitat
Recreation	○	◉			limited/unsafe access
Educational/Scientific Value	○	◉	14		limited/unsafe access
Uniqueness/Heritage	○	◉			limited/unsafe access
Visual Quality/Aesthetics	○	◉	6		limited/unsafe access
ES Endangered Species Habitat	○	◉	NA		None present in 2016 CT DEEP NDDB records
Other	○	◉			

378

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

60-158

Total area of wetland_____ Human made? No Is wetland part of a wildlife corridor? yes or a "habitat island"?_____

Adjacent land use Highway & local road Distance to nearest roadway or other development ~ 50 ft

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present Yes

Is the wetland a separate hydraulic system? no If not, where does the wetland lie in the drainage basin? middle

How many tributaries contribute to the wetland? 2 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland HI

Latitude_____ Longitude_____

Prepared by: DWL Date Dec 2016

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N_____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	◉	○	4,7,8,12,15		some evidence of groundwater recharge
Floodflow Alteration	◉	○	3,5,6,7,8,9,10,13	X	small scale floodflow alteration
Fish and Shellfish Habitat	◉	○	1,2,4,8,14,17		possible small populations of fish in fast flowing shallow water
Sediment/Toxicant Retention	◉	○	1,2,4,9,10		vegetation density not adequate for substantial retention
Nutrient Removal	○	◉	7		vegetation density not adequate for substantial retention
Production Export	○	◉	4		minimal production occuring within wetland
Sediment/Shoreline Stabilization	◉	○	2,3,6,7,9,14	X	wetland vegetation on banks of perennial watercourse
Wildlife Habitat	◉	○	4,7,8,10,11,14,15,19,2	X	adequate food and water for wildlife populations
Recreation	◉	○	1,4,5,6		adjacent to public and private lands
Educational/Scientific Value	◉	○	2,4,5,6,11,13		adjacent to public and private lands
Uniqueness/Heritage	◉	○	5,10,11,14,16,17,18,2		wetland not unique for the area
Visual Quality/Aesthetics	◉	○	7,8,9,11,12		wetland not unique for the area
ES Endangered Species Habitat	○	◉	NA		None present in 2016 CT DEEP NDDB records
Other	○	◉			

379

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

60-158

Total area of wetland_____ Human made? No Is wetland part of a wildlife corridor? yes or a "habitat island"?_____

Adjacent land use Highway & local road Distance to nearest roadway or other development ~ 25 ft

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present Yes

Is the wetland a separate hydraulic system? no If not, where does the wetland lie in the drainage basin? middle

How many tributaries contribute to the wetland? 4 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland JK

Latitude_____ Longitude_____

Prepared by: DWL Date Dec 2016

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N_____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	◉	○	4,7,8,12,15	X	strong evidence of groundwater recharge
Floodflow Alteration	◉	○	3,5,6,7,8,9,10,13	X	small scale floodflow alteration
Fish and Shellfish Habitat	◉	○	1,2,4,8,14,17		possible small populations of fish in fast flowing shallow water
Sediment/Toxicant Retention	◉	○	1,2,4,9,10		vegetation density not adequate for substantial retention
Nutrient Removal	○	◉	7		vegetation density not adequate for substantial retention
Production Export	○	◉	4		minimal production occuring within wetland
Sediment/Shoreline Stabilization	◉	○	2,3,6,7,9,14	X	wetland vegetation on banks of perennial watercourse
Wildlife Habitat	◉	○	4,7,8,10,11,14,15,19,2	X	adequate food and water for wildlife populations
Recreation	◉	○	1,4,5,6		adjacent to public and private lands
Educational/Scientific Value	◉	○	2,4,5,6,11,13		adjacent to public and private lands
Uniqueness/Heritage	◉	○	5,10,11,14,16,17,18,2		wetland not unique for the area
Visual Quality/Aesthetics	◉	○	7,8,9,11,12		wetland not unique for the area
ES Endangered Species Habitat	○	◉	NA		None present in 2016 CT DEEP NDDB records
Other	○	◉			

380

Notes:

* Refer to backup list of numbered considerations.

APPENDIX D: USFWS CONSULTATION FORM

Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form

Federal agencies should use this form for the optional streamlined consultation framework for the northern long-eared bat (NLEB). This framework allows federal agencies to rely upon the U.S. Fish and Wildlife Service's (USFWS) January 5, 2016, intra-Service Programmatic Biological Opinion (BO) on the final 4(d) rule for the NLEB for section 7(a)(2) compliance by: (1) notifying the USFWS that an action agency will use the streamlined framework; (2) describing the project with sufficient detail to support the required determination; and (3) enabling the USFWS to track effects and determine if reinitiation of consultation is required per 50 CFR 402.16.

This form is not necessary if an agency determines that a proposed action will have no effect to the NLEB or if the USFWS has concurred in writing with an agency's determination that a proposed action may affect, but is not likely to adversely affect the NLEB (i.e., the standard informal consultation process). Actions that may cause prohibited incidental take require separate formal consultation. Providing this information does not address section 7(a)(2) compliance for any other listed species.

Information to Determine 4(d) Rule Compliance:	**YES**	**NO**
1. Does the project occur wholly outside of the WNS Zone[1]?	☐	☑
2. Have you contacted the appropriate agency[2] to determine if your project is near known hibernacula or maternity roost trees?	☑	☐
3. Could the project disturb hibernating NLEBs in a known hibernaculum?	☐	☑
4. Could the project alter the entrance or interior environment of a known hibernaculum?	☐	☑
5. Does the project remove any trees within 0.25 miles of a known hibernaculum at any time of year?	☐	☑
6. Would the project cut or destroy known occupied maternity roost trees, or any other trees within a 150-foot radius from the maternity roost tree from June 1 through July 31.	☐	☑

You are eligible to use this form if you have answered yes to question #1 **or** yes to question #2 **and** no to questions 3, 4, 5 and 6. The remainder of the form will be used by the USFWS to track our assumptions in the BO.

Agency: FHWA – Connecticut Division

Applicant[3] (Name, Email, Phone No.):
Connecticut Department of Transportation
Amanda M. Saul, Office of Environmental Planning
DOT.NLEB@ct.gov, (860)594-2939

Project Name: CTDOT0060-0158

Project Location (include coordinates if known): Route 9 over the Pole Bridge Brook, Town of Haddam; 41.4641, -72.5401

Basic Project Description (provide narrative below or attach additional information):

Rehabilitation for Br 06728, Route 9 over Pole Bridge Brook in the Town of Haddam.

[1] http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf
[2] See http://www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html
[3] If applicable - only needed for federal actions with applicants (e.g., for a permit, etc.) who are party to the consultation.

General Project Information	YES	NO
Does the project occur within 0.25 miles of a known hibernaculum?	☐	☑
Does the project occur within 150 feet of a known maternity roost tree?	☐	☑
Does the project include forest conversion[4]? (if yes, report acreage below)	☑	☐
Estimated total acres of forest conversion	<0.5 ac	
If known, estimated acres[5] of forest conversion from April 1 to October 31		
If known, estimated acres of forest conversion from June 1 to July 31[6]		
Does the project include timber harvest? (if yes, report acreage below)	☐	☑
Estimated total acres of timber harvest		
If known, estimated acres of timber harvest from April 1 to October 31		
If known, estimated acres of timber harvest from June 1 to July 31		
Does the project include prescribed fire? (if yes, report acreage below)	☐	☑
Estimated total acres of prescribed fire		
If known, estimated acres of prescribed fire from April 1 to October 31		
If known, estimated acres of prescribed fire from June 1 to July 31		
Does the project install new wind turbines? (if yes, report capacity in MW below)	☐	☑
Estimated wind capacity (MW)		

Agency Determination:

By signing this form, the action agency determines that this project may affect the NLEB, but that any resulting incidental take of the NLEB is not prohibited by the final 4(d) rule.

If the USFWS does not respond within 30 days from submittal of this form, the action agency may presume that its determination is informed by the best available information and that its project responsibilities under 7(a)(2) with respect to the NLEB are fulfilled through the USFWS January 5, 2016, Programmatic BO. The action agency will update this determination annually for multi-year activities.

The action agency understands that the USFWS presumes that all activities are implemented as described herein. The action agency will promptly report any departures from the described activities to the appropriate USFWS Field Office. The action agency will provide the appropriate USFWS Field Office with the results of any surveys conducted for the NLEB. Involved parties will promptly notify the appropriate USFWS Field Office upon finding a dead, injured, or sick NLEB.

Signature: Amanda M. Saul Digitally signed by Amanda M. Saul DN: cn=Amanda M. Saul, o=Connecticut Department of Transportation, ou=Office of Environmental Planning, email=amanda.saul@ct.gov, c=US Date: 2018.07.02 15:58:19 -04'00'

Date Submitted: 7/2/2018

[4] Any activity that temporarily or permanently removes suitable forested habitat, including, but not limited to, tree removal from development, energy production and transmission, mining, agriculture, etc. (see page 48 of the BO).
[5] If the project removes less than 10 trees and the acreage is unknown, report the acreage as less than 0.1 acre.
[6] If the activity includes tree clearing in June and July, also include those acreage in April to October.

Attachment D: Other Information

Application for Department of the Army Permit

Applicant: State of Connecticut, Department of Transportation
Project No. 60-158 (Constr.), 60-158 (P.E.)
Rehabilitation of Bridge No. 06728 in Haddam
Route 9 over Pole Bridge Brook

List of Attachments

- Flood Insurance Rate Map Panel 09007C0233G, for Middlesex County. Dated: August 28, 2008
- Natural Diversity Data Base Area map of Haddam dated December 2017.
- Letter from the State of Connecticut Department of Transportation, Office of Environmental Planning dated February 2, 2017 with a determination that the project exempt from Section 106 review and no further consultation with SHPO is necessary.
- Email from FHWA CT Division, Environmental Protection Specialist Chris Hansen dated February 2, 2017, stating tribal consultation would not be required for this project.
- Initial Inland Fisheries Coordination memo submitted to OEP dated March 21, 2016.
- Memorandum of Agreement between the Department of Energy and Environmental Protection and the Department of Transportation for a project entitled *"Fisheries Mitigation – Br. No. 06728, Route 9 over Pole Bridge Brook, Haddam, State Project 60-158"*, signed 10/10/17.
- DEEP/DOT Regulatory Coordination Project Meeting Notes, May 26, 2016.
- Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form dated 7/2/2018.
- Site Photos

e National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0233G

FIRM

FLOOD INSURANCE RATE MAP

MIDDLESEX COUNTY, CONNECTICUT

(ALL JURISDICTIONS)

PANEL 233 OF 450

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
HADDAM, TOWN OF	090066	0233	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
09007C0233G

EFFECTIVE DATE
AUGUST 28, 2008

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Natural Diversity Data Base Areas

HADDAM, CT

December 2017

60-158

State and Federal Listed Species & Significant Natural Communities

Town Boundary

NOTE: This map shows general locations of State and Federal Listed Species and Significant Natural Communities. Information on listed species is collected and compiled by the Natural Diversity Data Base (NDDB) from a number of data sources . Exact locations of species have been buffered to produce the general locations. Exact locations of species and communities occur somewhere in the shaded areas, not necessarily in the center. A new mapping format is being employed that more accurately models important riparian and aquatic areas and eliminates the need for the upstream/downstream searches required in previous versions.

386

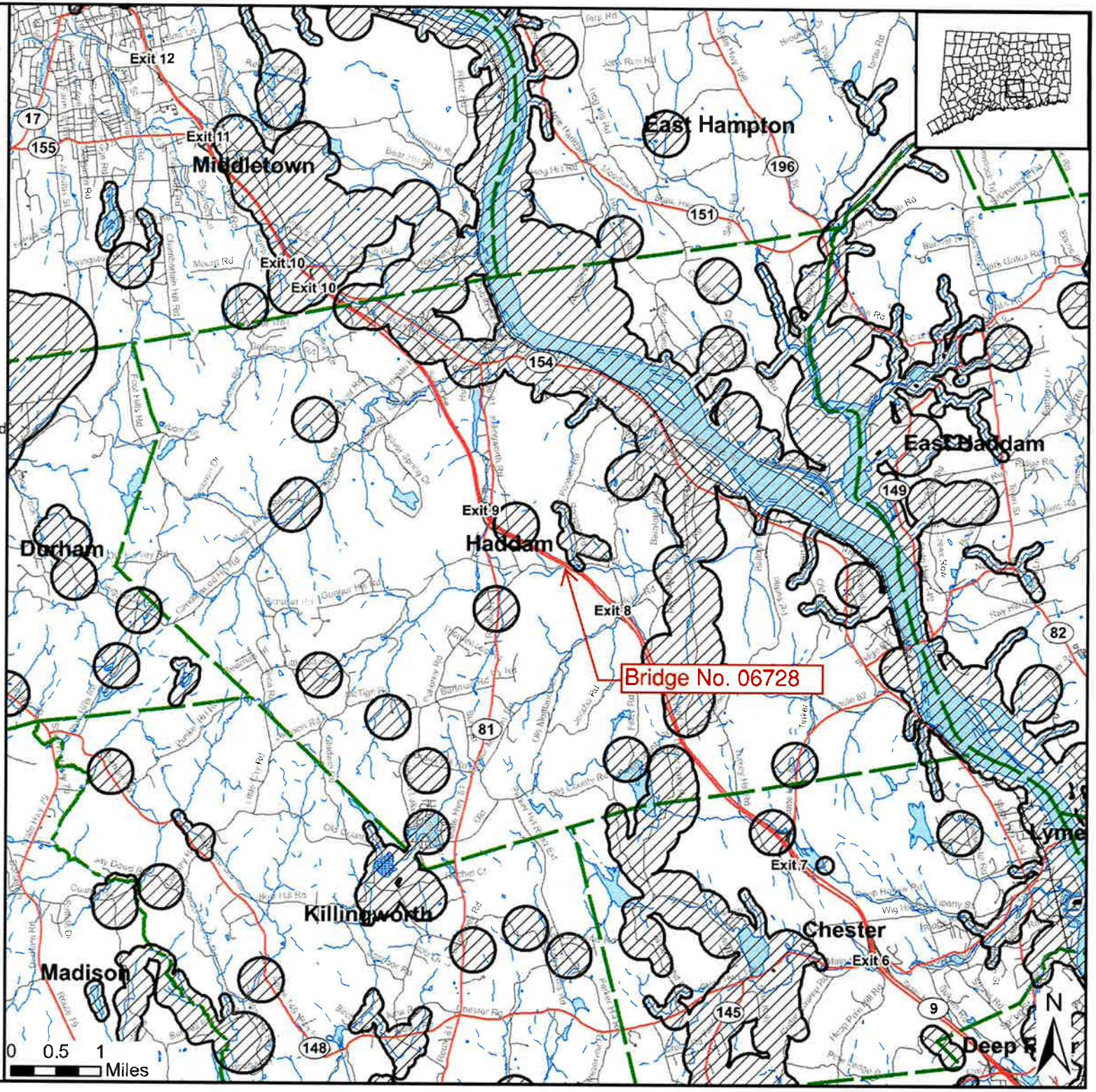
This map is intended for use as a preliminary screening tool for conducting a Natural Diversity Data Base Review Request. To use the map, locate the project boundaries and any additional affected areas. If the project is within a shaded area there may be a potential conflict with a listed species. For more information, complete a Request for Natural Diversity Data Base State Listed Species Review form (DEP-APP-007), and submit it to the NDDB along with the required maps and information. More detailed instructions are provided with the request form on our website.

www.ct.gov/deep/nddbrequest

Use the CTECO Interactive Map Viewers at www.cteco.uconn.edu to more precisely search for and locate a site and to view aerial imagery with NDDB Areas.

QUESTIONS: Department of Energy and Environmental Protection (DEEP)
79 Elm St., Hartford CT 06106
Phone (860) 424-3011

Connecticut Department of Energy & Environmental Protection
Bureau of Natural Resources
Wildlife Division



STATE OF CONNECTICUT

DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546

Determination of Exemption for Historic Properties

Author:	Mark McMillan	**Date:** February 2, 2017
Project:	State No.:	60-158
	F.A.P. No.:	TBD
	Project Title:	Rehabilitation of Culvert #06728 Route 9 over Mill River
	Town:	Haddam
Category of Exemption:		**Appendix B *"Screened Undertakings…"***

Project Description

Using federal and state funds, the Connecticut Department of Transportation (CTDOT) proposes to rehabilitate Culvert #06728, which conveys the Mill River under Route 9 in Haddam. Recent inspections by CTDOT's Bridge Safety and Inspection unit have determined the culvert to be in Critical condition due to the failure of its steel pipe lining. Under the proposed scope of work, a new lining will be installed within the existing pipe. Protections for the concrete headwalls will be installed at either end of the culvert.

The project anticipates minor interruptions to traffic. Temporary off-peak lane closures will be needed to accommodate delivery of materials and equipment to the site. Final design in scheduled for August 2018 with construction commencing in the fall of the same year.

Technical Review of Project

Culvert #06728 consists of a single asphalt-coated corrugated metal pipe (ACCMP) that is 6 feet in diameter and 397 feet long. When this segment of Route 9 was constructed, the culvert was installed at grade to the natural topography. The roadway of Route 9 is built on a raised roadbed of introduced soils (Image 1). In total, there is 28 feet of ballast between the top of the culvert pipe and the roadway. At either end of the pipe are reinforced concrete headwalls (Image 2). The outlet wall at the east features an additional 18" diameter pipe set into the culvert's wingwall. This discharges water from a catch basin located between the north and southbound lanes of Route 9. Culvert #06728 was built in 1966 and has not undergone any alterations. It is categorized as Not Eligible for the National Register of Historic Places.

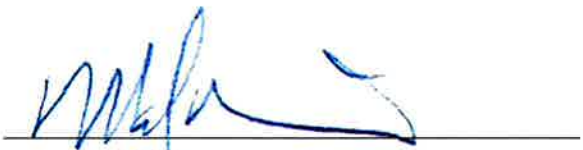
Under the proposed scope of work, the pipe will be cleaned of debris and then pressure grouted. A cured-in-place pipe lining system will then be installed within the existing pipe. This system will centrifugally cast a 2-½" thick cementitious coating over the existing steel liner. This will create a waterproof seal within the pipe and reduce future corrosion of the liner. The exposed walls at the ends of the culvert will be repaired by a combination of channel grading and the installation of riprap.

The equipment and materials required to perform the culvert repairs will be brought from Hubbard Road. Construction will likely require constructing temporary gravel access roads at each end of the culvert. Because these will occur within the existing right of way of Route 9, no acquisitions or easements of private property will be required.

The sediments surrounding the culvert are characterized as Udorthents-Urban Land Complex, which have a Poor archaeological sensitivity. Beyond this band of previously disturbed soils are a variety of soils that are all described as "Extremely Stony". Predictive models find such soils to have variable archaeological sensitivity, though this is reduced by the steep topography and stony conditions. Further, aerial photography of the project site shows extensive soil disturbance during the construction of Route 9. For these reasons, it is the professional opinion of the archaeology staff that there is very limited likelihood of intact archaeological properties being present within the project's area of potential effect.

Determination

Culvert #06728 is not eligible for the National Register of Historic Places. It is surrounded by sediments that have been previously disturbed by the construction of Route 9 and that are unlikely to contain any intact archaeological resources. Qualified cultural resource staff have screened this undertaking and found that the proposed rehabilitation work meets the criteria of a "Bridge/Culvert Related Project" as defined in Appendix B "*Screened Undertakings Not Requiring Connecticut SHPO Review*" of the Section 106 Programmatic Agreement[1]. Appendix B lists the types of undertakings that, due to their limited potential to impact historic resources, are exempt from Section 106 review. No further consultation with the SHPO is necessary. A copy of this finding will be included in the quarterly report of Minor Transportation Projects that is submitted to the SHPO.



Mark McMillan
National Register Specialist
Office of Environmental Planning
Connecticut Department of Transportation

[1] *Programmatic Agreement among the Federal Highway Administration, the Connecticut Department of Transportation, the Connecticut State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding Implementation of Minor Transportation Projects*, signed October 26, 2012. Accessible online at: www.ct.gov/culturalresources

From: Hansen, Christopher (FHWA) <christopher.hansen@dot.gov>
Sent: Thursday, February 02, 2017 1:36 PM
To: McMillan, Mark J.
Subject: RE: Tribal Consultation: Project #60-158 Haddam (Culvert #06728 Rehab., Route 9 over Mill River)

Mark,

I have carefully reviewed CTDOT's proposed project #0060-0158 to rehabilitate culvert 06728. As per the THPO Section 106 Agreements with FHWA-CT Division, dated January 4, 2012 and May 14, 2013, this project would fall within the categories of "resurfacing or repair of existing ramps or roadways within the previously disturbed right-of-way".

With this email, and taking all these items into consideration, the FHWA-CT Division has determined that tribal consultation would not be required for this project. Should any changes be made to the scope of work for this project that would involve additional ground disturbance beyond what is currently proposed, tribal consultation would have to be reconsidered.

Thanks,
Chris

Chris Hansen
Environmental Protection Specialist
Federal Highway Administration
Connecticut Division
860.494.7577
christopher.hansen@dot.gov

From: Mark.McMillan@ct.gov [mailto:Mark.McMillan@ct.gov]
Sent: Wednesday, February 01, 2017 2:07 PM
To: Hansen, Christopher (FHWA)
Subject: Tribal Consultation: Project #60-158 Haddam (Culvert #06728 Rehab., Route 9 over Mill River)

You have received 2 secure files from Mark.McMillan@ct.gov.
Use the secure links below to download.

Chris,

Attached is a Determination of Exemption for State Project #60-158 in Haddam. The undertaking will reline a culvert beneath Route 9. The only ground distrubance anticipated will be that created by bringing equipment and materials to the culvert ends, all of which is within the existing road ROW. Given the previous disturbance created by the construction of Route 9, I do not believe tribal consultation is warranted.

Mark

Mark McMillan
National Register Specialist
Office of Environmental Planning
Connecticut Department of Transportation
2800 Berlin Turnpike
Newington, CT 06131
☎ (860) 594-2135
☎ *(860) 594-3028 - Fax*
✉ mark.mcmillan@ct.gov

Secure File Downloads:

Available until: **03 March 2017**

Click links to download:

60-158 ER Request Haddam.pdf
1.86 MB, Fingerprint: 0d61ac0c0663442fedb6bf0df0e60c8b (What is this?)

ExemptFormB_Haddam60-158_20170201.pdf
686.90 KB, Fingerprint: 880817ac9854424beb72ad8f85dad18e (What is this?)

You have received attachment link(s) within this email sent via Accellion Secure File Transfer. To retrieve the attachment(s), please click on the link(s). To learn how your company can benefit from Accellion Secure File Transfer, please visit http://www.accellion.com

Secured by Accell

CTDEEP INLAND/MARINE FISHERIES DIVISION COORDINATION TRANSMITTAL MEMORANDUM

DOT Project #: 60-158 **Town:** Haddam **Bridge #: 06728**
Waterway: Mill River **Drainage Basin Name & Number:** 4015, Mill Creek
Project Description / Scope of work: Reline the existing pipe with a cured-in-place pipe lining system.
Design contact: Emma Lane **Town Initiated Project? No**

nitial Coordination

The following information is provided as required:

Plan /submittal date : 3/21/16

X Legible location map with project site clearly marked
X Description of scope of work and if developed, pertinent ½ scale plans as deemed relevant.
X Area photographs

To be completed by CTDEEP Fisheries Division and returned to DOT Environmental Planning Division

__ Affect of proposal on our program interests is negligible. No further review is warranted.
__ Additional information is required, a list of requested information is attached.
__ Comments and recommendations are attached.

_____ Initials
_____ Date

tructure Type Agreement

The following information is provided as required:

Plan date: _____

__ Copies of previous correspondence from Fisheries Division
__ If previous recommendations cannot be incorporated, provide narrative explaining why.
__ ½ scale plans of pertinent plan sheets including plan view, elevation view, profile and details as deemed relevant.

To be completed by CTDEEP Fisheries Division and returned to DOT Environmental Planning Division

__ DEEP Fisheries agrees to the structure type presented in the plans.
__ Unconfined in-stream work must be limited to _____
__ Other comments and recommendations are attached.

_____ Initials
_____ Date

inal Fisheries Sign-Off

____ ***Check here if project is not FM MOU eligible and will be finalized through DEEP IWRD.***

The following information is provided as required:

Plan date: _____

__ Copies of all previous correspondence from Fisheries Division
__ If previous recommendations cannot be incorporated, provide narrative explaining why.
__ ½ scale plans of pertinent plan sheets including plan view, elevation view, profile and details as deemed relevant.

To be completed by CTDEEP Fisheries Division and returned to DOT Environmental Planning Division

__ DEEP Fisheries comments have been adequately incorporated into project plans
__ The attached Special Conditions must be incorporated into the contract language

_____ _____
DEEP Fisheries Biologist Date

To be provided by Sponsoring Agency		
PS#	**Core CT Contract #**	**PO#**

MEMORANDUM OF AGREEMENT
BETWEEN THE
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION AND
THE DEPARTMENT OF TRANSPORTATION

This Memorandum of Agreement (MOA) is entered into by the Department of Energy and Environmental Protection (DEEP) and the Department of Transportation (DOT) for the purpose of undertaking a project of mutual interest.

1. **Duration**: The period of this MOA shall begin upon execution and shall expire when all conditions have been met but in any case no later than two years from the transfer of funds from DOT to DEEP.

2. **Title**: This project is entitled: *"Fisheries Mitigation – Br. No. 06728, Route 9 over Pole Bridge Brook, Haddam; State Project 60-158"*.

3. **Total Project Costs** for the period of this MOA shall not exceed **$60,000.**

4. **Project Directors**: The following individuals are designated to serve as Project Directors (or Project Managers or Principal Investigators):

For the DOT
Andrew H. Davis
Transportation Supervising Planner
Office of Environmental Planning
Department of Transportation
2800 Berlin Turnpike
Newington, CT 06131
Email: andrew.h.davis@ct.gov
Phone: (860)594-2157

For the DEEP
Roger Wolfe
Environmental Analyst III
DEEP – Bureau of Natural Resources
Wildlife Division
391 Route 32
North Franklin, CT 06242
Email: roger.wolfe@ct.gov
Phone: (860) 418-5987

5. **Business Contacts**: The following individuals are designated to serve as contacts for business matters:

For the DOT:
Mark F. Carlino
Transportation Planning Director

Department of Transportation
2800 Berlin Turnpike
PO Box 317546
Newington, CT 06131
email: mark.carlino@ct.gov
Phone: 860-594-2099

For the DEEP:
Sharon Gdovin
Fiscal Administrative Officer

DEEP - FSS – Financial Management Division
79 Elm Street
Hartford, CT 06106-5127
email: sharon.gdovin@ct.gov
Phone (860) 418-5969
Fax (860) 424-4070

6. **General Supervision**: Primary responsibility for general supervision of all activities and compliance with all applicable laws and standards and the terms of this MOA rests with the DEEP.

7. **Description:** This MOA will cover work which will be conducted by the DEEP Wildlife Division for a fisheries project within the Haddam Meadows Marsh system (hereinafter called "restoration project"). The Haddam Meadows Marsh system has been used since 1975 for the production of northern pike for introduction for sport fisheries into the State's waterways. The restoration project involves management activities to clear channels of vegetation and accumulated sediments within the marsh system to allow for

adequate water depth for adult and juvenile Pike to emigrate out of the marsh when water levels are lowered. In addition to allowing free passage, increase in conveyance of waters into the marsh will restore the wetland functions to pre-Tropical Storm Irene levels (the cause of the increased sedimentation). The restoration project will be conducted by DEEP staff from the Wetland Habitat and Mosquito Management unit (WHAMM) of the Wildlife Division. DEEP Fisheries Division has obtained all required state/federal permits for the project.

The selected restoration project has been chosen as off-site mitigation for DOT Project 60-158 which involves the rehabilitation of culvert #06728 through a centrifugally cast-in-place pipe lining. The project has been flagged as requiring mitigation due to the fact that the existing culvert is a barrier to fish passage, and no retrofit options would provide passage of the rehabilitated culvert. The Haddam Meadows restoration project has been discussed with DEEP Land and Water Reuse Division (LWRD) and LWRD staff are in agreement with the suitability of this project as adequate mitigation for Project 60-158 (See Appendix A).

8. **Project Location:** DOT Project 60-158 is located in Haddam; Bridge #06728 carries Route 9 over Pole Bridge Brook. The off-site mitigation project is located on State property within the boundary of Haddam Meadows State Park in Haddam.

9. **Deliverables**:

A. By the DOT-

1) DOT will secure funding to support the mitigation project (See Appendix B).

2) A transfer of funds from DOT to DEEP to reimburse DEEP costs for the restoration project will take place following the receipt of invoices for said work. DEEP shall invoice the DOT for costs not to exceed $60,000 and in accordance with the cost estimate in Appendix C. Costs above this amount may be considered for reimbursement but are subject to eligibility restrictions and available funds.

B. By the DEEP-

1) Construction machinery, equipment, and personnel to complete the restoration work on the marshes.

2) Provide summary report and presentation to DOT following schedule in Paragraph 11 below.

3) Upon completion of the work, DEEP will provide an invoice for actual expenses incurred

10. **Budget**: A total of up to $60,000 in incurred expenses will be reimbursed by the DOT pursuant to the terms of the MOA. Project estimate given to DOT by DEEP at the time of the agreement for the cost of the work was $59,763.00 (Refer to Appendix C for cost estimate).

11. **Schedule of Reports**:

A. **Project Completion Report:** Upon completion of the restoration work, DEEP will provide a summary report of the completed activities to DOT. Summary report will include a presentation to the DOT. Such summaries should be submitted to the DOT no later than 3 months following project completion.

12. **Schedule of Activities**: Upon formal authorization of construction activities to commence from DOT to DEEP, the restoration activities will be scheduled and completed by DEEP. Timing of the restoration work to be determined by DEEP so as to not impact ongoing/active pike rearing activities in the marsh but shall be completed as expeditiously as practical. Invoicing and reimbursement for actual expenses will occur after work is completed.

13. **Cancellation**: Either party may propose to terminate this MOA. The party proposing termination must notify the other party of the MOA explaining the reasons for termination and afford at least ninety (90) days to

consult and seek alternatives to termination. Should such consultation fail, the MOA will be terminated. In the event that the DOT is the proponent of the cancellation after the transfer of the funds has been completed, or should DOT project 60-158 not proceed, the completed mitigation work will be transferrable to a future DOT project requiring off-site fisheries mitigation.

14. **Extensions/Amendments:** This MOA may be modified by the mutual agreement of the DOT and the DEEP. Revisions may include but not limited to:

    a. timing of the restoration work,
    b. any other agreement revisions determined material by either agency.

15. **Use of Funds:** The DEEP agrees to limit expenses and efforts to the quoted scope and cost estimate solely for the purpose of the restoration work at Haddam Meadows and accepts the terms of this MOA.

16. **CFDA Number is 20.205**. (Include if federal funding is used)

17. **Approved by:**

DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION	**DEPARTMENT OF TRANSPORTATION**
APPROVED	APPROVED
Date: 10/12/17	Date: Thomas J Maziarz
By: _____	By: 9-28-2017
Authorized Signature	Authorized Signature

Chartfield Distributions For Sponsor Agency use only.

Amount	Dept	Fund	SID	Program	Project	Activity	Bud Ref	Agency CF 1	Agency CF 2	Account
	DOT57191	12062	22108	34001	DOT0060158PE	PE0000		PE155		51210

APPENDIX - A

Saul, Amanda M

From: Saul, Amanda M
Sent: Wednesday, August 30, 2017 11:08 AM
To: Saul, Amanda M
Subject: FW: Fisheries Mitigation Project for CTDOT Project 60-158 (Bridge #06728)

From: Gilmore, Robert
Sent: Thursday, January 05, 2017 7:39 AM
To: Murphy, Brian
Subject: RE: Fisheries Mitigation Project for CTDOT Project 60-158 (Bridge #06728)

I support the proposed Haddam Meadows Marsh Project as acceptable mitigation for the DOT Pole Bridge Brook culvert slip lining project –at bridge #06728, Haddam.

Bob Gilmore, Supervisor
Regulatory – North Region
Land & Water Resources Division
Bureau of Water Protection & Land Reuse
Connecticut Department of Energy and Environmental Protection
79 Elm St, Hartford, CT 06106-5127
(860) 424-3866
robert.gilmore@ct.gov

From: Murphy, Brian
Sent: Wednesday, January 04, 2017 11:39 AM
To: Gilmore, Robert <Robert.Gilmore@ct.gov>
Subject: Fisheries Mitigation Project for CTDOT Project 60-158 (Bridge #06728)

Hi Bob,

Happy New Year! After the last DOT PMM/Lean Meeting in December you and I briefly discussed the use of the Haddam Meadows Marsh Project as mitigation for the DOT Pole Bridge Brook sliplining project. For reference I have attached an email on this issue I sent to you in late November. In essence, you mentioned you would send me an email that confirms that Land and Water Resources staff has agreed with the use of this project as suitable mitigation. Appreciate if you could send me a brief email that documents this opinion so that I could include it within my Fisheries review for the Pole Bridge Project. Thanks much.

Regards,
Brian D. Murphy, Senior Fisheries Habitat Biologist
Inland Fisheries Division
Habitat Conservation and Enhancement Program
Connecticut Department of Energy and Environmental Protection
Eastern District Headquarters
209 Hebron Road
Marlborough, CT 06447
P: 860.295-9523 | F: 860.295.8175 | brian.murphy@ct.gov

APPENDIX - B

Saul, Amanda M

From:	Bacho, Louis D
Sent:	Thursday, August 17, 2017 10:23 AM
To:	Nezames, Theodore H; Barakat, Rabih M; Ruiz, Lesgie M; Saul, Amanda M; Davis, Andrew H; Trio, Jennifer N
Cc:	Meyers, Darren E
Subject:	FW: 60-158 Off-Site Mitigation for DEEP MOA

All,

I spoke with Ted Aldieri this morning and he is OK going forward with our off-site mitigation project with DEEP. At Ted's direction I will write a brief public interest finding paper for our records explaining why it is in the public's best interest to hire DEEP to perform this work as opposed to contracting this out via the bidding process.

Also we just submitted the design approval this morning for review and signatures.

Thanks all for your help,

Lou

Louis D. Bacho
Transportation Supervising Engineer
CT Department of Transportation
Consultant Design – Bridge
2800 Berlin Turnpike
Newington, CT
Phone: (860) 594-3212
Email: louis.bacho@ct.gov

From: Aldieri, Ted (FHWA) [mailto:Ted.Aldieri@dot.gov]
Sent: Thursday, August 17, 2017 10:15 AM
To: Bacho, Louis D
Cc: Meyers, Darren E
Subject: RE: 60-158 Off-Site Mitigation for DEEP MOA

Hi Lou,

FHWA takes no exception to how CT DOT would like to proceed with this mitigation as in the MOA and prior to the CN phase, we consider this as stage construction and is eligible for federal-aid.

I would like to make you aware that we consider DEEP as a State Force or work done by any municipal force or agency, and therefore requires a PIF. This PIF approval action as shown in the O&A page 13 Table 4 has been delegated to the State.

I discussed my few comments on the MOA with you but will leave that up to CT DOT to manage.

Feel free to contact me if you have any further questions.

Please let me know when mitigation work will commence as if time allows I would like to perform a field visit to the operation.

Thanks,

Ted

Ted J. Aldieri, S.E.T.
Division Structural Engineer/
Bridge Program Manager

Federal Highway Administration
Connecticut Division
628-2 Hebron Avenue
Suite 303
Glastonbury, CT 06033

Office No. 860-494-7582
Fax No. 860-659-6724
Ted.Aldieri@dot.gov

From: Bacho, Louis D [mailto:Louis.Bacho@ct.gov]
Sent: Thursday, August 17, 2017 9:54 AM
To: Aldieri, Ted (FHWA) <Ted.Aldieri@dot.gov>
Subject: FW: 60-158 Off-Site Mitigation for DEEP MOA

FYI

Louis D. Bacho
Transportation Supervising Engineer
CT Department of Transportation
Consultant Design – Bridge
2800 Berlin Turnpike
Newington, CT
Phone: (860) 594-3212
Email: louis.bacho@ct.gov

From: Meyers, Darren E
Sent: Thursday, August 17, 2017 8:05 AM
To: Saul, Amanda M; Bacho, Louis D
Cc: Ruiz, Lesgie M; Davis, Andrew H
Subject: RE: 60-158 Off-Site Mitigation for DEEP MOA

Hi Amanda,
I reviewed the draft MOA and formulated some comments that are intended to better clarify the purpose & need of this work and MOA. I looked at it from the perspective that FHWA agrees to eligibility & participation, and this cost would be paid out of the PE project with federal funds. Also, I changed some wording to reflect

our reimbursement of DEEP's actual expenses versus a transfer of funds. Please see my comments for items 7, 9A, 10, 12, 13, 15 and 16.

I saw Lou's email to FHWA and understand we are still awaiting their determination on eligibility of the work under PE(PD) as well as using DEEP forces.

Lou – with the existing POs for WMC and CJM there is insufficient funding under PE(PD) for this MOA. We would need to process the PE(PD) mod you requested or include this cost in the PE(FD) estimate. DA was scheduled for 8/6; I'm presuming we will see this very soon.

Please let me know if there are questions. Until we hear back from FHWA, I'd say this issue is on hold.
Darren

Darren Meyers - Highways Capital Planning 594-2973

Be brief! Here's why: http://emailcharter.org

From: Saul, Amanda M
Sent: Tuesday, July 18, 2017 1:22 PM
To: Meyers, Darren E
Cc: Bacho, Louis D; Ruiz, Lesgie M; Davis, Andrew H
Subject: 60-158 Off-Site Mitigation for DEEP MOA

Darren,

Attached is the latest draft MOA for your review...Items 7 & 13 are of particular interest in that they include the provisions which we have written in to protect the departments interests.

If you have any comments or proposed changes please let me know. Also attached is the construction estimate/scope provided by DEEP and a copy of an email from Bob Gilmore indicating that the mitigation is suitable for the project.

Amanda

Amanda M. Saul
Transportation Planner 2
Connecticut DOT Office of Environmental Planning
Bureau of Policy and Planning
p: 860.594.2939
f: 860.594.3028
Amanda.Saul@ct.gov

Saul, Amanda M

To: Saul, Amanda M
Subject: FW: #60-158, Haddam; Off-site Fisheries Mitigation

From: Bacho, Louis D
Sent: Wednesday, July 19, 2017 11:43 AM
To: 'ted.aldieri@dot.gov'
Cc: Nezames, Theodore H; Barakat, Rabih M; Ruiz, Lesgie M; Meyers, Darren E; Saul, Amanda M; Davis, Andrew H
Subject: #60-158, Haddam; Off-site Fisheries Mitigation

Good morning Ted,

We have a culvert lining project in Haddam (project #60-158, bridge no. 06728) that requires off-site mitigation because our culvert is a barrier to fish passage and no retrofit options would provide passage of the slip-lined culvert. Our current schedule shows an FDP of 8-28-2018 which equates to a spring 2019 construction start.

The Wetland Habitat and Mosquito Management unit (WHAMM) from DEEP has located a suitable site nearby next to the Connecticut River that is within the Haddam Meadows marsh and has been used for production of northern pike for introduction into the State's waterways. The restoration project would clear the existing spawning channels of vegetation and sediment to allow adequate water depth for the adult and juvenile pike to pass. The cost of the mitigation is not to exceed $60,000 and DEEP will invoice the DOT as the work and/or equipment is completed or used.

DEEP would like to perform the mitigation this year ahead of the spring 2018 pike spawning season and not wait until our project is in construction in 2019. Therefore the funding would come out of design monies, either PD or FD (we are currently a month or two away from design approval). This is not the usual way off-site mitigation is handled as we generally utilize construction monies since the mitigation is done during construction, however CE Bridge believes this is a good candidate to perform the mitigation now as we would not lose one or possibly two spawning seasons if we wait.

We have a draft MOA which is close to being finalized (copy attached) that has provisions written in to protect the department interests in the unlikely event that the culvert project is cancelled.

Therefore we are asking FHWA's concurrence to proceed with off-site mitigation utilizing PD or FD funding.

I will call you later this afternoon to discuss but wanted to give you a heads up on what this mitigation entails.

Thanks,
Lou

Louis D. Bacho

Transportation Supervising Engineer
CT Department of Transportation
Consultant Design – Bridge
2800 Berlin Turnpike
Newington, CT
Phone: (860) 594-3212
Email: louis.bacho@ct.gov

Haddam Meadows Marsh

Excavation costs (est.) for Northern pike habitat restoration (equipment use only)

Work performed by CT DEEP Wildlife Div., WHAMM Program

Prepared by Roger Wolfe, Env. Analyst, WHAMM Program

Date: 11/28/16

Site preparation:	
Mowing, Marsh Master with brush mower: 2 days @$990/da	$1980
Excavation (low ground pressure equipment):	
Volvo lgp excavator: 12 days @ $1300/da	$15,600
Kobelco lgp excavator: 12 days @ $1000/da	$12,000
Spoil management: shuttling, spreading, grading	
Pisten Bully 100AS with dozer blade: 10 days @ $1383/da	$13,830
Mobilzation/demobilization: $550/da/piece (8 days)	$4,400
Additional 25% overhead charge	11,953
Total cost:	**$59,763**

DEEP / DOT
REGULATORY COORDINATION
Project Meeting Notes

Meeting Date(s): May 26, 2016
DOT Project Number: 0060-0158
Project Description: Bridge 06728, culvert relining of existing 72" asphalt coated CMP
Route: Route 9 over Mill River (A.K.A. Pole Bridge Brook)
Town(s): Haddam
Fisheries Correspondences Status: Pending review
NDDB Correspondence Status: Pending review
Department Priority: Anticipate construction Spring 2019
Current FDP: August 22, 2018
DOT Design Contact: Project Manager: Louis Bacho
Project Engineer: Susan Morneault
Project Designers: CJM

Project Purpose & Need:

The existing structure consists of a 397' long 72" diameter asphalt coated corrugated steel pipe. The culvert and wing walls are in poor condition with an overall rating of 2. The CMP has lost half the asphalt coating and the exposed steel exhibits heavy rust and perforations throughout. Inspection noted a couple seams within the pipe are dented downward 1 ½". The concrete end treatments exhibit areas of hairline cracking and some efflorescence. The cut-off wall is exposed 13" x 8' at the outlet creating a hanging outlet.

Due to the condition of the CMP and end walls, repairs are necessary for the safety and support of the roadway, as well as to prohibit any further deterioration of the drainage way.

Presentation & Discussion:

CJM, CTDOT's consultant, gave a PowerPoint presentation which shows the current condition and proposed method of relining the culvert.

The culvert is buried approximately 35' below the roadway. The drainage area for the culvert is less than 1 sq. mile (0.46 sq. mi.). The culvert slope is steep and velocities of 15-20 fps. Erosion/scour has caused a hanging outlet. This culvert was originally part of an original "List 21" group of culverts in need for rehabilitation.

The proposed project will involve a centrifugally cast-in-place concrete re-lining of the existing culvert. The hydraulic capacity of the culvert will remain adequate after the re-lining, however velocities may increase.

Transaction & Determinations:

The culvert will be centrifugally grouted with a bypass pipe used simultaneously in the pipe for water handling. The designer has considered baffles inside the culvert, but due to the steep slope and high velocity, it is expected the baffles will not have any longevity. It was suggested to review the possibility of including ripples with the relining to reduce the velocities within the culvert. Andy Davis (OEP) suggested including rock weirs at the outlet to show Brian Murphy (DEEP Fisheries).

The consultant designer stated that the Project RSR cannot be signed off without a Fisheries determination. It was discussed that this project had previously been proposed by the Department, but that there was not agreement between the two Departments on mitigation proposals. For this project, agreement is sought with DEEP fisheries regarding satisfactory and reasonable incorporation of fisheries improvements and/or mitigation.

The LEAN PowerPoint presentation is attached.

Northern Long-Eared Bat 4(d) Rule Streamlined Consultation Form

Federal agencies should use this form for the optional streamlined consultation framework for the northern long-eared bat (NLEB). This framework allows federal agencies to rely upon the U.S. Fish and Wildlife Service's (USFWS) January 5, 2016, intra-Service Programmatic Biological Opinion (BO) on the final 4(d) rule for the NLEB for section 7(a)(2) compliance by: (1) notifying the USFWS that an action agency will use the streamlined framework; (2) describing the project with sufficient detail to support the required determination; and (3) enabling the USFWS to track effects and determine if reinitiation of consultation is required per 50 CFR 402.16.

This form is not necessary if an agency determines that a proposed action will have no effect to the NLEB or if the USFWS has concurred in writing with an agency's determination that a proposed action may affect, but is not likely to adversely affect the NLEB (i.e., the standard informal consultation process). Actions that may cause prohibited incidental take require separate formal consultation. Providing this information does not address section 7(a)(2) compliance for any other listed species.

Information to Determine 4(d) Rule Compliance:	**YES**	**NO**
1. Does the project occur wholly outside of the WNS Zone[1]?	☐	☑
2. Have you contacted the appropriate agency[2] to determine if your project is near known hibernacula or maternity roost trees?	☑	☐
3. Could the project disturb hibernating NLEBs in a known hibernaculum?	☐	☑
4. Could the project alter the entrance or interior environment of a known hibernaculum?	☐	☑
5. Does the project remove any trees within 0.25 miles of a known hibernaculum at any time of year?	☐	☑
6. Would the project cut or destroy known occupied maternity roost trees, or any other trees within a 150-foot radius from the maternity roost tree from June 1 through July 31.	☐	☑

You are eligible to use this form if you have answered yes to question #1 **or** yes to question #2 **and** no to questions 3, 4, 5 and 6. The remainder of the form will be used by the USFWS to track our assumptions in the BO.

Agency: FHWA – Connecticut Division

Applicant[3] (Name, Email, Phone No.):
Connecticut Department of Transportation
Amanda M. Saul, Office of Environmental Planning
DOT.NLEB@ct.gov, (860)594-2939

Project Name: CTDOT0060-0158

Project Location (include coordinates if known): Route 9 over the Pole Bridge Brook, Town of Haddam; 41.4641, -72.5401

Basic Project Description (provide narrative below or attach additional information):

Rehabilitation for Br 06728, Route 9 over Pole Bridge Brook in the Town of Haddam.

[1] http://www.fws.gov/midwest/endangered/mammals/nleb/pdf/WNSZone.pdf
[2] See http://www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html
[3] If applicable - only needed for federal actions with applicants (e.g., for a permit, etc.) who are party to the consultation.

General Project Information	YES	NO
Does the project occur within 0.25 miles of a known hibernaculum?	☐	☑
Does the project occur within 150 feet of a known maternity roost tree?	☐	☑
Does the project include forest conversion[4]? (if yes, report acreage below)	☑	☐
Estimated total acres of forest conversion	<0.5 ac	
If known, estimated acres[5] of forest conversion from April 1 to October 31		
If known, estimated acres of forest conversion from June 1 to July 31[6]		
Does the project include timber harvest? (if yes, report acreage below)	☐	☑
Estimated total acres of timber harvest		
If known, estimated acres of timber harvest from April 1 to October 31		
If known, estimated acres of timber harvest from June 1 to July 31		
Does the project include prescribed fire? (if yes, report acreage below)	☐	☑
Estimated total acres of prescribed fire		
If known, estimated acres of prescribed fire from April 1 to October 31		
If known, estimated acres of prescribed fire from June 1 to July 31		
Does the project install new wind turbines? (if yes, report capacity in MW below)	☐	☑
Estimated wind capacity (MW)		

Agency Determination:

By signing this form, the action agency determines that this project may affect the NLEB, but that any resulting incidental take of the NLEB is not prohibited by the final 4(d) rule.

If the USFWS does not respond within 30 days from submittal of this form, the action agency may presume that its determination is informed by the best available information and that its project responsibilities under 7(a)(2) with respect to the NLEB are fulfilled through the USFWS January 5, 2016, Programmatic BO. The action agency will update this determination annually for multi-year activities.

The action agency understands that the USFWS presumes that all activities are implemented as described herein. The action agency will promptly report any departures from the described activities to the appropriate USFWS Field Office. The action agency will provide the appropriate USFWS Field Office with the results of any surveys conducted for the NLEB. Involved parties will promptly notify the appropriate USFWS Field Office upon finding a dead, injured, or sick NLEB.

Signature: Amanda M. Saul Digitally signed by Amanda M. Saul DN: cn=Amanda M. Saul, o=Connecticut Department of Transportation, ou=Office of Environmental Planning, email=amanda.saul@ct.gov, c=US Date: 2018.07.02 15:58:19 -04'00'

Date Submitted: 7/2/2018

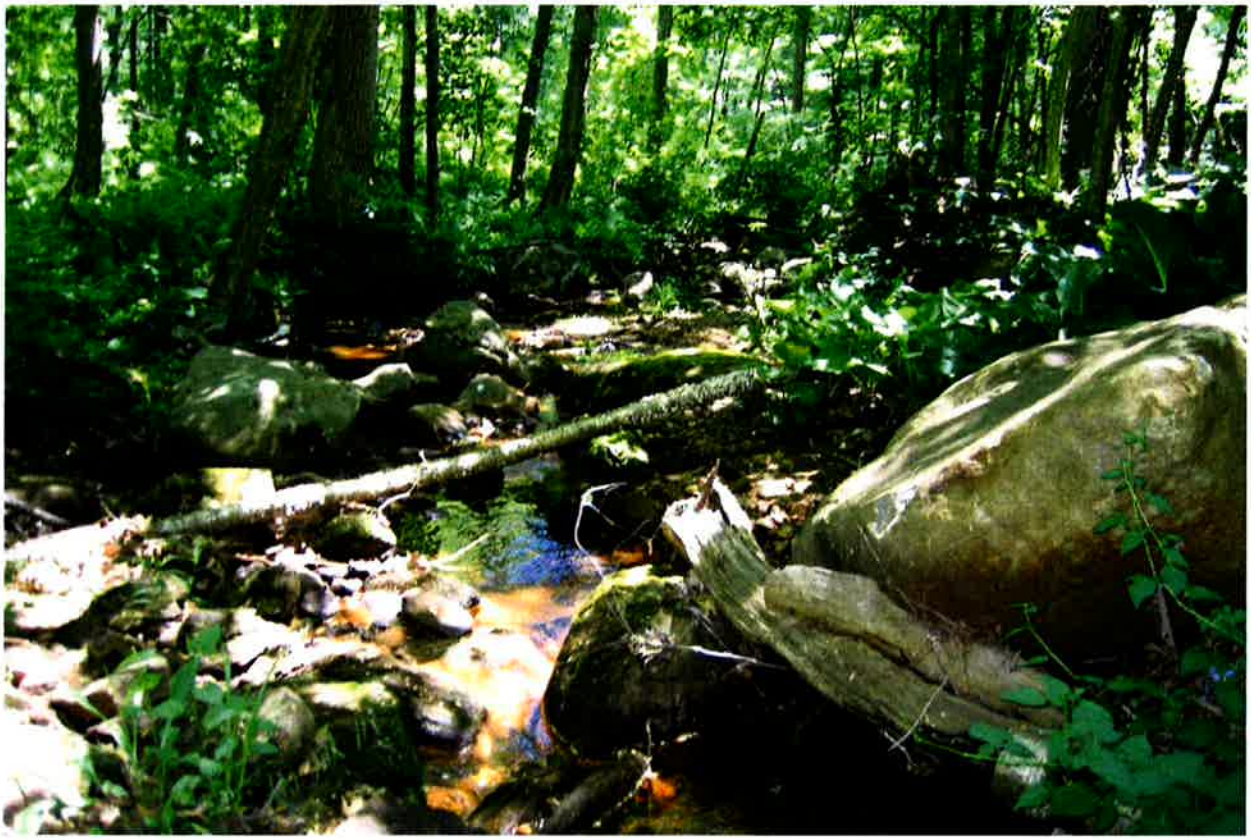
[4] Any activity that temporarily or permanently removes suitable forested habitat, including, but not limited to, tree removal from development, energy production and transmission, mining, agriculture, etc. (see page 48 of the BO).
[5] If the project removes less than 10 trees and the acreage is unknown, report the acreage as less than 0.1 acre.
[6] If the activity includes tree clearing in June and July, also include those acreage in April to October.

1. Looking North on Route 9 Southbound

2. Looking South on Route 9 Southbound

3. Looking North on Route 9 Northbound (By Google Maps)

4. Looking South on Route 9 Northbound (By Google Maps)



5. Looking East (Downstream)

6. Looking West (Upstream)

7. East Elevation (Downstream)

8. West Elevation (Upstream)

PERMITS AND/OR REQUIRED PROVISIONS

The following Permits and/or and Required Provisions follow this page are hereby made part of this Contract.

- **PERMITS AND/OR PERMIT APPLICATIONS**

Permit Name	Issue Date
• DEEP CT General Permit Addendum	December 21, 2018
• General Permit for Water Resource Construction Activities	Anticipated May 23, 2019
• Army Corps of Engineers	Anticipated May 23, 2019

- **Construction Contracts - Required Contract Provisions (FHWA Funded Contracts)**

Construction Contracts - Required Contract Provisions
(FHWA Funded Contracts)

Index

1. Federal Highway Administration (FHWA) Form 1273 (Revised May 1, 2012)

2. Title VI of the Civil Rights Act of 1964 / Nondiscrimination Requirements

3. Contractor Work Force Utilization (Federal Executive Order 11246) / Specific Equal Employment Opportunity

4. Requirements of Title 49, CFR, Part 26, Participation by DBEs

5. Contract Wage Rates

6. Americans with Disabilities Act of 1990, as Amended

7. Connecticut Statutory Labor Requirements

    a. Construction, Alteration or Repair of Public Works Projects; Wage Rates
    b. Debarment List - Limitation on Awarding Contracts
    c. Construction Safety and Health Course
    d. Awarding of Contracts to Occupational Safety and Health Law Violators Prohibited
    e. Residents Preference in Work on Other Public Facilities (Not Applicable to Federal Aid Contracts)

8. Tax Liability - Contractor's Exempt Purchase Certificate (CERT – 141)

9. Executive Orders (State of CT)

10. Non Discrimination Requirement (pursuant to section 4a-60 and 4a-60a of the Connecticut General Statutes, as revised)

11. Whistleblower Provision

12. Connecticut Freedom of Information Act

    a. Disclosure of Records
    b. Confidential Information

13. Service of Process

14. Substitution of Securities for Retainages on State Contracts and Subcontracts

15. Health Insurance Portability and Accountability Act of 1996 (HIPAA)

16. Forum and Choice of Law

17. Summary of State Ethics Laws

18. Audit and Inspection of Plants, Places of Business and Records

19. Campaign Contribution Restriction

20. Tangible Personal Property

21. Bid Rigging and/or Fraud – Notice to Contractor

22. Consulting Agreement Affidavit

23. Federal Cargo Preference Act Requirements (46 CFR 381.7(a)-(b))

Index of Exhibits

EXHIBIT A – FHWA Form 1273 (Begins on page 14)
EXHIBIT B – Title VI Contractor Assurances (page 34)
EXHIBIT C – Contractor Work Force Utilization (Federal Executive Order 11246) / Equal Employment Opportunity (page 36)
EXHIBIT D – Health Insurance Portability and Accountability Act of 1996 (HIPAA) (page 43)
EXHIBIT E - Campaign Contribution Restriction (page 51)
EXHIBIT F – Federal Wage Rates (Attached at the end)
EXHIBIT G - State Wage Rates (Attached at the end)

1. Federal Highway Administration (FHWA) Form 1273

The Contractor shall comply with the Federal Highway Administration (FHWA), Form 1273 attached at Exhibit A, as revised, which is hereby made part of this contract. The Contractor shall also require its subcontractors to comply with the FHWA – Form 1273 and include the FHWA – Form 1273 as an attachment to all subcontracts and purchase orders.

2. Title VI of the Civil Rights Act of 1964 / Nondiscrimination Requirements

The Contractor shall comply with Title VI of the Civil Rights Act of 1964 as amended (42 U.S.C. 2000 et seq.), all requirements imposed by the regulations of the United States Department of Transportation (49 CFR Part 21) issued in implementation thereof, and the Title VI Contractor Assurances attached hereto at Exhibit B, all of which are hereby made a part of this Contract.

3. Contractor Work Force Utilization (Federal Executive Order 11246) / Equal Employment Opportunity

(a) The Contractor shall comply with the Contractor Work Force Utilization (Federal Executive Order 11246) / Equal Employment Opportunity requirements attached at Exhibit C and hereby made part of this Contract, whenever a contractor or subcontractor at any tier performs construction work in excess of $10,000. These goals shall be included in each contract and subcontract. Goal achievement is calculated for each trade using the hours worked under each trade.

(b) Companies with contracts, agreements or purchase orders valued at $10,000 or more will develop and implement an Affirmative Action Plan utilizing the ConnDOT Affirmative Action Plan Guideline. This Plan shall be designed to further the provision of equal employment opportunity to all persons without regard to their race, color, religion, sex or national origin, and to promote the full realization of equal employment opportunity through a positive continuation program. Plans shall be updated as required by ConnDOT.

4. Requirements of Title 49, Code of Federal Regulations (CFR), Part 26, Participation by DBEs, as may be revised.

Pursuant to 49 CFR 26.13, the following paragraph is part of this Contract and shall be included in each subcontract the Contractor enters into with a subcontractor:

"The Contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26, Participation by DBEs, in the award and administration of U.S. DOT-assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this Contract, which may result in the termination of this contract or such other remedy as ConnDOT (recipient) deems appropriate, which may include, but is not limited to: (1) Withholding monthly progress payments, (2) Assessing sanctions, (3) Liquidated damages; and/or, (4) Disqualifying the contractor from future bidding as non-responsible."

5. Contract Wage Rates

The Contractor shall comply with:

The Federal and State wage rate requirements indicated in Exhibits F and G hereof, as revised, are hereby made part of this Contract. The Federal wage rates (Davis-Bacon Act) applicable to this Contract shall be the Federal wage rates that are current on the US Department of Labor website (http://www.wdol.gov/dba.aspx) as may be revised 10 days prior to bid opening. These applicable Federal wage rates will be physically incorporated in the final contract document executed by both parties. The Department will no longer physically include revised Federal wage rates in the bid documents or as part of addenda documents, prior to the bid opening date. During the bid advertisement period, bidders are responsible for obtaining the appropriate Federal wage rates from the US Department of Labor website.

To obtain the latest Federal wage rates go to the US Department of Labor website (link above). Under Davis-Bacon Act, choose "Selecting DBA WDs" and follow the instruction to search the latest wage rates for the State, County and Construction Type. Refer to the Notice to Contractor (NTC) - Federal Wage Determinations (Davis Bacon Act).

If a conflict exists between the Federal and State wage rates, the higher rate shall govern.

Prevailing Wages for Work on State Highways; Annual Adjustments. With respect to contracts for work on state highways and bridges on state highways, the Contractor shall comply with the provisions of Section 31-54 and 31-55a of the Connecticut General Statutes, as revised.

As required by Section 1.05.12 (Payrolls) of the State of Connecticut, Department of Transportation's Standard Specification for Roads, Bridges and Incidental Construction (FORM 816), as may be revised, every Contractor or subcontractor performing project work on a Federal aid project is required to post the relevant prevailing wage rates as determined by the United States Secretary of Labor. The wage rate determinations shall be posted in prominent and easily accessible places at the work site.

6. Americans with Disabilities Act of 1990, as Amended

This provision applies to those Contractors who are or will be responsible for compliance with the terms of the Americans with Disabilities Act of 1990, as amended (42 U.S.C. 12101 et seq.), (Act), during the term of the Contract. The Contractor represents that it is familiar with the terms of this Act and that it is in compliance with the Act. Failure of the Contractor to satisfy this standard as the same applies to performance under this Contract, either now or during the term of the Contract as it may be amended, will render the Contract voidable at the option of the State upon notice to the contractor. The Contractor warrants that it will hold the State harmless and indemnify the State from any liability which may be imposed upon the State as a result of any failure of the Contractor to be in compliance with this Act, as the same applies to performance under this Contract.

7. Connecticut Statutory Labor Requirements

(a) Construction, Alteration or Repair of Public Works Projects; Wage Rates. The Contractor shall comply with Section 31-53 of the Connecticut General Statutes, as revised. The wages paid on an hourly basis to any person performing the work of any mechanic, laborer or worker on the work herein contracted to be done and the amount of payment or contribution paid or payable on behalf of each such person to any employee welfare fund, as defined in subsection (i)

of section 31-53 of the Connecticut General Statutes, shall be at a rate equal to the rate customary or prevailing for the same work in the same trade or occupation in the town in which such public works project is being constructed. Any contractor who is not obligated by agreement to make payment or contribution on behalf of such persons to any such employee welfare fund shall pay to each mechanic, laborer or worker as part of such person's wages the amount of payment or contribution for such person's classification on each pay day.

(b) Debarment List. Limitation on Awarding Contracts. The Contractor shall comply with Section 3l-53a of the Connecticut General Statutes, as revised.

(c) Construction Safety and Health Course. The Contractor shall comply with section 31-53b of the Connecticut General Statutes, as revised. The contractor shall furnish proof to the Labor Commissioner with the weekly certified payroll form for the first week each employee begins work on such project that any person performing the work of a mechanic, laborer or worker pursuant to the classifications of labor under section 31-53 of the Connecticut General Statutes, as revised, on such public works project, pursuant to such contract, has completed a course of at least ten hours in duration in construction safety and health approved by the federal Occupational Safety and Health Administration or, has completed a new miner training program approved by the Federal Mine Safety and Health Administration in accordance with 30 CFR 48 or, in the case of telecommunications employees, has completed at least ten hours of training in accordance with 29 CFR 1910.268.

Any employee required to complete a construction safety and health course as required that has not completed the course, shall have a maximum of fourteen (14) days to complete the course. If the employee has not been brought into compliance, they shall be removed from the project until such time as they have completed the required training.

Any costs associated with this notice shall be included in the general cost of the contract. In addition, there shall be no time granted to the contractor for compliance with this notice. The contractor's compliance with this notice and any associated regulations shall not be grounds for claims as outlined in Section 1.11 – "Claims".

(d) Awarding of Contracts to Occupational Safety and Health Law Violators Prohibited. The Contract is subject to Section 31-57b of the Connecticut General Statutes, as revised.

(e) Residents Preference in Work on Other Public Facilities. NOT APPLICABLE TO FEDERAL AID CONTRACTS. Pursuant to Section 31-52a of the Connecticut General Statutes, as revised, in the employment of mechanics, laborers or workmen to perform the work specified herein, preference shall be given to residents of the state who are, and continuously for at least six months prior to the date hereof have been, residents of this state, and if no such person is available, then to residents of other states

8. Tax Liability - Contractor's Exempt Purchase Certificate (CERT – 141)

The Contractor shall comply with Chapter 219 of the Connecticut General Statutes pertaining to tangible personal property or services rendered that is/are subject to sales tax. The Contractor is responsible for determining its tax liability. If the Contractor purchases materials or supplies pursuant to the Connecticut Department of Revenue Services' "Contractor's Exempt Purchase Certificate (CERT-141)," as may be revised, the Contractor acknowledges and agrees that title to such materials and supplies installed or placed in the project will vest in the State simultaneously with passage of title

from the retailers or vendors thereof, and the Contractor will have no property rights in the materials and supplies purchased.

Forms and instructions are available anytime by:

Internet: Visit the DRS website at www.ct.gov/DRS to download and print Connecticut tax forms; or
Telephone: Call 1-800-382-9463 (Connecticut calls outside the Greater Hartford calling area only) and select Option 2 or call 860-297-4753 (from anywhere).

9. Executive Orders

This contract is subject to the provisions of Executive Order No. Three of Governor Thomas J. Meskill, promulgated June 16, 1971, concerning labor employment practices, Executive Order No. Seventeen of Governor Thomas J. Meskill, promulgated February 15, 1973, concerning the listing of employment openings and Executive Order No. Sixteen of Governor John G. Rowland promulgated August 4, 1999, concerning violence in the workplace, all of which are incorporated into and are made a part of the contract as if they had been fully set forth in it. The contract may also be subject to Executive Order No. 14 of Governor M. Jodi Rell, promulgated April 17, 2006, concerning procurement of cleaning products and services and to Executive Order No. 49 of Governor Dannel P. Malloy, promulgated May 22, 2015, mandating disclosure of certain gifts to public employees and contributions to certain candidates for office. If Executive Order No. 14 and/or Executive Order No. 49 are applicable, they are deemed to be incorporated into and are made a part of the contract as if they had been fully set forth in it. At the Contractor's request, the Department shall provide a copy of these orders to the Contractor.

10. Non Discrimination Requirement (pursuant to section 4a-60 and 4a-60a of the Connecticut General Statutes, as revised): References to "minority business enterprises" in this Section are not applicable to Federal-aid projects/contracts. Federal-aid projects/contracts are instead subject to the Federal Disadvantaged Business Enterprise Program.

(a) For purposes of this Section, the following terms are defined as follows:

(1) "Commission" means the Commission on Human Rights and Opportunities;
(2) "Contract" and "contract" include any extension or modification of the Contract or contract;
(3) "Contractor" and "contractor" include any successors or assigns of the Contractor or contractor;
(4) "Gender identity or expression" means a person's gender-related identity, appearance or behavior, whether or not that gender-related identity, appearance or behavior is different from that traditionally associated with the person's physiology or assigned sex at birth, which gender-related identity can be shown by providing evidence including, but not limited to, medical history, care or treatment of the gender-related identity, consistent and uniform assertion of the gender-related identity or any other evidence that the gender-related identity is sincerely held, part of a person's core identity or not being asserted for an improper purpose.
(5) "good faith" means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations;
(6) "good faith efforts" shall include, but not be limited to, those reasonable initial efforts necessary to comply with statutory or regulatory requirements and additional or substituted efforts when it is determined that such initial efforts will not be sufficient to comply with such requirements;
(7) "marital status" means being single, married as recognized by the state of Connecticut, widowed, separated or divorced;
(8) "mental disability" means one or more mental disorders, as defined in the most recent edition of the American Psychiatric Association's "Diagnostic and Statistical Manual of Mental Disorders", or a record of or regarding a person as having one or more such disorders;

(9) "minority business enterprise" means any small contractor or supplier of materials fifty-one percent or more of the capital stock, if any, or assets of which is owned by a person or persons: (1) who are active in the daily affairs of the enterprise, (2) who have the power to direct the management and policies of the enterprise, and (3) who are members of a minority, as such term is defined in subsection (a) of Connecticut General Statutes § 32-9n; and

(10) "public works contract" means any agreement between any individual, firm or corporation and the State or any political subdivision of the State other than a municipality for construction, rehabilitation, conversion, extension, demolition or repair of a public building, highway or other changes or improvements in real property, or which is financed in whole or in part by the State, including, but not limited to, matching expenditures, grants, loans, insurance or guarantees.

For purposes of this Section, the terms "Contract" and "contract" do not include a contract where each contractor is (1) a political subdivision of the State of Connecticut, including, but not limited to municipalities, unless the contract is a municipal public works contract or quasi-public agency project contract, (2) any other state of the United States, including but not limited to, the District of Columbia, Puerto Rico, U.S. territories and possessions, and federally recognized Indian tribal governments, as defined in Connecticut General Statutes § 1-267, (3) the federal government, (4) a foreign government, or (5) an agency of a subdivision, state or government described in subdivision (1), (2), (3), or (4) of this subsection.

(b) (1) The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, status as a veteran, intellectual disability, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such Contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the State of Connecticut; and the Contractor further agrees to take affirmative action to insure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, status as a veteran, intellectual disability, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by the Contractor that such disability prevents performance of the work involved; (2) the Contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the Commission; (3) the Contractor agrees to provide each labor union or representative of workers with which the Contractor has a collective bargaining agreement or other contract or understanding and each vendor with which the Contractor has a contract or understanding, a notice to be provided by the Commission, advising the labor union or workers' representative of the Contractor's commitments under this section and to post copies of the notice in conspicuous places available to employees and applicants for employment; (4) the Contractor agrees to comply with each provision of this Section and Connecticut General Statutes §§ 46a-68e and 46a-68f and with each regulation or relevant order issued by said Commission pursuant to Connecticut General Statutes §§ 46a-56, 46a-68e and 46a-68f; and (5) the Contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor as relate to the provisions of this Section and Connecticut General Statutes § 46a-56. If the contract is a public works contract, the Contractor agrees and warrants that he will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works projects.

(c) Determination of the Contractor's good faith efforts shall include, but shall not be limited to, the following factors: The Contractor's employment and subcontracting policies, patterns and practices; affirmative advertising, recruitment and training; technical assistance activities and such other reasonable activities or efforts as the Commission may prescribe that are designed to ensure the participation of minority business enterprises in public works projects.

(d) The Contractor shall develop and maintain adequate documentation, in a manner prescribed by the Commission, of its good faith efforts.

(e) The Contractor shall include the provisions of subsection (b) of this Section in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the State and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the Commission. The Contractor shall take such action with respect to any such subcontract or purchase order as the Commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with Connecticut General Statutes §46a-56; provided if such Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Commission, the Contractor may request the State of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the State and the State may so enter.

(f) The Contractor agrees to comply with the regulations referred to in this Section as they exist on the date of this Contract and as they may be adopted or amended from time to time during the term of this Contract and any amendments thereto.

(g) (1) The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of sexual orientation, in any manner prohibited by the laws of the United States or the State of Connecticut, and that employees are treated when employed without regard to their sexual orientation; (2) the Contractor agrees to provide each labor union or representative of workers with which such Contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such Contractor has a contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities advising the labor union or workers' representative of the Contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment; (3) the Contractor agrees to comply with each provision of this section and with each regulation or relevant order issued by said Commission pursuant to Connecticut General Statutes § 46a-56; and (4) the Contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor which relate to the provisions of this Section and Connecticut General Statutes § 46a-56.

(h) The Contractor shall include the provisions of the foregoing paragraph in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the State and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the Commission. The Contractor shall take such action with respect to any such subcontract or purchase order as the Commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with Connecticut General Statutes § 46a-56; provided, if such Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Commission, the Contractor may request the State of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the State and the State may so enter.

Please be aware the Nondiscrimination Certifications can be found at the Office of Policy and Management website:

https://portal.ct.gov/OPM/Fin-PSA/Forms/Nondiscrimination-Certification

11. Whistleblower Provision

The following clause is applicable if the Contract has a value of Five Million Dollars ($5,000,000) or more.

Whistleblowing. This Contract may be subject to the provisions of Section 4-61dd of the Connecticut General Statutes. In accordance with this statute, if an officer, employee or appointing authority of the Contractor takes or threatens to take any personnel action against any employee of the Contractor in retaliation for such employee's disclosure of information to any employee of the contracting state or quasi-public agency or the Auditors of Public Accounts or the Attorney General under the provisions of subsection (a) of such statute, the Contractor shall be liable for a civil penalty of not more than five thousand dollars for each offense, up to a maximum of twenty per cent of the value of this Contract. Each violation shall be a separate and distinct offense and in the case of a continuing violation, each calendar day's continuance of the violation shall be deemed to be a separate and distinct offense. The State may request that the Attorney General bring a civil action in the Superior Court for the Judicial District of Hartford to seek imposition and recovery of such civil penalty. In accordance with subsection (f) of such statute, each large state contractor, as defined in the statute, shall post a notice of the provisions of the statute relating to large state contractors in a conspicuous place which is readily available for viewing by the employees of the Contractor.

12. Connecticut Freedom of Information Act

(a) Disclosure of Records. This Contract may be subject to the provisions of section 1-218 of the Connecticut General Statutes. In accordance with this statute, each contract in excess of two million five hundred thousand dollars between a public agency and a person for the performance of a governmental function shall (a) provide that the public agency is entitled to receive a copy of records and files related to the performance of the governmental function, and (b) indicate that such records and files are subject to FOIA and may be disclosed by the public agency pursuant to FOIA. No request to inspect or copy such records or files shall be valid unless the request is made to the public agency in accordance with FOIA. Any complaint by a person who is denied the right to inspect or copy such records or files shall be brought to the Freedom of Information Commission in accordance with the provisions of sections 1-205 and 1-206 of the Connecticut General Statutes.

(b) Confidential Information. The State will afford due regard to the Contractor's request for the protection of proprietary or confidential information which the State receives from the Contractor. However, all materials associated with the Contract are subject to the terms of the FOIA and all corresponding rules, regulations and interpretations. In making such a request, the Contractor may not merely state generally that the materials are proprietary or confidential in nature and not, therefore, subject to release to third parties. Those particular sentences, paragraphs, pages or sections that the Contractor believes are exempt from disclosure under the FOIA must be specifically identified as such. Convincing explanation and rationale sufficient to justify each exemption consistent with the FOIA must accompany the request. The rationale and explanation must be stated in terms of the prospective harm to the competitive position of the Contractor that would result if the identified material were to be released and the reasons why the materials are legally exempt from release pursuant to the FOIA. To the extent that any other provision or part of the Contract conflicts or is in any way inconsistent with this section, this section controls and shall apply and the conflicting provision or part shall not be given effect. If the Contractor indicates that certain documentation is submitted in confidence, by specifically and clearly marking the documentation as "CONFIDENTIAL," DOT will first review the Contractor's claim for consistency with the FOIA (that is, review that the documentation is actually a trade secret or commercial or financial information and not required by statute), and if

determined to be consistent, will endeavor to keep such information confidential to the extent permitted by law. See, *e.g.*, Conn. Gen. Stat. §1-210(b)(5)(A-B). The State, however, has no obligation to initiate, prosecute or defend any legal proceeding or to seek a protective order or other similar relief to prevent disclosure of any information that is sought pursuant to a FOIA request. Should the State withhold such documentation from a Freedom of Information requester and a complaint be brought to the Freedom of Information Commission, the Contractor shall have the burden of cooperating with DOT in defense of that action and in terms of establishing the availability of any FOIA exemption in any proceeding where it is an issue. In no event shall the State have any liability for the disclosure of any documents or information in its possession which the State believes are required to be disclosed pursuant to the FOIA or other law.

13. Service of Process

The Contractor, if not a resident of the State of Connecticut, or, in the case of a partnership, the partners, if not residents, hereby appoints the Secretary of State of the State of Connecticut, and his successors in office, as agent for service of process for any action arising out of or as a result of this Contract; such appointment to be in effect throughout the life of this Contract and six (6) years thereafter.

14. Substitution of Securities for Retainages on State Contracts and Subcontracts

This Contract is subject to the provisions of Section 3-ll2a of the General Statutes of the State of Connecticut, as revised.

15. Health Insurance Portability and Accountability Act of 1996 (HIPAA)

The Contractor shall comply, if applicable, with the Health Insurance Portability and Accountability Act of 1996 and, pursuant thereto, the provisions attached at Exhibit D, and hereby made part of this Contract.

16. Forum and Choice of Law

Forum and Choice of Law. The parties deem the Contract to have been made in the City of Hartford, State of Connecticut. Both parties agree that it is fair and reasonable for the validity and construction of the Contract to be, and it shall be, governed by the laws and court decisions of the State of Connecticut, without giving effect to its principles of conflicts of laws. To the extent that any immunities provided by Federal law or the laws of the State of Connecticut do not bar an action against the State, and to the extent that these courts are courts of competent jurisdiction, for the purpose of venue, the complaint shall be made returnable to the Judicial District of Hartford only or shall be brought in the United States District Court for the District of Connecticut only, and shall not be transferred to any other court, provided, however, that nothing here constitutes a waiver or compromise of the sovereign immunity of the State of Connecticut. The Contractor waives any objection which it may now have or will have to the laying of venue of any Claims in any forum and further irrevocably submits to such jurisdiction in any suit, action or proceeding.

17. Summary of State Ethics Laws

Pursuant to the requirements of section 1-101qq of the Connecticut General Statutes, the summary of State ethics laws developed by the State Ethics Commission pursuant to section 1-81b of the Connecticut General Statutes is incorporated by reference into and made a part of the Contract as if the summary had been fully set forth in the Contract.

18. Audit and Inspection of Plants, Places of Business and Records

(a) The State and its agents, including, but not limited to, the Connecticut Auditors of Public Accounts, Attorney General and State's Attorney and their respective agents, may, at reasonable hours, inspect and examine all of the parts of the Contractor's and Contractor Parties' plants and places of business which, in any way, are related to, or involved in, the performance of this Contract. For the purposes of this Section, "Contractor Parties" means the Contractor's members, directors, officers, shareholders, partners, managers, principal officers, representatives, agents, servants, consultants, employees or any one of them or any other person or entity with whom the Contractor is in privity of oral or written contract and the Contractor intends for such other person or entity to Perform under the Contract in any capacity.

(b) The Contractor shall maintain, and shall require each of the Contractor Parties to maintain, accurate and complete Records. The Contractor shall make all of its and the Contractor Parties' Records available at all reasonable hours for audit and inspection by the State and its agents.

(c) The State shall make all requests for any audit or inspection in writing and shall provide the Contractor with at least twenty-four (24) hours' notice prior to the requested audit and inspection date. If the State suspects fraud or other abuse, or in the event of an emergency, the State is not obligated to provide any prior notice.

(d) The Contractor shall keep and preserve or cause to be kept and preserved all of its and Contractor Parties' Records until three (3) years after the latter of (i) final payment under this Agreement, or (ii) the expiration or earlier termination of this Agreement, as the same may be modified for any reason. The State may request an audit or inspection at any time during this period. If any Claim or audit is started before the expiration of this period, the Contractor shall retain or cause to be retained all Records until all Claims or audit findings have been resolved.

(e) The Contractor shall cooperate fully with the State and its agents in connection with an audit or inspection. Following any audit or inspection, the State may conduct and the Contractor shall cooperate with an exit conference.

(f) The Contractor shall incorporate this entire Section verbatim into any contract or other agreement that it enters into with any Contractor Party.

19.Campaign Contribution Restriction

For all State contracts, defined in Conn. Gen. Stat. §9-612(f)(1) as having a value in a calendar year of $50,000 or more, or a combination or series of such agreements or contracts having a value of $100,000 or more, the authorized signatory to this contract expressly acknowledges receipt of the State Elections Enforcement Commission's notice advising state contractors of state campaign contribution and solicitation prohibitions, and will inform its principals of the contents of the notice, as set forth in "Notice to Executive Branch State Contractors and Prospective State Contractors of Campaign Contribution and Solicitation Limitations," a copy of which is attached hereto and hereby made a part of this contract, attached as Exhibit E.

20. Tangible Personal Property

(a) The Contractor on its behalf and on behalf of its Affiliates, as defined below, shall comply with the provisions of Conn. Gen. Stat. §12-411b, as follows:

(1) For the term of the Contract, the Contractor and its Affiliates shall collect and remit to the State of Connecticut, Department of Revenue Services, any Connecticut use tax due under the provisions of Chapter 219 of the Connecticut General Statutes for items of tangible personal property sold by the Contractor or by any of its Affiliates in the same manner as if the Contractor and such Affiliates were engaged in the business of selling tangible personal property for use in Connecticut and had sufficient nexus under the provisions of Chapter 219 to be required to collect Connecticut use tax;

(2) A customer's payment of a use tax to the Contractor or its Affiliates relieves the customer of liability for the use tax;
(3) The Contractor and its Affiliates shall remit all use taxes they collect from customers on or before the due date specified in the Contract, which may not be later than the last day of the month next succeeding the end of a calendar quarter or other tax collection period during which the tax was collected;
(4) The Contractor and its Affiliates are not liable for use tax billed by them but not paid to them by a customer; and
(5) Any Contractor or Affiliate who fails to remit use taxes collected on behalf of its customers by the due date specified in the Contract shall be subject to the interest and penalties provided for persons required to collect sales tax under chapter 219 of the general statutes.

(b) For purposes of this section of the Contract, the word "Affiliate" means any person, as defined in section 12-1 of the general statutes, that controls, is controlled by, or is under common control with another person. A person controls another person if the person owns, directly or indirectly, more than ten per cent of the voting securities of the other person. The word "voting security" means a security that confers upon the holder the right to vote for the election of members of the board of directors or similar governing body of the business, or that is convertible into, or entitles the holder to receive, upon its exercise, a security that confers such a right to vote. "Voting security" includes a general partnership interest.

(c) The Contractor represents and warrants that each of its Affiliates has vested in the Contractor plenary authority to so bind the Affiliates in any agreement with the State of Connecticut. The Contractor on its own behalf and on behalf of its Affiliates shall also provide, no later than 30 days after receiving a request by the State's contracting authority, such information as the State may require to ensure, in the State's sole determination, compliance with the provisions of Chapter 219 of the Connecticut General Statutes, including, but not limited to, §12-411b.

21. Bid Rigging and/or Fraud – Notice to Contractor

The Connecticut Department of Transportation is cooperating with the U.S. Department of Transportation and the Justice Department in their investigation into highway construction contract bid rigging and/or fraud.

A toll-free "HOT LINE" telephone number 800-424-9071 has been established to receive information from contractors, subcontractors, manufacturers, suppliers or anyone with knowledge of bid rigging and/or fraud, either past or current. The "HOT LINE" telephone number will be available during normal working hours (8:00 am – 5:00 pm EST). Information will be treated confidentially and anonymity respected.

22. Consulting Agreement Affidavit

The Contractor shall comply with Connecticut General Statutes Section 4a-81(a) and 4a-81(b), as revised. Pursuant to Public Act 11-229, after the initial submission of the form, if there is a change in the information contained in the form, a contractor shall submit the updated form, as applicable, either (i) not later than thirty (30) days after the effective date of such change or (ii) prior to execution of any new contract, whichever is earlier.

The Affidavit/Form may be submitted in written format or electronic format through the Department of Administrative Services (DAS) website.

23. Cargo Preference Act Requirements (46 CFR 381.7(a)-(b)) – Use of United States Flag Vessels

The Contractor agrees to comply with the following:

(a) ***Agreement Clauses***.

(1) Pursuant to Pub. L. 664 (43 U.S.C. 1241(b)) at least 50 percent of any equipment, materials or commodities procured, contracted for or otherwise obtained with funds granted, guaranteed, loaned, or advanced by the U.S. Government under this agreement, and which may be transported by ocean vessel, shall be transported on privately owned United States-flag commercial vessels, if available.

(2) Within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (a)(1) of this section shall be furnished to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(b) ***Contractor and Subcontractor Clauses.*** The contractor agrees—

(1) To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

(2) To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b) (1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.

EXHIBIT A

FHWA-1273 -- Revised May 1, 2012

REQUIRED CONTRACT PROVISIONS

FEDERAL-AID CONSTRUCTION CONTRACTS

I. General
II. Nondiscrimination
III. Nonsegregated Facilities
IV. Davis-Bacon and Related Act Provisions
V. Contract Work Hours and Safety Standards Act Provisions
VI. Subletting or Assigning the Contract
VII. Safety: Accident Prevention
VIII. False Statements Concerning Highway Projects
IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
X. Compliance with Governmentwide Suspension and Debarment Requirements
XI. Certification Regarding Use of Contract Funds for Lobbying

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of

such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26, and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26, in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

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

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

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

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

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

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

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

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

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

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

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

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

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

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

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

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the

provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

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

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

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

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

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

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

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

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible

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

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

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

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;
(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out

the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.

2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from

participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

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

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

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

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

EXHIBIT B

TITLE VI CONTRACTOR ASSURANCES
APPENDIX A

During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. **Compliance with Regulations**: The contractor will comply with the Regulations relative to nondiscrimination in federally assisted programs of the United States Department of Transportation Federal Highway Administration, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

2. **Nondiscrimination**: The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, national origin, sex, age, disability, income or Limited English Proficiency in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment**: In all solicitations, either by bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.

4. **Information and Reports**: The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the Federal Highway Administration to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information, the contractor will so certify to the Recipient or the Federal Highway Administration, as appropriate, and will set forth what efforts it has made to obtain the information.

5. **Sanctions for Non-compliance**: In the event of the contractor's non-compliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to:

    a. withholding contract payments to the contractor under the contract until the contractor complies; and/or
    b. cancelling, terminating, or suspending a contract, in whole or in part.

6. **Incorporation of Provisions**: The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or the Federal Highway Administration may direct as a means of enforcing such provisions including sanctions for

noncompliance. Provided, that if the contractor becomes involved in, or is threatened with, litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

TITLE VI CONTRACTOR ASSURANCES
APPENDIX E

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following nondiscrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. § 2000d et seq.), (prohibits discrimination on the basis of race, color, national origin), as implemented by 49 C.F.R. § 21.1 et seq. and 49 C.F.R. part 303;
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601) (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973 (23 U.S.C. § 324 et seq.) (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. § 794 et seq.) (prohibits discrimination on the basis of disability); and 49 C.F.R. part 27;
- The Age Discrimination Act of 1975, as amended (42 U.S.C. § 6101 et seq.) (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982 (Pub. L. 97-248 (1982)), as amended (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987 (102 Stat. 28) *(" ... which restore[d] the broad scope of coverage and to clarify the application of Title IX of the Education Amendments of 1972, section 504 of the Rehabilitation Act of 1973, the Age Discrimination Act of 1975, and Title VI of the Civil Rights Act of 1964.");*
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 --12189), as implemented by Department of Justice regulations at 28 C.F.R. parts 35 and 36, and Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. § 1681 et seq).

EXHIBIT C

CONTRACTOR WORKFORCE UTILIZATION (FEDERAL EXECUTIVE ORDER 11246) / EQUAL EMPLOYMENT OPPORTUNITY
(Federal - FHWA)

1. **Project Workforce Utilization Goals:**
These goals are applicable to all the Contractor's construction work (whether or not it is Federal or Federally assisted or funded) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for the geographical area where the work is actually performed.

Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of $10,000 the provisions of these specifications which contain the applicable goals for minority and female participation.

The goals for minority and female utilization are expressed in percentage terms for the contractor's aggregate work-force in each trade on all construction work in the covered area, are referenced in the attached Appendix A.

2. **Executive Order 11246**
The Contractor's compliance with Executive Order 11246 and 41-CFR Part 60-4 shall be based on its implementation of the specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(A) and its efforts to meet the goals established for the geographical area where the contract is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from contractor to contractor or from project to project for the sole purpose of meeting the contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hour performed.

If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or subcontractors toward a goal in an approved Pan does not excuse any covered Contractor's of subcontractor's failure to take good faith efforts to achieve the plan goals and timetables.

The Contractor shall implement the specific affirmative action standards provided in a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in

which it has employees in the covered area. Covered Construction contractors performing construction work in geographical areas where they do not have a federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form and such notices may be obtained from any Office of Federal Contract Compliance Programs (OFCCP) Office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractors obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant hereto.

In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites; and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off the street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason thereafter; along with whatever additional actions the Contractor may have taken.

d. Provide immediate written notification to the Director when the Union or Unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or women sent by the Contractor, or when the Contractor has other

information that the Union referral process has impeded the Contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO Policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company EEO Policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment, decisions including specific Foreman, etc. prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO Policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the contractor shall send written notification to organizations such as the above, describing the openings, screening procedures and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's work-force.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and

employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are non-segregated except that separate or single user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review at least annually of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (a through p). The efforts of a contractor association, joint contractor union, contractor community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under a through p of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female work-force participation, makes a good faith effort to meet with individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of Executive Order 11246 if a particular group is employed in a substantially disparate manner, (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is under utilized).

The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in these

specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4 8.

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

Nothing herein provided shall be construed as a limitation upon the application of their laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g. those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

The Director of the Office of Federal Contract Compliance Programs, from time to time, shall issue goals and timetables for minority and female utilization which shall be based on appropriate work-force, demographic or other relevant data and which shall cover construction projects or construction contracts performed in specific geographical areas. The goals, which shall be applicable to each construction trade in a covered contractor's or timetables, shall be published as notices in the Federal Register, and shall be inserted by the Contracting officers and applicants, as applicable, in the Notice required by 41 CFR 60-4.2.

FEDERALLY FUNDED OR ASSISTED PROJECTS
APPENDIX A
(Labor Market Goals)

Standard Metropolitan Statistical Area (SMSA)

Female			**Minority**
Bridgeport – Stamford – Norwalk – Danbury			**10.2%**
6.9%			
Bethel	Bridgeport	Brookfield	Danbury
Darien	Derby	Easton	Fairfield
Greenwich	Milford	Monroe	New Canaan
New Fairfield	Newton	Norwalk	Redding
Shelton	Stamford	Stratford	Trumbull
Weston	Westport	Wilton	
Hartford – Bristol – New Britain			**6.9%**
6.9%			
Andover	Avon	Berlin	Bloomfield
Bolton	Bristol	Burlington	Canton
Colchester	Columbia	Coventry	Cromwell
East Granby	East Hampton	East Hartford	East Windsor
Ellington	Enfield	Farmington	Glastonbury
Granby	Hartford	Hebron	Manchester
Marlborough	New Britain	New Hartford	Newington
Plainville	Plymouth	Portland	Rocky Hill
Simsbury	South Windsor	Southington	Stafford
Suffield	Tolland	Vernon	West Hartford
Wethersfield	Willington	Windsor	Windsor Locks
New Haven – Waterbury – Meriden			**9.0%**
6.9%			
Beacon Falls	Bethany	Branford	Cheshire
Clinton	East Haven	Guilford	Hamden
Madison	Meriden	Middlebury	Naugatuck
New Haven	North Branford	North Haven	Orange
Prospect	Southbury	Thomaston	Wallingford
Waterbury	Watertown	West Haven	Wolcott
Woodbridge	Woodbury		
New London – Norwich			**4.5%**
6.9%			
Bozrah	East Lyme	Griswold	Groton
Ledyard	Lisbon	Montville	New London
Norwich	Old Lyme	Old Saybrook	Preston
Sprague	Stonington	Waterford	

Non SMSA

Female			**Minority**
Litchfield – Windham			**5.9%**
6.9%			
Abington	Ashford	Ballouville	Bantam
Barkhamsted	Bethlehem	Bridgewater	Brooklyn
Canaan	Canterbury	Central Village	Cahplin
Colebrook	Cornwall	Cornwall Bridge	Danielson
Dayville	East Canaan	East Killingly	East Woodstock
Eastford	Falls Village	Gaylordsville	Goshen
Grosvenor Dale	Hampton	Harwinton	Kent
Killignly	Lakeside	Litchfield	Moosup
Morris	New Milford	New Preston	New Preston Marble Dale
Norfolk	North Canaan	No. Grosvenordale	North Windham
Oneco	Pequabuck	Pine Meadow	Plainfield
Pleasant Valley	Pomfret	Pomfret Center	Putnam
Quinebaug	Riverton	Rogers	Roxbury
Salisbury	Scotland	Sharon	South Kent
South Woodstock	Sterling	Taconic	Terryville
Thompson	Torrington	Warren	Warrenville
Washington	Washington Depot	Wauregan	West Cornwall
Willimantic	Winchester	Winchester Center	Windham
Winsted	Woodstock	Woodstock Valley	

EXHIBIT D

Health Insurance Portability and Accountability Act of 1996 ("HIPAA").

(a) If the Contactor is a Business Associate under the requirements of the Health Insurance Portability and Accountability Act of 1996 ("HIPAA"), the Contractor must comply with all terms and conditions of this Section of the Contract. If the Contractor is not a Business Associate under HIPAA, this Section of the Contract does not apply to the Contractor for this Contract.

(b) The Contractor is required to safeguard the use, publication and disclosure of information on all applicants for, and all clients who receive, services under the Contract in accordance with all applicable federal and state law regarding confidentiality, which includes but is not limited to HIPAA, more specifically with the Privacy and Security Rules at 45 C.F.R. Part 160 and Part 164, subparts A, C, and E; and

(c) The State of Connecticut Agency named on page 1 of this Contract (hereinafter the "Department") is a "covered entity" as that term is defined in 45 C.F.R. § 160.103; and

(d) The Contractor, on behalf of the Department, performs functions that involve the use or disclosure of "individually identifiable health information," as that term is defined in 45 C.F.R. § 160.103; and

(e) The Contractor is a "business associate" of the Department, as that term is defined in 45 C.F.R. § 160.103; and

(f) The Contractor and the Department agree to the following in order to secure compliance with the HIPAA, the requirements of Subtitle D of the Health Information Technology for Economic and Clinical Health Act (hereinafter the HITECH Act), (Pub. L. 111-5, sections 13400 to 13423), and more specifically with the Privacy and Security Rules at 45 C.F.R. Part 160 and Part 164, subparts A, C, and E.

(g) Definitions

(1) "Breach shall have the same meaning as the term is defined in section 13400 of the HITECH Act (42 U.S.C. §17921(1))

(2) "Business Associate" shall mean the Contractor.

(3) "Covered Entity" shall mean the Department of the State of Connecticut named on page 1 of this Contract.

(4) "Designated Record Set" shall have the same meaning as the term "designated record set" in 45 C.F.R. § 164.501.

(5) "Electronic Health Record" shall have the same meaning as the term is defined in section 13400 of the HITECH Act (42 U.S.C. §17921(5))

(6) "Individual" shall have the same meaning as the term "individual"' in 45 C.F.R. § 160.103 and shall include a person who qualifies as a personal representative as defined in 45 C.F.R. § 164.502(g).

(7) "Privacy Rule" shall mean the Standards for Privacy of Individually Identifiable Health Information at 45 C.F.R. part 160 and parts 164, subparts A and E.

(8) "Protected Health Information" or "PHI" shall have the same meaning as the term "protected health information" in 45 C.F.R. § 160.103, limited to information created or received by the Business Associate from or on behalf of the Covered Entity.

(9) "Required by Law"' shall have the same meaning as the term "required by law" in 45 C.F.R. § 164.103.

(10) "Secretary" shall mean the Secretary of the Department of Health and Human Services or his designee.

(11) "More stringent" shall have the same meaning as the term "more stringent" in 45 C.F.R. § 160.202.

(12) "This Section of the Contract" refers to the HIPAA Provisions stated herein, in their entirety.

(13) "Security Incident" shall have the same meaning as the term "security incident" in 45 C.F.R.§ 164.304.

(14) "Security Rule" shall mean the Security Standards for the Protection of Electronic Protected Health Information at 45 C.F.R. part 160 and parts 164, subpart A and C.

(15) "Unsecured protected health information" shall have the same meaning as the term as defined in section 13402(h)(1)(A) of HITECH. Act. (42 U.S.C. §17932(h)(1)(A)).

(h) Obligations and Activities of Business Associates.

(1) Business Associate agrees not to use or disclose PHI other than as permitted or required by this Section of the Contract or as Required by Law.

(2) Business Associate agrees to use appropriate safeguards to prevent use or disclosure of PHI other than as provided for in this Section of the Contract.

(3) Business Associate agrees to use administrative, physical and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of electronic protected health information that it creates, receives, maintains, or transmits on behalf of the Covered Entity.

(4) Business Associate agrees to mitigate, to the extent practicable, any harmful effect that is known to the Business Associate of a use or disclosure of PHI by Business Associate in violation of this Section of the Contract.

(5) Business Associate agrees to report to Covered Entity any use or disclosure of PHI not provided for by this Section of the Contract or any security incident of which it becomes aware.

(6) Business Associate agrees to insure that any agent, including a subcontractor, to whom it provides PHI received from, or created or received by Business Associate, on behalf of the Covered Entity, agrees to the same restrictions and conditions that apply through this Section of the Contract to Business Associate with respect to such information.

(7) Business Associate agrees to provide access, at the request of the Covered Entity, and in the time and manner agreed to by the parties, to PHI in a Designated Record Set, to Covered Entity or, as directed by Covered Entity, to an Individual in order to meet the requirements under 45 C.F.R. § 164.524.

(8) Business Associate agrees to make any amendments to PHI in a Designated Record Set that the Covered Entity directs or agrees to pursuant to 45 C.F.R. § 164.526 at the request of the Covered Entity, and in the time and manner agreed to by the parties.

(9) Business Associate agrees to make internal practices, books, and records, including policies and procedures and PHI, relating to the use and disclosure of PHI received from, or created or received by, Business Associate on behalf of Covered Entity, available to Covered Entity or to the Secretary in a time and manner agreed to by the parties or designated by the Secretary, for purposes of the Secretary determining Covered Entity's compliance with the Privacy Rule.

(10) Business Associate agrees to document such disclosures of PHI and information related to such disclosures as would be required for Covered Entity to respond to a request by an Individual for an accounting of disclosures of PHI in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder.

(11) Business Associate agrees to provide to Covered Entity, in a time and manner agreed to by the parties, information collected in accordance with clause h. (10) of this Section of the Contract, to permit Covered Entity to respond to a request by an Individual for an accounting of disclosures of PHI in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder. Business Associate agrees at the Covered Entity's direction to provide an accounting of disclosures of PHI directly to an individual in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder.

(12) Business Associate agrees to comply with any state or federal law that is more stringent than the Privacy Rule.

(13) Business Associate agrees to comply with the requirements of the HITECH Act relating to privacy and security that are applicable to the Covered Entity and with the requirements of 45 C.F.R. sections 164.504(e), 164.308, 164.310, 164.312, and 164.316.

(14) In the event that an individual requests that the Business Associate (a) restrict disclosures of PHI; (b) provide an accounting of disclosures of the individual's PHI; or (c) provide a copy of the individual's PHI in an electronic health record, the Business Associate agrees to notify the covered entity, in writing, within two business days of the request.

(15) Business Associate agrees that it shall not, directly or indirectly, receive any remuneration in exchange for PHI of an individual without (1) the written approval of the covered entity, unless receipt of remuneration in exchange for PHI is expressly authorized by this Contract and (2) the valid authorization of the individual, except for the purposes provided under section 13405(d)(2) of the HITECH Act,(42 U.S.C. § 17935(d)(2)) and in any accompanying regulations

(16) Obligations in the Event of a Breach

A. The Business Associate agrees that, following the discovery of a breach of unsecured protected health information, it shall notify the Covered Entity of such breach in accordance with the requirements of section 13402 of HITECH (42 U.S.C. 17932(b) and the provisions of this Section of the Contract.
B. Such notification shall be provided by the Business Associate to the Covered Entity without unreasonable delay, and in no case later than 30 days after the breach is discovered by the Business Associate, except as otherwise instructed in writing by a law enforcement official pursuant to section 13402 (g) of HITECH (42 U.S.C. 17932(g)) . A breach is considered discovered as of the first day on which it is, or reasonably should have been, known to the Business Associate. The notification shall include the identification and last known address, phone number and email address of each individual (or the next of kin of the individual if the individual is deceased) whose unsecured protected health information has been, or is reasonably believed by the Business Associate to have been, accessed, acquired, or disclosed during such breach.
C. The Business Associate agrees to include in the notification to the Covered Entity at least the following information:
    1. A brief description of what happened, including the date of the breach and the date of the discovery of the breach, if known.

    2. A description of the types of unsecured protected health information that were involved in the breach (such as full name, Social Security number, date of birth, home address, account number, or disability code).

    3. The steps the Business Associate recommends that individuals take to protect themselves from potential harm resulting from the breach.

    4. A detailed description of what the Business Associate is doing to investigate the breach, to mitigate losses, and to protect against any further breaches.

    5. Whether a law enforcement official has advised either verbally or in writing the Business Associate that he or she has determined that notification or notice to

individuals or the posting required under section 13402 of the HITECH Act would impede a criminal investigation or cause damage to national security and; if so, include contact information for said official.

D. Business Associate agrees to provide appropriate staffing and have established procedures to ensure that individuals informed by the Covered Entity of a breach by the Business Associate have the opportunity to ask questions and contact the Business Associate for additional information regarding the breach. Such procedures shall include a toll-free telephone number, an e-mail address, a posting on its Web site and a postal address. Business Associate agrees to include in the notification of a breach by the Business Associate to the Covered Entity, a written description of the procedures that have been established to meet these requirements. Costs of such contact procedures will be borne by the Contractor.

E. Business Associate agrees that, in the event of a breach, it has the burden to demonstrate that it has complied with all notifications requirements set forth above, including evidence demonstrating the necessity of a delay in notification to the Covered Entity.

(i) Permitted Uses and Disclosure by Business Associate.

(1) General Use and Disclosure Provisions Except as otherwise limited in this Section of the Contract, Business Associate may use or disclose PHI to perform functions, activities, or services for, or on behalf of, Covered Entity as specified in this Contract, provided that such use or disclosure would not violate the Privacy Rule if done by Covered Entity or the minimum necessary policies and procedures of the Covered Entity.

(2) Specific Use and Disclosure Provisions

(A) Except as otherwise limited in this Section of the Contract, Business Associate may use PHI for the proper management and administration of Business Associate or to carry out the legal responsibilities of Business Associate.

(B) Except as otherwise limited in this Section of the Contract, Business Associate may disclose PHI for the proper management and administration of Business Associate, provided that disclosures are Required by Law, or Business Associate obtains reasonable assurances from the person to whom the information is disclosed that it will remain confidential and used or further disclosed only as Required by Law or for the purpose for which it was disclosed to the person, and the person notifies Business Associate of any instances of which it is aware in which the confidentiality of the information has been breached.

(C) Except as otherwise limited in this Section of the Contract, Business Associate may use PHI to provide Data Aggregation services to Covered Entity as permitted by 45 C.F.R. § 164.504(e)(2)(i)(B).

(j) Obligations of Covered Entity.

(1) Covered Entity shall notify Business Associate of any limitations in its notice of privacy practices of Covered Entity, in accordance with 45 C.F.R. § 164.520, or to the extent that such limitation may affect Business Associate's use or disclosure of PHI.

(2) Covered Entity shall notify Business Associate of any changes in, or revocation of, permission by Individual to use or disclose PHI, to the extent that such changes may affect Business Associate's use or disclosure of PHI.

(3) Covered Entity shall notify Business Associate of any restriction to the use or disclosure of PHI that Covered Entity has agreed to in accordance with 45 C.F.R. § 164.522, to the extent that such restriction may affect Business Associate's use or disclosure of PHI.

(k) Permissible Requests by Covered Entity. Covered Entity shall not request Business Associate to use or disclose PHI in any manner that would not be permissible under the Privacy Rule if done by the Covered Entity, except that Business Associate may use and disclose PHI for data aggregation, and management and administrative activities of Business Associate, as permitted under this Section of the Contract.

(l) Term and Termination.

(1) Term. The Term of this Section of the Contract shall be effective as of the date the Contract is effective and shall terminate when the information collected in accordance with clause h. (10) of this Section of the Contract is provided to the Covered Entity and all of the PHI provided by Covered Entity to Business Associate, or created or received by Business Associate on behalf of Covered Entity, is destroyed or returned to Covered Entity, or, if it is infeasible to return or destroy PHI, protections are extended to such information, in accordance with the termination provisions in this Section.

(2) Termination for Cause Upon Covered Entity's knowledge of a material breach by Business Associate, Covered Entity shall either:

(A) Provide an opportunity for Business Associate to cure the breach or end the violation and terminate the Contract if Business Associate does not cure the breach or end the violation within the time specified by the Covered Entity; or

(B) Immediately terminate the Contract if Business Associate has breached a material term of this Section of the Contract and cure is not possible; or

(C) If neither termination nor cure is feasible, Covered Entity shall report the violation to the Secretary.

(3) Effect of Termination

(A) Except as provided in (l)(2) of this Section of the Contract, upon termination of this Contract, for any reason, Business Associate shall return or destroy all PHI received from Covered Entity, or created or received by Business Associate on behalf of Covered Entity. Business Associate shall also provide the information collected in accordance with clause h. (10) of this Section of the Contract to the Covered Entity

within ten business days of the notice of termination. This provision shall apply to PHI that is in the possession of subcontractors or agents of Business Associate. Business Associate shall retain no copies of the PHI.

(B) In the event that Business Associate determines that returning or destroying the PHI is infeasible, Business Associate shall provide to Covered Entity notification of the conditions that make return or destruction infeasible. Upon documentation by Business Associate that return or destruction of PHI is infeasible, Business Associate shall extend the protections of this Section of the Contract to such PHI and limit further uses and disclosures of PHI to those purposes that make return or destruction infeasible, for as long as Business Associate maintains such PHI. Infeasibility of the return or destruction of PHI includes, but is not limited to, requirements under state or federal law that the Business Associate maintains or preserves the PHI or copies thereof.

(m) Miscellaneous Provisions.

(1) Regulatory References. A reference in this Section of the Contract to a section in the Privacy Rule means the section as in effect or as amended.

(2) Amendment. The Parties agree to take such action as in necessary to amend this Section of the Contract from time to time as is necessary for Covered Entity to comply with requirements of the Privacy Rule and the Health Insurance Portability and Accountability Act of 1996, Pub. L. No. 104-191.

(3) Survival. The respective rights and obligations of Business Associate shall survive the termination of this Contract.

(4) Effect on Contract. Except as specifically required to implement the purposes of this Section of the Contract, all other terms of the Contract shall remain in force and effect.

(5) Construction. This Section of the Contract shall be construed as broadly as necessary to implement and comply with the Privacy Standard. Any ambiguity in this Section of the Contract shall be resolved in favor of a meaning that complies, and is consistent with, the Privacy Standard.

(6) Disclaimer. Covered Entity makes no warranty or representation that compliance with this Section of the Contract will be adequate or satisfactory for Business Associate's own purposes. Covered Entity shall not be liable to Business Associate for any claim, civil or criminal penalty, loss or damage related to or arising from the unauthorized use or disclosure of PHI by Business Associate or any of its officers, directors, employees, contractors or agents, or any third party to whom Business Associate has disclosed PHI contrary to the provisions of this Contract or applicable law. Business Associate is solely responsible for all decisions made, and actions taken, by Business Associate regarding the safeguarding, use and disclosure of PHI within its possession, custody or control.

(7) Indemnification. The Business Associate shall indemnify and hold the Covered Entity harmless from and against any and all claims, liabilities, judgments, fines, assessments, penalties, awards and any statutory damages that may be imposed or assessed pursuant to HIPAA, as amended or the

HITECH Act, including, without limitation, attorney's fees, expert witness fees, costs of investigation, litigation or dispute resolution, and costs awarded thereunder, relating to or arising out of any violation by the Business Associate and its agents, including subcontractors, of any obligation of Business Associate and its agents, including subcontractors, under this section of the contract, under HIPAA, the HITECH Act, the Privacy Rule and the Security Rule.

CONNECTICUT STATE ELECTIONS ENFORCEMENT COMMISSION **EXHIBIT E**

Rev. 1/11
Page 1 of 2

Notice to Executive Branch State Contractors and Prospective State Contractors of Campaign Contribution and Solicitation Limitations

This notice is provided under the authority of Connecticut General Statutes §9-612(g)(2), as amended by P.A. 10-1, and is for the purpose of informing state contractors and prospective state contractors of the following law (italicized words are defined on the reverse side of this page).

CAMPAIGN CONTRIBUTION AND SOLICITATION LIMITATIONS

No *state contractor, prospective state contractor, principal of a state contractor or principal of a prospective state contractor*, with regard to a *state contract* or *state contract solicitation* with or from a state agency in the executive branch or a quasi-public agency or a holder, or principal of a holder of a valid prequalification certificate, shall make a contribution to (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor, Lieutenant Governor, Attorney General, State Comptroller, Secretary of the State or State Treasurer, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee (which includes town committees).

In addition, no holder or principal of a holder of a valid prequalification certificate, shall make a contribution to (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of State senator or State representative, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee.

On and after January 1, 2011, no state contractor, prospective state contractor, principal of a state contractor or principal of a prospective state contractor, with regard to a state contract or state contract solicitation with or from a state agency in the executive branch or a quasi-public agency or a holder, or principal of a holder of a valid prequalification certificate, shall **knowingly** *solicit* contributions from the state contractor's or prospective state contractor's employees or from a *subcontractor* or *principals of the subcontractor* on behalf of (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor, Lieutenant Governor, Attorney General, State Comptroller, Secretary of the State or State Treasurer, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee.

DUTY TO INFORM

State contractors and prospective state contractors are required to inform their principals of the above prohibitions, as applicable, and the possible penalties and other consequences of any violation thereof.

PENALTIES FOR VIOLATIONS

Contributions or solicitations of contributions made in violation of the above prohibitions may result in the following civil and criminal penalties:

Civil penalties—Up to $2,000 or twice the amount of the prohibited contribution, whichever is greater, against a principal or a contractor. Any state contractor or prospective state contractor which fails to make reasonable efforts to comply with the provisions requiring notice to its principals of these prohibitions and the possible consequences of their violations may also be subject to civil penalties of up to $2,000 or twice the amount of the prohibited contributions made by their principals.

Criminal penalties—Any knowing and willful violation of the prohibition is a Class D felony, which may subject the violator to imprisonment of not more than 5 years, or not more than $5,000 in fines, or both.

CONTRACT CONSEQUENCES

In the case of a state contractor, contributions made or solicited in violation of the above prohibitions may resulting the contract being voided.

In the case of a prospective state contractor, contributions made or solicited in violation of the above prohibitions shall result in the contract described in the state contract solicitation not being awarded to the prospective state contractor, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

The State shall not award any other state contract to anyone found in violation of the above prohibitions for a period of one year after the election for which such contribution is made or solicited, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.
Additional information may be found on the website of the State Elections Enforcement Commission, www.ct.gov/seec. Click on the link to “Lobbyist/Contractor Limitations.”

DEFINITIONS

"State contractor" means a person, business entity or nonprofit organization that enters into a state contract. Such person, business entity or nonprofit organization shall be deemed to be a state contractor until December thirty-first of the year in which such contract terminates. "State contractor" does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

"Prospective state contractor" means a person, business entity or nonprofit organization that (i) submits a response to a state contract solicitation by the state, a state agency or a quasi-public agency, or a proposal in response to a request for proposals by the state, a state agency or a quasi-public agency, until the contract has been entered into, or (ii) holds a valid prequalification certificate issued by the Commissioner of Administrative Services under section 4a-100. "Prospective state contractor" does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

"Principal of a state contractor or prospective state contractor" means (i) any individual who is a member of the board of directors of, or has an ownership interest of five per cent or more in, a state contractor or prospective state contractor, which is a business entity, except for an individual who is a member of the board of directors of a nonprofit organization**,** (ii) an individual who is employed by a state contractor or prospective state contractor, which is a business entity, as president, treasurer or executive vice president, (iii) an individual who is the chief executive officer of a state contractor or prospective state contractor, which is not a business entity, or if a state contractor or prospective state contractor has no such officer, then the officer who duly possesses comparable powers and duties, (iv) an officer or an employee of any state contractor or prospective state contractor who has *managerial or discretionary responsibilities with respect to a state contract*, (v) the spouse or a *dependent child* who is eighteen years of age or older of an individual described in this subparagraph, or (vi) a political committee established or controlled by an individual described in this subparagraph or the business entity or nonprofit organization that is the state contractor or prospective state contractor.

"State contract" means an agreement or contract with the state or any state agency or any quasi-public agency, let through a procurement process or otherwise, having a value of fifty thousand dollars or more, or a combination or series of such agreements or contracts having a value of one hundred thousand dollars or more in a calendar year, for (i) the rendition of services, (ii) the furnishing of any goods, material, supplies, equipment or any items of any kind, (iii) the construction, alteration or repair of any public building or public work, (iv) the acquisition, sale or lease of any land or building, (v) a licensing arrangement, or (vi) a grant, loan or loan guarantee. "State contract" does not include any agreement or contract with the state, any state agency or any quasi-public agency that is exclusively federally funded, an education loan, a loan to an individual for other than commercial purposes or any agreement or contract between the state or any state agency and the United States Department of the Navy or the United States Department of Defense.

"State contract solicitation" means a request by a state agency or quasi-public agency, in whatever form issued, including, but not limited to, an invitation to bid, request for proposals, request for information or request for quotes, inviting bids, quotes or other types of submittals, through a competitive procurement process or another process authorized by law waiving competitive procurement.

"Managerial or discretionary responsibilities with respect to a state contract" means having direct, extensive and substantive responsibilities with respect to the negotiation of the state contract and not peripheral, clerical or ministerial responsibilities.

"Dependent child" means a child residing in an individual's household who may legally be claimed as a dependent on the federal income tax of such individual.

"Solicit" means (A) requesting that a contribution be made, (B) participating in any fund-raising activities for a candidate committee, exploratory committee, political committee or party committee, including, but not limited to, forwarding tickets to potential contributors, receiving contributions for transmission to any such committee or bundling contributions, (C) serving as chairperson, treasurer or deputy treasurer of any such committee, or (D) establishing a political committee for the sole purpose of soliciting or receiving contributions for any committee. Solicit does not include: (i) making a contribution that is otherwise permitted by Chapter 155 of the Connecticut General Statutes; (ii) informing any person of a position taken by a candidate for public office or a public official, (iii) notifying the person of any activities of, or contact information for, any candidate for public office; or (iv) serving as a member in any party committee or as an officer of such committee that is not otherwise prohibited in this section.

"Subcontractor" means any person, business entity or nonprofit organization that contracts to perform part or all of the obligations of a state contractor's state contract. Such person, business entity or nonprofit organization shall be deemed to be a subcontractor until December thirty first of the year in which the subcontract terminates. "Subcontractor" does not include (i) a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or (ii) an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

"Principal of a subcontractor" means (i) any individual who is a member of the board of directors of, or has an ownership interest of five per cent or more in, a subcontractor, which is a business entity, except for an individual who is a member of the board of directors of a nonprofit organization, (ii) an individual who is employed by a subcontractor, which is a business entity, as president, treasurer or executive vice president, (iii) an individual who is the chief executive officer of a subcontractor, which is not a business entity, or if a subcontractor has no such officer, then the officer who duly possesses comparable powers and duties, (iv) an officer or an employee of any subcontractor who has managerial or discretionary responsibilities with respect to a subcontract with a state contractor, (v) the spouse or a dependent child who is eighteen years of age or older of an individual described in this subparagraph, or (vi) a political committee established or controlled by an individual described in this subparagraph or the business entity or nonprofit organization that is the subcontractor.

EXHIBIT F

(Federal wage rate package will be inserted here for final executed contract only. Refer to NTC – Federal Wage Determinations)

EXHIBIT G

(State wages will be inserted here)

Project: Rehabilitation Of Bridge Number 06728, Route 9 Over Pole Bridge Brook

Minimum Rates and Classifications
for Heavy/Highway Construction

ID#: **H** 25732

Connecticut Department of Labor
Wage and Workplace Standards Division

By virtue of the authority vested in the Labor Commissioner under provisions of Section 31-53 of the General Statutes of Connecticut, as amended, the following are declared to be the prevailing rates and welfare payments and will apply only where the contract is advertised for bid within 20 days of the date on which the rates are established. Any contractor or subcontractor not obligated by agreement to pay to the welfare and pension fund shall pay this amount to each employee as part of his/her hourly wages.

Project Number:

Project Town: Haddam

FAP Number:

State Number: 60-158

Project: Rehabilitation Of Bridge Number 06728, Route 9 Over Pole Bridge Brook

CLASSIFICATION	Hourly Rate	Benefits
1) Boilermaker	33.79	34% + 8.96
1a) Bricklayer, Cement Masons, Cement Finishers, Plasterers, Stone Masons	34.72	32.15
2) Carpenters, Piledrivermen	32.60	25.34
2a) Diver Tenders	32.60	25.34

As of: Thursday, February 28, 2019

3) Divers	41.06	25.34
03a) Millwrights	33.14	25.74
4) Painters: (Bridge Construction) Brush, Roller, Blasting (Sand, Water, etc.), Spray	49.75	21.05
4a) Painters: Brush and Roller	33.62	21.05
4b) Painters: Spray Only	36.62	21.05
4c) Painters: Steel Only	35.62	21.05
4d) Painters: Blast and Spray	36.62	21.05

Project: Rehabilitation Of Bridge Number 06728, Route 9 Over Pole Bridge Brook

4e) Painters: Tanks, Tower and Swing	35.62	21.05
5) Electrician (Trade License required: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9)	37.50	27.91+3% of gross wage
6) Ironworkers: Ornamental, Reinforcing, Structural, and Precast Concrete Erection	35.47	35.14 + a
7) Plumbers (Trade License required: (P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2) and Pipefitters (Including HVAC Work) (Trade License required: S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4 G-1, G-2, G-8, G-9)	42.62	31.21
----LABORERS---- -		
8) Group 1: Laborer (Unskilled), Common or General, acetylene burner, concrete specialist	30.05	20.10
9) Group 2: Chain saw operators, fence and guard rail erectors, pneumatic tool operators, powdermen	30.30	20.10

Project: Rehabilitation Of Bridge Number 06728, Route 9 Over Pole Bridge Brook

10) Group 3: Pipelayers	30.55	20.10
11) Group 4: Jackhammer/Pavement breaker (handheld); mason tenders (cement/concrete), catch basin builders, asphalt rakers, air track operators, block paver, curb setter and forklift operators	30.55	20.10
12) Group 5: Toxic waste removal (non-mechanical systems)	32.05	20.10
13) Group 6: Blasters	31.80	20.10
Group 7: Asbestos/lead removal, non-mechanical systems (does not include leaded joint pipe)	31.05	20.10
Group 8: Traffic control signalmen	16.00	20.10
Group 9: Hydraulic Drills	29.30	18.90

As of: Thursday, February 28, 2019

Project: Rehabilitation Of Bridge Number 06728, Route 9 Over Pole Bridge Brook

----LABORERS (TUNNEL CONSTRUCTION, FREE AIR). Shield Drive and Liner Plate Tunnels in Free Air.----		
13a) Miners, Motormen, Mucking Machine Operators, Nozzle Men, Grout Men, Shaft & Tunnel Steel & Rodmen, Shield & Erector, Arm Operator, Cable Tenders	32.22	20.10 + a
13b) Brakemen, Trackmen	31.28	20.10 + a
----CLEANING, CONCRETE AND CAULKING TUNNEL----		
14) Concrete Workers, Form Movers, and Strippers	31.28	20.10 + a
15) Form Erectors	31.60	20.10 + a
----ROCK SHAFT LINING, CONCRETE, LINING OF SAME AND TUNNEL IN FREE AIR:----		

Project: Rehabilitation Of Bridge Number 06728, Route 9 Over Pole Bridge Brook

16) Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers	31.28	20.10 + a
17) Laborers Topside, Cage Tenders, Bellman	31.17	20.10 + a
18) Miners	32.22	20.10 + a
----TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED AIR: ----		
18a) Blaster	38.53	20.10 + a
19) Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders	38.34	20.10 + a
20) Change House Attendants, Powder Watchmen, Top on Iron Bolts	36.41	20.10 + a

21) Mucking Machine Operator	39.11	20.10 + a
----TRUCK DRIVERS----(*see note below)		
Two axle trucks	29.13	23.33 + a
Three axle trucks; two axle ready mix	29.23	23.33 + a
Three axle ready mix	29.28	23.33 + a
Four axle trucks, heavy duty trailer (up to 40 tons)	29.33	23.33 + a
Four axle ready-mix	29.38	23.33 + a

Heavy duty trailer (40 tons and over)	29.58	23.33 + a
Specialized earth moving equipment other than conventional type on-the road trucks and semi-trailer (including Euclids)	29.38	23.33 + a
----POWER EQUIPMENT OPERATORS----		
Group 1: Crane handling or erecting structural steel or stone, hoisting engineer (2 drums or over), front end loader (7 cubic yards or over), Work Boat 26 ft. & Over, Tunnel Boring Machines. (Trade License Required)	39.55	24.30 + a
Group 2: Cranes (100 ton rate capacity and over); Excavator over 2 cubic yards; Piledriver ($3.00 premium when operator controls hammer); Bauer Drill/Caisson. (Trade License Required)	39.23	24.30 + a
Group 3: Excavator/Backhoe under 2 cubic yards; Cranes (under 100 ton rated capacity), Gradall; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar);Grader Operator; Bulldozer Fine Grade (slopes, shaping, laser or GPS, etc.). (Trade License Required)	38.49	24.30 + a
Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper)	38.10	24.30 + a

Project: Rehabilitation Of Bridge Number 06728, Route 9 Over Pole Bridge Brook

Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Spreader; Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24" Mandrell)	37.51	24.30 + a
Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller.	37.51	24.30 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	37.20	24.30 + a
Group 7: Asphalt Roller; Concrete Saws and Cutters (ride on types); Vermeer Concrete Cutter; Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24" and Under Mandrel).	36.86	24.30 + a
Group 8: Mechanic, Grease Truck Operator, Hydroblaster, Barrier Mover, Power Stone Spreader; Welder; Work Boat under 26 ft.; Transfer Machine.	36.46	24.30 + a
Group 9: Front End Loader (under 3 cubic yards), Skid Steer Loader regardless of attachments (Bobcat or Similar); Fork Lift, Power Chipper; Landscape Equipment (including hydroseeder).	36.03	24.30 + a
Group 10: Vibratory Hammer, Ice Machine, Diesel and Air Hammer, etc.	33.99	24.30 + a

Project: Rehabilitation Of Bridge Number 06728, Route 9 Over Pole Bridge Brook

Group 11: Conveyor, Earth Roller; Power Pavement Breaker (whiphammer), Robot Demolition Equipment.	33.99	24.30 + a
Group 12: Wellpoint Operator.	33.93	24.30 + a
Group 13: Compressor Battery Operator.	33.35	24.30 + a
Group 14: Elevator Operator; Tow Motor Operator (Solid Tire No Rough Terrain).	32.21	24.30 + a
Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	31.80	24.30 + a
Group 16: Maintenance Engineer/Oiler	31.15	24.30 + a
Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator.	35.46	24.30 + a

Project: Rehabilitation Of Bridge Number 06728, Route 9 Over Pole Bridge Brook

Group 18: Power Safety Boat; Vacuum Truck; Zim Mixer; Sweeper; (minimum for any job requiring CDL license).	33.04	24.30 + a

**NOTE: SEE BELOW

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

20) Lineman, Cable Splicer, Technician	48.19	6.5% + 22.00
21) Heavy Equipment Operator	42.26	6.5% + 19.88
22) Equipment Operator, Tractor Trailer Driver, Material Men	40.96	6.5% + 19.21
23) Driver Groundmen	26.50	6.5% + 9.00

As of: Thursday, February 28, 2019

Project: Rehabilitation Of Bridge Number 06728, Route 9 Over Pole Bridge Brook

23a) Truck Driver	40.96	6.5% + 17.76
----LINE CONSTRUCTION----		
24) Driver Groundmen	30.92	6.5% + 9.70
25) Groundmen	22.67	6.5% + 6.20
26) Heavy Equipment Operators	37.10	6.5% + 10.70
27) Linemen, Cable Splicers, Dynamite Men	41.22	6.5% + 12.20
28) Material Men, Tractor Trailer Drivers, Equipment Operators	35.04	6.5% + 10.45

As of: Thursday, February 28, 2019

Project: Rehabilitation Of Bridge Number 06728, Route 9 Over Pole Bridge Brook

01) Asbestos/Toxic Waste Removal Laborers: Asbestos removal and encapsulation (except its removal from mechanical systems which are not to be scrapped), toxic waste removers, blasters. **See Laborers Group 5 and 7**

Project: Rehabilitation Of Bridge Number 06728, Route 9 Over Pole Bridge Brook

Welders: Rate for craft to which welding is incidental.

**Note: Hazardous waste removal work receives additional $1.25 per hour for truck drivers.*

***Note: Hazardous waste premium $3.00 per hour over classified rate*

ALL Cranes: When crane operator is operating equipment that requires a fully licensed crane operator to operate he receives an extra $4.00 premium in addition to the hourly wage rate and benefit contributions:

1) Crane handling or erecting structural steel or stone; hoisting engineer (2 drums or over)

2) Cranes (100 ton rate capacity and over) Bauer Drill/Caisson

3) Cranes (under 100 ton rated capacity)

Crane with 150 ft. boom (including jib) - $1.50 extra
Crane with 200 ft. boom (including jib) - $2.50 extra
Crane with 250 ft. boom (including jib) - $5.00 extra
Crane with 300 ft. boom (including jib) - $7.00 extra
Crane with 400 ft. boom (including jib) - $10.00 extra

All classifications that indicate a percentage of the fringe benefits must be calculated at the percentage rate times the "base hourly rate".

Apprentices duly registered under the Commissioner of Labor's regulations on "Work Training Standards for Apprenticeship and Training Programs" Section 31-51-d-1 to 12, are allowed to be paid the appropriate percentage of the prevailing journeymen hourly base and the full fringe benefit rate, providing the work site ratio shall not be less than one full-time journeyperson instructing and supervising the work of each apprentice in a specific trade.

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

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

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

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

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

The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project.

All subsequent annual adjustments will be posted on our Web Site for contractor access.

Contracting Agencies are under no obligation pursuant to State labor law to pay any increase due to the annual adjustment provision.

As of: Thursday, February 28, 2019

Project: Rehabilitation Of Bridge Number 06728, Route 9 Over Pole Bridge Brook

Effective October 1, 2005 - Public Act 05-50: any person performing the work of any mechanic, laborer, or worker shall be paid prevailing wage

All Person who perform work ON SITE must be paid prevailing wage for the appropriate mechanic, laborer, or worker classification.

All certified payrolls must list the hours worked and wages paid to All Persons who perform work ON SITE regardless of their ownership i.e.: (Owners, Corporate Officers, LLC Members, Independent Contractors, et. al)

Reporting and payment of wages is required regardless of any contractual relationship alleged to exist between the contractor and such person.

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

Please direct any questions which you may have pertaining to classification of work and payment of prevailing wages to the Wage and Workplace Standards Division, telephone (860)263-6790.

As of: Thursday, February 28, 2019

Connecticut Department of Labor
Wage and Workplace Standards Division
FOOTNOTES

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

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

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

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

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

Elevator Constructors: Mechanics

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

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

Glaziers

a. Paid Holidays: Labor Day and Christmas Day.

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

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

Ironworkers

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

Laborers (Tunnel Construction)

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

Roofers

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

Sprinkler Fitters

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

Truck Drivers

(Heavy and Highway Construction & Building Construction)

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

Information Bulletin
Occupational Classifications

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

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

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

- ***ASBESTOS WORKERS***

Applies all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems.

- ***ASBESTOS INSULATOR***

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

- ***BOILERMAKERS***

Erects hydro plants, incomplete vessels, steel stacks, storage tanks for water, fuel, etc. Builds incomplete boilers, repairs heat exchanges and steam generators.

- ***BRICKLAYERS, CEMENT MASONS, CEMENT FINISHERS, MARBLE MASONS, PLASTERERS, STONE MASONS, PLASTERERS. STONE MASONS, TERRAZZO WORKERS, TILE SETTERS***

Lays building materials such as brick, structural tile and concrete cinder, glass, gypsum, terra cotta block. Cuts, tools and sets marble, sets stone, finishes concrete, applies decorative steel, aluminum and plastic tile, applies cements, sand, pigment and marble chips to floors, stairways, etc.

- ***<u>CARPENTERS, MILLWRIGHTS. PILEDRIVERMEN. LATHERS. RESILEINT FLOOR LAYERS, DOCK BUILDERS, DIKERS, DIVER TENDERS</u>***

Constructs, erects, installs and repairs structures and fixtures of wood, plywood and wallboard. Installs, assembles, dismantles, moves industrial machinery. Drives piling into ground to provide foundations for structures such as buildings and bridges, retaining walls for earth embankments, such as cofferdams. Fastens wooden, metal or rockboard lath to walls, ceilings and partitions of buildings, acoustical tile layer, concrete form builder. Applies firestopping materials on fire resistive joint systems only. Installation of curtain/window walls only where attached to wood or metal studs. Installation of insulated material of all types whether blown, nailed or attached in other ways to walls, ceilings and floors of buildings. Assembly and installation of modular furniture/furniture systems. Free-standing furniture is not covered. This includes free standing: student chairs, study top desks, book box desks, computer furniture, dictionary stand, atlas stand, wood shelving, two-position information access station, file cabinets, storage cabinets, tables, etc.

- **LABORER, CLEANING**

• The clean up of any construction debris and the general (heavy/light) cleaning, including sweeping, wash down, mopping, wiping of the construction facility and its furniture, washing, polishing, and dusting.

- **DELIVERY PERSONNEL**

• If delivery of supplies/building materials is to one common point and stockpiled there, prevailing wages <u>are not required</u>. If the delivery personnel are involved in the distribution of the material to multiple locations within the construction site then they would have to be paid prevailing wages for the type of work performed: laborer, equipment operator, electrician, ironworker, plumber, etc.

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

- ***<u>ELECTRICIANS</u>***

Install, erect, maintenance, alteration or repair of any wire, cable, conduit, etc., which generates, transforms, transmits or uses electrical energy for light, heat, power or other purposes, including the Installation or maintenance of telecommunication, LAN wiring or computer equipment, and low voltage wiring. ****License required per Connecticut General Statutes: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9.***

- ***ELEVATOR CONSTRUCTORS***

Install, erect, maintenance and repair of all types of elevators, escalators, dumb waiters and moving walks. ****License required by Connecticut General Statutes: R-1,2,5,6.***

- ***FORK LIFT OPERATOR***

Laborers Group 4) Mason Tenders - operates forklift solely to assist a mason to a maximum height of nine (9) feet only.

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

- ***GLAZIERS***

Glazing wood and metal sash, doors, partitions, and 2 story aluminum storefronts. Installs glass windows, skylights, store fronts and display cases or surfaces such as building fronts, interior walls, ceilings and table tops and metal store fronts. Installation of aluminum window walls and curtain walls is the "joint" work of glaziers and ironworkers, which require equal composite workforce.

- ***IRONWORKERS***

Erection, installation and placement of structural steel, precast concrete, miscellaneous iron, ornamental iron, metal curtain wall, rigging and reinforcing steel. Handling, sorting, and installation of reinforcing steel (rebar). Metal bridge rail (traffic), metal bridge handrail, and decorative security fence installation. Installation of aluminum window walls and curtain walls is the "joint" work of glaziers and ironworkers which require equal composite workforce.

- ***INSULATOR***

• Installing fire stopping systems/materials for "Penetration Firestop Systems": transit to cables, electrical conduits, insulated pipes, sprinkler pipe penetrations, ductwork behind radiation, electrical cable trays, fire rated pipe penetrations, natural polypropylene, HVAC ducts, plumbing bare metal, telephone and communication wires, and boiler room ceilings.

- ***LABORERS***

Acetylene burners, asphalt rakers, chain saw operators, concrete and power buggy operator, concrete saw operator, fence and guard rail erector (except metal bridge rail (traffic), decorative security fence (non-metal).

installation.), hand operated concrete vibrator operator, mason tenders, pipelayers (installation of storm drainage or sewage lines on the street only), pneumatic drill operator, pneumatic gas and electric drill operator, powermen and wagon drill operator, air track operator, block paver, curb setters, blasters, concrete spreaders.

- ***PAINTERS***

Maintenance, preparation, cleaning, blasting (water and sand, etc.), painting or application of any protective coatings of every description on all bridges and appurtenances of highways, roadways, and railroads. Painting, decorating, hardwood finishing, paper hanging, sign writing, scenic art work and drywall hhg for any and all types of building and residential work.

- ***LEAD PAINT REMOVAL***

• Painter's Rate

1. Removal of lead paint from bridges.
2. Removal of lead paint as preparation of any surface to be repainted.
3. Where removal is on a Demolition project prior to reconstruction.

• Laborer's Rate

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

- ***PLUMBERS AND PIPEFITTERS***

Installation, repair, replacement, alteration or maintenance of all plumbing, heating, cooling and piping. ****License required per Connecticut General Statutes: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2 S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4.***

- ***POWER EQUIPMENT OPERATORS***

Operates several types of power construction equipment such as compressors, pumps, hoists, derricks, cranes, shovels, tractors, scrapers or motor graders, etc. Repairs and maintains equipment. ****License required, crane operators only, per Connecticut General Statutes.***

- ***ROOFERS***

Covers roofs with composition shingles or sheets, wood shingles, slate or asphalt and gravel to waterproof roofs, including preparation of surface. (demolition or removal of any type of roofing and or clean-up of any and all areas where a roof is to be relaid.)

- ***SHEETMETAL WORKERS***

Fabricate, assembles, installs and repairs sheetmetal products and equipment in such areas as ventilation, air-conditioning, warm air heating, restaurant equipment, architectural sheet metal work, sheetmetal roofing, and aluminum gutters. Fabrication, handling, assembling, erecting, altering, repairing, etc. of coated metal material panels and composite metal material panels when used on building exteriors and interiors as soffits, facia, louvers, partitions, canopies, cornice, column covers, awnings, beam covers, cladding, sun shades, lighting troughs, spires, ornamental roofing, metal ceilings, mansards, copings, ornamental and ventilation hoods, vertical and horizontal siding panels, trim, etc. The sheet metal classification also applies to the vast variety of coated metal material panels and composite metal material panels that have evolved over the years as an alternative to conventional ferrous and non-ferrous metals like steel, iron, tin, copper, brass, bronze, aluminum, etc. Fabrication, handling, assembling, erecting, altering, repairing, etc. of architectural metal roof, standing seam roof, composite metal roof, metal and composite bathroom/toilet partitions, aluminum gutters, metal and composite lockers and shelving, kitchen equipment, and walk-in coolers. To include testing and air –balancing ancillary to installation and construction.

- ***SPRINKLER FITTERS***

Installation, alteration, maintenance and repair of fire protection sprinkler systems. ****License required per Connecticut General Statutes: F-1,2,3,4.***

- ***TILE MARBLE AND TERRAZZO FINISHERS***

Assists and tends the tile setter, marble mason and terrazzo worker in the performance of their duties.

- **TRUCK DRIVERS**

~How to pay truck drivers delivering asphalt is under REVISION~

Truck Drivers are requires to be paid prevailing wage for time spent "working" directly on the site. These drivers remain covered by the prevailing wage for any time spent transporting between the actual construction location and facilities (such as fabrication, plants, mobile factories, batch plant, borrow pits, job headquarters, tool yards, etc.) dedicated exclusively, or nearly so, to performance of the contract or project, which are so located in proximity to the actual construction location that it is reasonable to include them. ****License required, drivers only, per Connecticut General Statutes.***

For example:

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

➢ *Any questions regarding the proper classification should be directed to:*
Public Contract Compliance Unit
Wage and Workplace Standards Division
Connecticut Department of Labor
200 Folly Brook Blvd, Wethersfield, CT 06109
(860) 263-6543.

Statute 31-55a

Last Updated: June 02, 2008

- Special Notice -

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

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

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

- The prevailing wage rates applicable to any contract or subcontract awarded on or after October 1, 2002 are subject to annual adjustments each July 1st for the duration of any project which was originally advertised for bids on or after October 1, 2002.
- Each contractor affected by the above requirement shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.
- It is the ***contractor's*** responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's Web Site. The annual adjustments will be posted on the Department of Labor Web page: www.ctdol.state.ct.us. For those without internet access, please contact the division listed below.
- The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project. All subsequent annual adjustments will be posted on our Web Site for contractor access.

Any questions should be directed to the Contract Compliance Unit, Wage and Workplace

Standards Division, Connecticut Department of Labor, 200 Folly Brook Blvd., Wethersfield, CT 06109 at (860)263-6790.

Workplace Laws

Published by the Connecticut Department of Labor, Project Management Office

November 29, 2006

Notice

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

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

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

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

Forklift Operator:

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

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

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

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

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

Informational Bulletin

THE 10-HOUR OSHA CONSTRUCTION SAFETY AND HEALTH COURSE

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(c) Not later than January 1, 2007, the Labor Commissioner shall adopt regulations, in accordance with the provisions of chapter 54, to implement the provisions of subsections (a) and (b) of this section. Such regulations shall require that the ten-hour construction safety and health courses required under subsection (a) of this section be conducted in accordance with federal Occupational Safety and Health Administration Training Institute standards, or in accordance with 29 CFR 1910.268, as appropriate. The Labor Commissioner shall accept as sufficient proof of compliance with the provisions of subsection (a) or (b) of this section a student course completion card issued by the federal Occupational Safety and Health Administration Training Institute, or such other proof of compliance said commissioner deems appropriate, dated no earlier than five years before the commencement date of such public works project.

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

CONNECTICUT DEPARTMENT OF LABOR
WAGE AND WORKPLACE STANDARDS DIVISION

CONTRACTORS WAGE CERTIFICATION FORM

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

do hereby certify that the _____
Company Name

_____
Street

_____
City

and all of its subcontractors will pay all workers on the

_____
Project Name and Number

_____
Street and City

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

_____
Signed

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

_____
Notary Public

☞ Return to:

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