



Town of Wallingford, Connecticut

Application: _____
Date Submitted: _____
Filing Fee Paid: _____
Date Received: _____

Inland Wetlands and Watercourses Permit Application

A. Name of Applicant: Alison Kapushinski Date: _____
Home Address: _____ Phone: _____
Business Address: 45 South Main St Phone: (203)294-2035
Wallingford, CT, 06492

B. Interest in Property: Own: Rent: Lease: Option to Buy:
Other (please specify): _____

C. Owner of Property Town of Wallingford

D. Geographical Location: South Turnpike Road Bridge No. 148-0028 over Mansion Road Brook

Street Address: N/A

(or Assessors Map-Block-Lot) N/A

Total Area of Parcel _____

Total Area of Wetlands: _____

Total Area of Wetlands to be Altered (in acres or sq. ft.) _____

E. Names and Mailing Addresses of Abutting Property Owners:

Name

Address

h.a

h.a

F. Describe the land in sufficient detail to allow the identification of inland wetlands and watercourses, a computation of the area of wetland or watercourse disturbance, soil type(s) and vegetation:

The South Turnpike Road Culvert No. 148-0028 crosses over Mansion Road Brook about 0.25 miles north of Mansion Road. The floodplain is flat, forested, and dense with grasses on both sides of the crossing. Wetland soil types that have been identified within the area include two types of fine sandy loam and Fluvaquents-Udifluvents. The wetland delineation report from 9/16/16 by Soil Science and Environmental Services, Inc. is included in the attachments.

G. Describe the proposed activity, its purposes and intended use, area of wetland to be altered ^(in square feet) amounts and types of fill, structures and construction activities and anticipated time of construction:

It is proposed to repair the existing culverts with centrifugally cast concrete, improve inlet geometry, and place riprap at the outlet. The repairs will require permanent fill of 6 CY of riprap and 2 CY of concrete for the new lining and inlet structure. Also, 9 CY of native materials will be permanently excavated. This creates a net impact of 1 CY of excavation. Approximately 2600 square feet of wetland area will be affected. This project will have two water handling stages. Construction is expected to begin in April 2021 and is expected to take less than three months.

H. Describe all alternatives considered and why this proposal to alter wetlands was chosen:

The existing crossing is reported to have been in use since 1935, and has a culvert rating of 4 out of 9, which is structurally deficient. The overall structure rating is 4, which is fair condition. The sufficiency rating is unknown, but the crossing is overall in fair to poor condition and in need of rehabilitation. Repairing the existing culvert was selected as the best option to have minimal effects on the surrounding wetlands, as well as be more cost effective than a complete redesign. DEEP Fisheries has reviewed the proposed repairs and has provided recommendations for protecting and enhancing fishery resources. Also, the project has been reviewed by the NDDB, and no conflicts are anticipated with protected species. These reports will be included in the attachments.

I. A site plan showing existing and proposed conditions in relation to wetlands and watercourses must be submitted with this application.

J. The undersigned, as owner of the property, hereby consents to necessary and proper inspections of the above mentioned property by members and agents of the Wallingford Inland Wetlands Commission, at reasonable times, both before and after the final decision has been issued:

Signature of Owner (+ Print name) Date

K. The undersigned is familiar with all the information provided in this application and warrants the truth of all statements contained herein and in all supporting documents to the best of his knowledge and belief and is aware of the penalties for obtaining a permit through deception or through inaccurate or misleading information.

Signature of Applicant (+ Print name) Date

Additional Information Required for Significant Activities

L. Information required by Section 7.5 of the Inland Wetlands Regulations.

M. Names and mailing addresses of property owners within 500 feet of any portion of the property.

N. The undersigned certifies:

1. Any portion of the property on which the regulated activity is proposed is / is not located within 500 feet of the boundary of an adjoining municipality.
2. Traffic attributable to the completed project on the site will / will not use streets within the adjoining municipality to enter or exit the site.
3. Sewer or water drainage from the project site will / will not flow through and impact the sewage or drainage system within the adjoining municipality.
4. Water run-off from the improved site will / will not impact streets or other municipal or private property within the adjoining municipality.

N.A.

O. List any professional degrees and / or experience of any personnel in the submission of ecological and environmental information.

P. Please feel free to supply any additional information you deem necessary.

Signature of Applicant Date

NOTE: Homeowners do not need to submit Stateform + Water Co. notice

Supporting Documentation

The following documentation is enclosed in support of this permit application:

1. Project Summary
2. Project Location Map
3. Project Area Map, Aerial
4. Project Photos
5. DEEP Reporting Form
6. Wetland Delineation Report – South Turnpike Road Bridge over Unnamed Brook, Wallingford, CT, 9/19/2016 by Soil Science and Environmental Services, Inc.
7. Natural Diversity Data Base Map, June 2020
8. Natural Diversity Data Base Review, 10/16/2020.
9. DEEP Aquifer Protection Area Map, 8/26/2019
10. FEMA Firmette, 8/6/2020
11. DEEP Fisheries Review, 1/25/2018
12. Plans – Under Separate Cover
13. Hydraulic Design Report – Under Separate Cover

Wengell, McDonnell, and Costello Consulting Engineers (WMC) has been retained by the town of Wallingford to perform design services for the rehabilitation of South Turnpike Road Culvert (#148-0028) over Mansion Road Brook. South Turnpike Road is a two-lane minor arterial that runs north-south parallel to Route 15 in southern Wallingford. The crossing is approximately 0.25 miles north of Mansion Road.

The existing crossing is reported to have been in use since 1935 and has a current structural rating of 4 out of 9, which is fair to poor condition. A large scour hole has formed at the outlet and is threatening the stability of the downstream wall. This project proposes to repair the existing culvert by applying a centrifugally cast concrete liner to the culvert interior that will be approximately 1 inch thick. Inlet geometry will be improved by adding a 45° bevel to account for the slight decrease in capacity. Riprap will also be added to the outlet to prevent further scouring.

Mansion Road Brook has been studied by FEMA and has a regulatory Floodway for this reach. The culvert is located within a numbered FEMA flood zone. Project hydrology is based on the current FIS for New Haven County, dated May 16, 2017. The drainage area for the culvert is 0.94 square miles. This classifies the crossing as a Small Structure (less than 1 square mile). The ConnDOT Drainage Manual states that a structure of this size should pass the 100-year flood event with at least 1 foot of roadway freeboard.

Estimated impacts are as follows:

Wetland Impact Areas

Wetland Impacts	Area	
	Ft ²	Acres
Temporary	975	0.0224
Permanent	630	0.0144
Total	1,605	0.0368
Watercourse Impacts		
Temporary	724	0.0166
Permanent	1348	0.0309
Total	2,072	0.0475
Overall Total Impacts	3,677	0.0843

Wetland/Watercourse Fill Quantities

Type of Fill/Excavation	Volume (CY)	Description and Association
Permanent Fill		
Riprap	6	Inserted at outlet
Compacted Bedding Materials	0	Structure & Riprap Bedding
Native Materials	0	Excavated Material Replaced
Concrete	2	Culvert lining, inlet
Total Fill	8	Cubic Yards
Permanent Excavation		
Native Materials	9	In way of proposed
Demolition	0	Existing Structures Removed
Total Excavation	9	Cubic Yards
Net Total Impact	1	Cubic Yards Excavated

Existing Structure

The existing crossing consists of twin concrete box culverts that are 3 feet high and 4 feet wide with 6-inch miters on the top corners. Both ends have 90° walls. Upstream of the culvert, the brook makes a sharp bend which decreases channel velocity. At the downstream end, a large scour hole has developed, which is threatening the downstream wall. The out-to-out width of the crossing is ±29 feet, and the roadway has single MBR parapets on both sides.

The culvert was constructed in 1935 and has an unknown sufficiency rating. The culvert structural rating and overall structure rating are both 4 out of 9, making the culvert structurally deficient. The deck geometry is adequate for the average daily traffic of ±900 vehicles per day. The culvert is hydraulically adequate, and is not considered scour critical due to the closed bottom design.

Floodplains containing state and federal wetlands are found on both sides of the brook and both sides of the road. The only permanent watercourse and wetland impacts will be found at the outlet of the culvert.

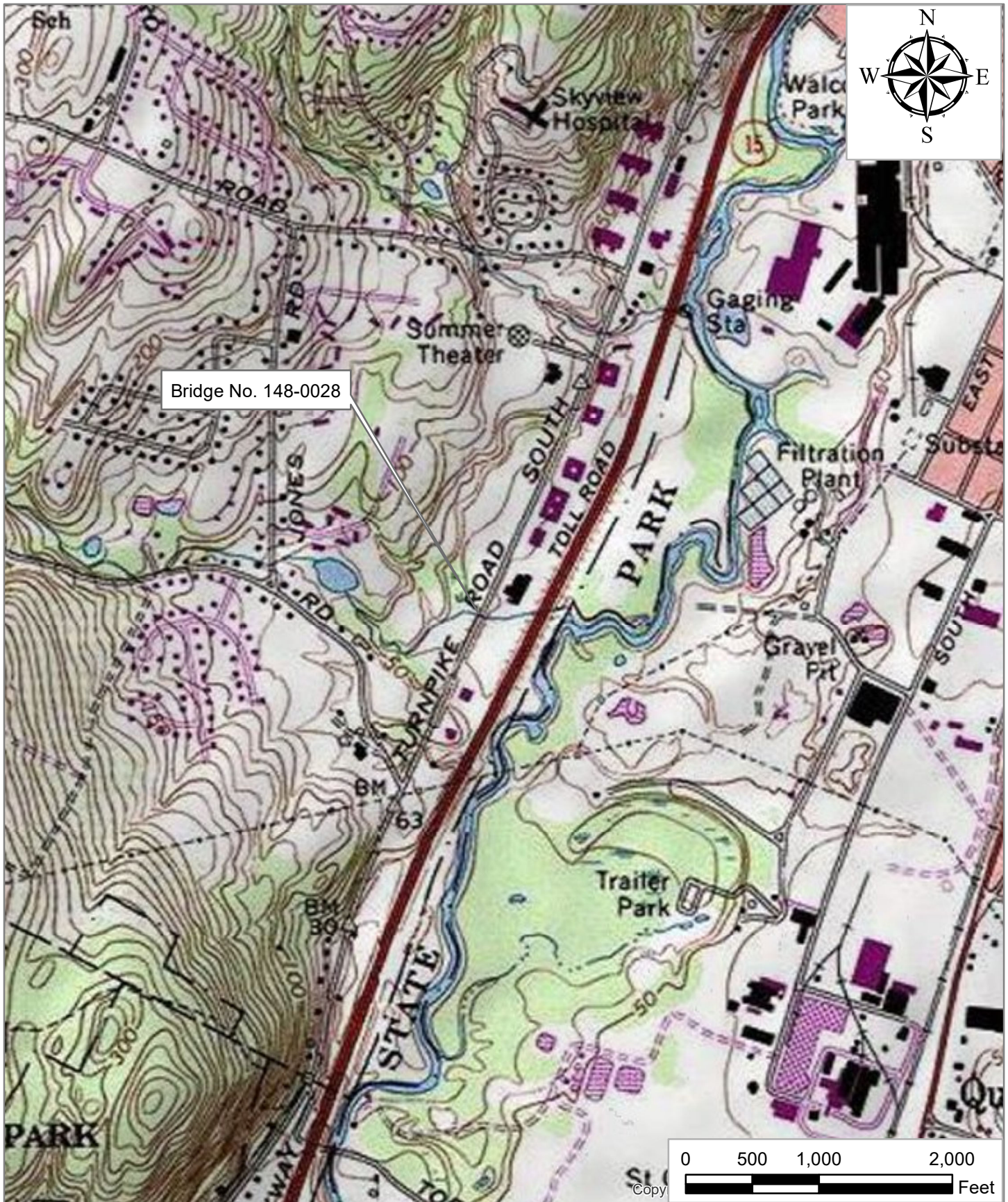
Proposed Project

It is proposed to repair the existing culvert with a centrifugally cast concrete liner approximately 1 inch thick. Since this will reduce the capacity of the culvert, the inlet geometry will be improved by adding a façade with a 45° bevel. This allows the inlet head loss coefficient to be lowered, which lowers water surface elevation levels at the outlet. The improvements showed a slight decrease in water surface elevation over the existing structure, especially for larger flood events. Channel boulders and intermediate riprap will be added to the outlet to diffuse flow and prevent further scouring.

The proposed project has been reviewed by DEEP Fisheries, and recommendations have been included in the plans. Although the culvert does not allow for fish passage, the deep hole at the outlet provides a habitat and must be kept. Downstream turbidity must not be increased either. Also, unconfined instream work must be done between June 1 and September 30, sedimentation controls must be maintained in all disturbed areas, and all disturbed areas must be restored with native plants. The Fisheries Review is included in the attachments.

The project has also been reviewed by the Natural Diversity Data Base, and no conflict with protected species is anticipated. The project does not fall in an aquifer protected area.

During construction, the contractor will be expected to maintain an effective sedimentation and erosion control plan to ensure protection of the stream environment within the project area. Temporary cofferdams will be installed to control flow during construction. The culverts will be repaired one at a time to allow flow through at least one culvert. The southerly culvert will be repaired first. Construction is expected to start in early 2021 and is estimated to take less than 3 months.



SUPV.	SRM
DESIGN	MEF
DRAWN	MEF
CHECKED	
DATE	MAY 14, 2020


WMC
 CONSULTING ENGINEERS

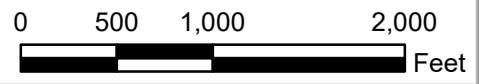
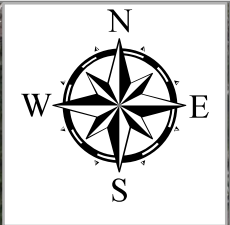
 WENGELL, McDONNELL & COSTELLO
 87 HOLMES ROAD
 NEWINGTON, CT 06111
 (860) 667-9624

PREPARED FOR:
 TOWN OF WALLINGFORD
 45 SOUTH MAIN STREET
 WALLINGFORD, CT 06492

LOCATION MAP	
SO TURNPIKE RD OVER MANSION ROAD BRK WALLINGFORD, CT	
S TURNPIKE LOCATION MAP 16032 --	SHEET 1
PROJECT FILE NAME NUMBER REV	OF 1



Bridge No. 148-0028



Source: Esri, DigitalGlobe, GeoEye, Earthstar (United States), USDA, USGS, AeroGRID, IGN, and the GIS User Community

SUPV.	SRM
DESIGN	MEF
DRAWN	MEF
CHECKED	
DATE	MAY 14, 2020


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AERIAL MAP			
SO TURNPIKE RD OVER MANSION ROAD BRK WALLINGFORD, CT			
S TURNPIKE LOCATION MAP	16032 --	SHEET	1
PROJECT	FILE NAME	NUMBER	REV
			OF 1



Photo 1: Culvert Inlet



Photo 2: Looking upstream



Photo 3: Downstream outlet



Photo 4: Looking downstream



Statewide Inland Wetlands & Watercourses Activity Reporting Form

Please complete and mail this form in accordance with the instructions on pages 2 and 3 to:

DEEP Land & Water Resources Division, Inland Wetlands Management Program, 79 Elm Street, 3rd Floor, Hartford, CT 06106

Incomplete or incomprehensible forms will be mailed back to the inland wetlands agency.

PART I: Must Be Completed By The Inland Wetlands Agency

- DATE ACTION WAS TAKEN: year: _____ month: _____
- ACTION TAKEN (see instructions, only use one code): _____
- WAS A PUBLIC HEARING HELD (check one)? yes no
- NAME OF AGENCY OFFICIAL VERIFYING AND COMPLETING THIS FORM:
(print name) _____ (signature) _____

PART II: To Be Completed By The Inland Wetlands Agency Or The Applicant

- TOWN IN WHICH THE ACTION IS OCCURRING (print name): Wallingford
does this project cross municipal boundaries (check one)? yes no
if yes, list the other town(s) in which the action is occurring (print name(s)): N/A
- LOCATION (see instructions for information): USGS quad name: Wallingford or number: 81
subregional drainage basin number: 5208
- NAME OF APPLICANT, VIOLATOR OR PETITIONER (print name): Town of Wallingford
- NAME & ADDRESS / LOCATION OF PROJECT SITE (print information): South Turnpike Road over Mansion Road Brook
briefly describe the action/project/activity (check and print information): temporary permanent description: Repair of an existing culvert
- ACTIVITY PURPOSE CODE (see instructions, only use one code): E
- ACTIVITY TYPE CODE(S) (see instructions for codes): 9, 1, 2, 12
- WETLAND / WATERCOURSE AREA ALTERED (must provide acres or linear feet):
wetlands: 0.033 acres open water body: 0.132 acres stream: 120 linear feet
- UPLAND AREA ALTERED (must provide acres): _____ acres
- AREA OF WETLANDS / WATERCOURSES RESTORED, ENHANCED OR CREATED (must provide acres): 0.106 acres

DATE RECEIVED:

PART III: To Be Completed By The DEEP

DATE RETURNED TO DEEP:

FORM COMPLETED: YES NO

FORM CORRECTED / COMPLETED: YES NO

NOTES

cb1 tf=29.07
 FL=26.5±
 cb2 tf=29.24
 FL=26.8±

Federal wetlands #101-#111
 Connecticut wetlands #1-#23

WETLANDS FLAGGED BY SOIL SCIENCE SERVICE AND ENVIRONMENTAL SERVICES, ROCKY HILL CT AND FIELD LOCATED BY WILLIAM HEARN, L.S.

HORIZONTAL DATUM PER GPS ON 11-2-2016
 BULK OF FIELD SURVEY PERFORMED November 2016

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON. THIS SURVEY AND MAP HAS BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-300B-1 THROUGH 20-300B-20 OF THE REGULATIONS OF CONNECTICUT'S DEPT. OF CONSUMER PROTECTION "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996. PROPERTY BOUNDARY DATA BASED ON A DEPENDENT RESURVEY CONFORMING TO HORIZONTAL ACCURACY CLASS D.

THE TYPE OF SURVEY PERFORMED AND THE MAPPED FEATURES DEPICTED HEREON ARE IN ACCORDANCE WITH THE REQUIREMENTS OF A PROPERTY/BOUNDARY SURVEY AND A TOPOGRAPHIC SURVEY.

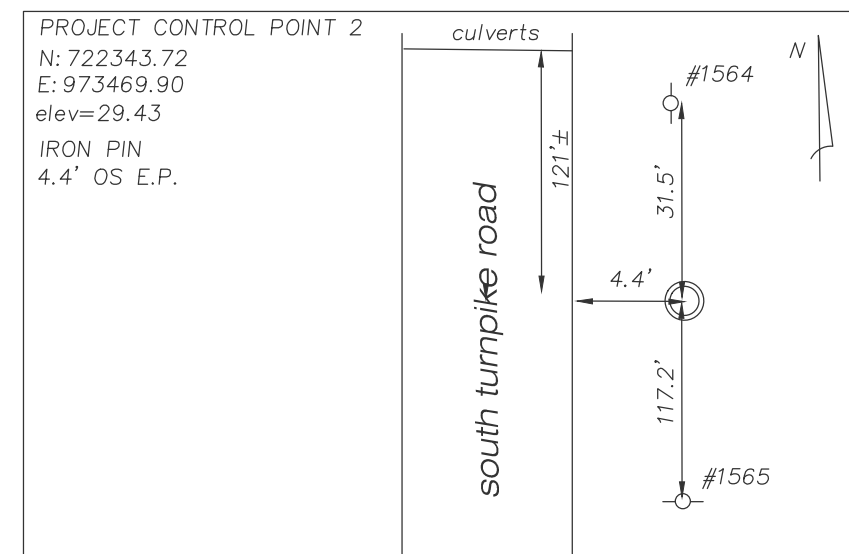
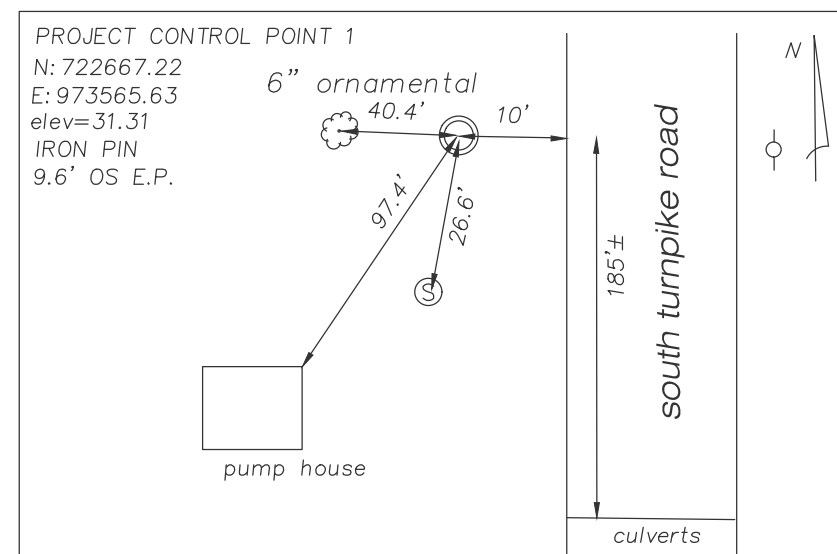
THE HORIZONTAL BASELINE CONFORMS TO A CLASS A-2 ACCURACY.
 THE TOPOGRAPHIC SURVEY CONFORMS TO A CLASS T-2 ACCURACY

MAP REFERENCE

Sewer, water maps from town public utilities department.

"Property survey prepared for Verna Developers parcel G-2, 125 South Turnpike Road, Wallingford, Connecticut" 1"=100' Aug 3 2001, Milone and MacBroom.

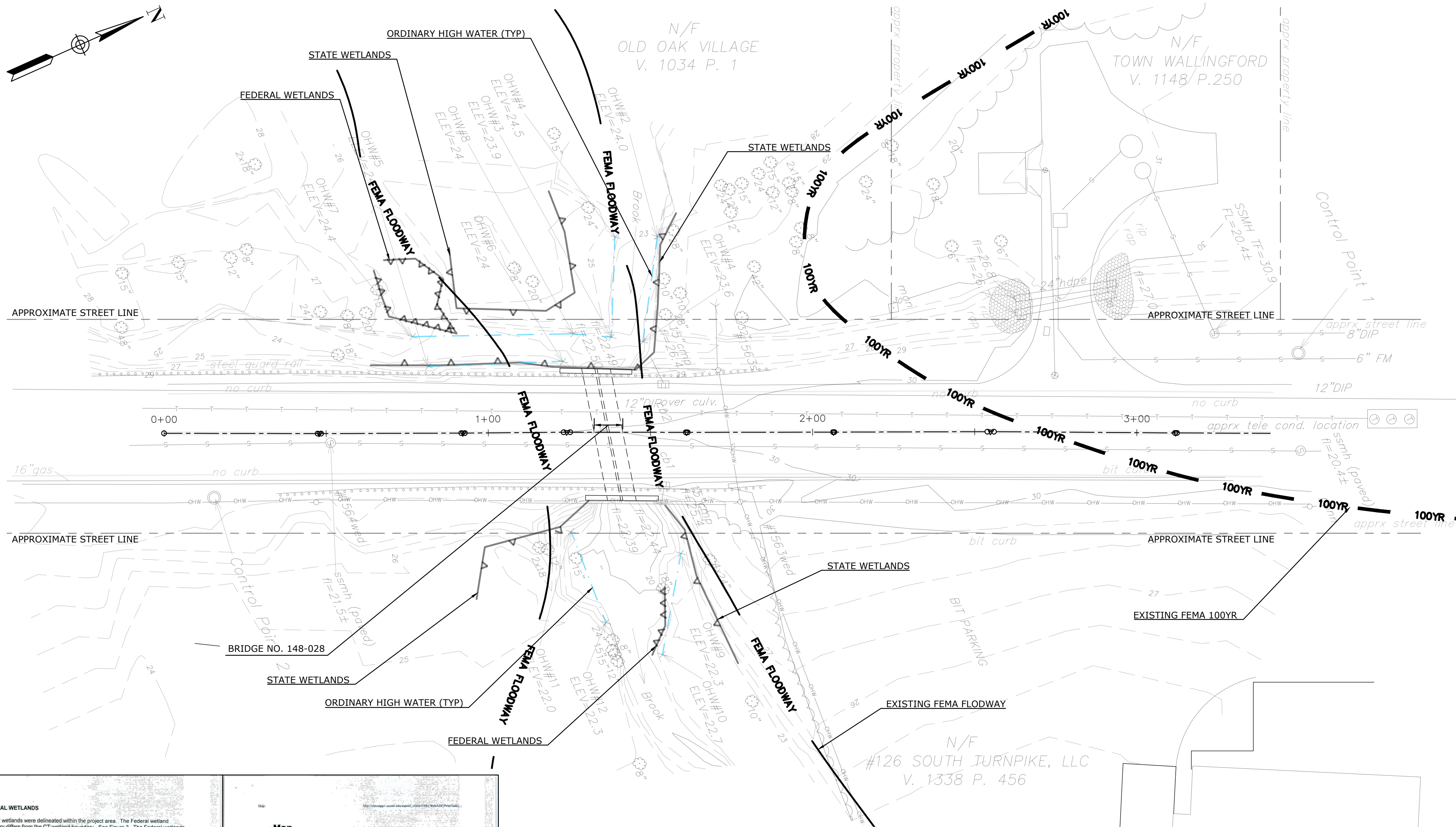
"Site Plan K&H Containers, Inc. 126 South Turnpike Road Wallingford CT" DTC Corp 1"=20' 9-10-92.



HORIZONTAL DATUM IS NAD 83/87
 VERTICAL DATUM IS 88 NAVD.

HORIZONTAL DATUM IS NAD 83/87
 VERTICAL DATUM IS 88 NAVD.

SURVEY TIES



CONNECTICUT INLAND WETLANDS & SOIL TYPES

CT inland wetlands were delineated within the project area approximately 50 feet up and down stream of the bridge along the unnamed brook and approximately 50 feet along South Turnpike Road north and south of the bridge. See Figure 2.

The wetland soils within the project area include:

- 102 Posttack fine sandy loam (Fluvisol Dystric) - This is a deep, moderately well drained, friable, coarse-bumpy textured soil that formed in alluvial sediments principally derived from schist, granite and gneiss. Posttack soils occur in nearly level floodplains and along ditches and channels which are subject to frequent flooding. The Posttack soil was formerly mapped in Connecticut as the Posttack fine sandy loam.
- 103 Riparian fine sandy loam (Aeric Fluvisol) - This is a deep, poorly drained, friable, coarse-bumpy textured soil that formed in alluvial sediments principally derived from schist, granite and gneiss. Riparian soils occur in nearly level floodplains and along rivers and streams which are subject to frequent flooding.
- 109 Fluvisol (Fluvisol) - This soil map unit consists of well drained to poorly drained, heavy to very heavy textured soils that formed in alluvial sediments principally derived from schist, granite and gneiss. Fluvisol soils occur in nearly level floodplains and along rivers and streams which are subject to frequent flooding.

The non-wetland soils within the project area include:

- 37 Mochester gravelly sandy loam (Typic Ustorthent) - This is a deep, excessively drained, medium-colored, gravelly sandy textured soil that developed over sandy and gravelly, glacial outwash derived from sandstone, shale and siltstone. Mochester soils occur in valleys, swales, gullies, terraces, kames and eskers landforms.
- 306 Ustorthent (Ustorthent) - This soil map unit consists of extensive areas where soils have been developed from level development areas with large areas of reserve surface associated with sheets, parking lots, buildings and other structures.
- 308 Ustorthent (Ustorthent) - This is a well drained to moderately well drained soil area that has had two or more feet of the original soil surface altered by filling, excavation or grading activities. Ustorthent, smoothed soils commonly occur on leveled land and fill landforms.

FEDERAL WETLANDS

Federal wetlands were delineated within the project area. The Federal wetland boundary differs from the CT wetland boundary. See Figure 3. The Federal wetlands consist of a complex of shallow mineral, shrub swamp, and forested swamp communities along the unnamed brook. One transect with two Federal wetland data plots was established (Data Plots 110.1V and 110.1J). The approximate location of the transect and data plots is shown in Figure 3. The information gathered from each data plot was recorded on Federal Wetland Data Sheets. These sheets are included with this report.

Figure No. 2 - Sketch of CT Wetland Locations (approximate)

Figure No. 3 - Sketch of Federal Wetland Locations (approximate)

EXISTING CONDITIONS PLAN

SCALE: 1" = 20'-0"

INLAND WETLANDS & SOIL TYPES

EXISTING UPSTREAM ELEVATION VIEW

SCALE: 1" = 10'-0"

EXISTING DOWNSTREAM ELEVATION VIEW

SCALE: 1" = 10'-0"

SUPV.	J.A.C.
DESIGN	K.O.E.
DRAWN	N.S.
CHECKED	K.O.E.
DATE	12/15/2020

WMC
 CONSULTING ENGINEERS

WENGELL, McDONNELL & COSTELLO
 87 HOLMES ROAD
 NEWINGTON, CT 06111
 (860) 667-9624

PREPARED FOR

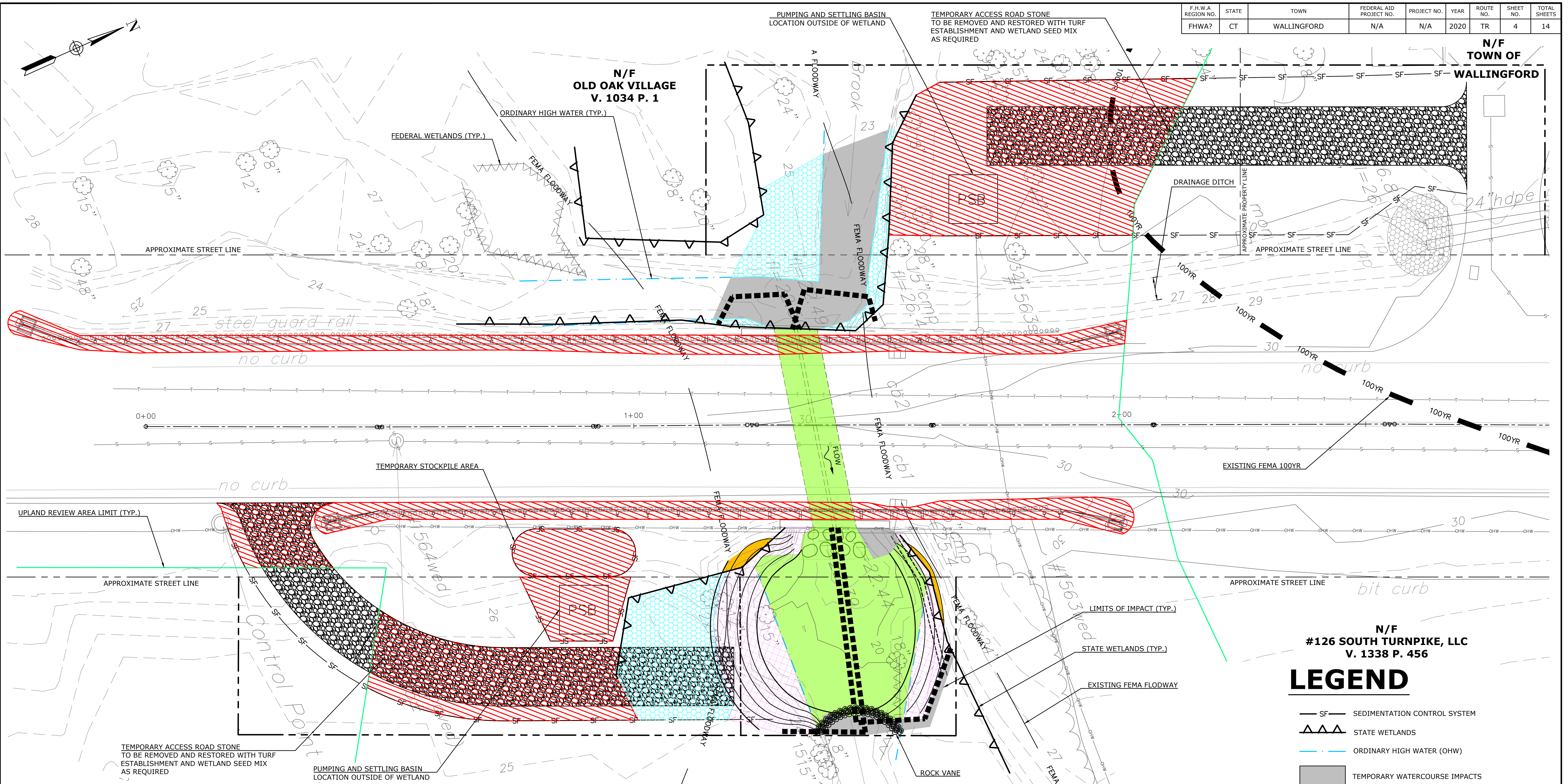
TOWN OF WALLINGFORD
 45 SOUTH MAIN STREET
 WALLINGFORD, CT 06492

**REHABILITATION OF SOUTH TURNPIKE ROAD
 CULVERT OVER MANSION BROOK
 EXISTING PLAN AND ELEVATIONS**

NO.	DATE	DESCRIPTION
REVISIONS		

D - S. TURNPIKE ROAD	16032.10	SHEET 3
SIZE PROJECT	FILE NAME	NUMBER REV. OF

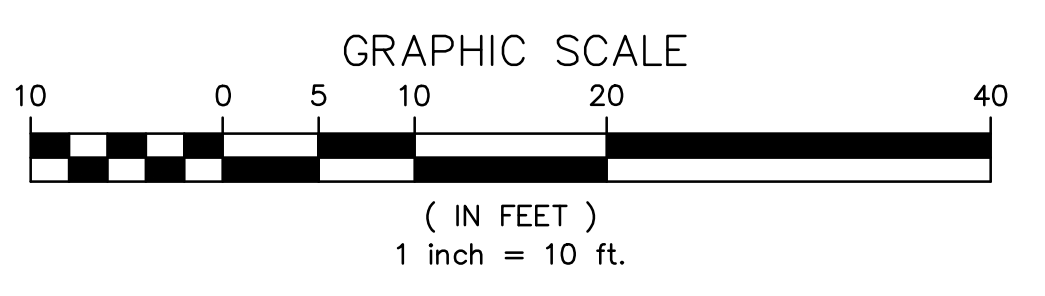
N/F
TOWN OF
WALLINGFORD



PROPOSED ACTIVITY PLAN WITH TEMPORARY AND PERMANENT WETLANDS AND WATERCOURSE IMPACTS

SCALE: 1" = 10'-0"

	WETLAND IMPACTS	WATERCOURSE IMPACTS	TOTAL	UPLAND REVIEW AREA
PERMANENT IMPACTS	630 S.F. (0.0144 AC.)	1348 S.F. (0.0309 AC.)	1978 S.F. (0.0453 AC.)	38 S.F. (0.00087 AC.)
TEMPORARY IMPACTS	975 S.F. (0.0224 AC.)	724 S.F. (0.0166 AC.)	1699 S.F. (0.0390 AC.)	4643 S.F. (0.10659 AC.)
TOTAL IMPACTS	1605 S.F. (0.0368 AC.)	2072 S.F. (0.0475 AC.)	3677 S.F. (0.0843 AC.)	4681 S.F. (0.10746 AC.)



N/F
#126 SOUTH TURNPIKE, LLC
V. 1338 P. 456

LEGEND

- SEDIMENTATION CONTROL SYSTEM
- STATE WETLANDS
- ORDINARY HIGH WATER (OHW)
- TEMPORARY WATERCOURSE IMPACTS
- PERMANENT WATERCOURSE IMPACTS
- TEMPORARY WETLAND IMPACTS
- PERMANENT WETLAND IMPACTS
- TEMPORARY UPLAND IMPACTS
- PERMANENT UPLAND IMPACTS

NOTES:
ANY "UNCONFINED" INSTREAM WORK ASSOCIATED WITH THE PROJECT SHOULD BE RESTRICTED TO THE PERIOD FROM JUNE 1 TO SEPTEMBER 30, INCLUSIVE.

SUPV.	J.A.C.
DESIGN	K.O.E.
DRAWN	N.S.
CHECKED	K.O.E.
DATE	12/15/2020

FD SUBMITTAL



WENDELL, McDONNELL & COSTELLO
87 HOLMES ROAD
NEWINGTON, CT 06111
(860) 667-9624

PREPARED FOR
TOWN OF WALLINGFORD
45 SOUTH MAIN STREET
WALLINGFORD, CT 06492

REHABILITATION OF SOUTH TURNPIKE ROAD
CULVERT OVER MANSION BROOK
IMPACT PLAN

D - S. TURNPIKE ROAD - S.F.D. - 16032.10 -	SHEET	4
SIZE PROJECT FILE NAME NUMBER REV. OF		14

SOIL SCIENCE AND ENVIRONMENTAL SERVICES, INC.

Wetland Delineations Ecological Studies Site Assessments Project Planning Soil Testing

September 19, 2016

RECEIVED

SEP 26 2016

ATTN: Seb Abdullah
WMC Consulting Engineers
87 Holmes Road
Newington, CT 06111

**WENGELL, McDONNELL & COSTELLO
CONSULTING ENGINEERS**

**Re: Wetlands Delineation Report
South Turnpike Road Bridge No. 148-028 Over Unnamed Brook,
Wallingford, CT
SS&ES Job No. 2016-73-CT-WAL**

Dear Mr. Abdullah:

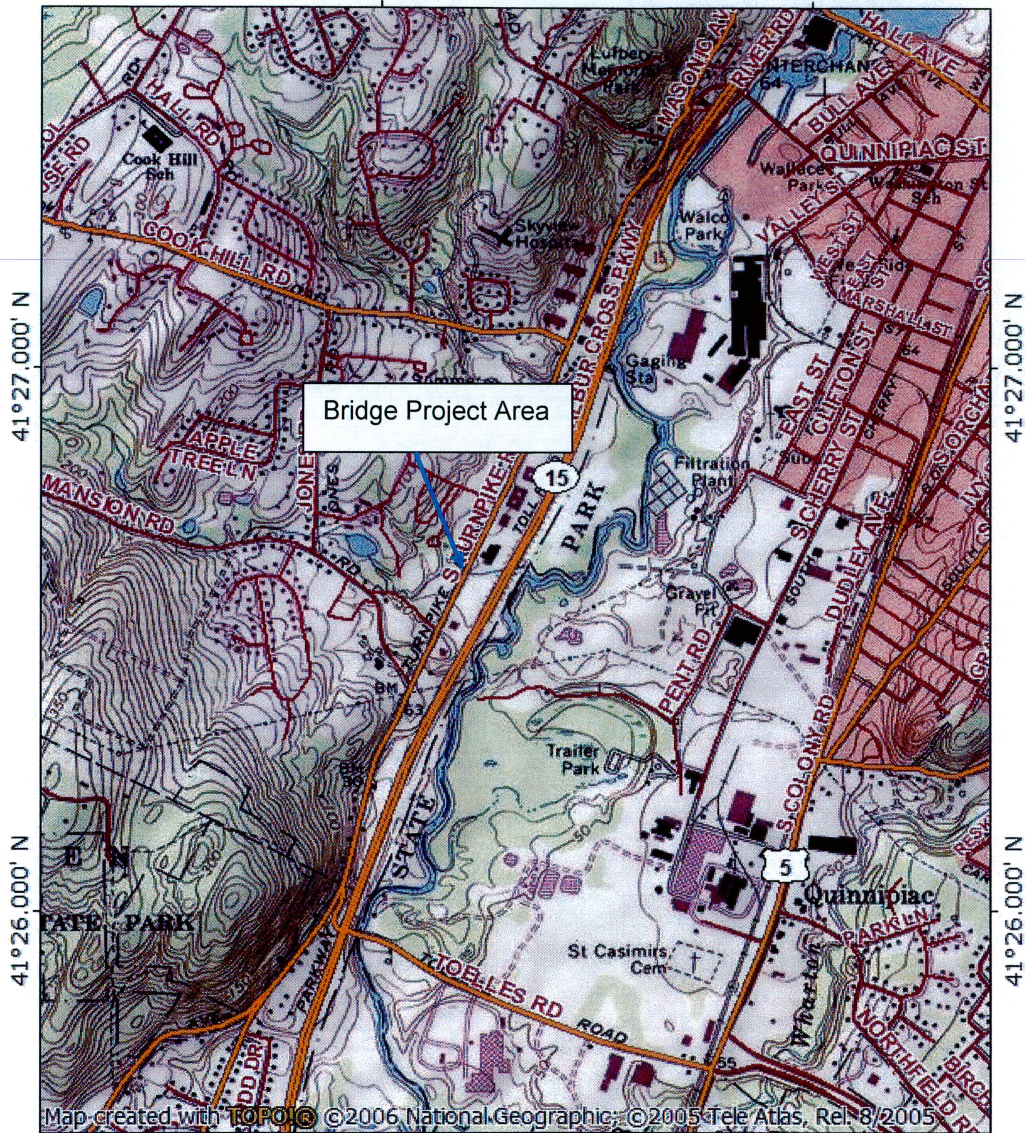
In accordance with your request, Scott D. Stevens, Soil Scientist and Jennifer L. Beno, Biologist, with Soil Science And Environmental Services, Inc. (SSES) inspected the South Turnpike Road bridge no. 148-028 over an unnamed brook project area on September 14, 2016. The purpose of the inspection was to identify regulated wetlands and waters and ordinary high water in the vicinity of the bridge rehabilitation project area. The project area is situated in the southwestern portion of Wallingford (Figure 1).

Regulated waters and wetlands present in and near the project area include an unnamed brook and associated CT inland wetlands and Federal wetlands. Definitions of waters and wetlands that are regulated by the State of Connecticut and Federal Government are presented in Appendix I. Rivers and streams are regulated by the State of CT as watercourses, according to the Inland Wetlands and Watercourses Act. Rivers and streams are regulated by the Federal Government as "Waters of the U.S." Wetlands are defined differently by the State of CT and the Federal Government. CT Inland Wetlands are defined by soil types that are either poorly drained, very poorly drained, floodplain or alluvial. Federal Wetlands consist of areas that are inundated or saturated by ground or surface water at a frequency and duration sufficient to support, and that under normal conditions do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

TOPO! map printed on 09/16/16 from "Untitled.tpo"

72°51.000' W

WGS84 72°50.000' W



72°51.000' W

WGS84 72°50.000' W

MN ↑ T
13½°
09/16/16

**SOIL SCIENCE and
ENVIRONMENTAL
SERVICES, INC.**

U.S.G.S. Topography Map
South Turnpike Road bridge over
Unnamed Brook, Wallingford, CT

Date 9/16/16

Figure No. 1

A spade and auger were used to dig test holes for soils identification during the investigation. The vegetation communities and any physical indicators of hydrology in the project area were also examined. The limits of the CT inland wetlands and the Federal wetlands were determined to differ within the limits of the project area. The CT inland wetland boundaries were delineated with consecutively numbered pink survey tapes, while Federal wetland boundaries were delineated with consecutively numbered orange survey tapes. Sketch maps of the delineated wetland boundaries are included as Figures 2 and 3.

CONNECTICUT INLAND WETLANDS & SOIL TYPES

CT inland wetlands were delineated within the project area approximately 50 feet up- and down-stream of the bridge along the unnamed brook and approximately 50 feet along South Turnpike Road north and south of the bridge. See Figure 2.

The wetland soils within the project area include:

102 Pootatuck fine sandy loam (Fluvaqentic Dystrudepts) – This is a deep, moderately well drained, friable, coarse-loamy textured soil that formed in alluvial sediments principally derived from schist, gneiss and granite. Pootatuck soils occur in nearly level floodplains and along rivers and streams which are subject to frequent flooding. The Pootatuck soil was formerly mapped in Connecticut as the Podunk fine sandy loam.

103 Rippowam fine sandy loam (Aeric Fluvaquents) – This is a deep, poorly drained, friable, coarse-loamy textured soil that formed in alluvial sediments principally derived from schist, gneiss and granite. Rippowam soils occur in nearly level floodplains and along rivers and streams which are subject to frequent flooding.

109 Fluvaquents-Udifluvents This soil map unit consists of well drained to very poorly drained, nearly level soils that formed in very recent alluvium deposited by rivers and streams. The soils are occasionally to frequently flooded, which often results in stream scouring, lateral erosion and shifting of soil from place to place. Soil characteristics, such as texture and stoniness, are usually highly variable within short distances.

The non-wetland soils within the project area include:

37 Manchester gravelly sandy loam (Typic Udorthents) – This is a deep, excessively drained, reddish-colored, gravelly sandy textured soil that developed over sandy and gravelly, glacial outwash derived from sandstone, shale and basalt. Manchester soils occur in valleys, outwash plains, terraces, kames and eskers landforms.

306 Udorthents-Urban land complex This map unit consists of extensive areas where soils have been disturbed from land development along with large areas of impervious surfaces associated with streets, parking lots, buildings and other structures.

308 Udorthents, smoothed This is a well drained to moderately well drained soil area that has had two or more feet of the original soil surface altered by filling, excavation or grading activities. Udorthents, smoothed soils commonly occur on leveled land and fill landforms.

Map

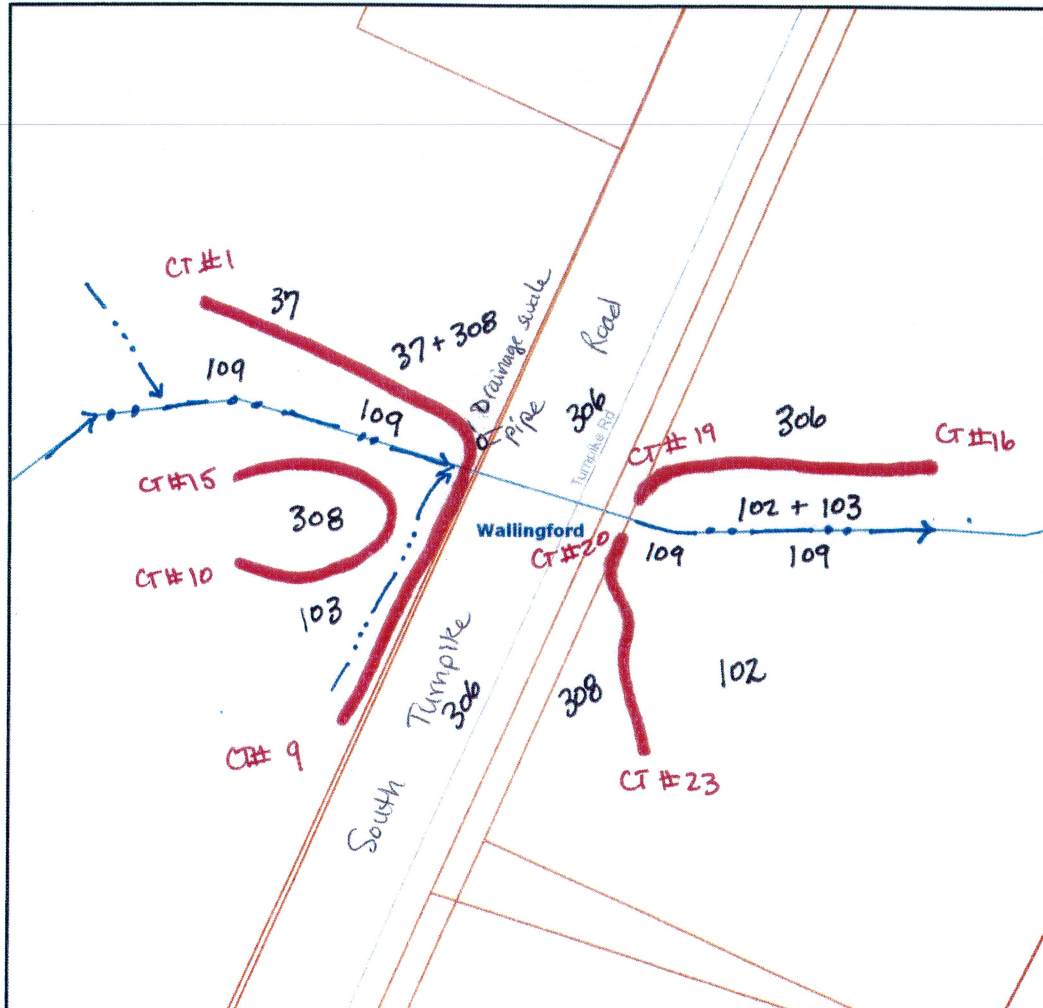


Figure No. 2 – Sketch of CT Wetland Locations (approximate)

FEDERAL WETLANDS

Federal wetlands were delineated within the project area. The Federal wetland boundary differs from the CT wetland boundary. See Figure 3. The Federal wetlands consist of a complex of shallow marsh, shrub swamp, and forested swamp communities along the unnamed brook. One transect with two Federal wetland data plots was established (Data Plots 110-W and 110-U). The approximate location of the transect and data plots is shown in Figure 3. The information gathered from each data plot was recorded on Federal Wetland Data Sheets. These sheets are included with this report.



Federal Data Transect 110-W and 110-U (9/14/16).

Map

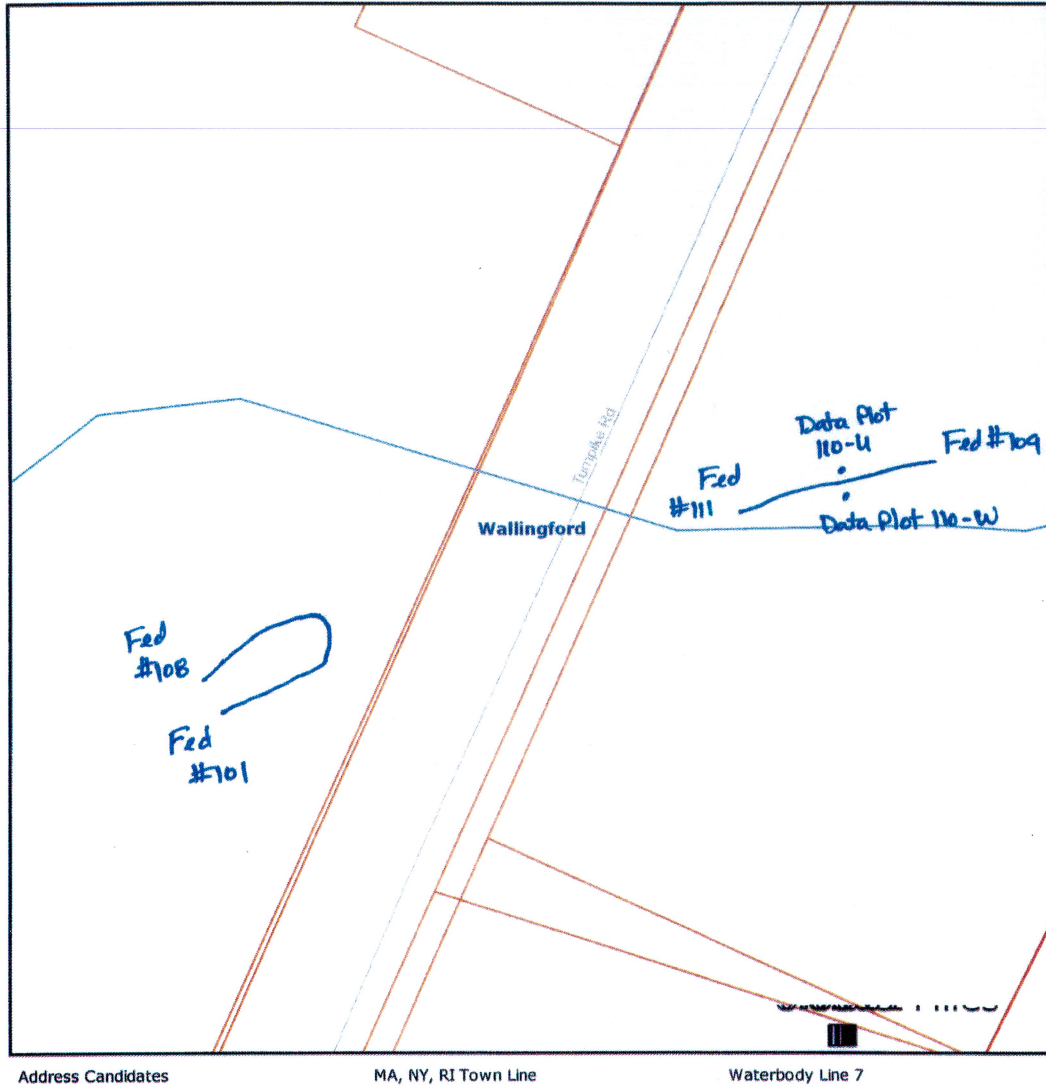


Figure No. 3 – Sketch of Federal Wetland Locations (approximate)

ORDINARY HIGH WATER MARK IDENTIFICATION

The lateral limits of U.S. Army Corps jurisdiction for non-tidal rivers, streams and water bodies extends to the ordinary high water mark (OHW), in the absence of adjacent wetlands. The Corps defines the term "ordinary high water mark" as the following: "means the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas." 33 CFR 328.3(e). The Corps recommends that whenever possible the investigator should consider the former indicators along with a number of others, that include: wracking; vegetation matted down, bent or absent; sediment sorting; leaf litter disturbed or washed away; scour; deposition; multiple observed flow events; beds and banks; water staining; and change in plant community.

The above-listed indicators were utilized during the September 14, 2016 investigation to determine the ordinary high water (OHW) along the unnamed brook and intermittent watercourse channels. Orange survey tapes were tied onto branches and plant stems at several locations upstream and downstream of the bridge along the river banks to identify the OHW elevation. The knot of the tied survey tape marks the OHW elevation. A sketch showing locations of the OHW boundary survey tapes is presented in Figure 4.

Respectfully submitted,

SOIL SCIENCE AND ENVIRONMENTAL SERVICES, INC.



Scott D. Stevens
Registered Professional Soil Scientist



Jennifer L. Beno
Biologist/Wetland Scientist

Map

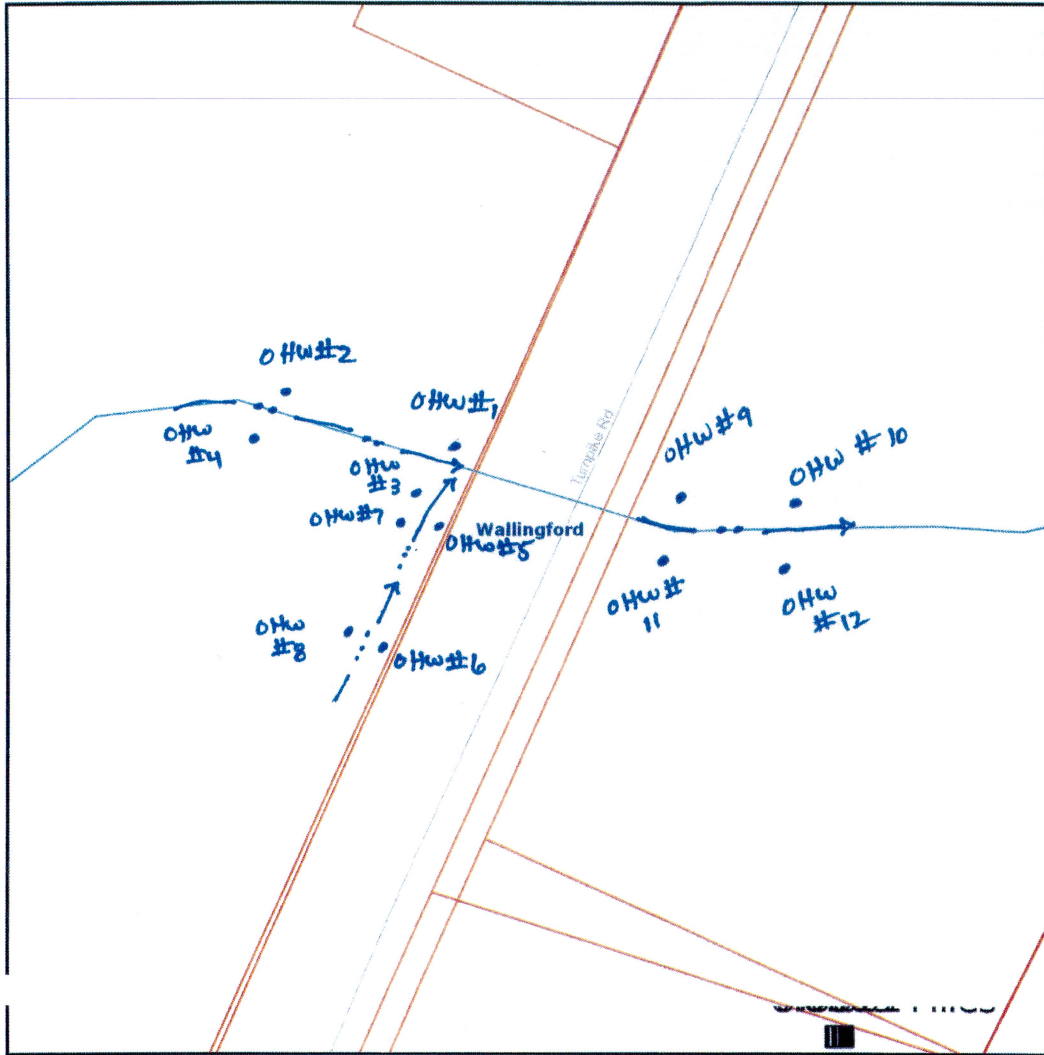


Figure No. 4 – Sketch of Ordinary High Water Locations (approximate)

APPENDIX I

REGULATED WATERS AND WETLANDS BY THE STATE OF CT AND FEDERAL GOVERNMENT

I. State of Connecticut

Wetlands and watercourses are regulated in the State of Connecticut by the Connecticut General Statutes, Chapter 440, section 22a-28 to 22a-45. These Statutes are divided into the Inland Wetlands and Watercourses Act (sections 22a-36 to 22a-45) and the Tidal Wetlands Act (sections 22a-28 to 22a-35). Definitions of the resources are provided in the statutes.

Inland Wetlands, "means land, including submerged land, not regulated pursuant to sections 22a-28 to 22a-35, inclusive, which consist of any of the soil types designated as poorly drained, very poorly drained, alluvial, and floodplain by the National Cooperative Soils Survey, as may be amended from time to time, of the Natural Resources Conservation Service of the United States Department of Agriculture" section 22a-38(15).

Watercourses "means rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs and all other bodies of water, natural or artificial, vernal or intermittent, public or private which are contained within, flow through or border upon this state or any portion thereof, not regulated pursuant to sections 22a-28 to 22a-35, inclusive. Intermittent watercourses shall be delineated by a defined permanent channel and bank and the occurrence of two or more of the following characteristics: (A) Evidence of scour or deposits of alluvium or detritus, (B) the presence of standing or flowing water for a duration longer than a particular storm incident, and (C) the presence of hydrophytic vegetation" section 22a-38(16).

Tidal Wetlands are defined as "those areas which border on or lie beneath tidal waters, such as, but not limited to banks, bogs, salt marsh, swamps, meadows, flats, or other low lands subject to tidal action, including those areas now or formerly connected to tidal waters, and whose surface is at or below an elevation of one foot above local extreme high water; and upon which may grow or be capable of growing some but not necessarily all, of the following:" (includes plant list) section 22a-29(2).

II. Federal Government

The Federal Government regulates waters and wetlands in accordance with the Code of Federal Regulations, Title 33, Parts 320 through 330 (33 CFR parts 320 to 330). Regulated areas include navigable waters; interstate waters; tributaries to navigable and interstate waters, including adjacent wetlands; and certain other waters and wetlands of the U.S. The United States Army Corps of Engineers has been authorized to regulate these waters and wetlands by Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899. Definitions of wetlands and watercourses that are regulated by the Corps are found in Parts 328 and 329 of the Code.

Waters of the United States as defined in Part 328 means, " (1) all waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; (2) all interstate waters including interstate wetlands; (3) all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce; (4) all impoundments of waters otherwise defined as waters of the U.S. under the definition; (5) tributaries of waters identified in 1 thru 4; (6) territorial seas; and (7) wetlands adjacent to waters that were identified in 1 thru 6. Waters of the United States do not include prior converted cropland" (33 CFR Part 328.3 (a)).

Wetlands are a subset of waters of the United States and are defined as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (33CFR Part 328.3(b)). The 1987 U.S. Corps of Engineers Delineation Manual and the Draft Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (dated July 2008) provide information and procedures for conducting Federal Wetland delineation. The methodology established by the Federal Government uses a three parameter approach utilizing hydrologic indicators, hydrophytic vegetation and hydric soils for identifying Federal Wetlands.

Navigable waters of the United States as defined in Part 329 mean "those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce" (33CFR Part 329.2).

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: South Turnpike Rd Bridge #148-028 City/County: Wallingford/New Haven Sampling Date: Sept. 14, 2016
 Applicant/Owner: WMC Consulting Engineers / Town of Wallingford State: CT Sampling Point: 110-W
 Investigator(s): Scott Stevens + John Beno - SSES Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): Concave Slope (%): _____
 Subregion (LRR or MLRA): LRR Lat: ± 41° 26' 37.73" N Long: ± 72° 50' 47.35" W Datum: _____
 Soil Map Unit Name: Rippowam fine sandy loam NWI classification: PEM2E + PSS2E + PFC1E
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ 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 <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> ___ Surface Water (A1) ___ Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) ___ Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) ___ Marl Deposits (B15) ___ Water Marks (B1) ___ Hydrogen Sulfide Odor (C1) ___ Sediment Deposits (B2) ___ Oxidized Rhizospheres on Living Roots (C3) ___ Drift Deposits (B3) ___ Presence of Reduced Iron (C4) ___ Algal Mat or Crust (B4) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Iron Deposits (B5) ___ Thin Muck Surface (C7) ___ Inundation Visible on Aerial Imagery (B7) ___ Other (Explain in Remarks) ___ Sparsely Vegetated Concave Surface (B8)	<p><u>Secondary Indicators (minimum of two required)</u></p> ___ 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)
<p>Field Observations:</p> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>± 3"</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>± 0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION – Use scientific names of plants.

Sampling Point: 110-W

Tree Stratum (Plot size: <u>±30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Acer rubrum</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (AB)
2. <u>Platanus occidentalis</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Acer saccharum</u>	<u>20</u>	<u>N</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>80%</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>±15'</u>)				
1. <u>Alnus serrulata</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Cornus amomum</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Lindera benzoin</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>30%</u> = Total Cover				
Herb Stratum (Plot size: <u>±5'</u>)				
1. <u>Impatiens capensis</u>	<u>40</u>	<u>Y</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Filea Arnica</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Epilobium hirsutum</u>	<u>10</u>	<u>N</u>	<u>OBL</u>	
4. <u>Glyceria striata</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>85%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>±30'</u>)				
1. _____	_____	_____	_____	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.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>0</u> = Total Cover				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: 110-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	5YR 4/3						loamy sand sediment layer	
7-24	5YR 3/1						sandy loam to loamy sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B)	<input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)	<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)	<input type="checkbox"/> Dark Surface (S7) (LRR K, L)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)	<input type="checkbox"/> Red Parent Material (F21)
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			
<input type="checkbox"/> Sandy Redox (S5)			
<input type="checkbox"/> Stripped Matrix (S6)			
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)			

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

SOIL

Sampling Point: 110-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-24	5YR 4/4 + 5YR 4/3						Alternating sediment layers of loamy fine sand to fine sand	
24-30	5YR 4/3 + 5YR 4/2						medium sands	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B)	<input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)	<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Dark Surface (S7) (LRR K, L)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		<input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)	
<input type="checkbox"/> Sandy Redox (S5)		<input type="checkbox"/> Red Parent Material (F21)	
<input type="checkbox"/> Stripped Matrix (S6)		<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)		<input type="checkbox"/> Other (Explain in Remarks)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.




Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>
---	---

Remarks:

Natural Diversity Data Base Areas

WALLINGFORD, CT

June 2020

-  State and Federal Listed Species
-  Critical Habitat
-  Town Boundary

NOTE: This map shows general locations of State and Federal Listed Species and Critical Habitats. Information on listed species is collected and compiled by the Natural Diversity Data Base (NDDDB) from a variety of data sources. Exact locations of species have been buffered to produce the generalized locations.

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 hatched 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 NDDDB along with the required maps and information. More detailed instructions are provided with the request form on our website.

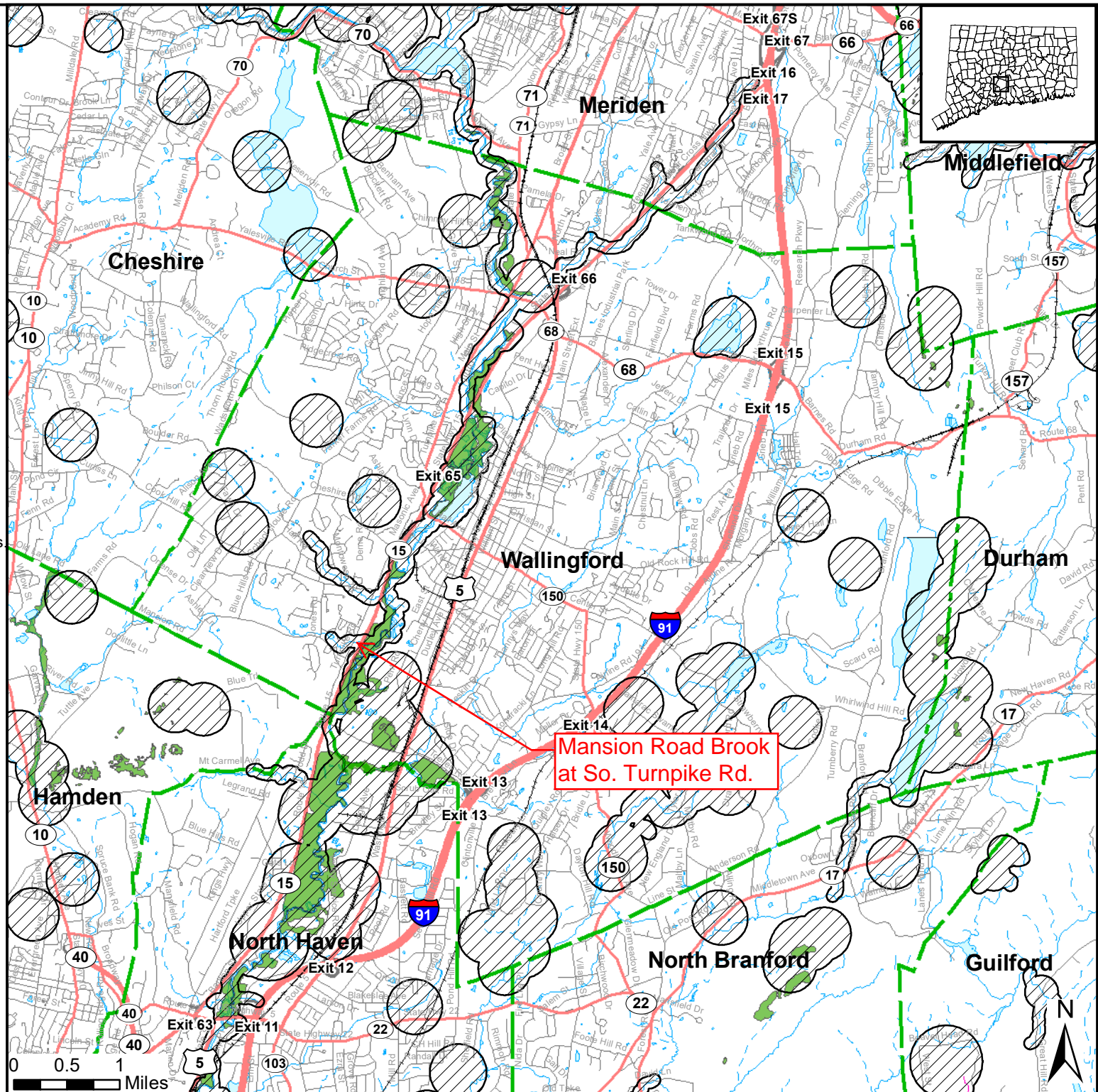
www.ct.gov/deep/nddbrequest

Use the CTECO Interactive Map Viewers at <http://cteco.uconn.edu> to more precisely search for and locate a site and to view aerial imagery with NDDDB Areas.

QUESTIONS: Department of Energy and Environmental Protection (DEEP)
79 Elm St, Hartford, CT 06106
email: deep.nddbrequest@ct.gov
Phone: (860) 424-3011



Connecticut Department of Energy & Environmental Protection
Bureau of Natural Resources
Wildlife Division



October 16, 2020

Keegan Elder
WMC Consulting Engineers
87 Holmes Rd
Newington CT 06111
kelder@wmcengineers.com

Project: Culvert rehabilitation, South Turnpike Road Bridge No. 148-0028 carrying Mansion Road Brook in Wallingford, CT
NDDDB Determination No.: 202012274

Dear Keegan Elder,

I have reviewed Natural Diversity Database (NDDDB) maps and files regarding the area of work provided for the proposed culvert rehabilitation of South Turnpike Road Bridge carrying Mansion Road Brook in Wallingford, Connecticut. I do not anticipate negative impacts to State-listed species (RCSA Sec. 26-306) resulting from your proposed activity at the site based upon the information contained within the NDDDB. The result of this review does not preclude the possibility that listed species may be encountered on site and that additional action may be necessary to remain in compliance with certain state permits. This determination is good for two years. Please re-submit a new NDDDB Request for Review if the scope of work changes or if work has not begun on this project by October 14, 2022.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey, cooperating units of DEEP, landowners, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the NDDDB should not be substitutes for on-site surveys necessary for a thorough environmental impact assessment. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the database as it becomes available.

Please contact me if you have further questions at (860) 424-3378, or karen.zyko@ct.gov . Thank you for consulting the Natural Diversity Database.





Sincerely,



Karen Zyko
Environmental Analyst

AQUIFER PROTECTION AREAS

Wallingford, CT
August 26, 2019

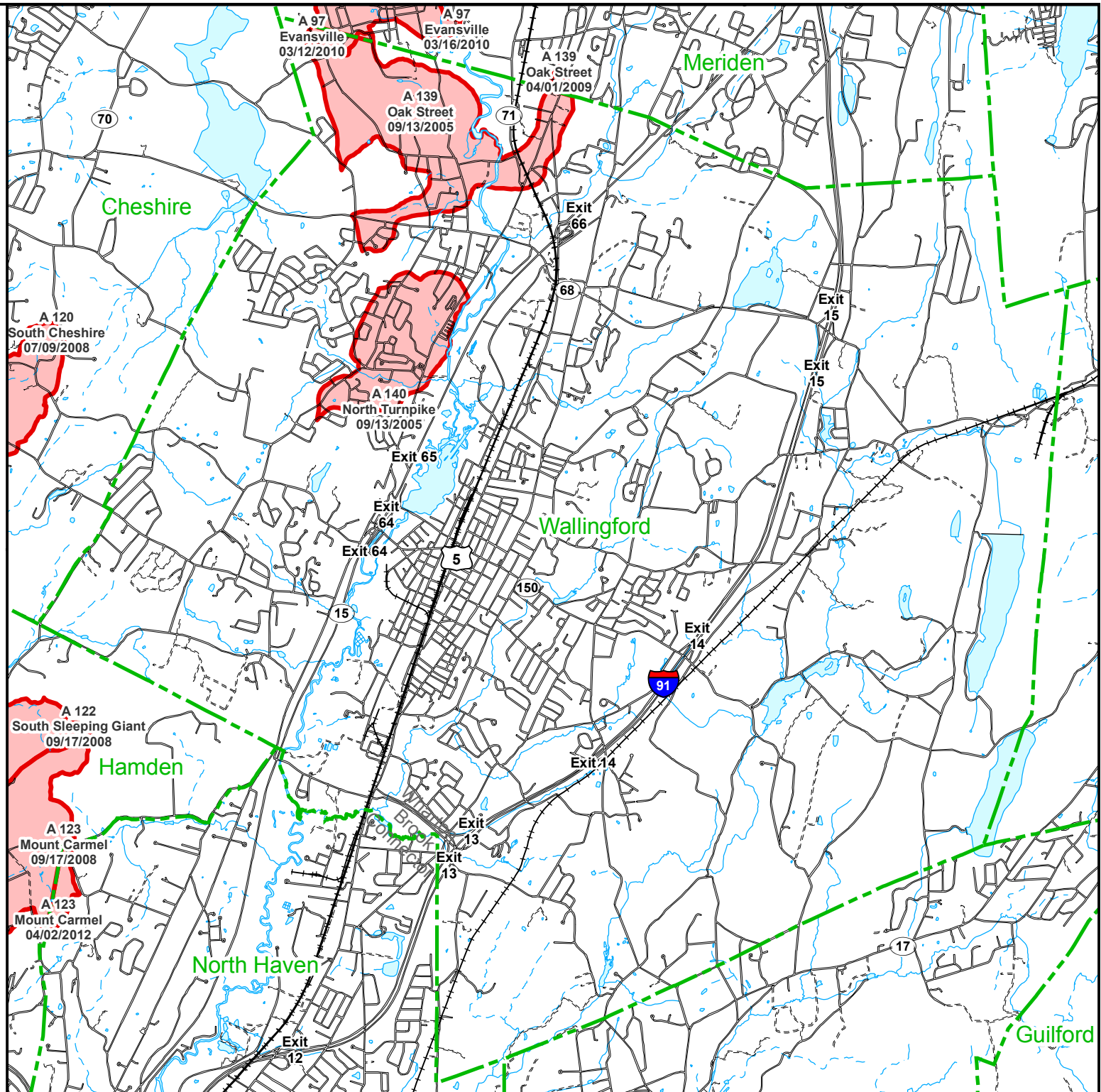
-  Level A APA (Final Adopted)
-  Level A APA (Final)
-  Level B APA (Preliminary)
-  Town Boundary

NOTE: The Aquifer Protection Areas were delineated through Connecticut's Level A and Level B Mapping Processes. Aquifer Protection Areas are delineated for active public water supply wells in stratified drift that serve more than 1000 people, in accordance with Sections 22a-354c and 22a-354z of the Connecticut General Statutes. Level B Mapping delineates a preliminary aquifer protection area, providing an estimate of the land area from which the well draws its water. Level A Mapping delineates the final Aquifer Protection Area, which becomes the regulatory boundary for land use controls designed to protect the well from contamination. As Level A Mapping is completed for each well field and approved by DEEP, it replaces the Level B Mapping. Final Adopted Level A Areas are those where towns have land use regulations for them. Massachusetts and Rhode Island Wellhead Protection Areas may be shown for informational purposes.

QUESTIONS:
Bureau of Water Protection and Land Reuse
Planning and Standards Division
Phone: (860) 424-3020
www.ct.gov/deep/aquiferprotection



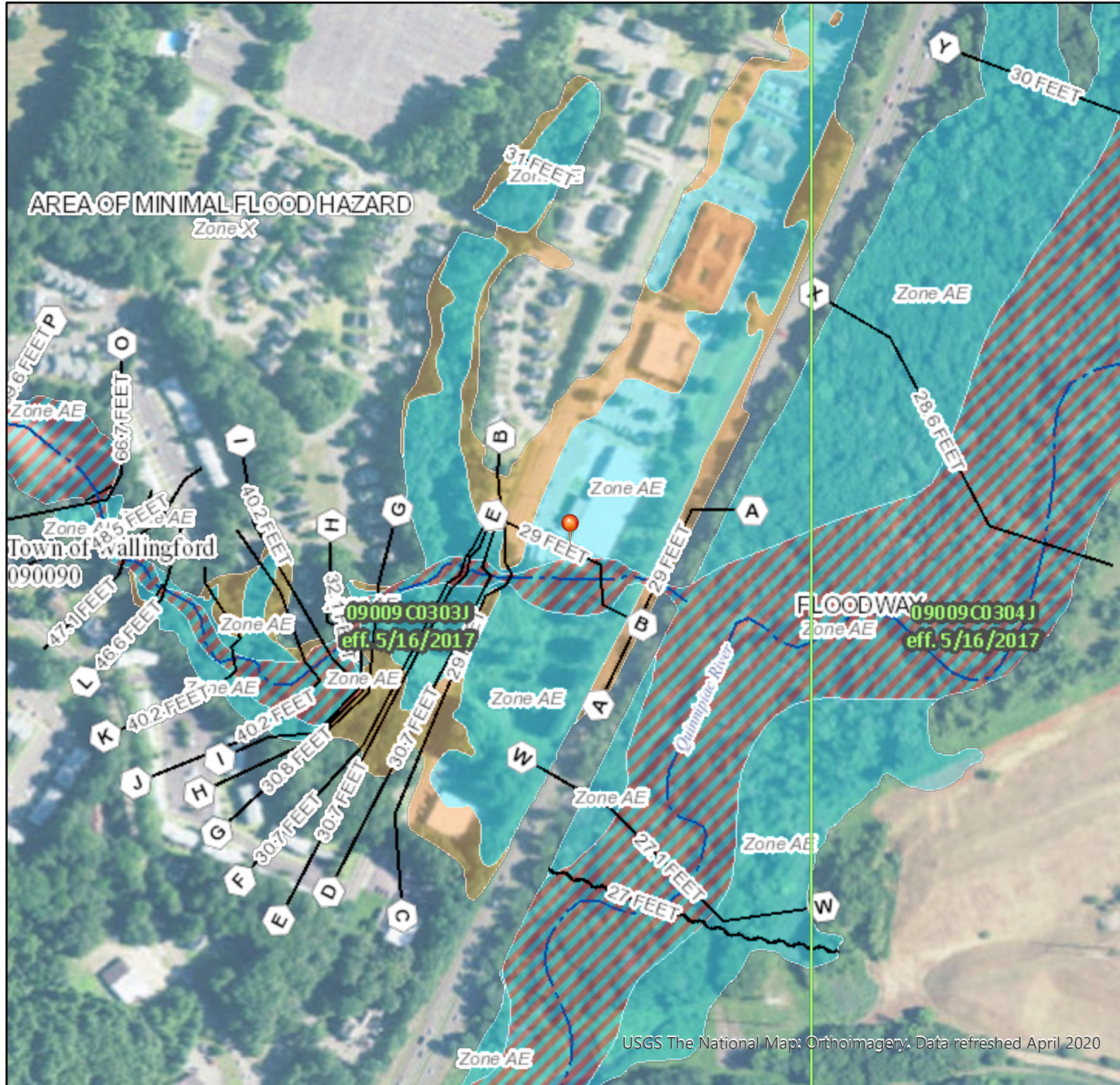
STATE OF CONNECTICUT
DEPARTMENT OF
ENERGY & ENVIRONMENTAL PROTECTION
79 Elm Street
Hartford, CT 06106-5127



National Flood Hazard Layer FIRMette



72°51'4"W 41°26'52"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D

OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall

OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature

MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 8/6/2020 at 4:14 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

TO: Keegan Elder, WMC Consulting Engineers

FROM: Bruce Williams, DEEP Fisheries Division

DATE: January 25, 2018

SUBJECT: Initial Fisheries Review – Rehabilitation of the South Turnpike Road Bridge over Mansion Brook.

Project#: SLBP 9148-0028

Bridge#: 148-028

Applicant: Town of Wallingford

Town: New Wallingford

Waters: Mansion Brook

Sub Regional Basin #: 5200

Project Scope: The existing structure consists of twin 3-foot high by 4-foot wide cast-in-place concrete box culverts. The outlets are perched by more than one foot and there is a scour hole approximately 48-inches deep at the outflow. The culverts are in poor condition. There is extensive concrete deterioration and exposed reinforcement at the downstream outlet and cut-off wall. The headwall and wingwalls show significant cracking and efflorescence. Due to existing traffic volume, limited right-of-way, and utility crossings it was determined that rehabilitation of the existing bridge would be the preferred alternative to replacement.

The proposed work will consist of relining the existing culverts with 1 – 1.5” of centrifugally cast concrete and patching the headwalls and wingwall. Rounded stone riprap will be placed at the outflow for scour protection.

Fisheries Resources: Currently there is no fisheries data available for Mansion Brook in Wallingford. Previous Fisheries Division sampling in the nearby section of the Quinnipiac River documented typical Connecticut warm-water riverine species. No fish species of special concern are believed to be found in Mansion Brook.

Comments/Recommendations: The existing culvert is not passable to fish, but the pool at the outflow provides a deep-water refuge. The final design of this project must maintain the pool and not increase downstream turbidity. The Fisheries Division makes the following recommendations:

1. Any “unconfined” instream work associated with the project should be restricted to the period from June 1 to September 30, inclusive. A June 1 through September 30 timeframe

can be utilized as an effective mitigation measure for construction related disturbances due to the following reasons: (1) timeframe will serve to protect the spawning, egg incubation, and fry development of resident fishes, (2) timeframe does not interfere with seasonal migratory behaviors, and (3) timeframe coincides with historic low rainfall levels in Connecticut a period in which instream construction activities are most effective. This restriction does not include the placement or removal of water control structures such as cofferdams.

2. As design proceeds, please provide more detail regarding any instream work associated with installation of riprap. It is important to minimize the overall footprint of the project and instream placement of riprap that might be required for scour protection.
3. To protect downstream fish habitat, sedimentation controls should be maintained at the toe of the slope of all disturbed areas until the project is completed and all disturbed areas are restored with native plants.

CC. Steve Gephard