



December 11, 2015

Jason Kambitsis, AICP
Director, Land Development
AR Building Company, Inc.
310 Seven Fields Blvd.
Seven Fields, PA 16046

Re: Project: 128-Unit Multi-family Residential Development
Site: 908 Hartford Turnpike, Waterford, Connecticut
BL Project No.: 15C5641

Dear Mr. Kambitsis,

BL Companies, Inc. (BL) completed an on-site investigation to determine the presence or absence of wetlands and watercourses on the above referenced property; (908 Hartford Turnpike, Waterford, Connecticut), as requested and authorized. The site is located southwest of Hartford Turnpike, west of a Target retail store, and east of a commercial business complex. The project is bounded to the southwest by an overhead electrical powerline right-of-way, to the south by upland and wetland forests. This investigation involved a delineation that was completed by a wetland biologist and qualified staff soil scientist and conducted in accordance with the principles and practices noted in the United States Department of Agriculture (USDA) Soil Survey Manual (1993). The soil classification system of the National Cooperative Soil Survey was used in this investigation to identify the soil map units present on the project site.

INVESTIGATION

The project site was investigated on November 09, 2015, with a temperature in the upper 50's under sunny conditions. Soil types are identified by observing soil morphology (soil texture, color, structure). To observe the morphology of the soils, numerous test pits and/or hand borings (generally to a depth of at least two feet) are completed. If wetland and/or watercourses were determined to be present, their boundaries were identified with flags and hung from vegetation or small wire stakes if in fields or grass communities. These flags are labeled "Wetland Delineation" and generally spaced a maximum of approximately 50 feet apart. Wetland classifications used to identify the type of wetland(s) occurring on the project site are based on guidance from the U.S. Fish and Wildlife Service (USFWS) (Cowardin et.al. 1979). It is important to note that flagged wetland and watercourse boundaries are subject to verification by regulatory agencies.

Wetland Statement:

I confirm that the wetland flag locations shown on this report (dated December 11, 2015) match the wetland flag locations shown on the ALTA/ASCM Land Title Survey dated 12/08/2015 prepared by BL Companies.

Sagan M. Simko, CPSS, PWS

5/25/2021
Date

FUNCTIONS AND VALUES

Biophysical elements such as a wetland's landscape position, size, geology, hydrology, substrate, and vegetation determine the wetland functions and to what capacity they are performed. Due to the differing biophysical characteristics between on-site wetlands, the functions the wetlands provide and the capacity to perform those functions vary. To better understand these differences, the wetland functions and values were assessed based on the United States Army Corps of Engineers (ACOE) Highway Methodology Workbook (1993) and its supplement workbook. The ACOE workbook includes thirteen (13) functions and values that have been recognized as functions wetlands can provide: groundwater recharge/discharge, floodflow alteration, fish and shellfish habitat, sediment/toxicant retention, nutrient removal/retention/ transformation, production export, sediment/shoreline stabilization, wildlife habitat, recreation, education/scientific value, uniqueness/heritage, visual quality/aesthetics, and habitat for threatened or endangered species.

REGULATORY INFORMATION

Wetlands and watercourses are regulated by both state and federal law each with different definitions and regulatory requirements. Accordingly, the State and municipalities may regulate waters that fall outside of federal jurisdiction; however, where federal jurisdiction exists, concurrent State jurisdiction is almost always present.

State Regulation

Wetland determinations are based on the presence of poorly drained, very poorly drained, alluvial, or floodplain soils and submerged land. *Watercourses* are defined as "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 the state or any portion thereof." *Intermittent watercourse* determinations are made based on the presence of a defined permanent channel and bank, and two of the following characteristics: (1) evidence of scour or deposits of recent alluvium or detritus, (2) the presence of standing or flowing water for a duration longer than a particular storm incident, and (3) the presence of hydrophytic vegetation. (See Inland Wetlands and Watercourses Act §22a-38 CGS.)

Municipal Regulations

The Town of Waterford Inland Wetland and Watercourses Regulations (effective date June 1, 2011) indicate that the Town Inland Wetland and Watercourses Commission regulates activities within wetlands and watercourses and also within a one hundred (100) foot upland review area as measured from the wetland or watercourse boundary. Activities in other non-wetland or non-

watercourse areas, likely to impact or effect wetlands or watercourse may be considered a regulated activity and can be reviewed by the Inland Wetland Commission.

Federal Jurisdiction

Jurisdictional wetlands at the Federal level consist of "Waters of the United States", which includes lakes, rivers and streams, as well as vegetated wetlands (See 33 CFR 328.8). The onsite waters and wetlands, regulated by the U.S. Army Corps of Engineers (ACOE), were delineated in accordance with the Regional Supplement to the Corps of Engineers Wetland Delineation Manual Northcentral and Northeast Region (Version 2.0) (January 2012). This Manual requires there to be dominant hydrophytic vegetation, hydric soils, and hydrological conditions present in determining wetland areas.

SOIL DESCRIPTIONS

According to the Natural Resources Conservation Service (NRCS) web soil survey, upland and wetland soils have been mapped within the project site.

Upland

Haven and Enfield soils (32B) - The drainage class for this series is well drained, is typically found on outwash plains and terraces, and consists of silt loam. Parent material includes eolian deposits over sandy gravelly glaciofluvial deposits

Sutton fine sandy loam (51B) - This series is typically found on hills with a concave shape consisting of fine sandy loam. The drainage class is moderately well drained and derives from till.

Canton and Charlton soils (61B,61C,62D) – This series is comprised of a course-loam over sand found on glaciated upland plains, hills and ridges and is very deep, well-drained soil.

Charlton-Chatfield complex (73C, 73E) – The series is well drained and somewhat excessively drained formed from till. The soils are loamy and typically found on glaciated upland convex bedrock.

Wetland

Ridgebury, Leicester and Whitman Soils (3)- This series is poorly drained typically found in low laying concave areas at the base of slopes and primarily composed of fine sandy loam.

Limerick and Lim soils (107) - The drainage class for this series is poorly drained. These soils can be found in depressions on flood plains, are considered alluvial, and are composed of silt loam and sandy loam.

WETLAND AND WATERCOURSE SITE DESCRIPTION

A regulated wetland system was identified on site, which consists of two watercourses and two wetland areas. Although all are interconnected, they are discussed separately below for clarification of their location, cover types, and functions and values they perform.

The site lies within the Jordan Brook drainage basin (2201), part of the Southeast Western Complex Regional basin, and is not located within a public water supply watershed. The site is not located within an Aquifer Protection Area according to the Connecticut Department of Energy and Environmental Protection (CT DEEP).

According to the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map, effective date July 18, 2011, a 500 year floodplain (Zone X) is mapped along the eastern project boundary, and a 100 year floodplain (Zone AE) is mapped along the western project boundary. Jordan Brook is located within a FEMA designated floodway, and described below as watercourse 2.

A review of the CTDEEP Natural Diversity Database (NDDB) Map dated September 2015 indicates that there are known or recorded listed species or critical habitats adjacent to the project site. A wood turtle (*Glyptemys insculpta*) was observed in the upland area adjacent to the western boundary of wetland 2 (See Plate 6, and Photo 12). According to the CT DEEP, the wood turtle is a species of special concern. Further considerations for wildlife are included below in this report.

Watercourse 1: USFWS Classification: R2UB1

Watercourse 1 is classified as a riverine lower perennial unconsolidated bottom cobble gravel watercourse (R2UB1). Watercourse 1 is an unnamed stream which flows east to west under the Hartford Turnpike and bisects the project site. The stream is a tributary to another stream (watercourse 2) located in the southwest quadrant of the site. The substrate of watercourse 1 varied, from approximately 75% boulder, 25% sand in the eastern most portion along the steeper slopes, to 5% boulder, 20% cobble, and 75% sand in the western most portion along the flatter slopes. The stream was 7 to 10 inches deep at the time of the investigation with a moderate flow. The channel varied in width from 8 to 15 feet. Pooling was prominent throughout, with interspersed riffles. A man made pond, fed by the stream, is located in the eastern portion of the property. The pond is bermed on three sides and exists in the shape of a rectangle. The stream inlets at the pond's southeast corner and outlets at the southwest corner. Additional contributing flow to the stream includes discharged runoff from a storm retention basin located to the east and groundwater from wetland 1.

Watercourse 1 flows through a cement box culvert just north of the confluence with watercourse 2. This culvert carries a dirt access road, which is interconnected with other access roads crisscrossing the property.

Watercourse 2: USFWS Classification: R24UB1

Watercourse 2, Jordon Brook, is classified as a riverine lower perennial unconsolidated bottom cobble gravel watercourse (USFWS classification R24UB1). Jordon Brook flows north to south and is located in the southwest quadrant of the project site. Watercourse 1 is a tributary to this system. The substrate of the brook is 90% sand, 10% cobble with a relatively flat grade. The channel width is approximately 8 to 10 feet wide with defined bed and bank. Water depth was approximately 7 inches at the time of field investigation with moderate flow. Some riffles and pooling were present however the majority of the channel is characterized as a run. Wetland 2 is situated along the western bank and is described below. Jordon Brook has a FEMA mapped floodplain and floodway.

Wetland 1: USFWS Classification: PFO1

Wetland 1 can be classified as a palustrine broad leaved deciduous forested wetland (USFWS classification PFO1). This Red Maple dominated wetland is located within the northwest quadrant of the site. The area is extremely bouldery with prominent microtopography. The area has been historically disturbed, with berms to the north, created for a detention pond associated with an adjacent commercial building. In addition, the land appears previously farmed, with evidence of a soil plow layer and further evidenced by past aerial imagery (Google Earth). Wetland 1 is hydraulically connected to watercourse 1.

The hydrologic indicators for wetland 1 include inundation and saturation visible on aerial imagery, water stained leaves, stressed plants, geomorphic position and microtopographic relief. Dominant vegetation includes Red Maple (*Acer rubrum*) in the canopy layer, Highbush Blueberry (*Vaccinium corymbosum*) and Swamp White Oak (*Quercus bicolor*) in the shrub stratum. The herbaceous layer is dominated by Japanese barberry (*Berberis thunbergii*), Southern Arrow-Wood (*Viburnum dentatum*), Marsh Fern (*Thelypteris palustris*), and Rambler Rose (*Rosa multiflora*), with Oriental Bittersweet (*Celastrus orbiculatus*) in the vine stratum. Japanese Barberry, Oriental, and Rambler Rose are considered non-native invasive species in the State of Connecticut.

The soil observed in wetland 1 was 12 inches of muck over 12 inches of depleted silt loam with distinct redoximorphic concentrations. The wetland was extremely bouldery with glacial erratics scattered throughout. The soil meets the hydric soil indicator for Histosol, and Histic epipedon. According to the Natural Resources Conservation Service (NRCS) Web Soil Survey, the soil mapped within the delineated wetland area is primarily Ridgbury, Leicester, and Whitman soils (3), with some Sutton fine sandy loam (51B). Evidence of both soil types were observed within the wetland.

Wetland 2: USFWS Classification: PFO1

Wetland 2 can be classified as a palustrine broad leaved deciduous forested wetland (USFWS classification PFO1). This wetland is located within the southwest quadrant of the site. The area has been disturbed due to installation of overhead electrical power lines to the west, with existing dirt access roads cutting through the wetland. Wetland 2 fringes the west bank of watercourse 2.

The hydrologic indicators for wetland 2 include saturation, inundation and saturation visible on aerial imagery, sparsely vegetated concave surface, water stained leaves, stressed plants, geomorphic position, and microtopographic relief. Dominant vegetation includes Red Maple (*Acer rubrum*), American Elm (*Ulmus americana*), and River birch (*Betula nigra*) in the canopy layer, Highbush Blueberry (*Vaccinium corymbosum*), Coastal Sweet Pepperbush (*Clethra alnifolia*), and Mountain Laurel (*Kalmia latifolia*) in the shrub stratum. The herbaceous layer is dominated by Cinnamon Fern (*Osmundastrum cinnamomeum*), Tussock Sedge (*Carex stricta*), Marsh Fern (*Thelypteris palustris*), and Rambler Rose (*Rosa multiflora*), with Oriental Bittersweet (*Celastrus orbiculatus*) in the vine stratum.

The soil observed was 12 inches of muck over 8 inches of depleted sand, which are alluvial deposits from the river. The soil meets the hydric soil indicator for Histosol, and Histic epipedon. According to the Natural Resources Conservation Service (NRCS) Web Soil Survey, the soil mapped within the delineated wetland area is Limerick and Lim soils (107). Evidence of this soil type was observed within the wetland.

FUNCTIONS AND VALUES

The functions and values of this overall wetland system, consisting of two perennial watercourses and two forested wetlands include ground water recharge/ discharge, floodflow alteration, potential fish habitat, nutrient retention, wildlife habitat and listed species. Groundwater is discharged when the ground water table is high and intersects the soil surface. This function is more prominent in wetland 1, but is also present in wetland 2. Both wetlands allow for surface water to slowly percolate back into the water table. Wetland 2 allows for floodwaters to be retained, abating downstream flooding. According to town staff, watercourse 2 is a trout stream, although, no fish were observed during the field investigation. Nutrients from the adjacent commercial properties and roadways can be absorbed and retained within the vegetation of the wetlands. The wetland system provides a contrasting habitat area to the surrounding developed land and upland forests. A wood turtle (*Glyptemys insculpta*) was observed in the upland area adjacent to the western boundary of wetland 2.

FURTHER CONSIDERATIONS

The wetland 2/watercourse 2 complex, located within the southwest corner of the site, is likely suitable habitat for the wood turtle as the wood turtle use both aquatic and terrestrial habitats. The wetland/watercourse on site include riparian forests and wetlands and is adjacent to a stream

with moderate flow with a sandy substrate and muddy banks. The habitat on site correlates to the CT DEEP habitat characteristics for the wood turtle.

Although Connecticut DEEP NDDb mapping does not indicate any records of listed species within the project SITE, the U.S. Fish and Wildlife Service has recently listed the northern long-eared bat (*Myotis septentrionalis*) as “Threatened” under the Endangered Species Act. The northern long-eared bat’s range includes much of the eastern and north central United States, and all Canadian provinces from the Atlantic Ocean west to the southern Yukon Territory and eastern British Columbia. The species’ range includes 37 states, including Connecticut. This listing is largely due to the emergence of white-nose syndrome which has resulted in a dramatic population decline since the disease was first noted in New York in 2006. The USFWS has also issued an interim 4(d) rule which provides flexibility to landowners, land managers, government agencies and others as they conduct activities in northern long-eared bat habitat, which was out to notice for further public comment until July 1, 2015. The State of Connecticut has followed the USFWS ruling, and has listed this bat, as well as other tree roosting bats in Connecticut, as either State Threatened or Endangered. Forested areas are utilized by this species as roosting and foraging habitat, and the proposed project could therefore have a potential adverse effect upon this, and other species of tree roosting bats. Proper timing of tree clearing can minimize potential impacts to tree roosting bats, and coordination with the CT DEEP Wildlife Division and USFWS is recommended as plans move forward.

REFERENCES

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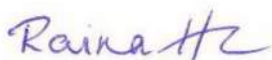
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CLOSING

Thank for the opportunity to work with you on this project.

Very truly yours,

BL COMPANIES



Raina Huebner, PWS, APSS
Project Scientist
Environmental Resources Group

Enclosures



Legend

- FIELD DELINEATED STREAM
-  FIELD DELINEATED WETLAND
- - - 100 FOOT BUFFER
- - - - - APPROXIMATE PROPERTY LINE

NOT FOR CONSTRUCTION
FOR INFORMATIONAL
PURPOSES ONLY

GRAPHIC SCALE
50 0 50 100 150
SCALE IN FEET

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



355 Research Parkway
Meriden, CT 06450
(203) 630 - 1406
(203) 630 - 2615

WETLAND LOCATION MAP

RESIDENTIAL DEVELOPMENT
908 HARTFORD TURNPIKE
WATERFORD, CT 06835

Designed	R.H.
Drawn	J.P.K
Checked	
Approved	
Scale	1:1,800
Project No.	15C5641
Date	11/30/2015

WLM-01



PHOTO 1: View of wetland 1 looking northwest from center of wetland.



PHOTO 2: View of wetland 1 looking west from center of wetland



PHOTO 3: Downstream view of watercourse 1 within northeast portion of the site.



PHOTO 4: View of channel in northeast portion of watercourse 1.



PHOTO 5: View of man-made pond looking west from the eastern boundary of watercourse.

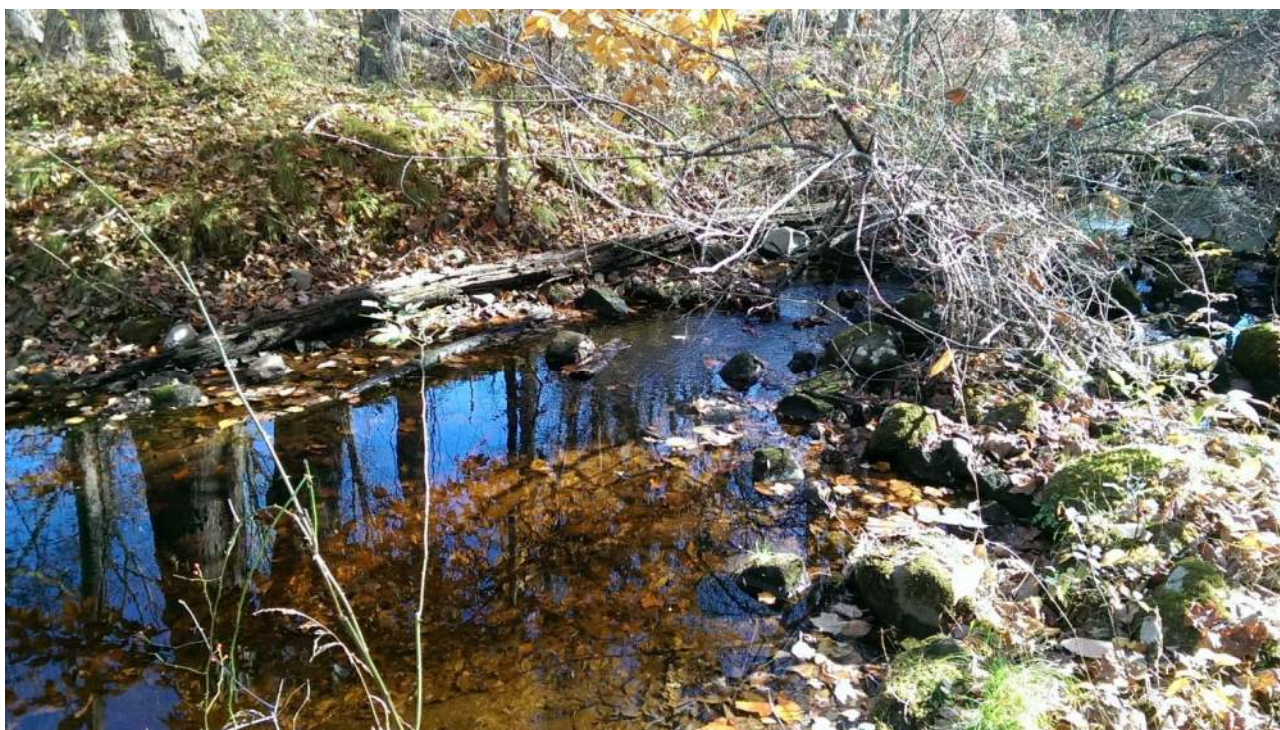


PHOTO 6: Watercourse 1 in vicinity of egress from pond.



PHOTO 7: View of central portion of watercourse 1, connecting to wetland 1.



PHOTO 8: View of southwest portion of watercourse 1.



PHOTO 9: View of dirt access road and bridge over watercourse 1.



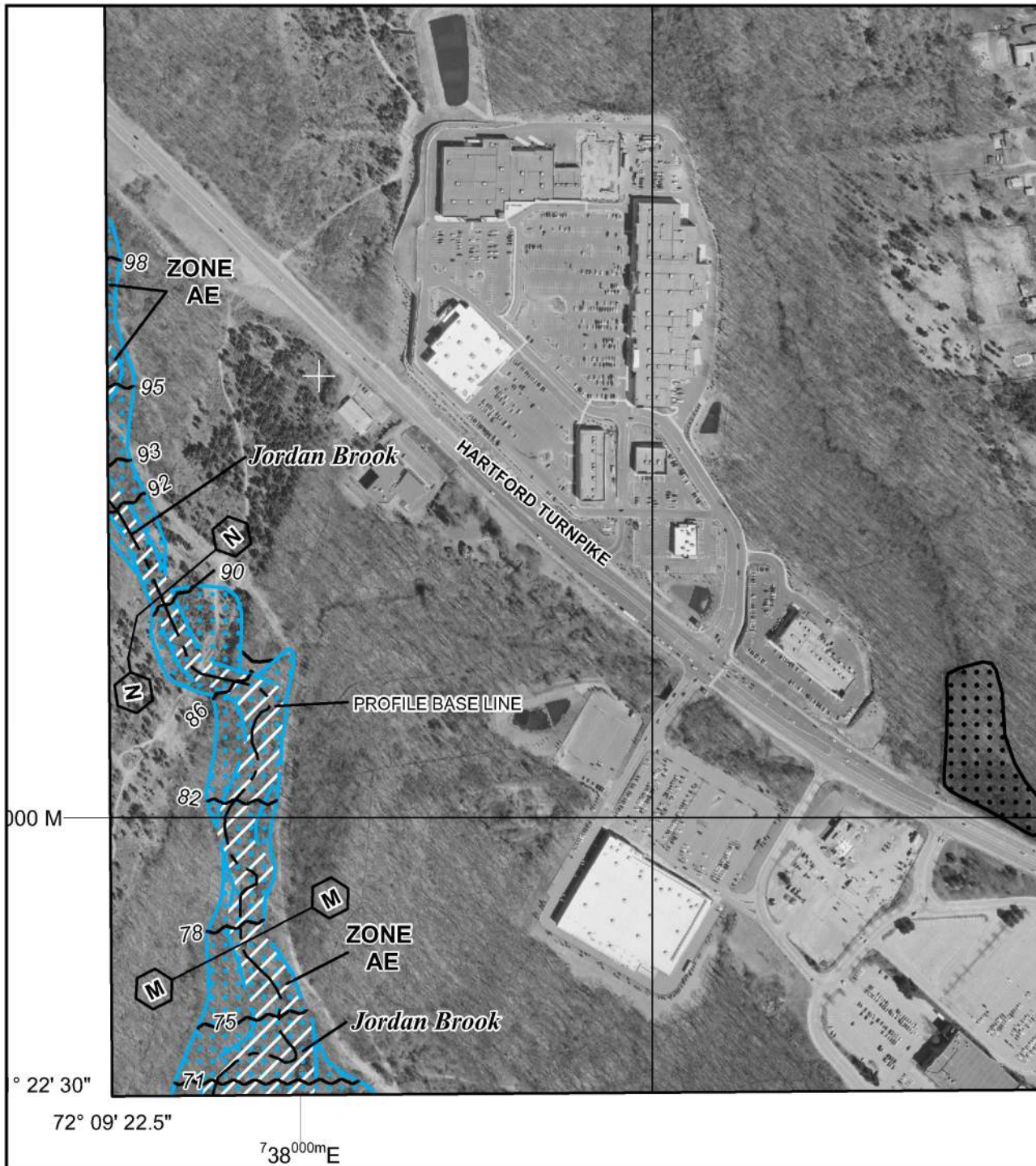
PHOTO 10: View of watercourse outlet from bridge.



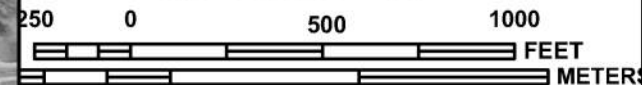
PHOTO 11: Upstream view of watercourse 2, and confluence with watercourse 1. Wetland 2 is located along the left hand side of the picture.



PHOTO 12: Wood turtle found in wetland 2.



MAP SCALE 1" = 500'



NFP

PANEL 0344G

FIRM

FLOOD INSURANCE RATE MAP
NEW LONDON COUNTY,
CONNECTICUT
ALL JURISDICTIONS

PANEL 344 OF 554
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
WATERFORD, TOWN OF	090107	0344	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
09011C0344G
EFFECTIVE DATE
JULY 18, 2011

Federal Emergency Management Agency

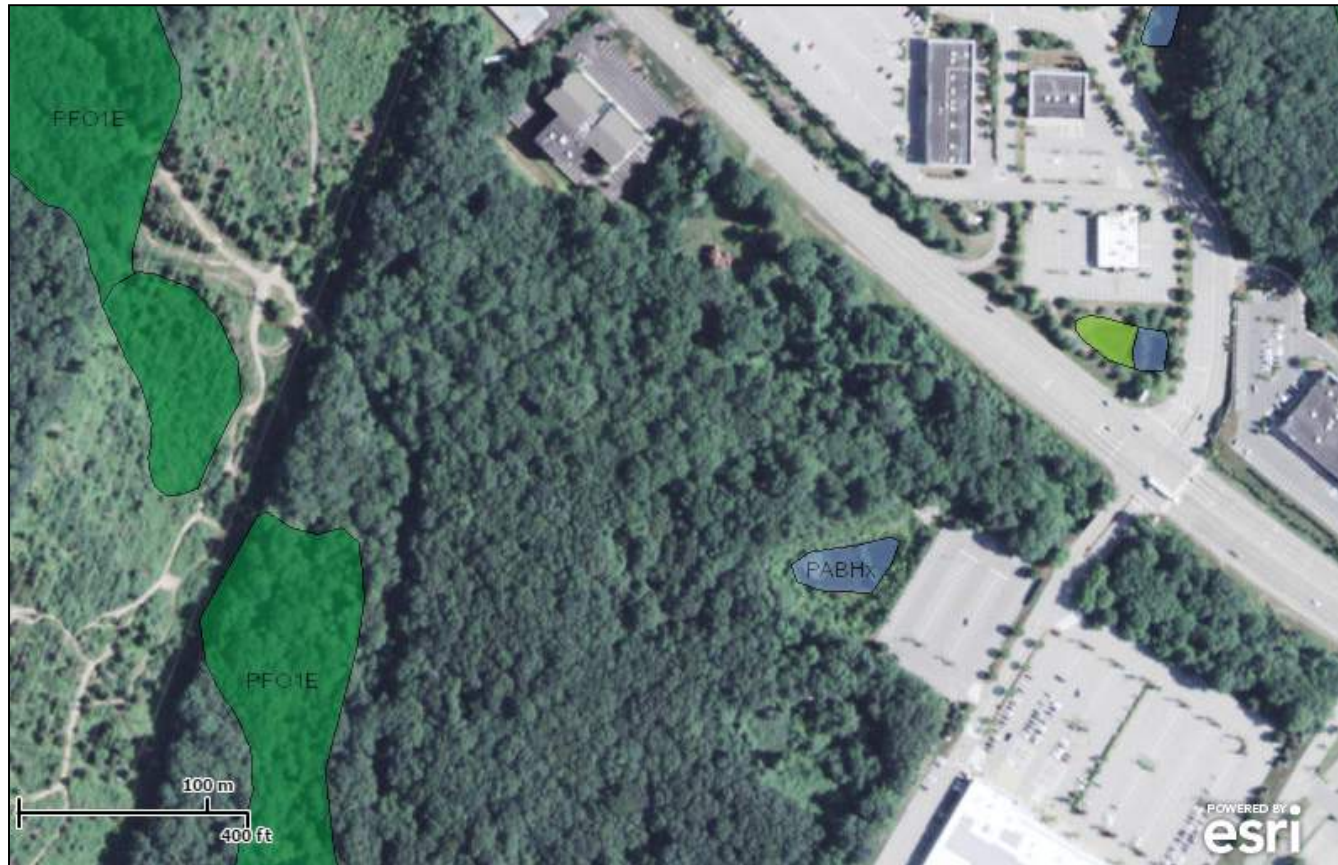
This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



U.S. Fish and Wildlife Service

National Wetlands Inventory

Nov 10, 2015



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:

Natural Diversity Data Base Areas

WATERFORD, CT

September 2015

 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.

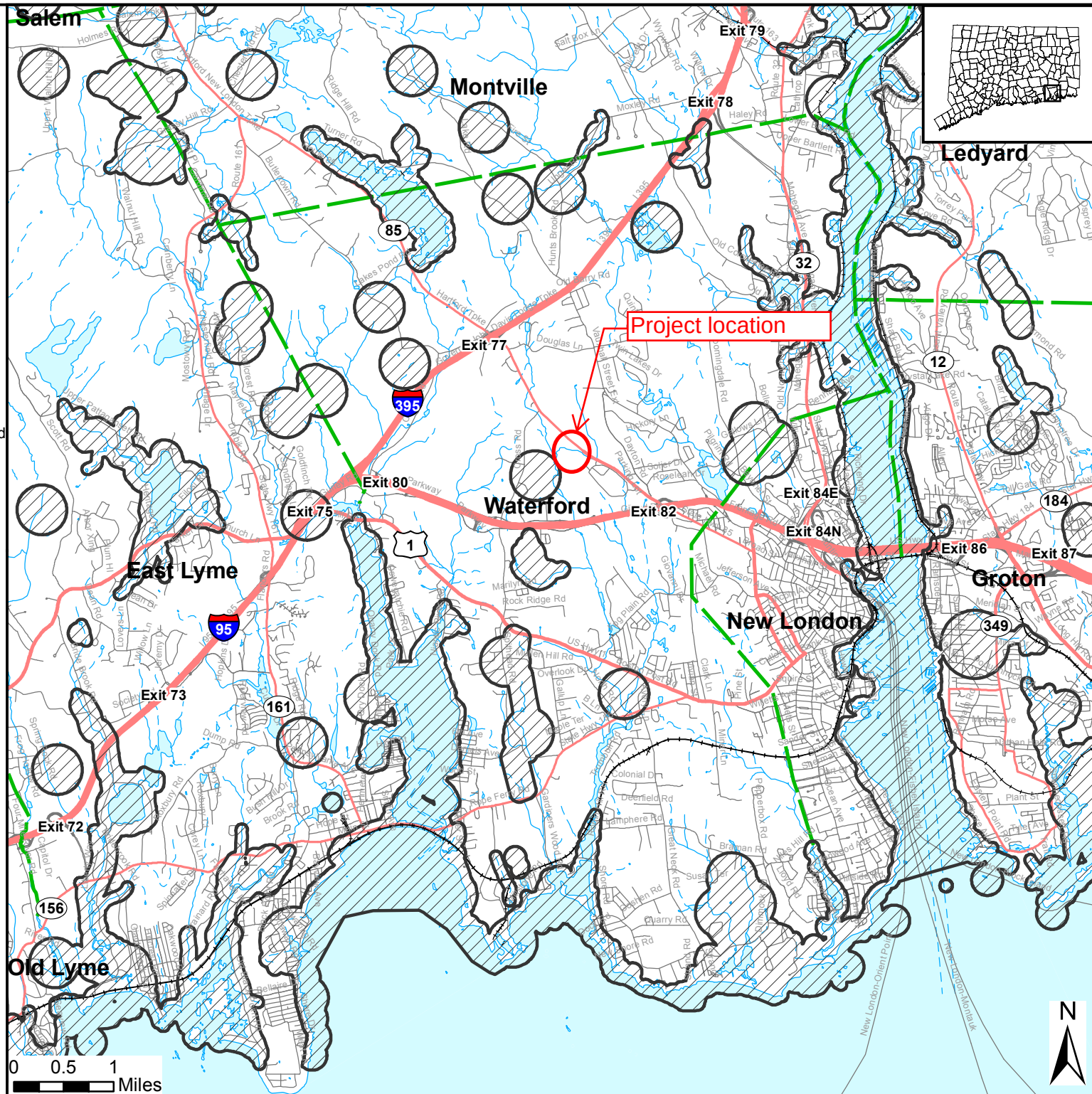
www.ct.gov/deep/nddbrequest

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



Connecticut Department of Energy & Environmental Protection

WOOD TURTLE

Glyptemys insculpta

State Species of Special Concern



Background

Wood turtles may be found throughout Connecticut, but they have become increasingly rare due to their complex habitat needs. Wood turtles also have become more scarce in Fairfield County due to the fragmentation of suitable habitat by urban development.

Range

Wood turtles can be found across the northeastern United States into parts of Canada. They range from Nova Scotia through New England, south into northern Virginia, and west through the Great Lakes region into Minnesota.

Description

The scientific name of the wood turtle, *Glyptemys insculpta*, refers to the deeply sculptured or chiseled pattern found on the carapace (top shell). This part of the shell is dark brown or black and may have an array of faint yellow lines radiating from the center of each chiseled, pyramid-like segment due to tannins and minerals accumulating between ridges. These segments of the carapace, as well as those of the plastron (bottom shell), are called scutes. The carapace also is keeled, with a noticeable ridge running from front to back. The plastron is yellow with large dark blotches in the outer corners of each scute. The black or dark brown head and upper limbs are contrasted by brighter pigments ranging from red and orange to a pale yellow on the throat and limb undersides. Orange hues are most typical for New England's wood turtles. The hind feet are only slightly webbed, and the tail is long and thick at the base. Adults weigh approximately 1.5 to 2.5 pounds and reach a length of 5 to 9 inches.

Habitat and Diet

Wood turtles use aquatic and terrestrial habitats at different times of the year. Their habitats include rivers and large streams, riparian forests (adjacent to rivers), wetlands, hayfields, and other early successional habitats. Terrestrial habitat that is usually within 1,000 feet of a suitable stream or river is most likely used. Preferred stream conditions include moderate flow, sandy or gravelly bottoms, and muddy banks.

Wood turtles are omnivorous and opportunistic. They are not picky eaters and will readily consume slugs, worms, tadpoles, insects, algae, wild fruits, leaves, grass, moss, and carrion.

Life History

From late spring to early fall, wood turtles can be found roaming their aquatic or terrestrial habitats. However, once temperatures drop in autumn, the turtles retreat to rivers and large streams for

hibernation. The winter is spent underwater, often tucked away below undercut riverbanks within exposed tree roots. Dissolved oxygen is extracted from the water, allowing the turtle to remain submerged entirely until the arrival of spring. Once warmer weather sets in, the turtles will become increasingly more active, eventually leaving the water to begin foraging for food and searching for mates. Travel up or down stream is most likely, as turtles seldom stray very far from their riparian habitats.

Females nest in spring to early summer, depositing anywhere from 4 to 12 eggs into a nest dug out of soft soil, typically in sandy deposits along stream banks or other areas of loose soil. The eggs hatch in late summer or fall and the young turtles may either emerge or remain in the nest for winter hibernation. As soon as the young turtles hatch, they are on their own and receive no care from the adults.

Turtle eggs and hatchlings are heavily preyed upon by a wide variety of predators, ranging from raccoons to birds and snakes. High rates of nest predation and hatchling mortality, paired with the lengthy amount of time it takes for wood turtles to reach sexual maturity, present a challenge to maintaining sustainable populations. Wood turtles live upwards of 40 to 60 years, possibly more.

Conservation Concerns

Loss and fragmentation of habitat are the greatest threats to wood turtles. Many remaining populations in Connecticut are low in numbers and isolated from one another by human-dominated landscapes. Turtles forced to venture farther and farther from appropriate habitat to find mates and nesting sites are more likely to be run over by cars, attacked by predators, or collected by people as pets.

Other sources of mortality include entanglements in litter and debris left behind by people, as well as strikes from mowing equipment used to maintain hayfields and other early successional habitats.

The wood turtle is imperiled throughout a large portion of its range and was placed under international trade regulatory protection through the Convention on International Trade in Endangered Species (CITES) in 1992. Wood turtles also have been included on the International Union for Conservation of Nature's (IUCN) Red List as a vulnerable species since 1996. They are listed as a species of special concern in Connecticut and protected by the Connecticut Endangered Species Act.

How You Can Help

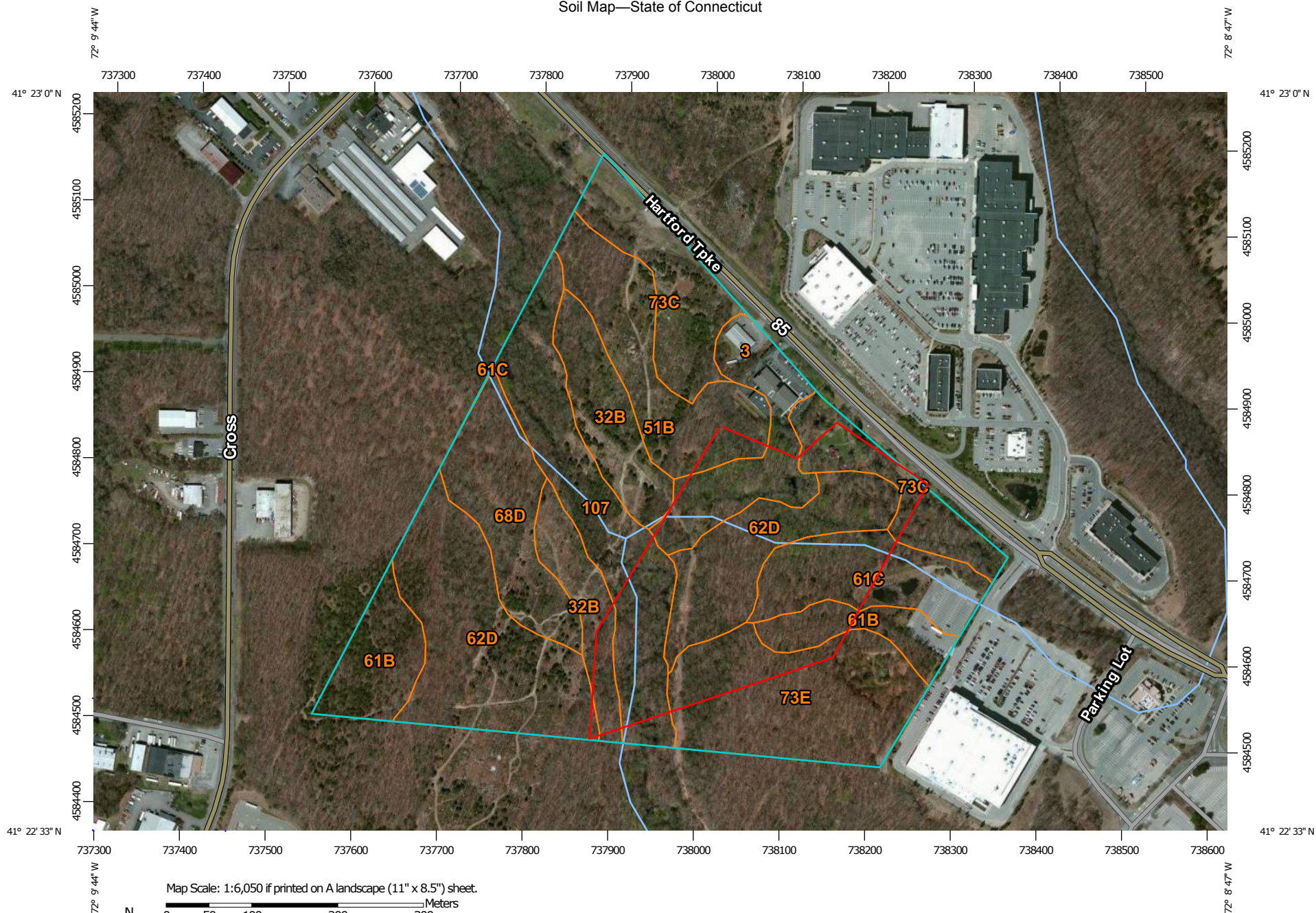
- Conserve riparian habitat. Maintaining a buffer strip of natural vegetation (minimum of 100 feet) along the banks of streams and rivers will protect wood turtle habitat and also help improve the water quality of the stream system. Stream banks that are manicured (cleared of natural shrubby and herbaceous vegetation) or armored by rip rap or stone walls will not be used by wood turtles or most other wildlife species.
- Do not litter. Wood turtles and other wildlife may accidentally ingest or become entangled in garbage and die.
- Leave turtles in the wild. They should never be kept as pets. Whether collected singly or for the pet trade, turtles that are removed from the wild are no longer able to be a reproducing member of a population. Every turtle removed reduces the ability of the population to maintain itself.
- Never release a captive turtle into the wild. It probably would not survive, may not be native to the area, and could introduce diseases to wild populations.
- As you drive, watch out for turtles crossing the road. Turtles found crossing roads in June and July are often pregnant females. They should not be collected but can be helped on their way. Without creating a traffic hazard or compromising safety, drivers are encouraged to avoid running over turtles that are crossing roads. Also, still keeping safety precautions in mind, you may elect to pick up turtles from the road and move them onto the side in the direction they are headed. Never relocate a turtle to another area that is far from where you found it.
- Learn more about turtles and their conservation concerns, and educate others.

- If you see a wood turtle, leave it in the wild, take a photograph, record the location where it was seen, and contact the Connecticut Department of Environmental Protection Wildlife Division at dep.wildlife@ct.gov, or call 860-424-3011 to report your observation.



The production of this Endangered and Threatened Species Fact Sheet Series is made possible by donations to the Endangered Species-Wildlife Income Tax Checkoff Fund.
(4/11)

Soil Map—State of Connecticut



Map Scale: 1:6,050 if printed on A landscape (11" x 8.5") sheet.

0 50 100 200 300 Meters

0 250 500 1000 1500 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge ticks: UTM Zone 18N WGS84



**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

11/9/2015
Page 1 of 3

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

-  Soil Map Unit Polygons
-  Soil Map Unit Lines
-  Soil Map Unit Points

Special Point Features

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

Water Features

-  Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

-  Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut
Survey Area Data: Version 14, Sep 22, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 28, 2011—May 12, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

State of Connecticut (CT600)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	4.9	6.4%
32B	Haven and Enfield soils, 3 to 8 percent slopes	6.9	8.9%
51B	Sutton fine sandy loam, 2 to 8 percent slopes, very stony	6.8	8.7%
61B	Canton and Charlton soils, 3 to 8 percent slopes, very stony	5.7	7.3%
61C	Canton and Charlton soils, 8 to 15 percent slopes, very stony	5.2	6.7%
62D	Canton and Charlton soils, 15 to 35 percent slopes, extremely stony	15.3	19.7%
68D	Narragansett silt loam, 15 to 25 percent slopes, extremely stony	5.7	7.3%
73C	Charlton-Chatfield complex, 3 to 15 percent slopes, very rocky	8.7	11.2%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	9.4	12.1%
107	Limerick and Lim soils	9.0	11.7%
Totals for Area of Interest		77.5	100.0%

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: 908 Hartford Turnpike County: New London Sampling Date: 11/9/2015
 Applicant/Owner: AR Building Company, Inc. State: CT Sample Point: Wetland 1
 Investigator(s): R. Huebner, R. Hyland Section, Township, Range: Waterford
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 0
 Subregion (LRR or MLRA): LRR-R Lat: 41.37935 Long: -72.15273 Datum:
 Soil Map Unit Name: Ridgebury, Leicester, and Whitman soils (3) NWI Classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
 Are Vegetation Yes, Soil Yes, or Hydrology Yes 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 <u>X</u> No <u></u> Hydric Soil Present? Yes <u>X</u> No <u></u> Wetland Hydrology Present? Yes <u>X</u> No <u></u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u></u> If yes, optional Wetland Site ID: <u></u>
Remarks: This point was determined to be within a wetland due to the presence of all 3 wetland criteria. The survey area was determined to be drier than normal at the time of survey.	

HYDROLOGY

Wetland hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<u></u> Surface Water (A1)	<u>X</u> Water-Stained Leaves (B9)	<u></u> Surface Soil Cracks (B6)
<u></u> High Water Table (A2)	<u></u> Aquatic Fauna (B13)	<u></u> Drainage Patterns (B10)
<u></u> Saturation (A3)	<u></u> Marl Deposits (B15)	<u></u> Moss Trim Lines (B16)
<u></u> Water Marks (B1)	<u></u> Hydrogen Sulfide Odor (C1)	<u></u> Dry-Season Water Table (C2)
<u></u> Sediment Deposits (B2)	<u></u> Oxidized Rhizospheres on Living Roots (C3)	<u>X</u> Saturation Visible on Aerial Imagery (C9)
<u></u> Drift Deposits (B3)	<u></u> Presence of Reduced Iron (C4)	<u>X</u> Stunted or Stressed Plants (D1)
<u></u> Algal Mat or Crust (B4)	<u></u> Recent Iron Reduction in Tilled Soils (C6)	<u>X</u> Geomorphic Position (D2)
<u></u> Iron Deposits (B5)	<u></u> Thin Muck Surface (C7)	<u></u> Shallow Aquitard (D3)
<u>X</u> Inundation Visible on Aerial Imagery (B7)	<u></u> Other (Explain in Remarks)	<u>X</u> Microtopographic Relief (D4)
<u></u> Sparsely Vegetated Concave Surface (B8)		<u></u> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> Water Table Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> Saturation Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u></u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (primary and secondary indicators were present).

VEGETATION (Four Strata) - Use scientific names of plants.

 Sampling Point: Wetland 1

Tree Stratum (Plot size: <u>30 ft.</u>)	Absolute % cover	Dominant Species?	Indicator Status
1. <u>Acer rubrum</u>	<u>35</u>	<u>Yes</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	<u>35</u> = Total Cover		

Sapling/Shrub Stratum (Plot size: <u>15 ft.</u>)	Absolute % cover	Dominant Species?	Indicator Status
1. <u>Vaccinium corymbosum</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>
2. <u>Quercus bicolor</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	<u>20</u> = Total Cover		

Herb Stratum Plot size: <u>5 ft.</u>	Absolute % cover	Dominant Species?	Indicator Status
1. <u>Berberis thunbergii</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Rosa multiflora</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>
3. <u>Thelypteris palustris</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>
4. <u>Viburnum dentatum</u>	<u>5</u>	<u>No</u>	<u>FAC</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
	<u>40</u> = Total Cover		

Woody Vine Stratum Plot size: <u>30 ft.</u>	Absolute % cover	Dominant Species?	Indicator Status
1. <u>Celastrus orbiculatus</u>	<u>5</u>	<u>No</u>	<u>UPL</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
	<u>5</u> = 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: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index Worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>30</u>	x 2 = <u>60</u>
FAC species <u>40</u>	x 3 = <u>120</u>
FACU species <u>25</u>	x 4 = <u>100</u>
UPL species <u>5</u>	x 5 = <u>25</u>
Column Totals: <u>100</u> (A)	<u>305</u> (B)

Prevalence Index = B/A = 3.05

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- 3 - Prevalence Index is $\leq 3.0^1$
- 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five 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 vine - All woody vines greater than 3.28 ft in height.

Hydrophytic
Vegetation

Present? Yes X No _____

Remarks:

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

The wetland was extremely bouldery with pronounced microtopography, forming upland mounds within the wetland

SOIL

Sampling Point: **Wetland 1**

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		
0-12	10YR 2/1	100					Muck	
12-24	10YR 6/2	60	10YR 5/8	40	C	M	Silt Loam	

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

Hydric Soils Indicators:		Indicators for Problematic Hydric Soils ³ :	
☒ Histosol (A1)	☐ Polyvalue Below Surface (S8) (LRR R,	☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)	
☒ Histic Epipedon (A2)	MLRA 149B)	☐ Coast Prairie Redox (A16) (LRR K, L, R)	
☐ Black Histic (A3)	☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)	☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)	
☐ Hydrogen Sulfide (A4)	☐ Loamy Mucky Mineral (F1) (LRR K, L)	☐ Dark Surface (S7) (LRR K, L)	
☐ Stratified Layers (A5)	☐ Loamy Gleyed Matrix (F2)	☐ Polyvalue Below Surface (S8) (LRR K, L)	
☐ Depleted Below Dark Surface (A11)	☐ Depleted Matrix (F3)	☐ Thin Dark Surface (S9) (LRR K, L)	
☐ Thick Dark Surface (A12)	☐ Redox Dark Surface (F6)	☐ Iron-Manganese Masses (F12) (LRR K, L, R)	
☐ Sandy Mucky Mineral (S1)	☐ Depleted Dark Surface (F7)	☐ Piedmont Floodplain Soils (F19) (MLRA 149B)	
☐ Sandy Gleyed Matrix (S4)	☐ Redox Depressions (F8)	☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)	
☐ Sandy Redox (S5)		☐ Red Parent Material (F12)	
☐ Stripped Matrix (S6)		☐ Very Shallow Dark Surface (F22)	
☐ Dark Surface (S7) (LRR R, MLRA 149B)		☐ Other (Explain in Remarks)	

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

Restrictive Layer (if observed):		Hydric Soil Present? Yes ☒ No ☐
Type: _____	Depth (inches): _____	

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: 908 Hartford Turnpike County: New London Sampling Date: 11/9/2015
 Applicant/Owner: AR Building Company, Inc. State: CT Sample Point: Upland 1
 Investigator(s): R. Huebner, R. Hyland Section, Township, Range: Waterford
 Landform (hillslope, terrace, etc.): Backslope Local relief (concave, convex, none): None Slope (%): 0-3
 Subregion (LRR or MLRA): LRR-R Lat: 41.37931 Long: -72.15240 Datum:
 Soil Map Unit Name: Ridgebury, Leicester, and Whitman soils (3) NWI Classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
 Are Vegetation Yes, Soil Yes, or Hydrology Yes 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 <u></u> No <u>X</u> Hydric Soil Present? Yes <u></u> No <u>X</u> Wetland Hydrology Present? Yes <u></u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u></u> No <u>X</u> If yes, optional Wetland Site ID: <u></u>
Remarks: This point was determined not to be within a wetland due to the lack of all three wetland criteria. The survey area was determined to be drier than normal at the time of survey.	

HYDROLOGY

Wetland hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u>Surface Water (A1)</u> <u>Water-Stained Leaves (B9)</u> <u>High Water Table (A2)</u> <u>Aquatic Fauna (B13)</u> <u>Saturation (A3)</u> <u>Marl Deposits (B15)</u> <u>Water Marks (B1)</u> <u>Hydrogen Sulfide Odor (C1)</u> <u>Sediment Deposits (B2)</u> <u>Oxidized Rhizospheres on Living Roots (C3)</u> <u>Drift Deposits (B3)</u> <u>Presence of Reduced Iron (C4)</u> <u>Algal Mat or Crust (B4)</u> <u>Recent Iron Reduction in Tilled Soils (C6)</u> <u>Iron Deposits (B5)</u> <u>Thin Muck Surface (C7)</u> <u>Inundation Visible on Aerial Imagery (B7)</u> <u>Other (Explain in Remarks)</u> <u>Sparsely Vegetated Concave Surface (B8)</u>		<u>Secondary Indicators (minimum of two required)</u> <u>Surface Soil Cracks (B6)</u> <u>Drainage Patterns (B10)</u> <u>Moss Trim Lines (B16)</u> <u>Dry-Season Water Table (C2)</u> <u>Crayfish Burrows (C8)</u> <u>Saturation Visible on Aerial Imagery (C9)</u> <u>Stunted or Stressed Plants (D1)</u> <u>Geomorphic Position (D2)</u> <u>Shallow Aquitard (D3)</u> <u>Microtopographic Relief (D4)</u> <u>FAC-Neutral Test (D5)</u>
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Field Observations: Surface Water Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> Water Table Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> Saturation Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u></u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No positive indication of wetland hydrology was observed.
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VEGETATION (Four Strata) - Use scientific names of plants.

 Sampling Point: Upland 1

Tree Stratum (Plot size: <u>30 ft.</u>)	Absolute % cover	Dominant Species?	Indicator Status
1. <u><i>Liriodendron tulipifera</i></u>	<u>35</u>	<u>Yes</u>	<u>FACU</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	<u>35</u> = Total Cover		

Sapling/Shrub Stratum (Plot size: <u>15 ft.</u>)	Absolute % cover	Dominant Species?	Indicator Status
1. <u><i>Betula populifolia</i></u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	<u>5</u> = Total Cover		

Herb Stratum Plot size: <u>5 ft.</u>	Absolute % cover	Dominant Species?	Indicator Status
1. <u><i>Berberis thunbergii</i></u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>
2. <u><i>Rosa multiflora</i></u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>
3. <u><i>Rubus phoenicolasius</i></u>	<u>5</u>	<u>No</u>	<u>FACU</u>
4. <u><i>Polystichum acrostichoides</i></u>	<u>5</u>	<u>No</u>	<u>FACU</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
	<u>35</u> = Total Cover		

Woody Vine Stratum Plot size: <u>30 ft.</u>	Absolute % cover	Dominant Species?	Indicator Status
1. <u><i>Celastrus orbiculatus</i></u>	<u>5</u>	<u>No</u>	<u>UPL</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
	<u>5</u> = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index Worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>5</u>	x 3 = <u>15</u>
FACU species <u>70</u>	x 4 = <u>280</u>
UPL species <u>5</u>	x 5 = <u>25</u>
Column Totals: <u>80</u> (A)	<u>320</u> (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is $\leq 3.0^1$
- 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five 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 vine - All woody vines greater than 3.28 ft in height.

Hydrophytic
Vegetation

Present? Yes No X

Remarks:

No positive indication of hydrophytic vegetation was observed ($\geq 50\%$ of dominant species indexed as FAC- or drier).

SOIL

Sampling Point: Upland 1

[illegible]

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: 908 Hartford Turnpike County: New London Sampling Date: 11/9/2015
 Applicant/Owner: AR Building Company, Inc. State: CT Sample Point: Wetland 2
 Investigator(s): R. Huebner, R. Hyland Section, Township, Range: Waterford
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 0
 Subregion (LRR or MLRA): LRR-R Lat: 41.37452 Long: -72.15317 Datum:
 Soil Map Unit Name: Limerick and Lim (107) NWI Classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
 Are Vegetation Yes, Soil Yes, or Hydrology Yes 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 <u>X</u> No <u></u> Hydric Soil Present? Yes <u>X</u> No <u></u> Wetland Hydrology Present? Yes <u>X</u> No <u></u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u></u> If yes, optional Wetland Site ID: <u></u>
Remarks: This point was determined to be within a wetland due to the presence of all 3 wetland criteria. The survey area was determined to be drier than normal at the time of survey.	

HYDROLOGY

Wetland hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <u></u> Surface Water (A1) <u>X</u> Water-Stained Leaves (B9) <u></u> High Water Table (A2) <u></u> Aquatic Fauna (B13) <u>X</u> Saturation (A3) <u></u> Marl Deposits (B15) <u></u> Water Marks (B1) <u></u> Hydrogen Sulfide Odor (C1) <u></u> Sediment Deposits (B2) <u></u> Oxidized Rhizospheres on Living Roots (C3) <u></u> Drift Deposits (B3) <u></u> Presence of Reduced Iron (C4) <u></u> Algal Mat or Crust (B4) <u></u> Recent Iron Reduction in Tilled Soils (C6) <u></u> Iron Deposits (B5) <u></u> Thin Muck Surface (C7) <u>X</u> Inundation Visible on Aerial Imagery (B7) <u></u> Other (Explain in Remarks) <u>X</u> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) <u></u> Surface Soil Cracks (B6) <u></u> Drainage Patterns (B10) <u></u> Moss Trim Lines (B16) <u></u> Dry-Season Water Table (C2) <u></u> Crayfish Burrows (C8) <u></u> Saturation Visible on Aerial Imagery (C9) <u></u> Stunted or Stressed Plants (D1) <u>X</u> Geomorphic Position (D2) <u></u> Shallow Aquitard (D3) <u>X</u> Microtopographic Relief (D4) <u></u> FAC-Neutral Test (D5)
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Field Observations: Surface Water Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> Water Table Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> Saturation Present? Yes <u>X</u> No <u></u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u></u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (primary and secondary indicators were present).

VEGETATION (Four Strata) - Use scientific names of plants.

 Sampling Point: Wetland 2

Tree Stratum (Plot size: <u>30 ft.</u>)	Absolute % cover	Dominant Species?	Indicator Status
1. <u>Ulmus americana</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>
2. <u>Acer rubrum</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Betula nigra</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	<u>35</u> = Total Cover		

Sapling/Shrub Stratum (Plot size: <u>15 ft.</u>)	Absolute % cover	Dominant Species?	Indicator Status
1. <u>Kalmia latifolia</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Vaccinium corymbosum</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	<u>20</u> = Total Cover		

Herb Stratum Plot size: <u>5 ft.</u>	Absolute % cover	Dominant Species?	Indicator Status
1. <u>Carex stricta</u>	<u>5</u>	<u>Yes</u>	<u>OBL</u>
2. <u>Osmundastrum cinnamomeum</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
	<u>10</u> = Total Cover		

Woody Vine Stratum Plot size: <u>30 ft.</u>	Absolute % cover	Dominant Species?	Indicator Status
1. <u>None Observed</u>	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
	<u>0</u> = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 86% (A/B)

Prevalence Index Worksheet:

Total % Cover of:	Multiply by:
OBL species <u>5</u>	x 1 = <u>5</u>
FACW species <u>35</u>	x 2 = <u>70</u>
FAC species <u>10</u>	x 3 = <u>30</u>
FACU species <u>15</u>	x 4 = <u>60</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>65</u> (A)	<u>165</u> (B)

Prevalence Index = B/A = 2.54

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤ 3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five 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 vine - All woody vines greater than 3.28 ft in height.

Hydrophytic
Vegetation

Present? Yes X No _____

Remarks:

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

SOIL

Sampling Point: **Wetland 2**

[illegible]

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: 908 Hartford Turnpike County: New London Sampling Date: 11/9/2015
 Applicant/Owner: AR Building Company, Inc. State: CT Sample Point: Upland 2
 Investigator(s): R. Huebner, R. Hyland Section, Township, Range: Waterford
 Landform (hillslope, terrace, etc.): Backslope Local relief (concave, convex, none): None Slope (%): 0-3
 Subregion (LRR or MLRA): LRR-R Lat: 41.37931 Long: -72.15240 Datum:
 Soil Map Unit Name: Haven and Enfield Soils (32B) NWI Classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
 Are Vegetation Yes, Soil Yes, or Hydrology Yes 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 <u></u> No <u>X</u> Hydric Soil Present? Yes <u></u> No <u>X</u> Wetland Hydrology Present? Yes <u></u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u></u> No <u>X</u> If yes, optional Wetland Site ID: <u></u>
Remarks: This point was determined not to be within a wetland due to the lack of all three wetland criteria. The survey area was determined to be drier than normal at the time of survey.	

HYDROLOGY

Wetland hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u>Surface Water (A1)</u> <u>Water-Stained Leaves (B9)</u> <u>High Water Table (A2)</u> <u>Aquatic Fauna (B13)</u> <u>Saturation (A3)</u> <u>Marl Deposits (B15)</u> <u>Water Marks (B1)</u> <u>Hydrogen Sulfide Odor (C1)</u> <u>Sediment Deposits (B2)</u> <u>Oxidized Rhizospheres on Living Roots (C3)</u> <u>Drift Deposits (B3)</u> <u>Presence of Reduced Iron (C4)</u> <u>Algal Mat or Crust (B4)</u> <u>Recent Iron Reduction in Tilled Soils (C6)</u> <u>Iron Deposits (B5)</u> <u>Thin Muck Surface (C7)</u> <u>Inundation Visible on Aerial Imagery (B7)</u> <u>Other (Explain in Remarks)</u> <u>Sparsely Vegetated Concave Surface (B8)</u>		<u>Secondary Indicators (minimum of two required)</u> <u>Surface Soil Cracks (B6)</u> <u>Drainage Patterns (B10)</u> <u>Moss Trim Lines (B16)</u> <u>Dry-Season Water Table (C2)</u> <u>Crayfish Burrows (C8)</u> <u>Saturation Visible on Aerial Imagery (C9)</u> <u>Stunted or Stressed Plants (D1)</u> <u>Geomorphic Position (D2)</u> <u>Shallow Aquitard (D3)</u> <u>Microtopographic Relief (D4)</u> <u>FAC-Neutral Test (D5)</u>
--	--	--

Field Observations: Surface Water Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> Water Table Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> Saturation Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u></u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

VEGETATION (Four Strata) - Use scientific names of plants.

 Sampling Point: Upland 2

Tree Stratum (Plot size: <u>30 ft.</u>)	Absolute % cover	Dominant Species?	Indicator Status
1. <u>Fagus grandifolia</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Quercus palustris</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	<u>40</u> = Total Cover		

Sapling/Shrub Stratum (Plot size: <u>15 ft.</u>)	Absolute % cover	Dominant Species?	Indicator Status
1. <u>Kalmia latifolia</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	<u>10</u> = Total Cover		

Herb Stratum Plot size: <u>5 ft.</u>	Absolute % cover	Dominant Species?	Indicator Status
1. <u>none observed</u>	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
	<u>0</u> = Total Cover		

Woody Vine Stratum Plot size: <u>30 ft.</u>	Absolute % cover	Dominant Species?	Indicator Status
1. <u>None observed</u>	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
	<u>0</u> = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index Worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>10</u>	x 2 = <u>20</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>40</u>	x 4 = <u>160</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>50</u> (A)	<u>180</u> (B)

Prevalence Index = B/A = 3.60

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is $\leq 3.0^1$
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five 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 vine - All woody vines greater than 3.28 ft in height.

Hydrophytic
Vegetation

Present? Yes _____ No X

Remarks:

No positive indication of hydrophytic vegetation was observed ($\geq 50\%$ of dominant species indexed as FAC- or drier).

SOIL

Sampling Point: Upland 2

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		
0-8	10YR 2/2	100					Sandy Loam	
8-16	10YR 4/4	100					Sandy Loam	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix.								
Hydric Soils Indicators:							Indicators for Problematic Hydric Soils³:	
☐ Histosol (A1)			☐ Polyvalue Below Surface (S8) (LRR R,				☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)	
☐ Histic Epipedon (A2)			MLRA 149B)				☐ Coast Prairie Redox (A16) (LRR K, L, R)	
☐ Black Histic (A3)			☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)				☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)	
☐ Hydrogen Sulfide (A4)			☐ Loamy Mucky Mineral (F1) (LRR K, L)				☐ Dark Surface (S7) (LRR K, L)	
☐ Stratified Layers (A5)			☐ Loamy Gleyed Matrix (F2)				☐ Polyvalue Below Surface (S8) (LRR K, L)	
☐ Depleted Below Dark Surface (A11)			☐ Depleted Matrix (F3)				☐ Thin Dark Surface (S9) (LRR K, L)	
☐ Thick Dark Surface (A12)			☐ Redox Dark Surface (F6)				☐ Iron-Manganese Masses (F12) (LRR K, L, R)	
☐ Sandy Mucky Mineral (S1)			☐ Depleted Dark Surface (F7)				☐ Piedmont Floodplain Soils (F19) (MLRA 149B)	
☐ Sandy Gleyed Matrix (S4)			☐ Redox Depressions (F8)				☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)	
☐ Sandy Redox (S5)							☐ Red Parent Material (F12)	
☐ Stripped Matrix (S6)							☐ Very Shallow Dark Surface (F22)	
☐ Dark Surface (S7) (LRR R, MLRA 149B)							☐ Other (Explain in Remarks)	
³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.								
Restrictive Layer (if observed):								
Type: <u>Rock</u>								
Depth (inches): <u> 16 </u>						Hydric Soil Present? Yes _____ No <u>X</u> _____		
Remarks:								
No positive indication of hydric soils was observed.								