



October 22, 2015

Reference No. 083167

Mr. Shawn C. Crosbie  
 Environmental Analyst  
 UIL Holdings Corporation  
 180 Marsh Hill Road  
 Orange, CT 06477Address

Dear Mr. Crosbie:

**Re: Wetland Delineation Report, Revised  
 Baird Substation  
 1770 Stratford Avenue, Stratford, Connecticut**

GHD Services Inc., (GHD – formerly Conestoga-Rovers & Associates, Inc.) was retained by UIL Holdings Corporation (UIL) to conduct a wetland delineation at the Baird Substation (Site) located at 1770 Stratford Avenue in Stratford, Connecticut. This wetland delineation was completed in anticipation of expansion of the existing electrical substation. As part of this project, three new utility poles are proposed to be constructed on the adjacent State of Connecticut property (operated by the Metro North Commuter Railroad) to the north and east of the Site. The proposed utility pole locations are included as part of this wetland delineation project. For the purpose of this report, the proposed utility poles located on the State of Connecticut property are included in the definition of the Site.

The location of the Site and the surrounding properties are shown on Figure 1, which includes a copy of the United States Geologic Survey (USGS) topographic map. Figure 1 shows the topography, nearby water bodies, man-made structures, and access routes. The Baird substation property encompasses 3.52 acres on two parcels of land and located on the north side of Stratford Avenue at the intersection of Stratford Avenue, Honeyspot Road, and Surf Avenue. A recent aerial photograph of the Site, which includes the surveyed location of the wetland delineation flagging are shown on Figure 2.

This letter discusses the wetland delineation methodology and provides the results of the field investigation performed. The wetland delineation was completed by David Lord, Certified Soil Scientist, Soil Resource Consultants of Meriden, Connecticut. The survey of the wetland flagging was prepared by David L. Nafis, PE, LS, Nafis & Young Engineers, Inc. of Northford, Connecticut.

## 1. Regulatory Framework and Wetland Delineation Methodology

This investigation involved the delineation of the Site wetland by a qualified 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. The wetland boundaries were also established using procedures outlined in the Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, January 1987.

Vegetation, soils, and hydrology were observed and documented during the site investigation in order to meet the criteria of state and federal delineation methodologies. Soil types were identified by observing soil morphology (soil texture, color, structure, etc.). To observe the morphology of the soils, test borings were advanced with a hand auger or shovel. Where wetlands were determined to be present, their boundaries were identified with flags and hung from vegetation.

## 2. Review of Secondary Data

As shown on Figure 1, the topography on the Site is generally level to gently sloping with an elevation between 10 to 20 feet, North American Vertical Datum 1988 (NAVD88). The aerial photograph, provided as Figure 2, shows the Site bordered by railroad tracks for the State of Connecticut (Metro-North Commuter Railroad) to the north, Stratford Avenue to the south, Two Roads Brewing Company to the east, and Savings Auto Center to the west. There is a 15 foot wide storm water easement along the southern portion of the Site in favor of U.S. Baird Corporation, the former property owner of the Two Roads Brewing Company parcel. Currently, the Site is developed with an existing electrical substation in the western portion, a parking lot in the eastern portion, and an undeveloped wooded portion in the center of the property.

As shown on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) (see Figure 3), the Site is not located within a mapped Flood Hazard Area. The nearest wetland identified in the National Wetlands Inventory (NWI) Map (Figure 4) is approximately 1,300 feet northwest from the Site. As shown on the National Resources Conservation Soils (NRCS) Web Soil Survey (Figure 5), the following soil series are mapped on and adjoining the Site:

- 260C: Charlton-Urban land complex, 8 to 15 percent slopes
- 307: Urban land (Udorthents)

Soil surveys in Connecticut were originally conducted primarily for agricultural purposes and do not provide site specific information. The minimum area delineated on a soil survey map sheet is approximately 2 to 3 acres in size. For this reason there may be some differences between the Site specific information (Section 5) and that published in the Soil Survey.

## 3. Regulatory Information

### 3.1 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). In Connecticut, wetlands and waterways are regulated at the Federal level by the U.S. Army Corps of Engineers (ACOE) under Section 404 of the Clean Water Act. However, projects that have minimal individual and cumulative impacts on the aquatic environment within the State of Connecticut are

regulated under the Connecticut General Permit issued by the ACOE. In order for any work authorized under the General Permit to be valid, State and any local approvals must be obtained.

### **3.2 State Jurisdiction**

In 1972, the Connecticut Inland Wetlands and Watercourses Act (IWWA – sections 22a 36 through 22a 45 of the General Statutes of Connecticut) was passed that requires the regulation of activities affecting the wetlands and watercourses of our state. Under the IWWA, wetlands are defined by soil type. The soil types of wetlands are poorly drained, very poorly drained, alluvial, and floodplain. In 1987, the IWWA was amended to require municipal regulation of such activities. However, State agency actions within inland wetlands and waterways are regulated at the state level by the Connecticut Department of Energy and Environmental Protection (CTDEEP). Coastal wetlands are regulated by the CTDEEP.

### **3.3 Municipal Jurisdiction**

The proposed substation improvement is subject to the Department of Public Utility Control (DPUC) Document No. 95 08 34 entitled “DPUC Investigation of the Process of and Jurisdiction over Siting Certain Utility Company Facilities and Plants in Connecticut.” Pursuant to Orders 1 through 3 of the above decision document, the Town of Stratford Inland Wetland Department will be notified of the proposed substation improvements.

## **4. Field Activities**

As stated above, projects that have minimal individual and cumulative impacts on the aquatic environment within the State of Connecticut are regulated under the Connecticut General Permit issued by the ACOE, and are subject to State regulation. Wetlands regulated in Connecticut are defined by soil type. The wetland delineation via soil type was conducted by David Lord, Certified Soil Scientist, on April 14, 2015. The surveyed limits of the wetland delineation are shown on Figure 2 and Figure 5. No vernal pools were identified on the property. A copy of the wetland delineation report is provided in Attachment A.

The wetlands were also delineated using the Routine Onsite Determination Method in the Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, January 1987, by David Lord, Certified Soil Scientist, on July 8, 2015. According to this methodology, wetlands are identified by the presence of three parameters: the dominance of hydrophytic vegetation, the presence of hydric soils, and positive indicators of wetland hydrology. Typically, all three parameters must be present for an area to be considered ACOE jurisdictional wetlands. However, in areas where one or more of the wetland parameters have been significantly disturbed (e.g., mowed lawn areas, agricultural fields, etc.), the remaining parameters and best professional judgment are used to delineate the extent of jurisdictional wetlands.

A completed copy of the Wetland Delineation Report using the ACOE data form referenced in the ACOE 1987 Wetlands Delineation Manual is provided in Attachment B. Transect sampling locations (locations T1A and T1B) are shown on Figures 2 and 5. The limit of the ACOE Method wetland delineation is consistent with the delineation by soil type only.

A supplemental Soil Investigation for Wetland Determination was conducted by Mr. Lord on October 16, 2015. This investigation included the proposed utility poles located on the adjacent State of Connecticut property. Approximately eight test holes were advanced by hand and no indications of wetland soil conditions, watercourses or federal jurisdictional wetlands were found. A copy of the soil investigation report is included as Attachment C.

## 5. Results of the Wetland Delineation

The wetland area on-Site was delineated with sequentially numbered flags 1 through 8 (closed loop) and its location is depicted on Figures 2 and Figure 5. The calculated area of the wetland is approximately 654 square feet. It is the lowest point on the site where the groundwater table was observed in the bottom of this subject wetland at the time of the inspection. No inlet or outlet is associated with this wetland. This wetland is classified as palustrine emergent nonpersistent (PEM2) and is a small sparsely vegetated depression.

The wetland area is located between an existing electrical substation to the west, the Metro-North rail road right of way to the north, Stratford Avenue to the south, and a parking lot to the west. This area is extremely disturbed due to the development of the property and surrounding properties. Hydrologic conditions are influenced by the storm water runoff, ponding, and groundwater connection. The soil profile is considerably disturbed from historic site activities.

The wetland soil series is identified as Aquents (Aq). The Aq map unit consists primarily of disturbed soil materials with poorly drained characteristics generally less than 20 inches down from the existing soil surface. The natural soil profile has been disturbed by previous filling and/or grading activities and classification into natural soil map units is not possible.

The upland (non-wetland) soil types are described as Charlton-Urban Land Complex and Udorthents (Urban Land). The Charlton series consists of very deep well drained loamy soils formed in till, derived from parent materials that are very low in iron sulfides. They are nearly level to very steep soils on till plains and hills. Slope ranges from 0 to 50 percent. Saturated hydraulic conductivity is moderately high or high. Udorthents are moderately well to well drained disturbed soils composed of filled areas and areas consisting of both cut and fill. Original diagnostic soil horizons are not present. Udorthents have a wide range of characteristics. Textures are predominantly gravelly fine, sandy loams.

The undeveloped portion of the Site can be classified as wooded land and the remaining portions of the Site support the existing UIL electric substation and a parking lot. No indicators of wetland hydrology were observed in the uplands portion of the Site.

If you have any questions or require additional information, please call me at (860) 747-1800 or [stuart.manley@ghd.com](mailto:stuart.manley@ghd.com).

Sincerely,

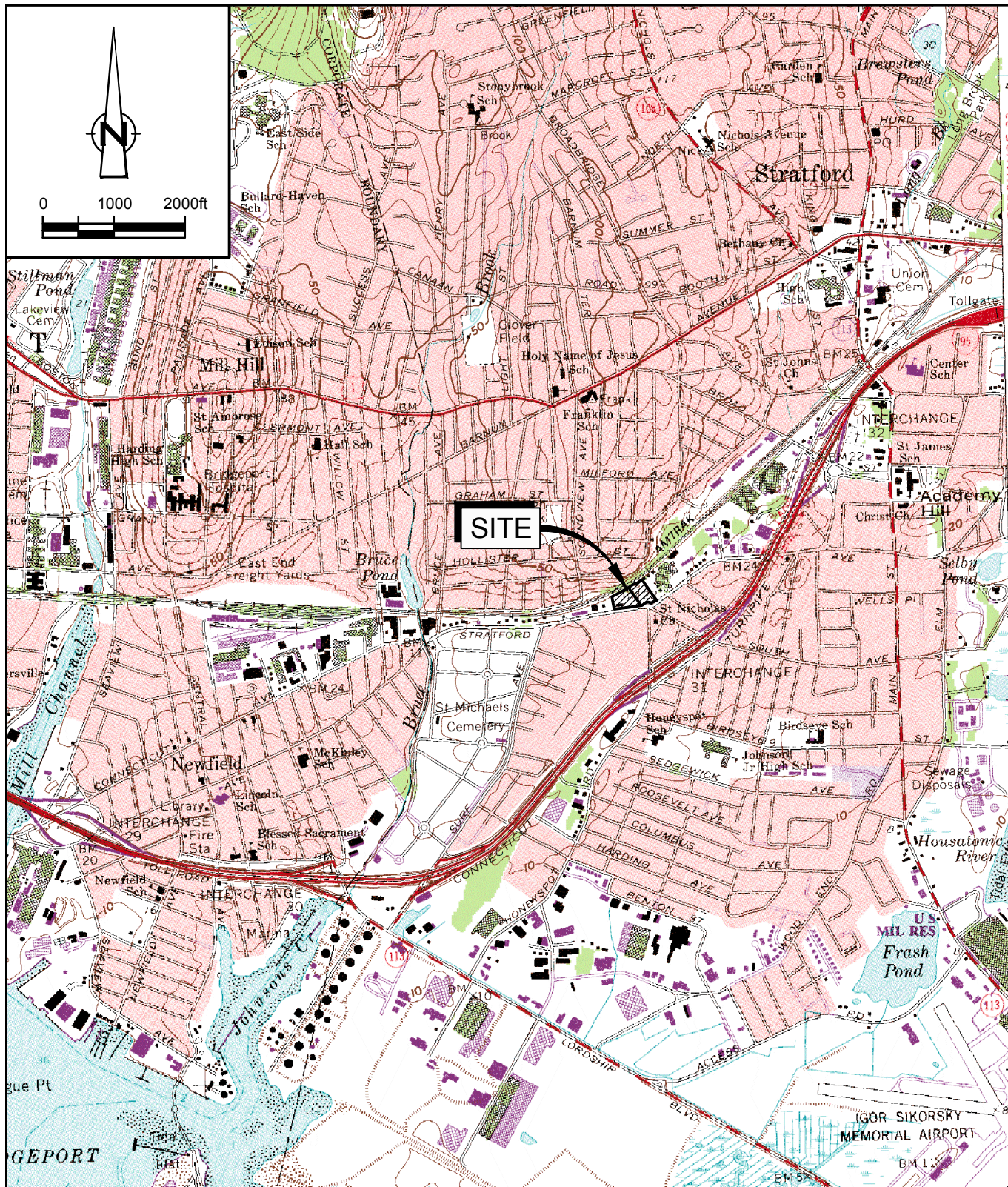
GHD

A handwritten signature in black ink, reading "Stuart S. Manley". The signature is written in a cursive style with a large, sweeping initial 'S'.

Stuart S. Manley, LEP, CHMM

SM/ro/13rev2

Encl.



SOURCE: USGS QUADRANGLE MAP;  
BRIDGEPORT, NORTH CONNECTICUT, 1984

figure 1

**SITE LOCATION**  
**BAIRD SUBSTATION**  
**1770 STRATFORD AVENUE**  
*Stratford, Connecticut*





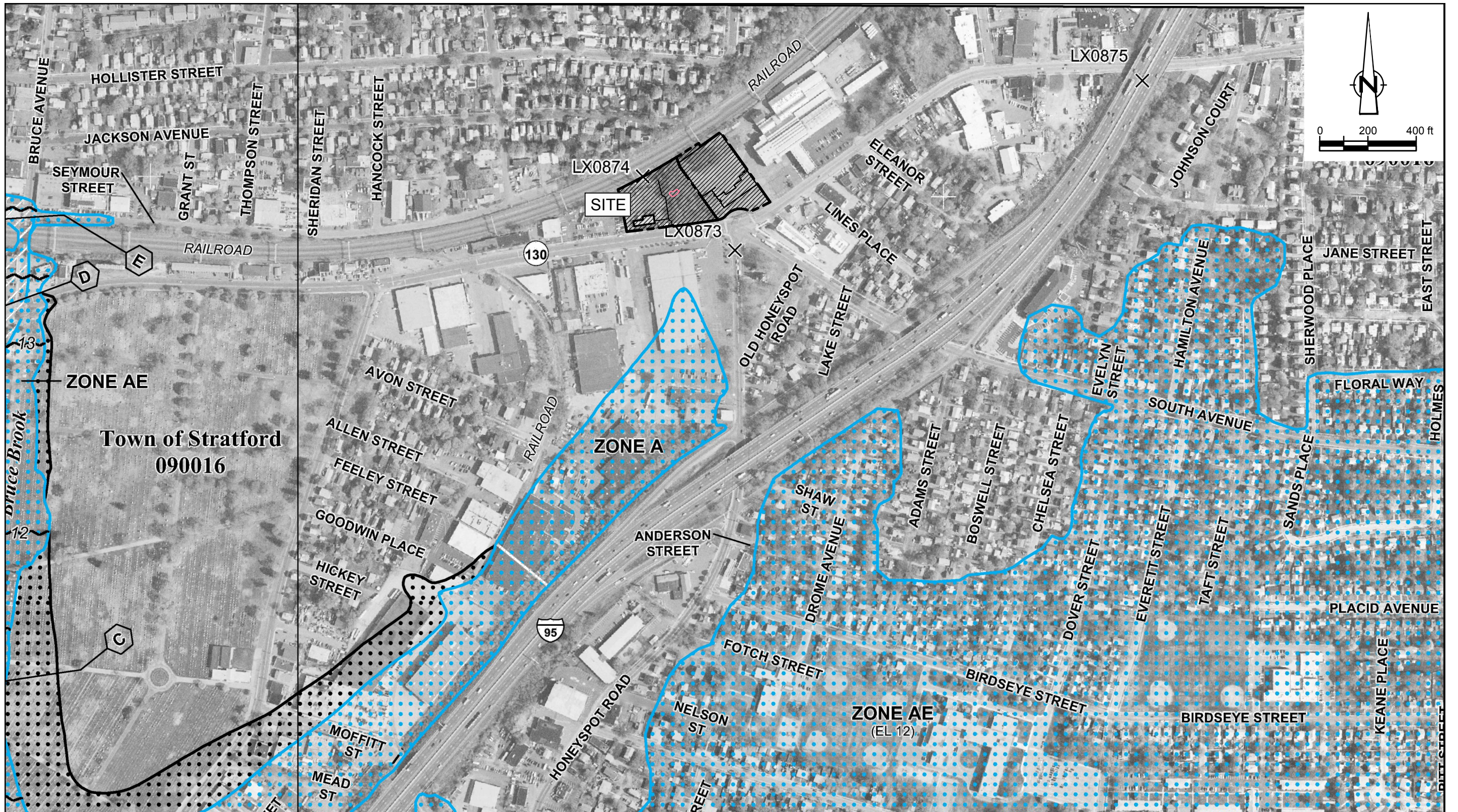
**LEGEND**

	PROPERTY BOUNDARY
	FENCE
	PROPOSED FENCE
	WETLAND LIMITS
	WETLAND FLAG
	WETLAND TRANSECT SAMPLING LOCATION

**SOURCES:**  
 IMAGE - NAIP IMAGERY OF CONNECTICUT, 2008 - U.S. DEPARTMENT OF AGRICULTURE (USDA) FARM SERVICE AGENCY, AERIAL PHOTOGRAPHY FIELD OFFICE.  
 PROPERTY LINES AND SITE SURVEY - PRELIMINARY DRAWING, WETLAND AREA AROUND BAIRD SUBSTATION, BLACK & VEATCH, APRIL 02, 2015.  
 PROPOSED DEVELOPMENT PLAN - SUBSTATION ARRANGEMENT PLAN, FULL REPLACEMENT SITE, BAIRD SUBSTATION, BLACK & VEATCH FEBRUARY 02, 2015.  
 WETLAND DELINEATION - DAVID LORD, CERTIFIED SOIL SCIENTIST, APRIL 14, 2015.  
 WETLAND LIMITS SURVEY - COMPLETED BY NAFIS & YOUNG ENGINEERS, INC., APRIL 14, 2015.



figure 2  
**WETLAND DELINEATION MAPPING**  
**BAIRD SUBSTATION**  
**1770 STRATFORD AVENUE**  
*Stratford, Connecticut*



SOURCE: PANEL 0442G, FLOOD INSURANCE RATE MAP,  
FAIRFIELD COUNTY CONNECTICUT, MAP NUMBER 09001C0442G,  
JULY 8, 2013.

- LEGEND**
- — — — — PROPERTY BOUNDARY
  - x — — — FENCE
  - X — — — PROPOSED FENCE
  - · — · — SURFACE WATER



figure 3  
FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP  
BAIRD SUBSTATION  
1770 STRATFORD AVENUE  
Stratford, Connecticut





**Wetlands**

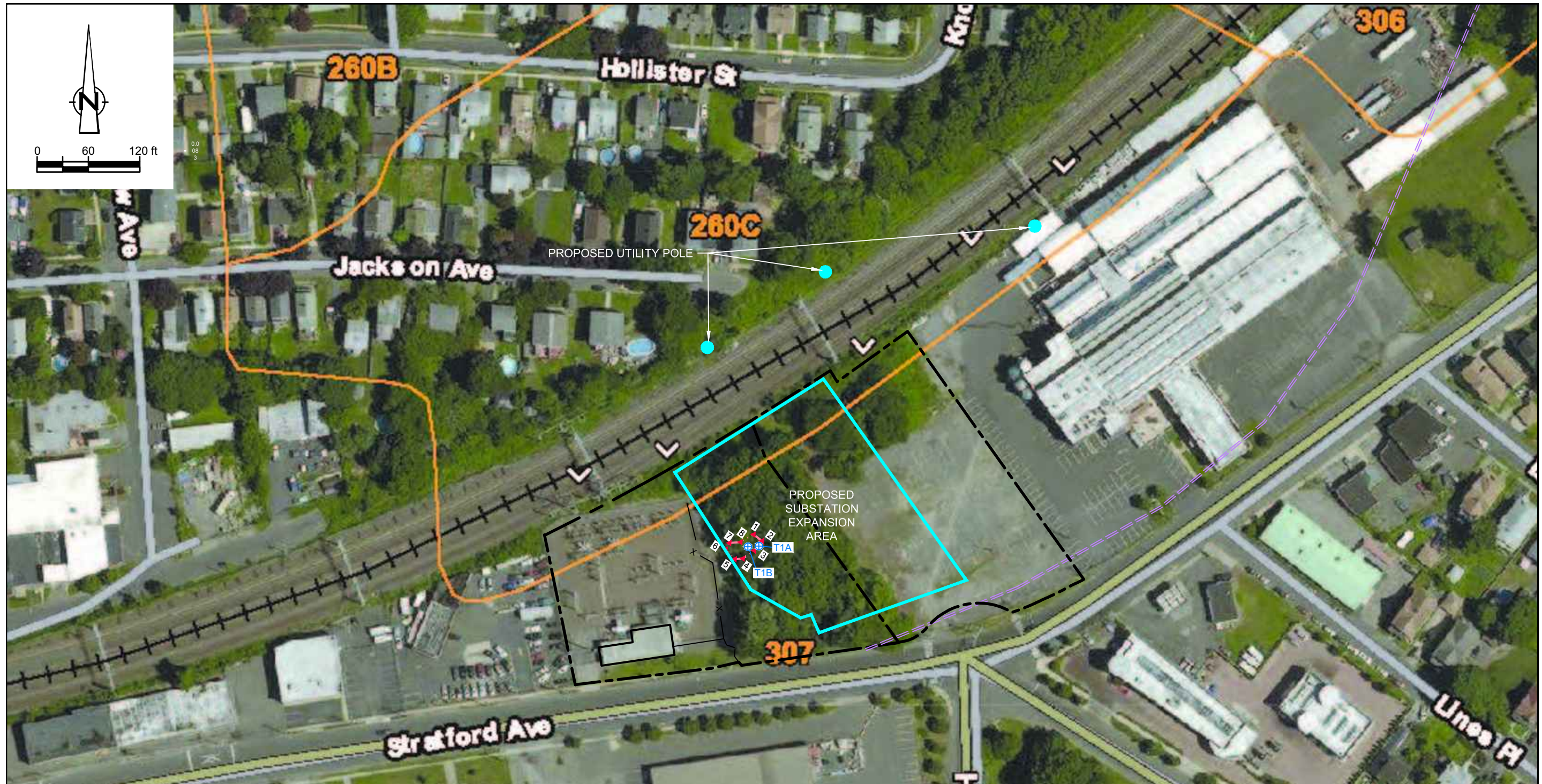
- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

SOURCE: U.S. FISH AND WILDLIFE SERVICE, NATIONAL WETLANDS INVENTORY, BAIRD SUBSTATION, APRIL 17, 2015.

- LEGEND**
- PROPERTY BOUNDARY
  - x FENCE
  - X PROPOSED FENCE
  - SURFACE WATER

figure 4  
 NATIONAL WETLANDS INVENTORY MAP  
 BAIRD SUBSTATION  
 1770 STRATFORD AVENUE  
 Stratford, Connecticut





**Map Unit Legend**

State of Connecticut (CT600)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
260C	Charlton-Urban land complex, 8 to 15 percent slopes	1.8	30.9%
307	Urban land	4.0	69.1%
<b>Totals for Area of Interest</b>		<b>5.8</b>	<b>100.0%</b>

**LEGEND**

- PROPERTY BOUNDARY
- FENCE
- PROPOSED FENCE
- WETLAND LIMITS
- WETLAND FLAG
- WETLAND TRANSECT SAMPLING LOCATION

SOURCES:  
 IMAGE - USDA-NRCS, WEB SOIL SURVEY URL: <http://websoilsurvey.nrcs.usda.gov> STATE OF CONNECTICUT, VERSION 13, OCT. 28, 2014, IMAGE PHOTOGRAPHY JUN 27 TO JUL 22, 2014.  
 PROPERTY LINES AND SITE SURVEY - PRELIMINARY DRAWING, WETLAND AREA AROUND BAIRD SUBSTATION, BLACK & VEATCH, APRIL 02, 2015.  
 PROPOSED DEVELOPMENT PLAN - SUBSTATION ARRANGEMENT PLAN, FULL REPLACEMENT SITE, BAIRD SUBSTATION, BLACK & VEATCH FEBRUARY 02, 2015.  
 WETLAND DELINEATION - DAVID LORD, CERTIFIED SOIL SCIENTIST, APRIL 14, 2015.  
 WETLAND LIMITS SURVEY - COMPLETED BY NAFIS & YOUNG ENGINEERS, INC., APRIL 14, 2015.

figure 5

NATURAL RESOURCES CONSERVATION SERVICE SOILS SURVEY MAP  
 BAIRD SUBSTATION  
 1770 STRATFORD AVENUE  
 Stratford, Connecticut



Attachment A  
Wetland Delineation Report – by Soil Type

# SOIL RESOURCE CONSULTANTS

P.O. Box 752

Meriden, CT 06450

May 18, 2015

**SRC Job No. 15-11**

Stuart Manley  
Conestoga Rovers & Associates, Inc.  
45 Farmington Valley Drive  
Plainville, CT 06062

Dear Mr. Manley:

**Re: Wetland Delineation - Baird Substation - 1770 Stratford Avenue - Stratford, CT**

At your request, I have completed an onsite investigation of this site. The purpose of my investigation was to determine if the proposed location of the future Baird Substation contained any vernal pools, inland/tidal wetlands and or watercourses. One small wetland area was identified and delineated on April 14, 2015.

The wetland and watercourse boundaries were marked with blue plastic flagging numbered **WF -1** through **WF-8**. As no site plan drawing was available I have sketched the approximate limits of the small wetland area on the attached aerial photograph. I have also attached a photograph of the wetland taken on the day of my investigation.

The wetland soil map to be prepared for this site will be a refinement of data found in the **Soil Survey of Fairfield County**. Each map unit is composed of a unique combination of soils. Areas with the same symbol have a similar soil composition.

The map units described below are based on data collected at this particular site. Soil surveys in Connecticut were originally conducted for primarily agricultural purposes and do not provide site specific information. The minimum area delineated on a soil survey map sheet is approximately 2-3 acres in size. For this reason there may be some differences between the following information and that published in the Soil Survey.

## **INLAND WETLAND SOILS**

The identification of inland wetland areas on this site is based on my field observations of test borings and the guidelines of the **National Cooperative Soil Survey Program**. Test borings were done using a shovel and or hand auger.

In Connecticut inland wetland soil categories include poorly drained soils, very poorly drained soils, alluvial and flood plain soils.

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The subject wetland occupies a very small subarea in the west central portion of this site. It is the lowest point on the site. The apparent ground water table is present in the bottom of this subject wetland. No inlet or outlet is associated with this wetland.

No vernal pool habitat conditions or functioning was observed within the small wetland soil area. Only a couple inches of water were observed in the bottom of the wetland. No vernal pool obligate species were present within this wetland. Signs of a rapidly receding water table were also apparent. This area is not a vernal pool.

### **Aq**

The **Aq** map unit consists primarily of disturbed soil materials with poorly drained characteristics generally less than 20 inches down from the existing soil surface. The natural soil profile has been disturbed by previous filling and or grading activities. Classification into natural soil map units is not possible. This map unit is referred to taxonomically as - Aquentis.

## **NON-WETLAND SOILS**

The non-wetland soils were not studied or mapped in detail. Some observations were made of these soils during the process of identifying the inland wetland areas. Random soil boring locations were flagged with pink & black stripped plastic ribbon. The following map unit descriptions do not constitute a detailed soil investigation of these upland areas, but may be used as a guide in site planning.

### **Charlton-Urban Complex**

This map unit located in a less than 100 foot band along the railroad tracks is composed primarily of two soils that are so intermingled on the ground that they could not be separated on the site map. Slopes range from 3 to 15 percent. The dominant is named Charlton. Charlton soils are also very deep and well drained. Typically they have fine sandy loam textures to a depth of 60 inches or more.

The other soil is referred to taxonomically as Udorthents. Udorthents are moderately well to well drained disturbed soils composed of filled areas and areas consisting of both cut and fill. Original diagnostic soil horizons are not present. Udorthents have a wide range of characteristics. Textures are predominantly gravelly fine sandy loams.

### **Ud (307)**

The **Ud** map unit consists of moderately well to well drained disturbed soils. It is composed of filled areas and areas consisting of both cut and fill. Soils in this map unit have been extensively disturbed by grading and filling activities associated with the existing developed\altered portions of this site.

Classification into natural soil units is impossible. This map unit is referred to taxonomically as Udorthents. Original diagnostic soil horizons are not present. Soils in this map unit have a wide range of characteristics. Textures are predominantly gravelly fine sandy loams. Permeability can be variable due to the lack of soil profile structure caused by the grading activities.

If you have any questions regarding this report, or need additional assistance with this site, please contact me. Environmental planning and wetland impact evaluation services are also available upon request. I am available to attend Inland Wetland Commission meetings and site walks.

Sincerely,

A handwritten signature in black ink that reads "David H. Lord". The signature is written in a cursive style with a large initial 'D'.

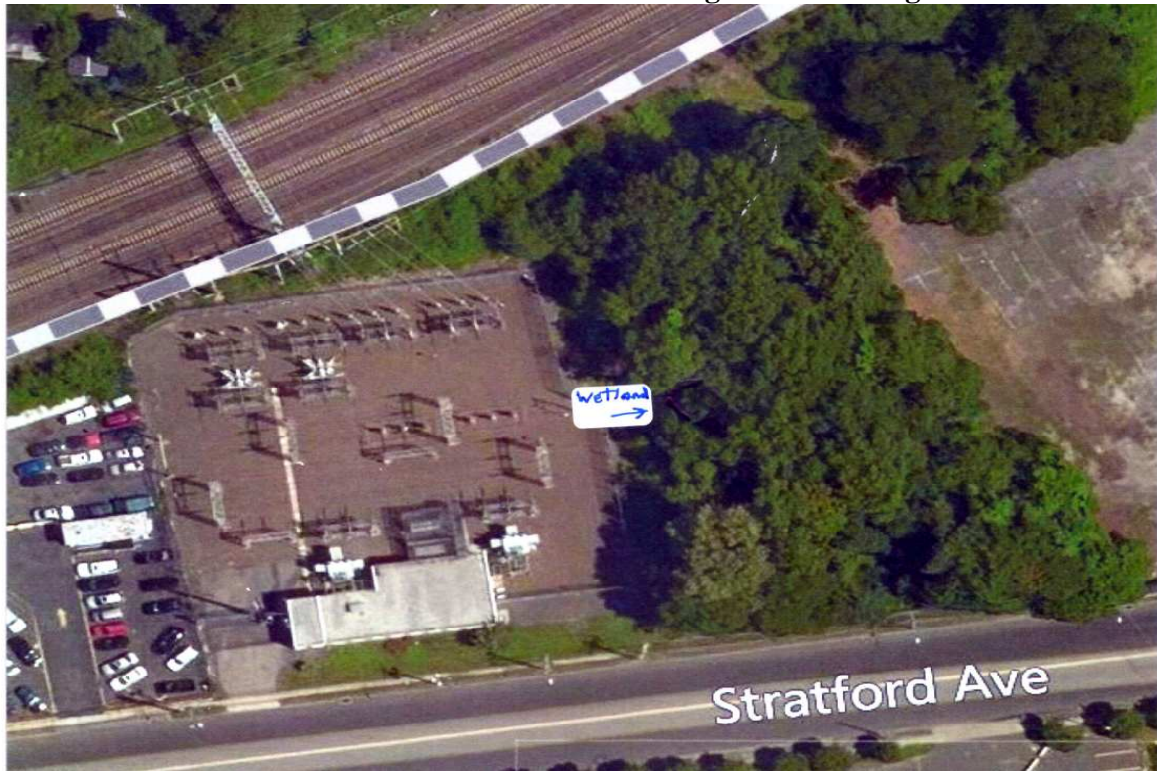
**David H. Lord**  
Certified Soil Scientist  
& Environmental Consultant

## Baird Substation Project Site

Stafford Avenue

Stratford, CT

### Views of Onsite Wetland and Surrounding Volunteer Vegetation



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Attachment B  
Wetland Delineation Report – ACOE Methodology



# SOIL RESOURCE CONSULTANTS

P.O. Box 752

Meriden, CT 06450

July 14, 2015

**SRC Job No. 15-11**

Stuart Manley  
Conestoga Rovers & Associates, Inc.  
45 Farmington Valley Drive  
Plainville, CT 06062

Dear Mr. Manley:

**Re: Federal Jurisdictional Wetland Delineation - Baird Substation  
- 1770 Stratford Avenue - Stratford, CT**

At your request, I have completed an onsite investigation of this site. The purpose of my investigation was to identify and delineate the onsite federal jurisdictional boundaries. The field work was completed on July 8, 2015.

The subject site consists of all undeveloped portions of 1770 Stratford Avenue. The study area is wooded with a mixture of volunteer deciduous and evergreen species. Numerous invasive species including Multiflora Rose and Oriental Bittersweet. Poison Ivy is dominant as ground cover and as thick vines and many of the trees and shrubs.

One small wetland area was observed in the central western area of the woods. This shallow depression pocket is a remnant of past earth moving and re-grading activities. Soils are very disturbed with very little or no original soil profile horizons present. Upland soils are classifiable at the taxonomic level as Udothents - Upland non-wetlands. The soils within the identified wetland are classified as Aquents - disturbed soils with persistent water table conditions at less than 6 inches below existing grades.

The wetland boundaries were established using procedures outlined in the *Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, January 1987*. 2 sample points along one transect were established to conduct the delineation. Please refer to the enclosed sketch for the approximate location of the federal wetland boundaries. The sketch is not drawn to scale but is a field drawn representation of wetland configurations. Sample point numbers and other landmarks can be used to locate the points in the field.

The attached Wetland Delineation Dataform sheets were completed during the site investigation. These Dataform sheets are the basis for the placement of the wetland boundary line.

I have attached several photos of the site focusing on the wetland characteristics and conditions.

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If you have any questions regarding this report, or need additional assistance with this site, please contact me.

Sincerely,

A handwritten signature in black ink that reads "David H. Lord". The signature is written in a cursive style with a large initial 'D' and 'L'.

**David H. Lord**  
Certified Soil Scientist  
& Environmental Consultant

## Baird Substation Project Site

**Photo #1 - Westerly View of Subject Wetland**



**Photo #2 - Existing Character of Vegetation at Sample Points T1A & T1B**



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**Photo #3 - Oxydized Rhizospheres in Topsoil Layer At Sample Point T1B**



**Photo #4 - Overall View of Wetland with Existing Substation in Background**



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Town of Stratford			
Parcel: 17247 Acres: 1.73			
Name:	UNITED ILLUMINATING CO	Land Value:	674700
Site:	1770 STRATFORD AVE	Improvement Value:	187700
Sale:	\$0 on 0000-00-00 Reason= Qual=U	Accessory Value:	0
Mail:	P O BOX 1564	Total Value:	876000
	NEW HAVEN, CT 06506-0901		

The Town of Stratford makes every effort to produce the most accurate information possible. No warranties, expressed or implied, are provided for the data herein, its use or interpretation. The assessment information is from the last certified taxroll. All data is subject to change before the next certified taxroll.  
 Date printed: 07/15/15 · 20:02:17

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# APPENDIX C - WETLAND DELINEATION REPORT

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Baird Substation City/County: Stratford Sampling Date: 7-8-15  
 Applicant/Owner: UI State: CT Sampling Point: T1A  
 Investigator(s): David H. Lord Section, Township, Range: \_\_\_\_\_  
 Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): concave Slope (%): 0-3  
 Subregion (LRR or MLRA): LRR R, MLRA 144B Lat: 41°11' 10" N Long: 73° 8' 38" W Datum: \_\_\_\_\_  
 Soil Map Unit Name: Udorthent NWI classification: Upl  
 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 <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: (Explain alternative procedures here or in a separate report.) subject wetland is located in a heavily disturbed area lacking natural soil profiles and dominated by volunteer vegetative species including numerous invasives. Site is entirely surrounded by existing developments including parking lots, rail lines, and the existing substation facility.			

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Moss Trim Lines (B16)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Crayfish Burrows (C8)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)		<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)		<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)		<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			<input type="checkbox"/> Microtopographic Relief (D4)
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>&gt;24"</u> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>&gt;24"</u> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>&gt;24"</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

APPENDIX C - WETLAND DELINEATION REPORT

VEGETATION – Use scientific names of plants.

Sampling Point: T1A

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. <u>QUERCUS PALustris</u>	<u>50</u>	<u>Y</u>	<u>FACW</u>	
2. <u>QUERCUS bicolor</u>	<u>20</u>	<u>N</u>	<u>FACW</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
			<u>80</u> =Total Cover	<b>Prevalence Index worksheet:</b> 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> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>CORNUS Amomum</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	<u>20</u> =Total Cover
Herb Stratum (Plot size: <u>5'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ### 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Toxicodendron Radicans</u>	<u>80</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	<u>100</u> =Total Cover
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Definitions of Vegetation Strata:</b> <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	#NAME?	
2. _____	_____	_____	#NAME?	
3. _____	_____	_____	#NAME?	
4. _____	_____	_____	#NAME?	
			_____ =Total Cover	<b>Hydrophytic Vegetation Present?</b> Yes <u>###</u> No _____
Remarks: (Include photo numbers here or on a separate sheet.)    				





# APPENDIX C - WETLAND DELINEATION REPORT

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Baird Substation City/County: Stratford Sampling Date: 7-8-15  
 Applicant/Owner: UI State: CT Sampling Point: T1B  
 Investigator(s): David H. Lord Section, Township, Range: \_\_\_\_\_  
 Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): concave Slope (%): 0-3  
 Subregion (LRR or MLRA): LRR R, MLRA 144B Lat: 41 11' 10" N Long: 73 8' 38" W Datum: \_\_\_\_\_  
 Soil Map Unit Name: Udorthent NWI classification: Upl  
 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 _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____		If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) subject wetland is located in a heavily disturbed area lacking natural soil profiles and dominated by volunteer vegetative species including numerous invasives. Site is entirely surrounded by existing developments including parking lots, rail lines, and the existing substation facility.		

**HYDROLOGY**

<p><b>Wetland Hydrology Indicators:</b></p> <p>Primary Indicators (minimum of one is required; check all that apply)</p> <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<p>Secondary Indicators (minimum of two required)</p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input checked="" type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<p><b>Field Observations:</b></p> Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>2"</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>&lt;6"</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	<p><b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____</p>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Refer to Transect T1A datasheet	

# APPENDIX C - WETLAND DELINEATION REPORT

**VEGETATION** – Use scientific names of plants.

Sampling Point:     T1B    

Tree Stratum (Plot size: <u>    30'    </u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	FACW	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)  Total Number of Dominant Species Across All Strata: _____ (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
=Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Sapling/Shrub Stratum (Plot size: <u>    15'    </u>)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
=Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 - Prevalence Index is ≤3.0 <sup>1</sup> _____ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
<b>Herb Stratum (Plot size: <u>    5'    </u>)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
=Total Cover				<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.
<b>Woody Vine Stratum (Plot size: <u>          </u>)</b>				
1. _____	_____	_____	#NAME?	
2. _____	_____	_____	#NAME?	
3. _____	_____	_____	#NAME?	
4. _____	_____	_____	#NAME?	
=Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
Remarks: (Include photo numbers here or on a separate sheet.)          				



Attachment C  
Soil Investigation for Wetland Determination

# SOIL RESOURCE CONSULTANTS

P.O. Box 752

Meriden, CT 06450

October 20, 2015

**SRC Job No. 15-11**

Stuart Manley  
Conestoga Rovers & Associates, Inc.  
45 Farmington Valley Drive  
Plainville, CT 06062

Dear Mr. Manley:

**Re: Soil Investigation for Wetland Determination - Baird Substation  
- 1770 Stratford Avenue - Stratford, CT**

At your request, I have completed an onsite investigation of an area to the north of the railroad tracks north of the above this site. The purpose of my investigation was to identify and delineate any onsite inland wetlands and watercourse boundaries as well as federal jurisdictional wetlands. The field work was completed on October 16, 2015.

The soil investigation was conducted using a spade and or hand auger to identify existing soil conditions on this site. Approximately 8 test holes were dug throughout all areas of this site.

No indications of inland wetland soil conditions, watercourses or federal jurisdictional wetlands were found in any of the test hole locations. Existing soils represent the drainage classes - excessively drained and well drained.

The attached soil map prepared for this site is a refinement of data found in the **Soil Survey of Fairfield County**. Each map unit is composed of a unique combination of soils. Areas with the same symbol have a similar soil composition.

The map units described below are based on data collected at this particular site. Soil surveys in Connecticut were originally conducted for primarily agricultural purposes and do not provide site specific information. The minimum area delineated on a soil survey map sheet is approximately 2-3 acres in size. For this reason there may be some differences between the following information and that published in the Soil Survey.

## **NON-WETLAND SOILS**

The non-wetland soils were not studied or mapped in detail. Some observations were made of these soils during the process of identifying the inland wetland areas. Random soil boring locations were flagged with pink & black stripped plastic ribbon. The following map unit descriptions do not constitute a detailed soil investigation of these upland areas, but may be used as a guide in site planning.

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The site area investigated consist of the north side of an existing multi-track railroad bed, adjacent gravel covered drainage swale, and a highly disturbed slope area leading down from the north. The attached photos will provide views of the existing conditions of the area investigated.

### **Charlton-Urban Complex**

This map unit, located on the slope along the north side of the railroad tracks, is composed primarily of two soils that are so intermingled on the ground that they could not be separated on the site map. Slopes range from 3 to 15 percent. The dominant is named Charlton. Charlton soils are also very deep and well drained. Typically they have fine sandy loam textures to a depth of 60 inches or more.

The other soil is referred to taxonomically as Udorthents. Udorthents are moderately well to well drained disturbed soils composed of filled areas and areas consisting of both cut and fill. Original diagnostic soil horizons are not present. Udorthents have a wide range of characteristics. Textures are predominantly gravelly fine sandy loams.

Exposures of bedrock are numerous within this map unit area.

### **Ud (307)**

The **Ud** map unit consists of moderately well to well drained disturbed soils. It is composed of filled areas and areas consisting of both cut and fill. Soils in this map unit have been extensively disturbed by grading and filling activities associated with the existing developed\altered portions of this site.

Classification into natural soil units is impossible. This map unit is referred to taxonomically as Udorthents. Original diagnostic soil horizons are not present. Soils in this map unit have a wide range of characteristics. Textures are predominantly gravelly fine sandy loams. Permeability can be variable due to the lack of soil profile structure caused by the grading activities.

This map unit area consists of the gravel covered swale along the north side of the tracks. Designed to convey surface water runoff, no indications of any ground water connection was observed.

If you have any questions regarding this report, or need additional assistance with this site, please contact me.

Sincerely,



**David H. Lord**  
Certified Soil Scientist  
& Environmental Consultant



**Photo #1 - Easterly View of Area Investigated North of Railroad Tracks**

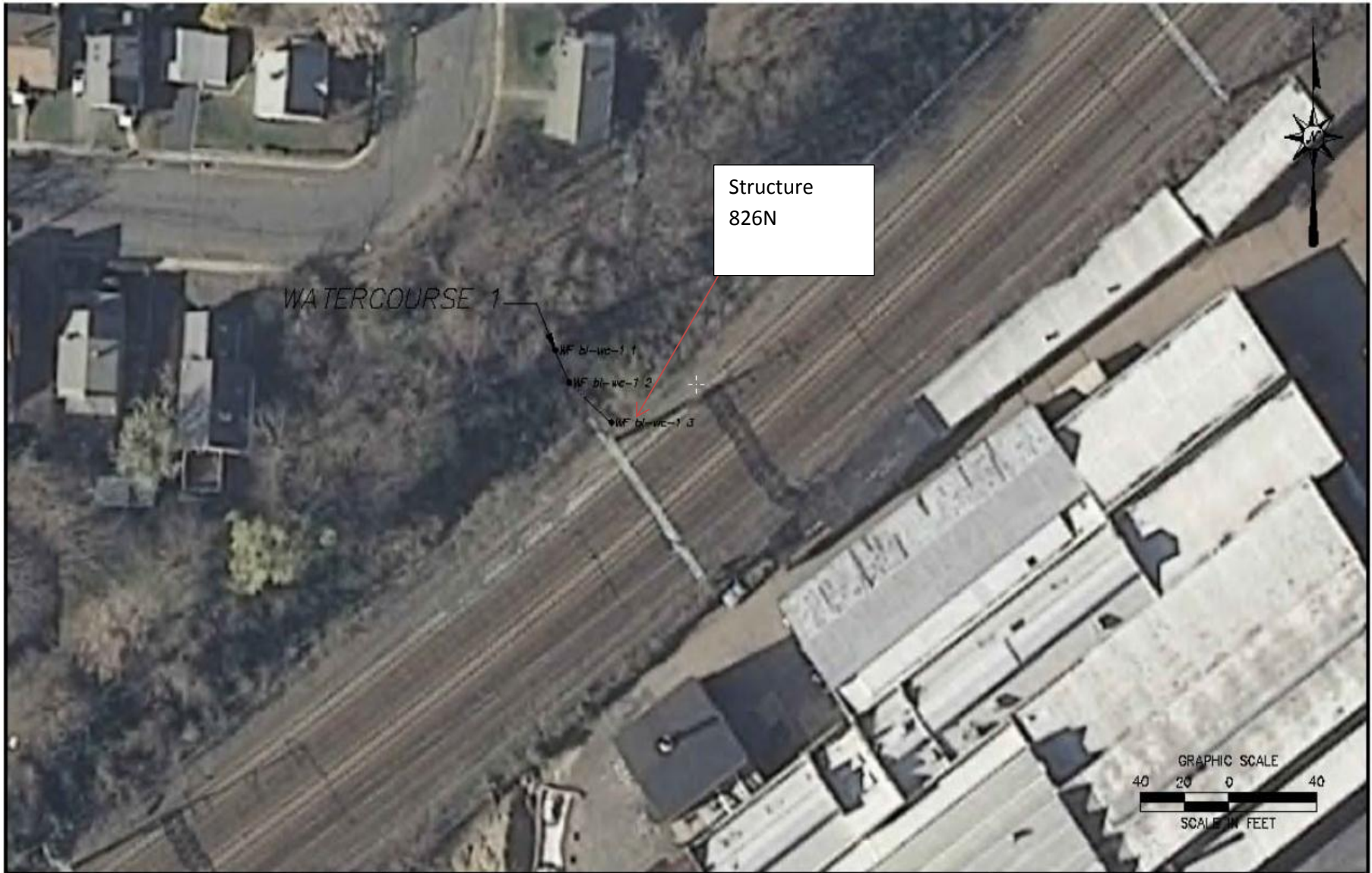



**Westerly View of Investigated Area North of Tracks**



**Wetland Delineations    Wetland Impact Evaluations    Environmental Planning**





 <p>ARCHITECTURE ENGINEERING ENVIRONMENTAL LAND SURVEYING</p>	<p>355 Research Parkway Meriden, CT 06450 (203) 630-1406 (203) 630-2615 Fax</p>	<p><b>WETLAND DELINEATION SKETCH</b></p> <hr/> <p>VICINITY OF HOLLISTER ST AND KNOWLTON ST TOWN OF BRIDGEPORT STATE OF CONNECTICUT</p>	<p>Drawn _____ R.H. Approved _____ Soils 1"=40' ± Project No. 1301 000 Date 12/10/2013 CAD File EVL38160001-F0004</p>	<p><b>WD-02</b></p>
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