



WETLAND INSPECTION

January 13, 2017

Revised August 1, 2017

APT Project No.: CT1418090

Prepared For: Verizon Wireless
99 East River Drive
East Hartford, CT 06108
Attn: Stephen Schadler

Verizon Wireless Site Name: Canterbury South CT

Site Address: 46 Cemetery Road, Canterbury, Connecticut

Date(s) of Investigation: 12/21/2016, 4/20/17, 6/12/17

Field Conditions: **Weather:** sunny, low 30's
Soil Moisture: dry to moist

Wetland/Watercourse Delineation Methodology*:

- Connecticut Inland Wetlands and Watercourses
- Connecticut Tidal Wetlands
- Massachusetts Wetlands
- U.S. Army Corps of Engineers

Municipal Upland Review Area/Buffer Zone:

Wetlands: 100 feet
Watercourses: 100 feet

The wetlands inspection was performed by or under the direction of†:

Dean Gustafson, Professional Soil Scientist

Enclosures: Wetland Delineation Field Forms & Wetland Inspection Map

This report is provided as a summary of findings from APT's wetland investigation of the referenced Study Area that consists of proposed development activities and areas generally within 200 feet.‡

* Wetlands and watercourses were delineated in accordance with applicable local, state and federal statutes, regulations and guidance.

† All established wetlands boundary lines are subject to change until officially adopted by local, state, or federal regulatory agencies.

‡ APT has relied upon the accuracy of information provided by Verizon Wireless and its contractors regarding proposed lease area and access road/utility easement locations for identifying wetlands and watercourses within the study area.

Attachments

- Wetland Delineation Field Forms
- Wetland Inspection Map
- Vernal Pool Survey Memo

Wetland Delineation Field Form

Wetland I.D.:	Wetland 1	
Flag #'s:	WF 1-01 to 1-05	
Flag Location Method:	Site Sketch <input checked="" type="checkbox"/>	GPS (sub-meter) located <input checked="" type="checkbox"/>

WETLAND HYDROLOGY:

NONTIDAL

Intermittently Flooded <input type="checkbox"/>	Artificially Flooded <input type="checkbox"/>	Permanently Flooded <input type="checkbox"/>
Semipermanently Flooded <input type="checkbox"/>	Seasonally Flooded <input type="checkbox"/>	Temporarily Flooded <input type="checkbox"/>
Permanently Saturated <input type="checkbox"/>	Seasonally Saturated – seepage <input type="checkbox"/>	Seasonally Saturated - perched <input checked="" type="checkbox"/>
Comments: Wetland 1 is located along the southwest property corner.		

TIDAL

Subtidal <input type="checkbox"/>	Regularly Flooded <input type="checkbox"/>	Irregularly Flooded <input type="checkbox"/>
Irregularly Flooded <input type="checkbox"/>		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine <input type="checkbox"/>	Riverine <input type="checkbox"/>	Palustrine <input checked="" type="checkbox"/>
Lacustrine <input type="checkbox"/>	Marine <input type="checkbox"/>	
Comments: None		

CLASS:

Emergent <input type="checkbox"/>	Scrub-shrub <input type="checkbox"/>	Forested <input checked="" type="checkbox"/>
Open Water <input type="checkbox"/>	Disturbed <input type="checkbox"/>	Wet Meadow <input type="checkbox"/>
Comments: None		

WATERCOURSE TYPE:

Perennial <input type="checkbox"/>	Intermittent <input type="checkbox"/>	Tidal <input type="checkbox"/>
Watercourse Name: None		
Comments: None		

Wetland Delineation Field Form (Cont.)

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes <input type="checkbox"/> No <input type="checkbox"/> Potential <input checked="" type="checkbox"/>	Other <input type="checkbox"/>
Vernal Pool Habitat Type: 'Cryptic'	
Comments: See attached Vernal Pool Survey Memo for details.	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
If no, describe field identified soils		

DOMINANT PLANTS:

Red Maple (<i>Acer rubrum</i>)	Yellow Birch (<i>Betula alleghaniensis</i>)
Sweet Pepperbush (<i>Clethra alnifolia</i>)	Highbush Blueberry (<i>Vaccinium corymbosum</i>)
Winterberry (<i>Ilex verticillata</i>)	

* denotes Connecticut Invasive Species Council invasive plant species

GENERAL COMMENTS:

The subject property consists of a developed residential property that includes a large fenced field used to pasture goats. The Verizon Wireless facility ("Facility") is proposed in the southwest corner of the fenced field. A gravel access is proposed along the south side of the fenced field which will connect to an existing gravel drive and then to the paved driveway that serves the residence. Underground utilities are proposed from a utility pole on Cemetery Road north of the existing paved access entrance, following along an existing underground utility route through a narrow forested clearing that leads to a transformer behind the subject property's garage. Six wetlands were identified on the subject property in proximity to the proposed Facility development activities.

Wetland 1 is a forested headwater wetland system located along the southwest corner of the subject property. The wetland boundary along the subject property parcel boundary (as evident in the field) was delineated and the approximate wetland area located on the adjoining parcel was estimated from the property boundary. A potential vernal pool located within this wetland system but on the adjoining parcel to the south was field identified from the property boundary and later verified using aerial photo interpretation remote sensing techniques to determine the pool's approximate limits. The nearest proposed Verizon Wireless development activity to Wetland 1 is located ± 45 feet to the west/southwest and ± 250 feet from the potential vernal pool, beyond the vernal pool's envelope (0'-100' from the vernal pool edge).

Although wetlands are located relatively close, the Facility would be located within an existing cleared goat pasture and would not require removal of mature vegetation bordering the nearby wetland. Provided erosion and sedimentation controls are installed and maintained during construction in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sedimentation Control and all protective measures identified in the project site plans are adhered to and maintained, no likely adverse impact to wetlands is associated with the proposed Verizon Wireless development. This statement is based on APT's review of the project site plans completed by On Air Engineering, LLC, latest revision date 8/1/17.

A vernal pool survey was performed during the spring 2017 season, which concluded that the potential vernal pool did not contain breeding by obligate vernal pool species and therefore would not be classified as a vernal pool habitat. A summary of the vernal pool survey methodology and details of the resource are provided in the attached Vernal Pool Survey Memo dated May 30, 2017.

Wetland Delineation Field Form

Wetland I.D.:	Wetland 2	
Flag #'s:	WF 2-01 to 2-26	
Flag Location Method:	Site Sketch <input checked="" type="checkbox"/>	GPS (sub-meter) located <input checked="" type="checkbox"/>

WETLAND HYDROLOGY:

NONTIDAL

Intermittently Flooded <input type="checkbox"/>	Artificially Flooded <input type="checkbox"/>	Permanently Flooded <input type="checkbox"/>
Semipermanently Flooded <input type="checkbox"/>	Seasonally Flooded <input type="checkbox"/>	Temporarily Flooded <input type="checkbox"/>
Permanently Saturated <input type="checkbox"/>	Seasonally Saturated – seepage <input type="checkbox"/>	Seasonally Saturated - perched <input checked="" type="checkbox"/>
Comments: Wetland 2 is hillside seep.		

TIDAL

Subtidal <input type="checkbox"/>	Regularly Flooded <input type="checkbox"/>	Irregularly Flooded <input type="checkbox"/>
Irregularly Flooded <input type="checkbox"/>		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine <input type="checkbox"/>	Riverine <input type="checkbox"/>	Palustrine <input checked="" type="checkbox"/>
Lacustrine <input type="checkbox"/>	Marine <input type="checkbox"/>	
Comments: None		

CLASS:

Emergent <input type="checkbox"/>	Scrub-shrub <input type="checkbox"/>	Forested <input checked="" type="checkbox"/>
Open Water <input type="checkbox"/>	Disturbed <input type="checkbox"/>	Wet Meadow <input type="checkbox"/>
Comments: None		

WATERCOURSE TYPE:

Perennial <input type="checkbox"/>	Intermittent <input checked="" type="checkbox"/>	Tidal <input type="checkbox"/>
Watercourse Name: Unnamed tributary to Cranberry Lake Brook		
Comments: None		

Wetland Delineation Field Form (Cont.)

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Potential <input type="checkbox"/>	Other <input type="checkbox"/>
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
If no, describe field identified soils		

DOMINANT PLANTS:

Red Maple (<i>Acer rubrum</i>)	Black Birch (<i>Betula lenta</i>)
Yellow Birch (<i>Betula alleghaniensis</i>)	Cinnamon Fern (<i>Osmunda cinnamomea</i>)
Sweet Pepperbush (<i>Clethra alnifolia</i>)	Highbush Blueberry (<i>Vaccinium corymbosum</i>)
Greenbrier (<i>Smilax rotundifolia</i>)	

* denotes Connecticut Invasive Species Council invasive plant species

GENERAL COMMENTS:

The subject property consists of a developed residential property that includes a large fenced field used to pasture goats. The Verizon Wireless facility (“Facility”) is proposed in the southwest corner of the fenced field. A gravel access is proposed along the south side of the fenced field which will connect to an existing gravel drive and then to the paved driveway that serves the residence. Underground utilities are proposed from a utility pole on Cemetery Road north of the existing paved access entrance, following along an existing underground utility route through a narrow forested clearing that leads to a transformer behind the subject property’s garage. Six wetlands were identified on the subject property in proximity to the proposed Facility development activities.

Wetland 2 is a forested perched headwater wetland system located along the south side of the residence’s paved driveway in the eastern portion of the subject property. The wetland drains to the southeast into an unnamed intermittent watercourse (associated with Wetland 3) that is a tributary to Cranberry Lake Brook, located ±700 feet to the northeast.

Although Wetland 2 is located relatively close to the existing paved driveway (±35 feet from WF 2-03), no work is proposed along the driveway and therefore no likely adverse impact to this wetland would be associated with the proposed Verizon Wireless development.

Wetland Delineation Field Form

Wetland I.D.:	Wetland 3	
Flag #'s:	WF 3-01 to 3-06	
Flag Location Method:	Site Sketch <input checked="" type="checkbox"/>	GPS (sub-meter) located <input checked="" type="checkbox"/>

WETLAND HYDROLOGY:

NONTIDAL

Intermittently Flooded <input type="checkbox"/>	Artificially Flooded <input type="checkbox"/>	Permanently Flooded <input type="checkbox"/>
Semipermanently Flooded <input type="checkbox"/>	Seasonally Flooded <input checked="" type="checkbox"/>	Temporarily Flooded <input type="checkbox"/>
Permanently Saturated <input type="checkbox"/>	Seasonally Saturated – seepage <input type="checkbox"/>	Seasonally Saturated - perched <input checked="" type="checkbox"/>
Comments: Wetland 3 is a hillside seep associated with an intermittent watercourse.		

TIDAL

Subtidal <input type="checkbox"/>	Regularly Flooded <input type="checkbox"/>	Irregularly Flooded <input type="checkbox"/>
Irregularly Flooded <input type="checkbox"/>		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine <input type="checkbox"/>	Riverine <input type="checkbox"/>	Palustrine <input checked="" type="checkbox"/>
Lacustrine <input type="checkbox"/>	Marine <input type="checkbox"/>	
Comments: None		

CLASS:

Emergent <input type="checkbox"/>	Scrub-shrub <input type="checkbox"/>	Forested <input checked="" type="checkbox"/>
Open Water <input type="checkbox"/>	Disturbed <input type="checkbox"/>	Wet Meadow <input type="checkbox"/>
Comments: None		

WATERCOURSE TYPE:

Perennial <input type="checkbox"/>	Intermittent <input checked="" type="checkbox"/>	Tidal <input type="checkbox"/>
Watercourse Name: Unnamed tributary to Cranberry Lake Brook		
Comments: Intermittent watercourse is 2 to 3 feet wide with a stone bottom that flows northwest to culvert under Cemetery Road.		

Wetland Delineation Field Form (Cont.)

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Potential <input type="checkbox"/>	Other <input type="checkbox"/>
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
If no, describe field identified soils		

DOMINANT PLANTS:

Red Maple (<i>Acer rubrum</i>)	Black Birch (<i>Betula lenta</i>)
Yellow Birch (<i>Betula alleghaniensis</i>)	Winterberry (<i>Ilex verticillata</i>)
Sweet Pepperbush (<i>Clethra alnifolia</i>)	Highbush Blueberry (<i>Vaccinium corymbosum</i>)

* denotes Connecticut Invasive Species Council invasive plant species

GENERAL COMMENTS:

The subject property consists of a developed residential property that includes a large fenced field used to pasture goats. The Verizon Wireless facility (“Facility”) is proposed in the southwest corner of the fenced field. A gravel access is proposed along the south side of the fenced field which will connect to an existing gravel drive and then to the paved driveway that serves the residence. Underground utilities are proposed from a utility pole on Cemetery Road north of the existing paved access entrance, following along an existing underground utility route through a narrow forested clearing that leads to a transformer behind the subject property’s garage. Six wetlands were identified on the subject property in proximity to the proposed Facility development activities.

Wetland 3 is a forested seep wetland system associated with an intermittent watercourse located along the south side of the residence’s paved driveway entrance off Cemetery Road in the eastern portion of the subject property. The wetland drains to the southeast into an unnamed intermittent watercourse (associated with Wetland 3) that is a tributary to Cranberry Lake Brook, located ±700 feet to the northeast.

Although Wetland 3 is located relatively close to the existing paved driveway (±12 feet from WF 3-03) and Cemetery Road, no work is proposed along the driveway and therefore no likely adverse impact to this wetland would be associated with the proposed Verizon Wireless development.

Wetland Delineation Field Form

Wetland I.D.:	Wetlands 4, 5, and 6	
Flag #'s:	WF 4-01 to 4-07 (loop), 5-01 to 5-11, and 6-01 to 6-11	
Flag Location Method:	Site Sketch <input checked="" type="checkbox"/>	GPS (sub-meter) located <input checked="" type="checkbox"/>

WETLAND HYDROLOGY:

NONTIDAL

Intermittently Flooded <input type="checkbox"/>	Artificially Flooded <input type="checkbox"/>	Permanently Flooded <input type="checkbox"/>
Semipermanently Flooded <input type="checkbox"/>	Seasonally Flooded <input type="checkbox"/>	Temporarily Flooded <input type="checkbox"/>
Permanently Saturated <input type="checkbox"/>	Seasonally Saturated – seepage <input checked="" type="checkbox"/>	Seasonally Saturated - perched <input type="checkbox"/>
Comments: Wetlands 4, 5, and 6 are a series of small isolated wetland pockets within a general wetland hillside seep area. Pockets of perched saturation are present within these features, which have all been altered by the existing underground utility conduits that serve the subject property.		

TIDAL

Subtidal <input type="checkbox"/>	Regularly Flooded <input type="checkbox"/>	Irregularly Flooded <input type="checkbox"/>
Irregularly Flooded <input type="checkbox"/>		
Comments: None		

WETLAND TYPE:

SYSTEM:

Estuarine <input type="checkbox"/>	Riverine <input type="checkbox"/>	Palustrine <input checked="" type="checkbox"/>
Lacustrine <input type="checkbox"/>	Marine <input type="checkbox"/>	
Comments: None		

CLASS:

Emergent <input checked="" type="checkbox"/>	Scrub-shrub <input type="checkbox"/>	Forested <input checked="" type="checkbox"/>
Open Water <input type="checkbox"/>	Disturbed <input checked="" type="checkbox"/>	Wet Meadow <input type="checkbox"/>
Comments: Edge forest and interior scrub/shrub and emergent vegetation classes within the existing cleared utility route. Due to their similar morphology, hydrology and vegetative covers, these wetlands have been grouped together for descriptive purposes.		

WATERCOURSE TYPE:

Perennial <input type="checkbox"/>	Intermittent <input type="checkbox"/>	Tidal <input type="checkbox"/>
Watercourse Name: None		
Comments: None		

Wetland Delineation Field Form (Cont.)

SPECIAL AQUATIC HABITAT:

Vernal Pool Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Potential <input type="checkbox"/>	Other <input type="checkbox"/>
Vernal Pool Habitat Type: None	
Comments: None	

SOILS:

Are field identified soils consistent with NRCS mapped soils?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
If no, describe field identified soils		

DOMINANT PLANTS:

Sensitive Fern (<i>Onoclea sensibilis</i>)	Japanese Knotweed* (<i>Polygonum cuspidatum</i>)
Multiflora Rose* (<i>Rosa multiflora</i>)	Highbush Blueberry (<i>Vaccinium corymbosum</i>)
Greater Bladder Sedge (<i>Carex intumescens</i>)	Boneset (<i>Eupatorium perfoliatum</i>)
Bebb Willow (<i>Salix bebbiana</i>)	Purple Loosestrife* (<i>Lythrum salicaria</i>)
Red Maple (<i>Acer rubrum</i>)	Soft Rush (<i>Juncus effusus</i>)
Golden Rod (<i>Solidago</i> sp.)	Japanese Stilt Grass (<i>Microstegium vimineum</i>)

* denotes Connecticut Invasive Species Council invasive plant species

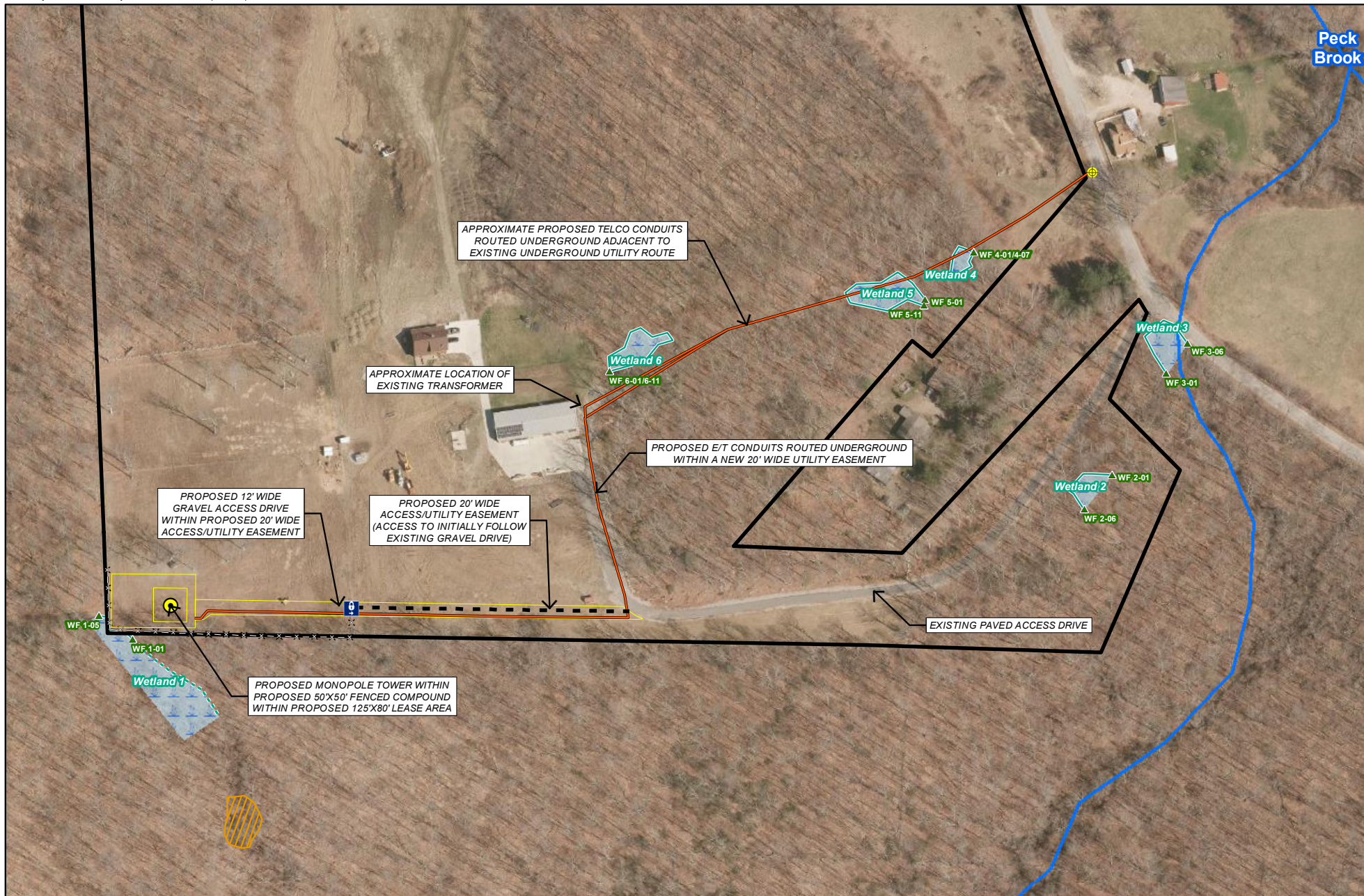
GENERAL COMMENTS:

The subject property consists of a developed residential property that includes a large fenced field used to pasture goats. The Verizon Wireless facility ("Facility") is proposed in the southwest corner of the fenced field. A gravel access is proposed along the south side of the fenced field which will connect to an existing gravel drive and then to the paved driveway that serves the residence. Underground utilities are proposed from a utility pole on Cemetery Road north of the existing paved access entrance, following along an existing underground utility route through a narrow forested clearing that leads to a transformer behind the subject property's garage. Six wetlands were identified on the subject property in proximity to the proposed Facility development activities. This underground utility route intercepts Wetlands 4 and 5; Wetland 6 is apparently not directly affected by the existing underground utility route.

Wetlands 4, 5, and 6 consist of small wetland seep pockets that drain from south to north across an existing cleared underground utility corridor. These wetlands generally drain out along the utility corridor where the topography flattens. Moving further north, the topography becomes steeper and the wetland hydrology ceases as soil drainage improves. This wetland has experienced varying degrees of anthropogenic affects from the historic trenching associated with the utility corridor. As the utility corridor widens near Wetland 6, an emergent habitat type dominates.

The proposed underground utility routing will cross Wetlands 4 and 5 within an existing maintained forest clearing associated with the existing underground utility corridor; Wetland 6 will not be impacted by the proposed underground utility route. A utility consult has been completed with Eversource Energy, which included a site visit and a determination from Eversource Energy that the proposed underground utility route would be required. Therefore, avoidance of these two temporary wetland impacts is not possible.

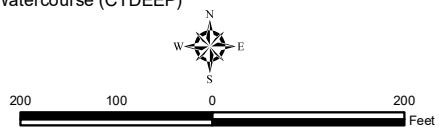
Some mature tree clearing may be necessary to increase the clearing widths in select locations along the proposed underground utility route for the proposed Facility. In addition, temporary ground disturbance will be required for trenching of the new underground utility conduits. A wetland protection and restoration plan is proposed with a series of measures that will both protect Wetlands 4 and 5 during trenching/clearing as well as properly restore wetland areas to pre-disturbance condition. Details of the wetland protection and restoration plan are provided in the project site plans prepared by On Air Engineering, LLC, latest revision date 8/2/17. Provided erosion and sedimentation controls are installed and maintained during construction in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sedimentation Control and all wetland protective measures and restoration efforts are completed as noted on the project site plans, no likely adverse impact to wetlands is associated with the proposed Verizon Wireless development.



Legend

- Subject Property
- Proposed Monopole Tower
- Approximate Proposed Facility Layout
- Proposed Underground Utility Route
- Existing Gravel Drive
- Existing Utility Pole
- Gate
- Fence
- Wetland Flag
- Delineated Wetland Boundary
- Approximate Wetland Boundary
- Wetland Area
- Potential Vernal Pool
- Culvert
- Watercourse (CTDEEP)

Map Notes:
 Base Map Source: 2016 Aerial Imagery (CTECO)
 Map Scale: 1 inch = 200 feet
 Map Date: August 2017



Wetland Inspection Map

Proposed Wireless Telecommunications Facility
 Canterbury South CT
 Holowaty Property
 46 Cemetery Road
 Canterbury, Connecticut





VERNAL POOL SURVEY

Date: May 30, 2017

To: Verizon Wireless
99 East River Drive
East Hartford, Connecticut

Re: Proposed Canterbury South CT Facility
46 Cemetery Road
Canterbury, Connecticut

Cellco Partnership d/b/a Verizon Wireless has identified a proposed location for development of a new wireless telecommunications facility ("Facility") at 46 Cemetery Road in Canterbury, Connecticut. The proposed Facility would include a 160-foot tall monopole in the southwest corner of the property ("Site"). At the request of Verizon Wireless, All-Points Technology Corporation, P.C. ("APT") completed a vernal pool survey to evaluate the potential for vernal pool breeding habitat associated with Wetland 1, located along the southwest Site boundary.

During a wetland investigation inspection on December 21, 2016 a local depression within the northern extents of Wetland 1 was visually identified (located in proximity to the Site on an adjoining parcel). At the time of the inspection it appeared this depression may have contained the necessary physical attributes to be able to support vernal pool breeding habitat. The resulting Wetland Inspection Report, dated January 13, 2017 (submitted previously under separate cover) recommended that a follow-up vernal pool inspection be performed in early spring 2017. This recommended inspection would consist of a wood frog breeding call survey due to the potential vernal pool in question being located off Site. The inspection would consist of visiting the site and listening for wood frog breeding calls to confirm if breeding was occurring. Due to access restriction, physical identification of breeding indicators (egg masses, etc.) could not be confirmed.

The wood frog call survey inspection was performed on March 30, 2017. During the March inspection, auditory observations were made along the property boundary in proximity to Wetland 1; no wood frogs were heard calling during the inspection. In addition, a follow-up inspection was performed on April 20, 2017 where wetlands immediately adjacent to the Site were visually surveyed (aided by binoculars) for amphibian breeding and hydrology. During this April inspection, no evidence of vernal pool breeding (i.e., tadpoles, egg masses etc.) was observed in Wetland 1. Therefore, based upon the referenced observations, Wetland 1 does not appear to contain vernal pool breeding habitat.

Sincerely,

A handwritten signature in black ink that reads "Matthew Gustafson". The signature is written in a cursive style.

Matthew Gustafson
Registered Soil Scientist