Original Alteration of Terrain Permit Application

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H141 AND R193 TRANSMISSION LINE STRUCTURE REPLACEMENT PROJECT

EVERSOURCE ENERGY

Chester, Sandown, and Danville, New Hampshire

NHDES Alteration of Terrain Permit Application

April 6, 2023
GZA File No. 04.0191410.64

PREPARED FOR:
Eversource Energy
Chester, Sandown, and Danville, New Hampshire

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April 6, 2023
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Mr. Ridgely Mauck, P.E.
Program Supervisor - Permitting
NHDES Land Resources Management
Alteration of Terrain Bureau
29 Hazen Drive, P.O. Box 95
Concord, New Hampshire 03302

Re: Alteration of Terrain Permit
H141 and R193 Transmission Line Structure Replacement Project
Chester, Sandown, and Danville, New Hampshire

Dear Mr. Mauck:

On behalf of Public Service Company of New Hampshire dba Eversource Energy (Eversource), GZA GeoEnvironmental, Inc. (GZA) is submitting this Alteration of Terrain (AoT) Permit Application for the proposed H141 and R193 Transmission Line Structure Replacement Project in accordance with Terrain Alteration Law (RSA 485-A:17), Administrative Rules (Env-Wq 1500), and discussions between the New Hampshire Department of Environmental Services (NHDES) AoT Bureau and Eversource.

The proposed project includes the replacement of 13 existing utility structures along the existing R193 Transmission line, and 28 existing utility structures along the H141 Transmission Line that exceed AoT impact thresholds. The proposed project crosses through portions of Chester, Sandown, and Danville for approximately 4.8 miles. To more efficiently conduct routine maintenance of the existing H141 and R193 Transmission Lines, work pad grading, and access road improvements are proposed as part of this project in upland areas. The proposed project will require disturbance subject to AoT permitting through the NHDES as a result of impact areas cumulatively exceeding 100,000 square feet of contiguous disturbance in the project area as defined in RSA 483- B (i.e., the H141 Utility Line Corridor).

Included with this submittal is a copy of the application fee check, a completed AoT Permit Application Form, a detailed project overview narrative, required plans and figures, and additional supporting materials. In addition, a waiver request for the preparation of a stormwater drainage report, drainage area plans, and hydrologic soil group plans and from amendment requirements for shifting of access roads greater than 20 ft is enclosed as required by Env-Wq 1509.04. The proposed project is scheduled to start in June 2023 and continue through January 2024. Eversource appreciates the efforts of the Alteration of Terrain Bureau in helping to maintain the anticipated construction schedule, which is dependent on scheduled outages dictated by regional outage planning.

Please feel free to contact Mr. Conor Madison at 603-232-8751 or conor.madison@gza.com if you have any questions.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

Conor Madison, CPESC, CESSWI
Project Manager

Deborah M. Zarta Gier, CNRP
Consultant/Reviewer

Tracy Tarr, CWS, CWB, CESSWI
Associate Principal

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Attachments: Alteration of Terrain Permit Application

cc: Town of Chester, New Hampshire
Town of Sandown, New Hampshire
Town of Danville, New Hampshire
Exeter-Squamscott River LAC

Official eCheck

GZA GEOENVIRONMENTAL
249 VANDERBILT AVE
NORWOOD, MA 02062

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Eight thousand, one hundred twenty-five and 00/100 Dollars

KeyBank National Association

Memo Alteration of Terrain Permit Application

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1.0 PROJECT BACKGROUND AND PURPOSE

The proposed project involves the replacement of 13 existing utility structures along the existing R193 Transmission line and 28 existing utility structures along the H141 Transmission Line in portions of Chester, Sandown, and Danville, New Hampshire. The proposed replacement structures are old and worn and must be replaced in order for the transmission lines to continue to function safely and reliably. Impacts have been minimized and avoided to the greatest extent practicable through Site evaluations of access routes and work pad placements. Where possible, existing gravel roads are utilized for access.

The project requires approximately 671,407 square feet (sq. ft.) of total impact, including 48,405 sq. ft. of temporary wetland matting, 26,992 sq. ft. of temporary upland matting, and 596,010 sq. ft. of upland ground disturbance. The proposed project to replace a total of 41 existing utility poles is subject to the AoT disturbance threshold per Env-Wq 1500 and RSA 485-A:17 (See Figure 4 – Alteration of Terrain Permitting Plans and Appendix A – Alteration of Terrain Application Form). For purposes of presentation of details and consistency with other permitting efforts for this project, we have broken out project areas as follows:

TOWN	AREA ID	APPROXIMATE AOT IMPACT (SQ. FT.)
Chester	Area A	112,171
Sandown	Area B	428,897
Danville	Area C	54,942

2.0 SITE INFORMATION

2.1 SITE LOCATION AND DESCRIPTION

Area A includes the portion of the shared H141 and R193 Transmission Line ROW at Haverhill Road and continuing easterly to the Chester and Sandown town line for a distance of approximately 0.9 miles. The ROW in Area A is approximately 320-ft in width.

Area B includes the portion of the shared H141 and R193 Transmission Line ROW at the Chester and Sandown town line and continuing in an easterly direction to R193 Structure 303 for a distance of approximately 3.6 miles. The ROW in Area A is approximately 320-ft in width.

Area C includes the portion of the shared H141 and R193 Transmission Line ROW at Sandown Road and continuing in an easterly direction to H141 Structure 261 for a distance of approximately 0.3 miles. The ROW in Area C is approximately 225-ft in width.

The total project area is approximately 4.8 miles in length. The project area primarily crosses privately owned rural/residential properties (see Figure 1 – USGS Topographic Map). There are approximately 24 wetlands along the project route located in the towns of Chester, Sandown, and Danville. The majority of ground disturbance resulting from the project will be related to access and work pad preparations.

2.2 TAX MAP AND LOT(S)

Eversource either holds easements across parcels along the ROW or owns parcels in-fee (see Figure 4). There are approximately 39 abutting properties that contain existing Eversource easements for the ROW involved in the project, and Eversource owns three parcels. In those project locations, the easements are considered to be the

"subject property" because Eversource is the applicant/owner and only has control over the easement. These abutting parcels have been identified and listed on the enclosed abutter's list. See Appendix B for Abutter's List.

2.3 IDENTIFICATION OF NATURAL AND CULTURAL RESOURCES

GZA GeoEnvironmental, Inc. (GZA) has been retained by Eversource to provide professional services on this project that relate to natural and cultural resources identification and assessment, as well as permit applications for natural resources and alteration of terrain impacts required to complete the project. GZA has conducted field evaluations and has corresponded with the appropriate agencies to identify natural and cultural resources present in the vicinity of the proposed project.

2.3.1 Identification of Jurisdictional Wetlands and Vernal Pools

Wetlands were originally delineated by others in 2018, 2019, 2020, and 2021 within this ROW. GZA confirmed wetland boundaries, photographed resources, and recorded data relevant to wetland functions and values within the ROW in March 2023. GZA confirmed wetland boundaries in accordance with the United States Army Corps of Engineers (ACOE) Wetlands Delineation Manual using the Routine Determinations Method and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual as required by the New Hampshire Department of Environmental Services (NHDES) Wetlands Bureau and the ACOE.

GZA conducted a vernal pool evaluation in February 2023 while confirming wetland boundaries in accordance with "Identification and Documentation of Vernal Pools in New Hampshire," 2016, New Hampshire Fish and Game Department, Nongame and Endangered Wildlife Program to identify potential vernal pools. Vernal pool areas exist as confined basins and must exhibit vernal pool criteria outlined in the New Hampshire Code of Administrative Rules, Env-Wt 103.64, 104.15, and 104.44. Three potential vernal pools (PVP) were identified in Chester within Wetlands CW-23, CW-25, and CW-26. Eight PVPs were located in the Town of Sandown within Wetlands SW-4, SW-5, SW-6, SW-25, SW-30, SW-44, and no PVPs were identified in the Town of Danville. It is typical that all potential vernal pools are considered vernal pools for the purposes of impact avoidance and minimization for Eversource maintenance projects. Therefore, no temporary or permanent impacts are proposed to any potential vernal pools as a result of this project.

2.3.2 Identification of Surface Waters

Jurisdictional limits of surface waters of the State of New Hampshire were confirmed by GZA in March 2023 in accordance with their definition in RSA 485-A:2 XIV, 482-A:4 II and rule Env-Wt 104.33. Surface waters include wherever freshwater flows or stands and tidal waters. This includes, but is not limited to, rivers, perennial and intermittent streams, lakes, ponds, intertidal zones, and tidal waters. In addition, jurisdiction extends to the portion of any bank or shore which borders such surface waters and to any swamp or bog subject to periodic flooding by freshwater, including the surrounding shore. The limit of jurisdiction for surface water areas were confirmed as the top of bank, where a natural bank occurs, or its ordinary high-water mark where a natural bank is not present.

2.3.3 Identification of Rare, Threatened, and Endangered Species

In the Towns of Chester, Sandown, and Danville, the NHB and New Hampshire Fish and Game (NHFG) identified records of Blanding's turtle (*Emydoidea blandingii*), wood turtle (*Glyptemys insculpta*), and spotted turtle *(Clemmys guttata*) in the vicinity of the H141 and R193 Transmission Line ROW (See Appendix C for the NHB Reports). Typical of similar Eversource projects, protected species best management practices have been incorporated into the design. Construction personnel will be made aware of the potential presence of sensitive turtle species. Species information will be incorporated into project plans. In addition, construction personnel will be made aware of the potential to encounter Blanding's turtle, wood turtle, and spotted turtle more

frequently during turtle nesting season from late May through the beginning of July. GZA will notify the NHFG and NHB of any protected species observations for inclusion in the statewide database.

Correspondence is ongoing between Eversource and the NHFG. Eversource is proposing the following Protective Measurers for the above-listed turtle species:

New Hampshire Fish and Game Permit Conditions:

- Blanding's turtle (state endangered), spotted turtle (state threatened), and wood turtle (state species of special concern) occur within the vicinity of the project area. All operators and personnel working on or entering the site shall be made aware of the potential presence of these species and shall be provided flyers that help to identify these species, along with NHFG contact information. Rare species information (e.g., identification, observation and reporting of observations, when to contact NHFG immediately and NHFG contact information) shall be posted on site at all times and communicated during morning tailgate meetings prior to work commencement.
- For all work areas from Wells Village Road to Main Street in Sandown:
    - All material shall be staged/placed within pre-established work pads which have been cleared for and isolated from turtle entry, and all work pads around structures shall be cleared and isolated from turtle entry with wildlife exclusion silt fence prior to work. These areas shall be cleared by a qualified biologist or herpetologist.
    - Silt fence used for wildlife exclusion should fully enclose the work areas and should be buried to a depth no less than 6-8" and be 18" above grade with ground stakes on the active site side of the fence. Access gates shall be weighed down and lay flat on the ground to prevent wildlife entry. There should be no gaps between the gate and the silt fence or the gate and the ground.
    - Any failings in silt fence for wildlife exclusion shall be reported to NHFG immediately.
- Turtles may be attracted to disturbed ground during nesting season. Turtle nesting season occurs approximately May 15th – June 30th. Nesting areas may include work pads and access roads that are not hard pack gravel and other sandy/gravel work areas. All turtle species nests are protected by NH laws. Be aware of the potential to encounter nesting wildlife in these areas.
- If a nest is observed or suspected, operators shall contact Melissa Winters (603-479-1129) or Josh Megyesy (978-578-0802) at NHFG immediately for further consultation. The nest or suspected nest shall be marked (surrounding roped off or cone buffer) and avoided; this shall be communicated to all personnel onsite. Site activities shall not occur in the area surrounding the nest or suspected nest until further guidance is provided by NHFG.
- Vernal pools and potential vernal pools shall be flagged prior to work, and impacts shall be avoided. No disturb vegetative buffers of 50' shall be maintained.
- All matting which will be placed in waterbodies deemed suitable for hibernating rare turtles will be placed prior to the start of the inactive season (October 16-March 31) so as to prevent accidental placement atop hibernating turtles. Immediately prior to matting placement in these wetlands, the area shall be swept by a qualified biologist or herpetologist. They shall watch for signs that turtles are being disturbed in the area (ex. Heads coming above water, animals moving in water). Contact NHFG if biologist/herpetologist sees or suspects turtles in matting areas. Areas identified as suitable hibernation habitat shall be identified on plan sheets and provided to NHFG at least two weeks prior to beginning work. Biologist qualifications shall be provided to NHFG.
- Immediately prior to the placement of matting in wetlands during the active season (April 1-October 15), the areas shall be cleared by a qualified biologist or herpetologist. Biologist qualifications shall be provided to NHFG.
- All work activities shall be restricted to the defined roads, construction areas, and staging areas, with no equipment or materials staged or stored outside of the defined areas as shown on plan sheets.

- Searches and sweeps shall be conducted immediately by trained personnel before the start of work and movement of equipment in order to minimize the chance of animals entering an area between the sweep and work.
- Work, pull pads, and access shall be minimized to the greatest extent possible.
- Works pads shall be reduced post-construction to 30' x 60' and restored with a native vegetation seed mix.
- All manufactured erosion and sediment control products, with the exception of turf reinforcement mats, utilized for, but not limited to, slope protection, runoff diversion, slope interruption, perimeter control, inlet protection, check dams, and sediment traps shall not contain plastic, or multifilament or monofilament polypropylene netting or mesh with an opening size of greater than 1/8 inches;
- All observations of threatened or endangered species on the project site shall be reported immediately to the NHFG nongame and endangered wildlife environmental review program by phone at 603-271-2461 and by email at NHFGreview@wildlife.nh.gov, with the email subject line containing the NHB DataCheck tool results letter assigned number, the project name, and the term Wildlife Species Observation;
- Photographs of the observed species and nearby elements of habitat or areas of land disturbance shall be provided to NHFG in digital format at the above email address for verification, as feasible;
    - In the event a threatened or endangered species is observed on the project site during the term of the permit, the species shall not be disturbed, handled, or harmed in any way prior to consultation with NHFG and implementation of corrective actions recommended by NHFG.

        Site operators shall be allowed to relocate wildlife encountered if discovered within the active work zone and if in direct harm from project activities. Wildlife shall be relocated in close proximity to the capture location but outside of the work zone and in the direction the individual was heading. NHFG shall be contacted immediately if this action occurs.
- The NHFG, including its employees and authorized agents, shall have access to the property during the term of the permit.

2.3.4 Identification of Cultural and Historical Resources

GZA will submit a Request for Project Review (RPR) to the New Hampshire Division of Historical Resources (NHDHR) for the proposed project.

Victoria Bunker Inc (VBI) conducted a Phase IA Archeological Assessment along the H141 and R193 Transmission Line in Stratham, Exeter, Brentwood, Fremont, Danville, Sandown, Chester, and Derry, New Hampshire during June 2013. GZA has contracted Independent Archaeological Consultants, LLC (IAC) to complete Phase IB Survey in the Town of Sandown for proposed access and work pad location as shown on plans created by GZA and dated December 2022. IAC will conduct the Phase IB Survey throughout the potentially significant archaeological sites located within the project area. Results of this work will be submitted to DHR consistent with the response to the RPR.

3.0 EXISTING CONDITIONS

The proposed project is located within the existing and maintained H141 and R193 Transmission Line ROW. The proposed project work areas subject to the Alteration of Terrain permit cross through portions of three towns. Existing dirt and/or grass access routes currently used for access to existing utility structures within the ROW are

proposed to be improved using gravel and stone as a part of a routine structure maintenance project. Proposed access road improvements include 12- to 16-foot-wide gravel and stone roads with a 20-foot total width limit of disturbance. Based on NRCS soil mapping, existing upland soils are primarily Chatfield-Hollis-Canton complex and Canton fine sandy loam. Slopes are variable and generally range from 0 to 25%, with an average of approximately 8%.

The project includes areas of uplands and wetlands located in primarily rural and forested areas. In uplands, the shrub layer contains red maple (*Acer rubrum*), gray birch (*Betula populifolia*), American beech *(Fagus grandifolia)*, white pine *(Pinus strobus)*, and Eastern hemlock *(Tsuga canadensis)*. The herbaceous layer contains bracken fern *(Pteridium aquilinum)*, hay scented fern *(Dennstaedtia punctilobula)*, and teaberry *(Gaultheria procumbens)*. Wetlands in the ROW primarily consist of palustrine emergent (PEM) or palustrine scrub-shrub (PSS) systems that are seasonally saturated. Dominant species observed in the shrub layer include, glossy buckthorn (*Rhamnus frangula),* highbush blueberry *(Vaccinium corymbosum)*, red maple, meadowsweet *(Filipendula ulmaria)*, steeplebush *(Spiraea tomentose)*, and white birch *(Betula papyrifera)*. The herbaceous layer contains a variety of species, including reed canary grass (*Phalaris arundinacea*), sensitive fern (*Onoclea sensibilis*), cinnamon fern *(Osmundastrum cinnamomeum)*, broadleaf cattail (*Typha latifolia*), soft rush *(Juncus effusus)*, royal fern *(Osmunda regalis)*, and wool grass *(Scirpis cyperinus).*

Existing conditions along the H141 and R193 Transmission Lines are discussed below by areas subject to jurisdiction under the Alteration of Terrain Law and Rules and consistent with discussions with the AoT Bureau for Eversource Line projects.

3.1 AOT AREA A – TOWN OF CHESTER

Area A includes the portion of the shared H141 and R193 Transmission Line ROW from Haverhill Road to the Chester and Sandown town line. The total work area in the portion of the ROW is approximately 0.9 miles in length and approximately 320-ft in width. Area A includes upland and wetland areas with elevations ranging from approximately 282 feet above sea level (fasl) adjacent to R193 Structure 353 to 416 fasl adjacent to R193 Structure 347. This portion of the ROW is located in primarily forested undeveloped areas of Chester. This area also lacks documented drainage structures in the proposed access route.

Land disturbance subject to Alteration of Terrain Law and Rules due to *Env-Wq 1502.58 (b) (2)* (see *Section 5.1.2* below) within Area A includes:

- Work pads associated with:
    a. H141 Structures 348 to 351,
    b. R193 Structure 312, and
- Access from Haverhill Road to the Chester and Sandown town line.

3.1.1 Surface and Groundwater Protection – Area A

There is one unnamed stream associated with wetland CW-18, and one named stream, the Exeter River, associated with wetland CW-19, within this portion of the project area (see Figure 3 – Surface Water and Groundwater Overlay Plans). This portion of the project area includes temporary wetland matting in three wetland systems for access and work pad placement. A NHDES SPN will be submitted for temporary wetland impacts for the proposed project in the Town of Chester. Temporary wetland matting totals are summarized in the table below. The AoT disturbance area is summarized in *Section 5.1.2*.

Temporary Matting	Impact (sq. ft.)

Wetland Matting	4,620

According to Figure 3, portions of Area A are located within the "Designated River quarter-mile buffer," "Surface Water with Impairments quarter-mile buffer," and "Wellhead Protection Area" screening layers. Area A is not located within any remaining AoT screening layers, including "Groundwater Classification Areas GA2," "Local Potential Contamination Sources," "Class A Surface Water (RSA 485 A9) Watersheds," "All Lakes Within a Quarter-mile Buffer," "Outstanding Resource Water Watershed," "Watersheds with Chloride Impairments 2016," "Groundwater Classification Areas GAA," "Groundwater Classification Areas GA1," and "Water Supply Intake Protection Area."

3.1.2 FEMA 100-year Floodplain, Shoreland Protection, Designated Rivers – Area A

According to the FEMA Flood Insurance layer on Figure 3, a portion of Area A from R193 Structure 352 to R193 Structure 354 are located within a mapped 100-year floodplain area. According to the Consolidated List of Water Bodies Subject to RSA 483-B (May 11, 2020), there is proposed work within the 250-ft of a protected shoreland of the Exeter River between R193 Structure 353 and 354. Based on the NHDES Designated River Corridor Web Map, there is proposed work within a quarter-mile of the Exeter River, a designated river protected under RSA-483.

3.2 AOT AREA B – TOWN OF SANDOWN

Area B includes the portion of the shared H141 and R193 Transmission Line ROW from the Chester and Sandown town line to H141 Transmission Line 303. The total work area in this portion of the ROW is approximately 3.6 miles in length and approximately 320-ft in width. Area B includes upland and wetland areas with elevations ranging from approximately 176 fasl at R193 Structure 303 to approximately 396 fasl at the proposed access adjacent to the Chester and Sandown town line. This portion of the ROW is located in a primarily forested undeveloped areas in the Town of Sandown.

Land disturbance subject to Alteration of Terrain Law and Rules due to *Env-Wq 1502.58 (b) (2)* (see *Section 5.1.2* below) within Area B includes:

- Work Pads associated with
    a. R193 Structures 303 to 307 and 324 to 327,
    b. H141 Structures 275, 275, 281 to 287, 290 to 292, 294, 299 to 302, 305 to 308, 310, 311, and
- Access from:
    - The Chester and Sandown town line to H141 Structure 305,
    - H141 Structure 302 to H141 Structure 299,
    - H141 Structure 294 to H141 Structure 290,
    - Cross Road to H141 Structure 281, and
    - R193 Structure 307 to R193 Structure 303.

3.2.1 Surface and Groundwater Protection – Area B

There are 5 unnamed streams within this portion of the project area associated with wetlands SW-7, SW-9, SW-15, SW-17, and SW-28. There are no named streams within this portion of the project area (see Figure 3 – Surface Water and Groundwater Overlay Plans). This portion of the project area includes temporary wetland matting in 18 wetland systems for access and work pad placement. A NHDES SPN will be submitted for temporary wetland

impacts for the proposed project in the Town of Sandown. Temporary wetland matting totals are summarized in the table below. AoT disturbance area is summarized in *Section 5.1.2*.

Temporary Matting	Impact (sq. ft.)
Wetland Matting	38,877

According to Figure 3, portions of Area B are located within the "Designated River quarter-mile buffer," "Surface Water with Impairments quarter-mile buffer," "All Lakes Within a Quarter-mile Buffer," and "Wellhead Protection Area" screening layers. Area B is not located within any remaining AoT screening layers, including "Groundwater Classification Areas GA2," "Local Potential Contamination Sources," "Class A Surface Water (RSA 485 A9) Watersheds," "Outstanding Resource Water Watershed," "Watersheds with Chloride Impairments 2016," "Groundwater Classification Areas GAA," "Groundwater Classification Areas GA1," and "Water Supply Intake Protection Area."

3.2.2 FEMA 100-year Floodplain, Shoreland Protection, Designated Rivers – Area B

According to the FEMA Flood Insurance layer on Figure 3, no proposed work within a mapped 100-year floodplain area. According to the Consolidated List of Water Bodies Subject to RSA 483-B (May 11, 2020), there is no proposed work within the 250-ft of a protected shoreland. Based on the NHDES Designated River Corridor Web Map, there is no proposed work within a quarter-mile of a designated river protected under RSA 483.

3.3 AOT AREA C – TOWN OF DANVILLE

Area C includes the portion of the shared H141 and R193 Transmission Line ROW from Sandown Road to H141 Structure 261. The total work area in this portion of the ROW is approximately 0.3 miles in length and approximately 225-ft in width. Area C includes upland and wetland areas with elevations ranging from approximately 200 fasl at the proposed wetland crossing between H141 Structures 261 and 262 to 224 fasl at the proposed access between H141 Structures 264 and 264. This portion of the ROW is located in primarily forested undeveloped areas of Allenstown and abuts some residential properties. This area also lacks documented drainage structures in the proposed access route.

Land disturbance subject to Alteration of Terrain Law and Rules due to *Env-Wq 1502.58 (b) (2)* (see *Section 5.1.2* below) within Area C includes:

- Work pads associated with H141 Structures 261 to 264, and
- Access from Sandown Road to H141 Structure 261.

3.3.1 Surface and Groundwater Protection – Area B

There are no unnamed or named streams within this portion of the project area (see Figure 3 – Surface Water and Groundwater Overlay Plans). This portion of the project area includes temporary wetland matting in two wetland systems for access and work pad placement. A NHDES SPN will be submitted for temporary wetland impacts for the proposed project in the Town of Danville. Temporary wetland matting totals are summarized in the table below. The AoT disturbance area is summarized in *Section 5.1.2*.

Temporary Matting	Impact (sq. ft.)
Wetland Matting	5,178

According to Figure 3, no portion of Area B is located within an AoT screening layer, including "Groundwater Classification Areas GA2", "Wellhead Protection Areas," "Local Potential Contamination Sources," "Class A Surface

Water (RSA 485 A9) Watersheds," "Designated River quarter-mile buffer," "Surface Water with Impairments quarter-mile buffer," "All Lakes Within a Quarter-mile Buffer," "Outstanding Resource Water Watershed," "Watersheds with Chloride Impairments 2016," "Groundwater Classification Areas GAA," "Groundwater Classification Areas GA1," and "Water Supply Intake Protection Area."

3.3.2 FEMA 100-year Floodplain, Shoreland Protection, Designated Rivers – Area C

According to the FEMA Flood Insurance layer on Figure 3, no proposed work within a mapped 100-year floodplain area. According to the Consolidated List of Water Bodies Subject to RSA 483-B (May 11, 2020), there is no proposed work within the 250-ft of a protected shoreland. Based on the NHDES Designated River Corridor Web Map, there is no proposed work within a quarter-mile of a designated river protected under RSA 483.

3.4 STRUCTURE REPLACEMENT AND MAINTENANCE

As previously mentioned, the proposed project includes replacement of 13 existing utility structures along the existing R193 Transmission line and 28 existing utility structures along the H141 Transmission Line within AoT areas. The structures must be replaced due to environmental damage. The process for replacing structures consists of drilling approximately 4-ft diameter holes to install a caisson approximately 7 to 15 ft below the ground surface. New structures will be installed in caissons and backfilled with clean, suitable materials. Spoils produced from drilling will be disposed in approved upland areas at a minimum distance of 100 ft from wetland areas. Any disturbed upland and wetland areas will be restored or stabilized upon completion of work. Anchors will also be installed to stabilize new structures. Anchors will be installed by excavating trenches, installing the concrete block anchors, and backfilling trenches. Backfill for anchors in wetlands will consist of hydric soils to maintain hydric conditions in the soil.

Old structures will be typically removed in upland areas cut at the ground surface in wetlands. In addition to the removal of old structures, old cross-arms, wires, and accessory equipment will be removed off-Site and disposed. Old structure butts may be dug up and removed depending on field conditions and whether or not the remaining pole butt would impact the structural integrity of new structures.

3.4.1 Access

The proposed structure replacement project utilizes existing access routes within the existing H141 and R193 ROW to the greatest extent practicable. The majority of existing access routes have been improved due to prior maintenance work or are comprised of dirt or grassy areas and are proposed to be improved as part of this project. Proposed access routes are shown on the plans in both Figures 3 and 4. Access into the existing ROW will be obtained from various state and local roadways and private properties where permission has been obtained. Proposed access routes, as shown on Figures 3 and 4, were identified to minimize ground disturbance to the greatest extent practicable while providing safe and efficient access to existing utility structures. Access through existing wetlands within the project area will be completed using temporary timber matting.

3.4.1.1 Road Construction

Proposed access road improvements include 12- to 16-foot-wide gravel and stone roads with a 20-foot total width limit of disturbance. The roads will provide access to existing utility structures for routine maintenance activities. Improved access will provide reliable, permanent, and quick, efficient access to utility structures for future maintenance activities and when emergency repairs are required (see Appendix E – Photo Log).

3.4.1.2 Wetland and Upland Temporary Matting

Access through existing wetlands in the project area will be completed using temporary timber matting to minimize and prevent rutting in the wetlands (see Figure 4- Alteration of Terrain Permitting Plans). In addition, upland matting may be used rather than improving access with gravel and stone if access is necessary through maintained property owner lawns or farm fields.

3.4.2 Work Pad Construction

The proposed project includes the construction of 100-foot by 100-foot gravel work pads to stage construction equipment and vehicles necessary to replace utility structures. Work pads will be constructed using clean modified riprap (6- to 8-inch diameter) or equivalent stone. In addition, the work pad will be top-dressed with 1.5- to 3-inch diameter clean stone. Lastly, disturbed areas in proximity to the final work pad configuration will be stabilized with an upland seed mix. Upon completion of work, work pads will be reduced to a 30-foot by 60- foot gravel maintenance work pad. The restored portions of the larger gravel work pad will be seeded and mulched for restoration.

Proposed work pads in wetland areas will be constructed using temporary timber matting and removed upon completion of work.

3.5 CONSTRUCTION SEQUENCE

This proposed project is scheduled to begin in June 2023. The work is proposed to be undertaken during the fall and winter of 2023 into January 2024, following the receipt of all regulatory approvals. The following is a description of the anticipated construction sequence for this type of routine maintenance work. Once contractor(s) are scheduled, a more finalized sequence and schedule will be determined.

1) Install sediment and erosion controls in proposed locations, as shown in Figure 4.
2) Upgrade access routes and build work pads. Timber matting to be used in uplands and wetlands as designated by Figure 4.
3) Conduct drilling activities, including drilling of approximately 4-ft diameter holes for caisson placement, approximately 7-15-ft below ground surface.
4) Conduct structure replacement activities, including installation of new structures, removal of old structures, removal of old wire.
5) Reduce 100-foot by 100-foot gravel work pads to 30-foot x 60-foot gravel work pads to remain after construction and apply seed and mulch to restored portions of gravel work pad.
6) Remove temporary timber matting and stabilized exposed soils within the ROW and restore temporarily disturbed wetland areas with appropriate wetland seed mix, as necessary.
7) Remove erosion and sedimentation controls following stabilization.

3.6 BEST MANAGEMENT PRACTICES

Work will be conducted in accordance with Eversource's standard Best Management Practices (BMPs) as designated by the NHDES Best Management Practices Manual for Utility Maintenance in and Adjacent to Wetlands and Waterbodies in New Hampshire dated March 2019. By implementing these BMPs, impacts to both wetland and upland areas will be minimized and prevented to the greatest extent practicable.

Where necessary, perimeter protective measures consisting of a silt fence, straw wattle, mulch, and straw bales will be installed around the structures to minimize potential impacts to nearby resource areas. Water bars will be installed in areas of road improvements with steep slopes as identified by the Contractor. If necessary and based on localized Site conditions, a silt fence may be used. Disturbed soil will be seeded and mulched with hay or straw for stabilization as needed following completion of work. No equipment or material will be stored within wetland areas. Erosion controls will be implemented during construction as detailed in Note sheets 1 through 3 of Figures 3 and 4 to minimize potential impacts during construction (see Figure 3 – Surface Water and Groundwater Overlay Plans and Figure 4 – Alteration of Terrain Permitting Plans).

Timber matting will be used in wetlands and in some upland areas to minimize impacts and provide level work pads. Upon completion of work where timber matting is implemented in upland areas, those upland areas will be restored and stabilized to pre-existing conditions, and areas of exposed soils will be seeded and/or mulched. Additionally, should any removal of BMPs be necessary, it will occur during restoration activities.

4.0 REGULATORY COMPLIANCE

4.1 ALTERATION OF TERRAIN

The NHDES requires an AoT permit whenever a project proposes to disturb more than 100,000 sq. ft. of terrain (50,000 sq. ft. if within a protected shoreland). This NHDES requirement, which is found in Administrative Rule Env- Wq-1500, is intended to protect New Hampshire surface waters by controlling soil erosion and managing stormwater runoff from developed areas. The project contains three AoT regulated areas (referred to respectively as Areas A and B) along the H141 Transmission Line ROW based on continuous areas of disturbance. Details on impacts in each regulated area are provided below in *Section 5.1.2* Quantification of Impacts Subject to AoT.

4.1.1 Waiver Request: Stormwater Drainage Report; Drainage Area Plan; Hydrologic Soil Group Plans (Env- WQ 15.09)

Per Env-Wq 1509.02, a waiver is being requested from the requirements to prepare a Stormwater Drainage Report, Drainage Area Plans, and Hydrologic Soil Group Plans because of the new impervious surface is limited to the footprint of new transmission line structures. It is not anticipated that the proposed structures will have a significant impact on- Site drainage patterns. Accordingly, stormwater treatment practices are not proposed. A formal waiver request is provided in Appendix F.

4.1.2 Waiver Request: Measurement of Contiguous Area Disturbed; Inclusion of Plans (Env- WQ 1503.12)

Per Env-Wq 1503.12, a waiver is being requested for including past terrain disturbance in the measurement of contiguous disturbed area included in this H141 and R193 Transmission Line AOT application. Existing terrain alteration associated with past transmission line maintenance within the H141 ROW is minimal. Any existing trails or access roads that may have been created within the last 10 years will be utilized and/or improved as part of this project and have been included in the current calculations within this application. Future disturbance beyond the scope of H141 and R193 structure replacement project described in this application, is not known at this time. The project proposes to improve access routes and work pads around utility structures for the purpose of maintaining existing utility infrastructure. This project is necessary to maintain the safety and reliability of the electrical infrastructure. Project disturbances included in this application and subsequent permit approvals will be considered if future structure maintenance is proposed within the ROW. Eversource respectfully requests a waiver from including past disturbance in this application. A formal waiver request is provided in Appendix F.

4.1.3 Waiver Request: Deviation from the Approved Plans and Specifications (Env- WQ 1503.21)

Per Env-Wq 1503.21, a waiver is being requested for deviations from the approved plans without applying for an amended permit or a new permit if shifts in the proposed project layout occur. Changes in the project layout are frequently identified during construction by Eversource and their contractors and may be necessary to safely perform the work. Access shifts would be limited to the extent necessary for safety, would not impact new resources, and access would remain within the existing and maintained ROW. Eversource respectfully requests a waiver from limiting shifts of the project road centerlines and parking areas to 20 feet. A formal waiver request is provided in Appendix F.

4.1.4 Quantification of Impacts Subject to AOT

The project requires approximately 671,407 square feet (sq. ft.) of total impact, including 48,405 sq. ft. of temporary wetland matting, 26,992 sq. ft. of temporary upland matting, and 596,010 sq. ft. of ground disturbance along the H141 and R193 Transmission Line ROW that requires an AoT permit in accordance with Env-Wq 1502.58. Specific areas and construction activities that significantly alter the terrain are detailed below. Additional details are shown in Figure 4.

AoT Area A - Chester Map Sheets 1 to 2	
Disturbance Type	Impact (sq. ft)
New Access	73,334
Gravel Work Pad	38,837
Total AoT Disturbed Area	*112,171*
-Criteria: Env-Wq 1502.58 (b) (2) "An area that, over a 10-year period, cumulatively exceeds 100,000 square feet of contiguous area." -Work pad dimensions: Up to 100-ft x 100-ft; Access road width: 16-ft	

AoT Area B - Sandown Map Sheets 3 to 9	
Disturbance Type	Impact (sq. ft)
New Access	158.245
Gravel Work Pad	270,652
Total AoT Disturbed Area	*428,897*
-Criteria: Env-Wq 1502.58 (b) (2) "An area that, over a 10-year period, cumulatively exceeds 100,000 square feet of contiguous area." -Work pad dimensions: Up to 100-ft x 100-ft; Access road width: 16-ft	

AoT Area C - Danville Map Sheet 10	
Disturbance Type	Impact (sq. ft)
New Access	19,449
Gravel Work Pad	35,493
Total AoT Disturbed Area	*54,942*

-Criteria: Env-Wq 1502.58 (b) (2) "An area that, over a 10-year period, cumulatively exceeds 100,000 square feet of contiguous area."

-Work pad dimensions: Up to 100-ft x 100-ft; Access road width: 16-ft

4.2 OTHER REGULATORY PROGRAMS

Other regulatory permits and notifications required for the proposed project are summarized below.

Agency	Permit/Notification		Status
Local			
Town of Chester Town of Sandown Town of Danville	Conditional Use Permit Conditional Use Permit Special Exception Permit		*Pending* *Pending* *Pending*
State			
NHDES	Statutory Permit by Notification		
	Town/City	SPN File No.	
	Chester Sandown Deerfield	TBD TBD	*Pending*
Federal			
EPA (Construction General Permit)	Stormwater Pollution Prevention Plan (SWPPP)		*Pending*

The proposed project includes the replacement of 28 existing utility structures on the H141 Transmission Line and 13 existing utility structures on the R193 Transmission Line that exceed AoT impact thresholds. This includes a total of approximately 596,010 sq. ft. of ground disturbance associated with access improvements and work pad grading across three separate work areas broken out by Town.

The proposed project is necessary for routine maintenance of the H141 and R193 Transmission Lines and to ensure the long-term safety and reliability of the electrical infrastructure.

Figure 1 – USGS Topographic Map

CHESTER
FREMONT
SANDOWN
Marders Hill
Great Hill
Hunt Pond
Lily Pond
Sanborn Cem
North Cem
Wells Cem
Center Cem
Central Sch
Hoyt Hill
French Hill
Chestnut Hill
Sandown
Exeter
Toule Brook
Exeter River
Walnut Hill
Sandpit
Substa
Radio Tower
BM 520
BM 232
BM 189
BM 217
BM 147
CHESTER
DERRY
FREMONT
SANDOWN
DANVILLE
1
2
3
4
5
6
7
8
9
10

TOWN BOUNDARY
MAP TILE

0 1,000 2,000 4,000
SCALE IN FEET

3

H141 AND R193 TRANSMISSION LINE STRUCTURE REPLACEMENT PROJECT

CHESTER, SANDOWN, AND DANVILLE, NEW HAMPSHIRE

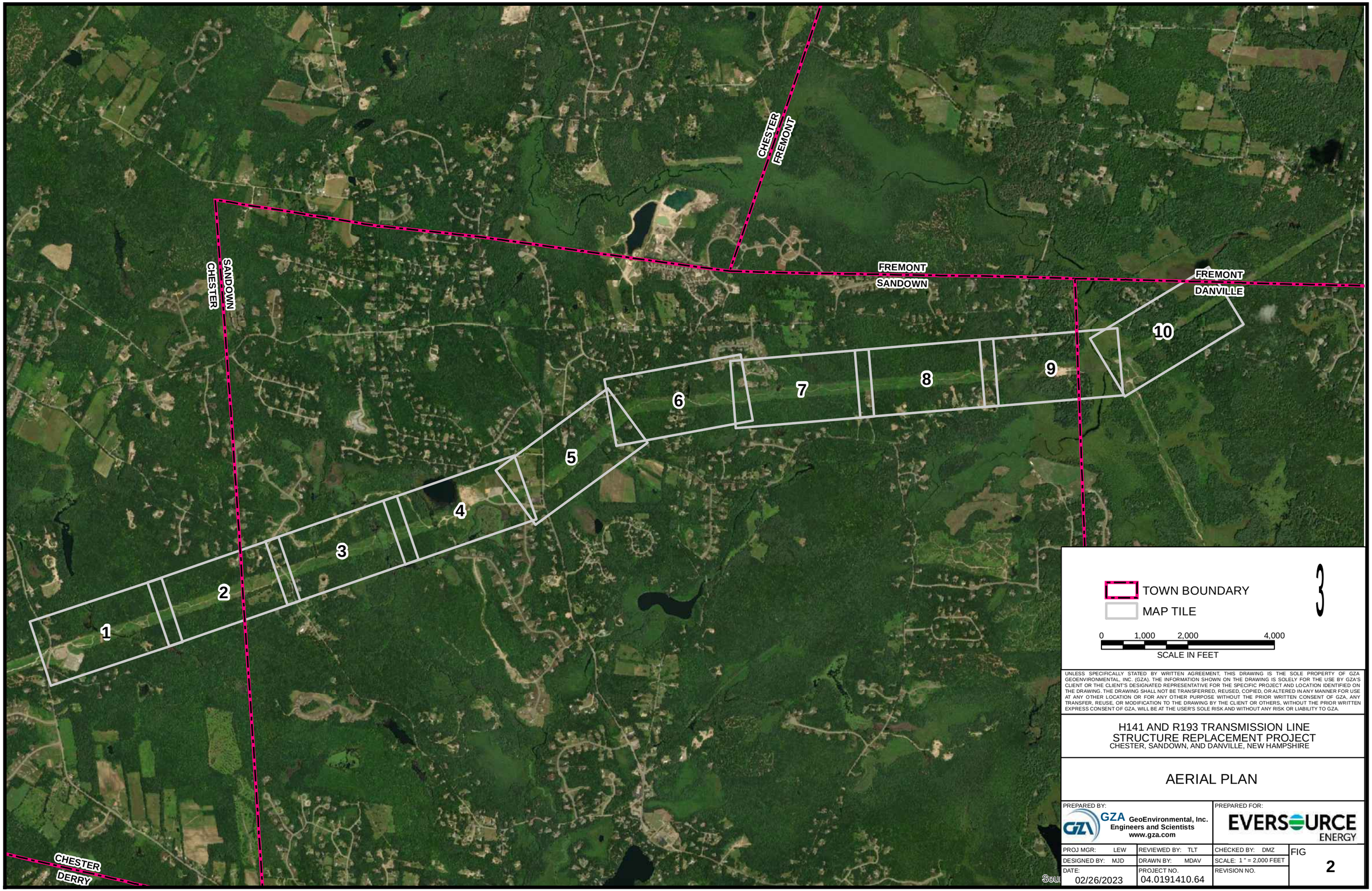
LOCUS PLAN

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
EVERSOURCE ENERGY

PROJ MGR: LEW	REVIEWED BY: TLT	CHECKED BY: DMZ	FIG 1
DESIGNED BY: MJD	DRAWN BY: MDAV	SCALE: 1 " = 2,000 FEET	
DATE: 02/15/2023	PROJECT NO. 04.0191410.64	REVISION NO.	

Figure 2 – Orthophotograph Site Map



TOWN BOUNDARY

MAP TILE

3

0 1,000 2,000 4,000

SCALE IN FEET

H141 AND R193 TRANSMISSION LINE STRUCTURE REPLACEMENT PROJECT

CHESTER, SANDOWN, AND DANVILLE, NEW HAMPSHIRE

AERIAL PLAN

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
EVERSOURCE ENERGY

PROJ MGR: LEW	REVIEWED BY: TLT	CHECKED BY: DMZ	FIG 2
DESIGNED BY: MJD	DRAWN BY: MDAV	SCALE: 1 " = 2,000 FEET	
DATE: 02/26/2023	PROJECT NO. 04.0191410.64	REVISION NO.	

Figure 3 – Surface Water and Groundwater Overlay Plans

Haverhill Rd
R193 Line
356
355
354
353
352
351
H141Line
B172Line
CHESTER SS
179
178
177
176
363 Line
A184 Line
Pulpit Rock Rd
ZONE A
TOWNHOUSES AT WELLS VILLAGE
Exeter River
TOWNHOUSES AT WELLS VILLAGE

INDEX MAP

- Local Potential Contamination Sources
- Designated River Quarter Mile Buffer
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- Water Supply Intake Protection Areas - None Present
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- Class A Surface Waters RSA 485A9
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- PROPOSED STRUCTURE REPLACEMENT
- EXISTING TRANSMISSION LINE
- GATE
- AoT IMPACT AREA
- EROSION CONTROLS
- STONEWALL
- FENCE
- APPROXIMATE ROW
- FIELD DELINEATED STREAM
- PVP
- WORKPAD
- NHDOT ROADS
- UPLAND MATTING
- TEMPORARY WETLAND IMPACTS
- PROPOSED ACCESS
- OFF ROW ACCESS
- NHD FLOWLINE
- TOWN BOUNDARY
- FIELD DELINEATED WETLANDS
- 2FT CONTOURS

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1 inch = 200 feet

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NO.	DATE	REVISIONS

EVERSOURCE ENERGY

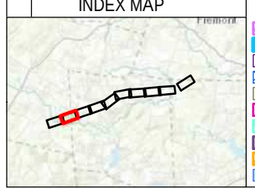
H141 and R193 Transmission Line Structure Replacement Project Surface and Groundwater Overlay Plans

Chester, NH | MAP SHEET

Date: April, 2023 | 1 OF 10

Document Path: \\GZABedford\Jobs\04\obs\01\91400s\04\ 0191410.00 - EE Siting Permitting 2019-2021\04.0191.410.64 - H141 Transmission Line Structure Replacement Project\Figures\MXD\H141 R193 Water Resource Plans 022023.mxd

INDEX MAP



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NO.	DATE	REVISIONS

EVERSOURCE ENERGY

H141 and R193 Transmission Line
Structure Replacement Project
Surface and Groundwater Overlay Plans

Chester/Sandown, NH | MAP SHEET

Date: April, 2023 | 2 OF 10

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Meghan Dr

Wells Village Rd

344 343 342 341 340 339 338 R193 Line 337

310 309 308 307 306 305 H141Line 304

171 170 169 168 363 Line 167

TOWNHOUSES AT WELLS VILLAGE

TOWNHOUSES AT WELLS VILLAGE

INDEX MAP

Fremont

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EVERSOURCE ENERGY

H141 and R193 Transmission Line Structure Replacement Project
Surface and Groundwater Overlay Plans

Sandown, NH | MAP SHEET

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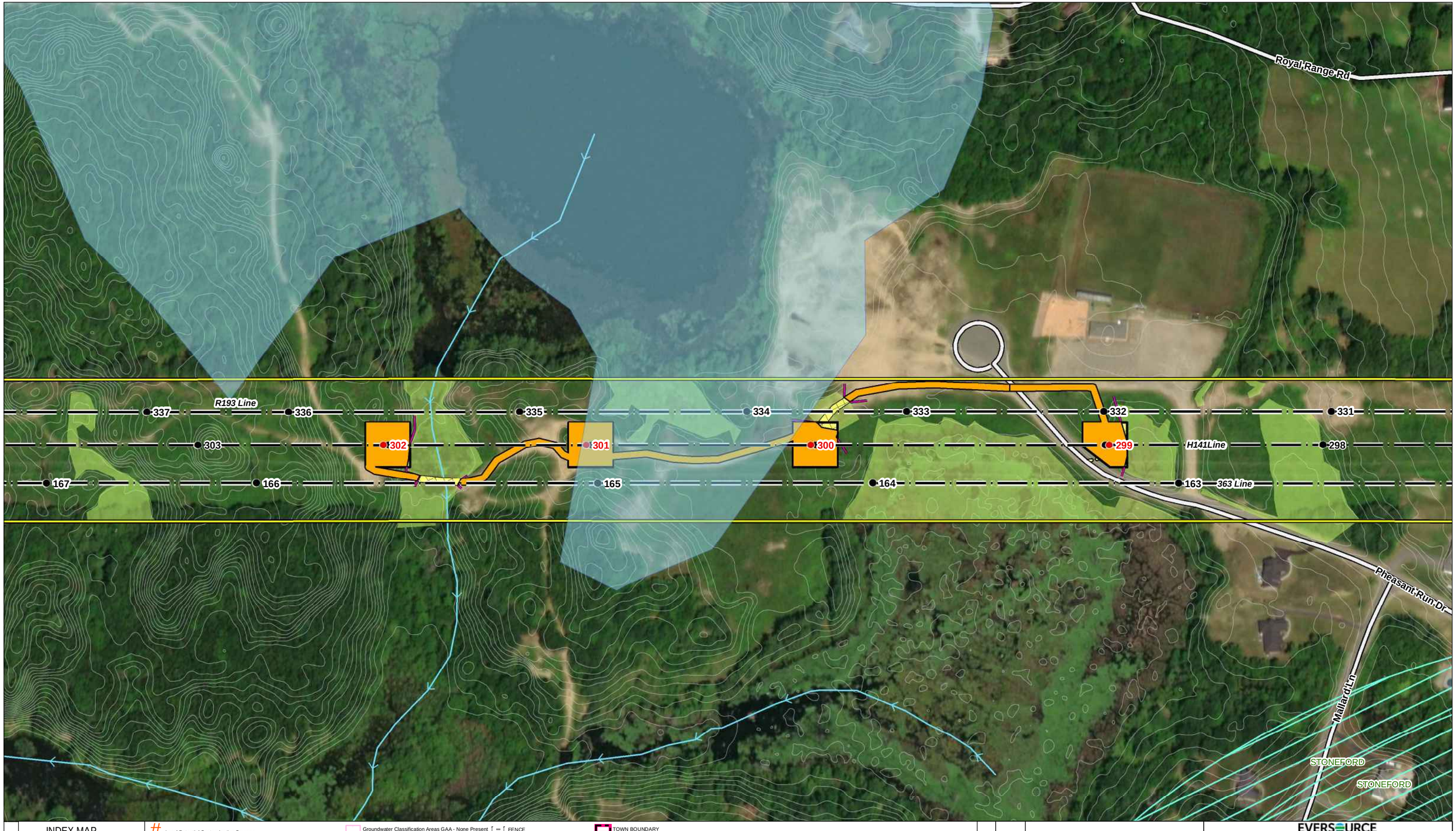
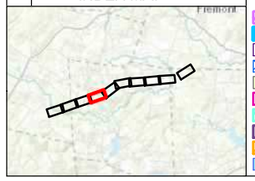


INDEX MAP



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NO.	DATE	REVISIONS

EVERSOURCE ENERGY

H141 and R193 Transmission Line Structure Replacement Project Surface and Groundwater Overlay Plans

Sandown, NH | MAP SHEET

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Royal Range Rd
HOMES
Main St
Cricket Ln
Sargent Rd
R193 Line
H141Line
363 Line
331
298
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161
295
327
294
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158
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160
Mallard Ln
Pheasant Run Dr
PEABODY FUNERAL HOME
STONEFORD
STONEFORD
WATERFORD VILLAGE ESTATES
WATERFORD VILLAGE ESTATES

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NO.	DATE	REVISIONS

EVERSOURCE ENERGY

H141 and R193 Transmission Line Structure Replacement Project Surface and Groundwater Overlay Plans

Sandown, NH | MAP SHEET

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PLAYMATES LEARNING CENTER
Cricket Ln
Waterford Dr
CORNERSTONE ESTATES
MILLPINE VILLAGE
CORNERSTONE ESTATES
WATERFORD VILLAGE ESTATES
WATERFORD VILLAGE ESTATES
Cross Rd
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11
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8
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5
4
3
2
1
324
291
290
157
156
363 Line
R193 Line
H141Line
287
286
285
155
154
158

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- 2FT CONTOURS

3

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1 inch = 200 feet

0 50 100 200 Feet

NO.	DATE	REVISIONS

EVERSOURCE ENERGY

H141 and R193 Transmission Line Structure Replacement Project Surface and Groundwater Overlay Plans

Sandown, NH

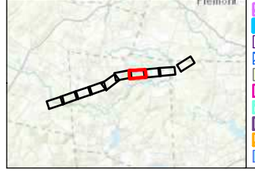
MAP SHEET

Date: April, 2023

6 OF 10

Document Path: \\GZABedford\Jobs\04\obs\04\obs\04\01914100.00 - EE Siting Permitting 2019-2022\04.0191 410. 64 - H141 Transmission Line Structure Replacement Project\Figures\MXD\H141 R193 Water Resource Plans 022023.mxd

INDEX MAP



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- Groundwater Classification Areas GA2
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- FENCE
- APPROXIMATE ROW
- FIELD DELINEATED STREAM
- PVP
- WORKPAD
- NHDOT ROADS
- UPLAND MATTING
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- PROPOSED ACCESS
- OFF ROW ACCESS
- NHD FLOWLINE
- TOWN BOUNDARY
- FIELD DELINEATED WETLANDS
- 2FT CONTOURS

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3

1 inch = 200 feet

0 50 100 200 Feet

NO.	DATE	REVISIONS

EVERSOURCE ENERGY

H141 and R193 Transmission Line Structure Replacement Project
Surface and Groundwater Overlay Plans

Sandown, NH | MAP SHEET

Date: April, 2023 | 7 OF 10

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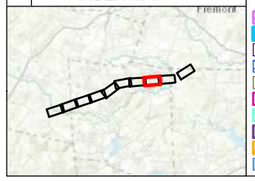
INDEX MAP



- Local Potential Contamination Sources
- Designated River Quarter Mile Buffer
- FEMA Special Flood Hazard Area
- Oustanding Resource Waters - None Present
- Water Supply Intake Protection Areas - None Present
- Class A Surface Waters RSA 485A9 Lakes Only 1/4 Mi Buffer - None Present
- Class A Surface Waters RSA 485A9
- Wellhead Protection Areas
- Watersheds with Chloride Impairments 2016
- Surface Waters with Impairments 2016 with Quarter Mile Buffer
- All Lakes with a Quarter Mile Buffer
- Groundwater Classification Areas GAA - None Present
- Groundwater Classification Areas GA1 - None Present
- Groundwater Classification Areas GA2
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EVERSOURCE ENERGY

H141 and R193 Transmission Line Structure Replacement Project Surface and Groundwater Overlay Plans

Sandown, NH | MAP SHEET

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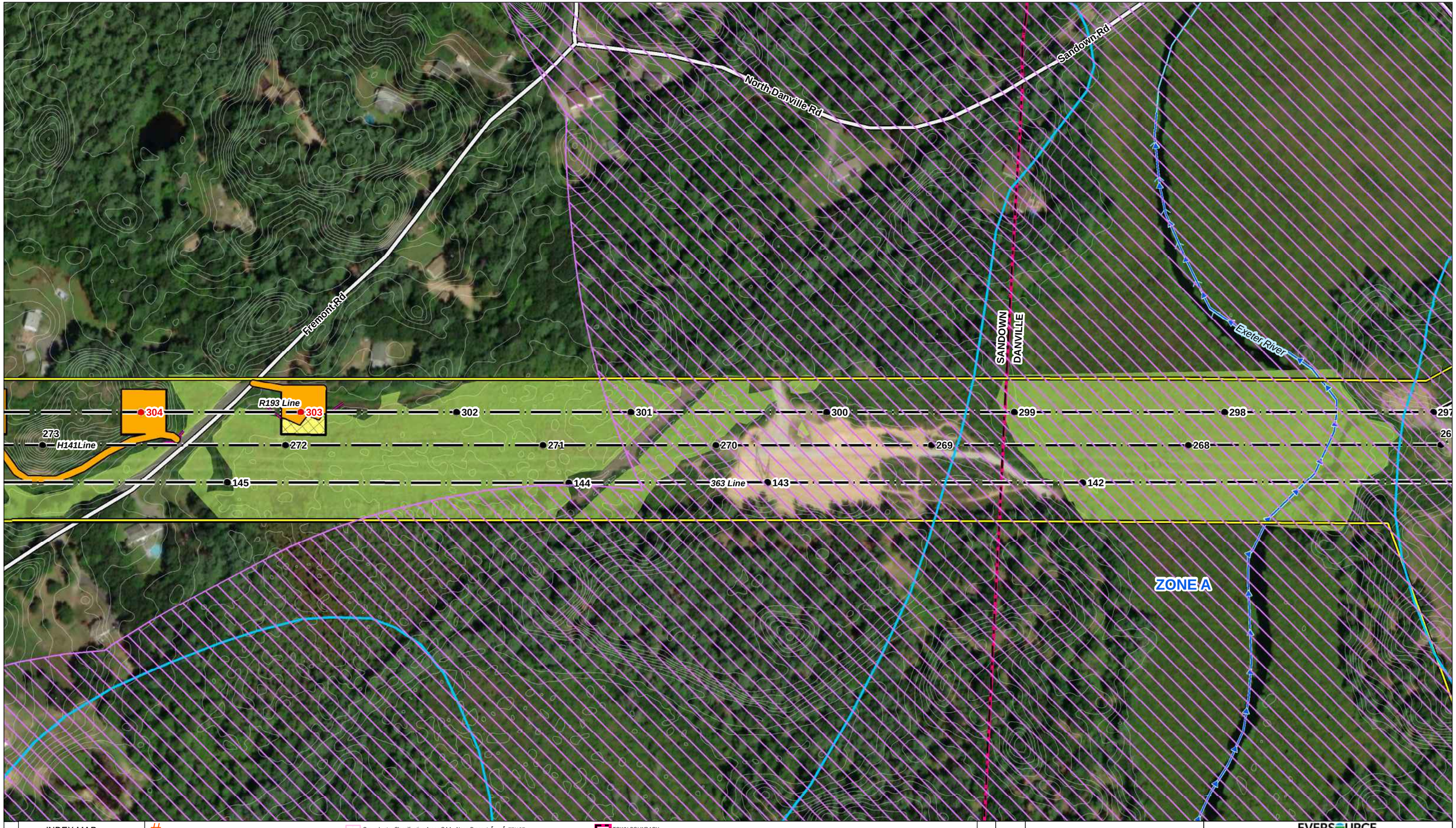

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- Local Potential Contamination Sources
- Designated River Quarter Mile Buffer
- FEMA Special Flood Hazard Area
- Oustanding Resource Waters - None Present
- Water Supply Intake Protection Areas - None Present
- Class A Surface Waters RSA 485A9 Lakes Only 1/4 Mi Buffer - None Present
- Class A Surface Waters RSA 485A9
- Wellhead Protection Areas
- Watersheds with Chloride Impairments 2016
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- Groundwater Classification Areas GA1 - None Present
- Groundwater Classification Areas GA2
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EVERSOURCE ENERGY

H141 and R193 Transmission Line
Structure Replacement Project
Surface and Groundwater Overlay Plans

Sandown/Danville, NH | MAP SHEET

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Twin Bridges Rd
Trailside Dr
ZONE A
FREMONT
DANVILLE
R193 Line
H141Line
Sandown Rd
294
293
292
291
290
289
288
287
265
264
263
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INDEX MAP

Local Potential Contamination Sources
Designated River Quarter Mile Buffer
FEMA Special Flood Hazard Area
Oustanding Resource Waters - None Present
Water Supply Intake Protection Areas - None Present
Class A Surface Waters RSA 485A9 Lakes Only 1/4 Mi Buffer - None Present
Class A Surface Waters RSA 485A9
Wellhead Protection Areas
Watersheds with Chloride Impairments 2016
Surface Waters with Impairments 2016 with Quarter Mile Buffer
All Lakes with a Quarter Mile Buffer

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EVERSOURCE ENERGY

H141 and R193 Transmission Line Structure Replacement Project Surface and Groundwater Overlay Plans

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Figure 4 – Alteration of Terrain Permitting Plans

AoT Area A - Chester Map Sheets 1 to 2	
Disturbance Type	Impact (sq. ft)
New Access	73,334
Gravel Work Pad	38,837
Total AoT Disturbed Area	*112,171*

-Criteria: Env-Wq 1502.58 (b) (2) "An area that, over a 10 year period, cumulatively exceeds 100,000 square feet of contiguous area."

-Work pad dimensions: Up to 100-ft x 100-ft; Access road width: 16-ft

CW-17
PSS1/EM1E

CW-16
PSS/EM1Ex

CW-18
PEM1/SS1E

CW-19
R2UB/R4SB/PSS1E/EM1E

APPROXIMATE TEMPORARY WETLAND IMPACT: 1,177 SF

APPROXIMATE TEMPORARY WETLAND IMPACT: 3,170 SF

R193 Line

B172Line

H141Line

A184 Line

363 Line

CHESTER SS

CW-15
PEM/SS1Ex

CW-16
PEM1/SS1E

CW-14
PSS1/PEM1E

CW-20
PSS1/EM1E/R4SB

CW-21
PSS/EM1E.Fg

Exeter River

Pulpit Rock Rd

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0 50 100 200 Feet

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H141 and R193 Transmission Line Structure Replacement Project Alteration of Terrain Permitting Plans

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AoT Area A - Chester Map Sheets 1 to 2	
Disturbance Type	Impact (sq. ft)
New Access	73,334
Gravel Work Pad	38,837
Total AoT Disturbed Area	*112,171*

-Criteria: Env-Wq 1502.58 (b) (2) "An area that, over a 10 year period, cumulatively exceeds 100,000 square feet of contiguous area."

-Work pad dimensions: Up to 100-ft x 100-ft; Access road width: 16-ft

AoT Area B - Sandown Map Sheets 2 to 9	
Disturbance Type	Impact (sq. ft)
New Access	158,245
Gravel Work Pad	270,652
Total AoT Disturbed Area	*428,897*

-Criteria: Env-Wq 1502.58 (b) (2) "An area that, over a 10 year period, cumulatively exceeds 100,000 square feet of contiguous area."

-Work pad dimensions: Up to 100-ft x 100-ft; Access road width: 16-ft

CW-20 PSS1/EM1E/R4SB

CW-22 PEM1/SS1E

CW-23 PEM1/SS1E

CW-25 PSS/EM1E

CW-26 PEM1E

SW-2 PEM/SS1E/F

CW-21 PSS/EM1E.Fg

CW-24 PSS/EM1E

APPROXIMATE TEMPORARY WETLAND IMPACT: 1,177 SF

APPROXIMATE TEMPORARY WETLAND IMPACT: 273 SF

APPROXIMATE TEMPORARY WETLAND IMPACT: 4,061 SF

APPROXIMATE TEMPORARY WETLAND IMPACT: 135 SF

R193 Line

H141Line

363 Line

CHESTER SANDOWN

Meghan Dr

Wells Village Rd

Exeter River

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0 50 100 200 Feet

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EVERSOURCE ENERGY

H141 and R193 Transmission Line Structure Replacement Project Alteration of Terrain Permitting Plans

Chester/Sandown, NH | MAP SHEET

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AoT Area B - Sandown Map Sheets 2 to 9	
Disturbance Type	Impact (sq. ft)
New Access	158,245
Gravel Work Pad	270,652
Total AoT Disturbed Area	*428,897*

-Criteria: Env-Wq 1502.58 (b) (2) "An area that, over a 10 year period, cumulatively exceeds 100,000 square feet of contiguous area."

-Work pad dimensions: Up to 100-ft x 100-ft; Access road width: 16-ft

SW-2
PEM/SS1E/F

SW-3
PEM/SS1E, F/R4SB

SW-4
PSS/EM1E

SW-5
PSS/EM1E,Fg

SW-6
PSS/EM1E

SW-7
PSS1F/PABH

SW-8
PSS/EM1E

APPROXIMATE TEMPORARY WETLAND IMPACT: 4,061 SF

APPROXIMATE TEMPORARY WETLAND IMPACT: 345 SF

APPROXIMATE TEMPORARY WETLAND IMPACT: 611 SF

APPROXIMATE TEMPORARY WETLAND IMPACT: 1,984 SF

R193 Line

H141Line

363 Line

Wells Village Rd

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PARCEL BOUNDARY
EVERSOURCE ENERGY OWNED PARCEL
STATE OWNED PARCEL
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0 50 100 200 Feet

NO.	DATE	REVISIONS

EVERSOURCE ENERGY

H141 and R193 Transmission Line Structure Replacement Project Alteration of Terrain Permitting Plans

Sandown, NH | MAP SHEET

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AoT Area B - Sandown Map Sheets 2 to 9	
Disturbance Type	Impact (sq. ft)
New Access	158,245
Gravel Work Pad	270,652
Total AoT Disturbed Area	*428,897*

-Criteria: Env-Wq 1502.58 (b) (2) "An area that, over a 10 year period, cumulatively exceeds 100,000 square feet of contiguous area."

-Work pad dimensions: Up to 100-ft x 100-ft; Access road width: 16-ft

Royal Range Rd

SW-10
PSS1F, PABH

APPROXIMATE TEMPORARY WETLAND IMPACT: 1,830 SF

APPROXIMATE TEMPORARY WETLAND IMPACT: 19 SF

APPROXIMATE TEMPORARY WETLAND IMPACT: 412 SF

SW-11
PEM1F/PSS1Ex

SW-12
PSS1E/PEM1E

SW-13
PEM1Ex

R193 Line

H141Line

363 Line

SW-8
PSS/EM1E

SW-9
PSS/EM1Fg, R2UB

APPROXIMATE TEMPORARY WETLAND IMPACT: 1,668 SF

SW-11
PSS/EM1E

SW-14
PSS1E

Pheasant Run Dr

Mallard Ln

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PVP
WORKPAD
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NHD FLOWLINE
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PARCEL BOUNDARY
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STATE OWNED PARCEL
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EVERSOURCE ENERGY

H141 and R193 Transmission Line Structure Replacement Project Alteration of Terrain Permitting Plans

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AoT Area B - Sandown Map Sheets 2 to 9	
Disturbance Type	Impact (sq. ft)
New Access	158,245
Gravel Work Pad	270,652
Total AoT Disturbed Area	*428,897*

-Criteria: Env-Wq 1502.58 (b) (2) "An area that, over a 10 year period, cumulatively exceeds 100,000 square feet of contiguous area."

-Work pad dimensions: Up to 100-ft x 100-ft; Access road width: 16-ft

APPROXIMATE TEMPORARY WETLAND IMPACT: 7,051 SF

APPROXIMATE TEMPORARY WETLAND IMPACT: 2,636 SF

APPROXIMATE TEMPORARY WETLAND IMPACT: 1,179 SF

APPROXIMATE TEMPORARY WETLAND IMPACT: 834 SF

SW-14 PSS1E
SW-15 PSS1E, PSS/EM1F
SW-16 PEM1E
SW-17 PSS/EM1Fg/R4SB
SW-18 PSS/EM1E
SW-19 PSS/EM1E
SW-20 PSS/EM1E
SW-21 PSS/EM1E

Main St
Mallard Ln
Pheasant Run Dr
Sargent Rd
Cricket Ln
R193 Line
H141Line
363 Line

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EVERSOURCE ENERGY

H141 and R193 Transmission Line Structure Replacement Project Alteration of Terrain Permitting Plans

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AoT Area B - Sandown Map Sheets 2 to 9	
Disturbance Type	Impact (sq. ft)
New Access	158,245
Gravel Work Pad	270,652
Total AoT Disturbed Area	*428,897*

-Criteria: Env-Wq 1502.58 (b) (2) "An area that, over a 10 year period, cumulatively exceeds 100,000 square feet of contiguous area."

-Work pad dimensions: Up to 100-ft x 100-ft; Access road width: 16-ft

APPROXIMATE TEMPORARY WETLAND IMPACT: 45 SF

APPROXIMATE TEMPORARY WETLAND IMPACT: 953 SF

APPROXIMATE TEMPORARY WETLAND IMPACT: 4,100 SF

APPROXIMATE TEMPORARY WETLAND IMPACT: 1,179 SF

APPROXIMATE TEMPORARY WETLAND IMPACT: 2,636 SF

APPROXIMATE TEMPORARY WETLAND IMPACT: 2,176 SF

SW-18 PSS/EM1E
SW-19 PSS/EM1E
SW-20 PSS/EM1E
SW-21 PSS/EM1E
SW-23 PSS1E
SW-24 PEM/SS1E, Fg/PUB
SW-25 PSS/EM1E
SW-25.1 PSS/EM1E
SW-26 PSS/EM1E/F,g
SW-27 PSS1E/F,g

H141 Line
R193 Line
363 Line
Cross Rd
Waterford Dr

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- FIELD DELINEATED STREAM
- PVP
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- NHD FLOWLINE
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EVERSOURCE ENERGY

H141 and R193 Transmission Line Structure Replacement Project Alteration of Terrain Permitting Plans

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AoT Area B - Sandown Map Sheets 2 to 9	
Disturbance Type	Impact (sq. ft)
New Access	158,245
Gravel Work Pad	270,652
Total AoT Disturbed Area	*428,897*

-Criteria: Env-Wq 1502.58 (b) (2) "An area that, over a 10 year period, cumulatively exceeds 100,000 square feet of contiguous area."

-Work pad dimensions: Up to 100-ft x 100-ft; Access road width: 16-ft

Waterford Dr

SW-27
PSS1E/F,g

APPROXIMATE TEMPORARY WETLAND IMPACT: 1,187 SF

SW-28
PSS/EM1E, R4SB

APPROXIMATE TEMPORARY WETLAND IMPACT: 348 SF

SW-29
PSS/EM1E

SW-32
PSS1E

SW-34
PSS1E

R193 Line

H141Line

363 Line

APPROXIMATE TEMPORARY WETLAND IMPACT: 4,100 SF

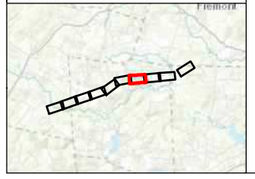
SW-26
PSS/EM1E/F,g

SW-30
PSS/EM1E

SW-31
PSS/EM1E

SW-33
PSS1E

INDEX MAP



EXISTING STRUCTURE
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NHD FLOWLINE
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PARCEL BOUNDARY
EVERSOURCE ENERGY OWNED PARCEL
STATE OWNED PARCEL
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WETLAND
2FT CONTOURS
TOWN BOUNDARY

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NO.	DATE	REVISIONS

EVERSOURCE ENERGY

H141 and R193 Transmission Line Structure Replacement Project Alteration of Terrain Permitting Plans

Sandown, NH | MAP SHEET

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AoT Area B - Sandown Map Sheets 2 to 9	
Disturbance Type	Impact (sq. ft)
New Access	158,245
Gravel Work Pad	270,652
Total AoT Disturbed Area	*428,897*

-Criteria: Env-Wq 1502.58 (b) (2) "An area that, over a 10 year period, cumulatively exceeds 100,000 square feet of contiguous area."

-Work pad dimensions: Up to 100-ft x 100-ft; Access road width: 16-ft

SW-35 PSS1E
SW-36 PSS1E
SW-37 PSS1E, PUBx
SW-38 PSS1E
SW-39 PSS/EM1E
SW-41 PSS/EM1E
SW-43 PS/EM1E
SW-44 PSS/EM1E

APPROXIMATE TEMPORARY WETLAND IMPACT: 3,799 SF

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Fremont Rd

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- TEMPORARY WETLAND IMPACTS
- NHD FLOWLINE
- TOWN BOUNDARY
- PARCEL BOUNDARY
- EVERSOURCE ENERGY OWNED PARCEL
- STATE OWNED PARCEL
- DELINEATED SURFACE WATER
- WETLAND
- 2FT CONTOURS
- TOWN BOUNDARY

This mapping product has been created to comply with submittal requirements to obtain certain regulatory approvals and, as such, there is no reliance on the information contained herein for any other purpose.

3

1 inch = 200 feet

0 50 100 200 Feet

NO.	DATE	REVISIONS

EVERSOURCE ENERGY

H141 and R193 Transmission Line Structure Replacement Project Alteration of Terrain Permitting Plans

Sandown, NH | MAP SHEET

Date: April, 2023 | 8 OF 10

Document Path: \\GZABedford\Jobs\04Jobs\01914100s\04.01914100.00 - EE Siting Permitting 2019-2022\04.01914100.64 - H141 Transmission Line Structure Replacement Project\Figures\MXD\H141 R193 AoT Plans 022023.mxd

AoT Area B - Sandown Map Sheets 2 to 9	
Disturbance Type	Impact (sq. ft)
New Access	158,245
Gravel Work Pad	270,652
Total AoT Disturbed Area	*428,897*

-Criteria: Env-Wq 1502.58 (b) (2) "An area that, over a 10 year period, cumulatively exceeds 100,000 square feet of contiguous area."
-Work pad dimensions: Up to 100-ft x 100-ft; Access road width: 16-ft

APPROXIMATE TEMPORARY WETLAND IMPACT: 3,237 SF

SW-45 PEM/SS1E
SW-47 PSS1E PSS1F
SW-48 PUB2E
SW-49 PSS1E
SW-44 PSS/EM1E
SW-46 PSS1E/F
DW-1 PSS1E/PEM1E/R2UB

North Danville Rd
Sandown Rd
Fremont Rd
SANDOWN
DANVILLE
Exeter River
R193 Line
H141Line
363 Line

INDEX MAP

EXISTING STRUCTURE
PROPOSED STRUCTURE REPLACEMENT
EXISTING TRANSMISSION LINE
GATE
UPLAND MATTING
AoT IMPACT AREA
EROSION CONTROLS
STONEWALL
FENCE
APPROXIMATE ROW
FIELD DELINEATED STREAM
PVP
WORKPAD
NHDOT ROADS
TEMPORARY WETLAND IMPACTS
NHD FLOWLINE
TOWN BOUNDARY
PARCEL BOUNDARY
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1 inch = 200 feet
0 50 100 200 Feet

EVERSOURCE ENERGY

H141 and R193 Transmission Line Structure Replacement Project Alteration of Terrain Permitting Plans

Sandown/Danville, NH | MAP SHEET
Date: April, 2023 | 9 OF 10

NO.	DATE	REVISIONS

Document Path: \\GZABedford\Jobs\042ojbs\0191400s\04.0191-410_00 - EE Siting Permitting 2019-2022\04.0191-410_64 - H141 Transmission Line Structure Replacement Project\Figures\MXD\H141 R193 AoT Plans 022023.mxd

AoT Area C - Danville Map Sheets 9 to 10	
Disturbance Type	Impact (sq. ft)
New Access	19,449
Gravel Work Pad	35,493
Total AoT Disturbed Area	*54,942*

-Criteria: Env-Wq 1502.58 (b) (2) "An area that, over a 10 year period, cumulatively exceeds 100,000 square feet of contiguous area."

-Work pad dimensions: Up to 100-ft x 100-ft; Access road width: 16-ft

DW-6
PSS/EM1E

DW-7
PSS1E

DW-5
PSS1E,
PEM1F

DW-5
PSS/EM1E

FREMONT
DANVILLE

R193 Line

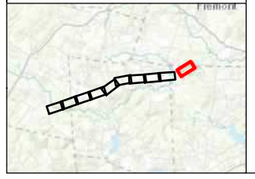
H141Line

Sandown Rd

APPROXIMATE TEMPORARY WETLAND IMPACT: 4,749 SF

APPROXIMATE TEMPORARY WETLAND IMPACT: 426 SF

INDEX MAP



EXISTING STRUCTURE
PROPOSED STRUCTURE REPLACEMENT
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GATE
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1 inch = 200 feet

0 50 100 200 Feet

NO.	DATE	REVISIONS

EVERSOURCE ENERGY

H141 and R193 Transmission Line Structure Replacement Project Alteration of Terrain Permitting Plans

Danville, NH | MAP SHEET

Date: April, 2023 | 10 OF 10

Document Path: \\GZABedford\Jobs\04Jobs\01\91400\04.0191410.00 - EE Siting Permitting 2019-2022\04.0191410.64 - H141 Transmission Line Structure Replacement Project\Figures\MXD\H141 R193 AoT Plans 022023.mxd

Appendix A – Alteration of Terrain Permit Application Form

ALTERATION OF TERRAIN PERMIT APPLICATION

Water Division/ Alteration of Terrain Bureau/ Land Resources Management
Check the Status of your Application: www.des.nh.gov/onestop

RSA/ Rule: RSA 485-A:17, Env-Wq 1500

Administrative Use Only	Administrative Use Only	Administrative Use Only	File Number: Check No. Amount: Initials:

1. APPLICANT INFORMATION (INTENDED PERMIT HOLDER)			
Applicant Name: Public Service of NH dba Eversource Energy	Contact Name: Ashley Friend		
Email: ashley.friend@eversource.com	Daytime Telephone: 603-634-2992		
Mailing Address: 13 Legends Drive			
Town/City: Hooksett	State: NH	Zip Code: 03106	
2. APPLICANT'S AGENT INFORMATION If none, check here: ☐			
Business Name: GZA GeoEnvironmental, Inc.	Contact Name: Conor Madison		
Email: conor.madison@gza.com	Daytime Telephone: 603-232-8784		
Address: 5 Commerce Park North, Suite 201			
Town/City: Bedford	State: NH	Zip Code: 03110	
3. PROPERTY OWNER INFORMATION (IF DIFFERENT FROM APPLICANT)			
Applicant Name: ROW consists of existing easements	Contact Name:		
Email:	Daytime Telephone:		
Mailing Address:			
Town/City:	State:	Zip Code:	
4. PROPERTY OWNER'S AGENT INFORMATION If none, check here: ☒			
Business Name:	Contact Name:		
Email:	Daytime Telephone:		
Address:			
Town/City:	State:	Zip Code:	
5. CONSULTANT INFORMATION If none, check here: ☐			
Engineering Firm: GZA GeoEnvironmental, Inc.	Contact Name: Conor Madison		
Email: conor.madison@gza.com	Daytime Telephone: 603-232-8784		
Address: 5 Commerce Park North, Suite 201			
Town/City: Bedford	State: NH	Zip Code: 03110	

6. PROJECT TYPE

☐ Excavation Only ☐ Residential ☐ Commercial ☐ Golf Course ☐ School ☐ Municipal
☐ Agricultural ☐ Land Conversion ☒ Other: Utility

7. PROJECT LOCATION INFORMATION

Project Name: H141 and R193 Transsmission Line Rebuild Project

Street/Road Address: Existing Utility Right-of-Way

Town/City: Chester, Sandown, and Danville	County: Rockingham		
Tax Map: See attached	Block:	Lot Number:	Unit:
Location Coordinates: 1099078N, 159404E	☐ Latitude/Longitude	☐ UTM	☒ State Plane

Post-development, will the proposed project withdraw from or directly discharge to any of the following? If yes, identify the purpose.

1. Stream or Wetland Purpose:	☐ Yes ☒ No	☐ Withdrawal	☐ Discharge
2. Man-made pond created by impounding a stream or wetland Purpose:	☐ Yes ☒ No	☐ Withdrawal	☐ Discharge
3. Unlined pond dug into the water table Purpose:	☐ Yes ☒ No	☐ Withdrawal	☐ Discharge

Post-development, will the proposed project discharge to:

- A surface water impaired for phosphorus and/or nitrogen? ☒ No ☐ Yes - include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen
- A Class A surface water or Outstanding Resource Water? ☒ No ☐ Yes - include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen
- A lake or pond not covered previously? ☒ No ☐ Yes - include information to demonstrate that project will not cause net increase in phosphorus in the lake or pond

Is the project a High Load area? ☐ Yes ☒ No
If yes, specify the type of high load land use or activity: _____

Is the project within a Water Supply Intake Protection Area (WSIPA)? ☐ Yes ☒ No
Is the project within a Groundwater Protection Area (GPA)? ☐ Yes ☒ No
Will the well setbacks identified in Env-Wq 1508.02 be met? ☐ Yes ☐ No

Note: Guidance document titled "*Using NHDES's OneStop WebGIS to Locate Protection Areas*" is available online. For more details on the restrictions in these areas, read Chapter 3.1 in Volume 2 of the NH Stormwater Manual.

Is any part of the property within the 100-year floodplain? ☒ Yes ☐ No
If yes: Cut volume: N/A cubic feet within the 100-year floodplain
Fill volume: N/A cubic feet within the 100-year floodplain

☒ Project IS within ¼ mile of a designated river Name of River: Exeter-Squamscott River
☐ Project is NOT within ¼ mile of a designated river

☐ Project IS within a Coastal/Great Bay Region community - include info required by Env-Wq 1503.08(l) if applicable
☒ Project is NOT within a Coastal/Great Bay Region community

8. BRIEF PROJECT DESCRIPTION (PLEASE DO NOT REPLY "SEE ATTACHED")

The proposed project includes the replacement of 41 existing utility structures in areas exceeding AoT thresholds along the existing H141 and R193 Transmission Lines, which cross through portions of Chester, Sandown, and Danville, New Hampshire. Access road improvements and work pad grading are proposed as part of this project for continued maintenance of the existing line.

9. IF APPLICABLE, DESCRIBE ANY WORK STARTED PRIOR TO RECEIVING PERMIT

No work has been started prior to receiving a permit.

10. ADDITIONAL REQUIRED INFORMATION

A. Date a copy of the application was sent to the municipality as required by Env-Wq 1503.05(e)[1]: 4 /11/23 .
(Attach proof of delivery)

B. Date a copy of the application was sent to the local river advisory committee if required by Env-Wq 1503.05(e)[2]: 4 /11/23 .
(Attach proof of delivery)

C. Type of plan required: ☐ Land Conversion ☐ Detailed Development ☒ Excavation, Grading & Reclamation ☐ Steep Slope

D. Additional plans required: ☐ Stormwater Drainage & Hydrologic Soil Groups ☐ Source Control ☐ Chloride Management

E. Total area of disturbance: 596,010 square feet

F. Additional impervious cover as a result of the project: N/A square feet (use the "-" symbol to indicate a net reduction in impervious coverage).
Total final impervious cover: 0 square feet

G. Total undisturbed cover: 0 square feet

H. Number of lots proposed: 0

I. Total length of roadway: 0 linear feet

J. Name(s) of receiving water(s): 0

K. Identify all other NHDES permits required for the project, and for each indicate whether an application has been filed and is pending, or if the required approval has been issued provide the permit number, registration date, or approval letter number, as applicable.

Type of Approval	Application Filed?	Status	
		Pending	If Issued:
1. Water Supply Approval	☐ Yes ☒ No ☐ N/A	☐	Permit number:
2. Wetlands Permit	☒ Yes ☐ No ☐ N/A	☒	Permit number: TBD
3. Shoreland Permit	☐ Yes ☒ No ☐ N/A	☒	Permit number:
4. UIC Registration	☐ Yes ☒ No ☐ N/A	☐	Registration date:
5. Large/Small Community Well Approval	☐ Yes ☒ No ☐ N/A	☐	Approval letter date:
6. Large Groundwater Withdrawal Permit	☐ Yes ☒ No ☐ N/A	☐	Permit number:
7. Other:	☐ Yes ☐ No	☐	Permit number:

L. List all species identified by the Natural Heritage Bureau as threatened or endangered or of concern: Blanding's turlte, spotted turtle, wood turtle

M. Using NHDES's Web GIS OneStop program (www2.des.state.nh.us/gis/onestop/), with the Surface Water Impairment layer turned on, list the impairments identified for each receiving water. If no pollutants are listed, enter "N/A." _____

N. Did the applicant/applicant's agent have a pre-application meeting with AOT staff? ☐ Yes ☒ No
If yes, name of staff member:

O. Will blasting of bedrock be required? ☐ Yes ☒ No If yes, estimated quantity of blast rock: _____ cubic yards
If yes, standard blasting BMP notes must be placed on the plans, available at:
http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/wd-10-12.pdf

NOTE: If greater than 5,000 cubic yards of blast rock will be generated, a groundwater monitoring program must be developed and submitted to NHDES. Contact AOT staff for additional detail.

[1] Env-Wq 1503.05(c)(6), requires proof that a completed application form, checklist, plans and specifications, and all other supporting materials have been sent or delivered to the governing body of each municipality in which the project is proposed.

[2] Env-Wq 1503.05(c)(6), requires proof that a completed application form, checklist, plans and specifications, and all other supporting materials have been sent or delivered to the Local River Advisory Committee, if the project is within ¼ mile of a designated river.

11. CHECK ALL APPLICATION ATTACHMENTS THAT APPLY (SUBMIT WITH APPLICATION IN ORDER LISTED)

LOOSE:

- ☒ Signed application form: des.nh.gov/organization/divisions/water/aot/index.htm (with attached proof(s) of delivery)
- ☒ Check for the application fee: des.nh.gov/organization/divisions/water/aot/fees.htm
- ☒ Color copy of a USGS map with the property boundaries outlined (1" = 2,000' scale)
- ☐ If Applicant is not the property owner, proof that the applicant will have a legal right to undertake the project on the property if a permit is issued to the applicant.

BIND IN A REPORT IN THE FOLLOWING ORDER:

- ☒ Copy of the signed application form & application checklist (des.nh.gov/organization/divisions/water/aot/index.htm)
- ☒ Copy of the check
- ☒ Copy of the USGS map with the property boundaries outlined (1" = 2,000' scale)
- ☐ Narrative of the project with a summary table of the peak discharge rate for the off-site discharge points
- ☒ Web GIS printout with the "Surface Water Impairments" layer turned on - http://www4.des.state.nh.us/onestopdatamapper/onestopmapper.aspx
- ☒ Web GIS printouts with the AOT screening layers turned on - http://www4.des.state.nh.us/onestopdatamapper/onestopmapper.aspx
- ☒ NHB letter using DataCheck Tool – www.nhdfl.org/about-forests-and-lands/bureaus/natural-heritage-bureau/
- ☒ The Web Soil Survey Map with project's watershed outlined – websoilsurvey.nrcs.usda.gov
- ☒ Aerial photograph (1" = 2,000' scale with the site boundaries outlined)
- ☒ Photographs representative of the site
- ☐ Groundwater Recharge Volume calculations (one worksheet for each permit application): des.nh.gov/organization/divisions/water/aot/documents/bmp_worksh.xls
- ☒ BMP worksheets (one worksheet for each treatment system): des.nh.gov/organization/divisions/water/aot/documents/bmp_worksh.xls
- ☐ Drainage analysis, stamped by a professional engineer (see Application Checklist for details)
- ☐ Riprap apron or other energy dissipation or stability calculations
- ☐ Site Specific Soil Survey report, stamped and with a certification note prepared by the soil scientist that the survey was done in accordance with the Site Specific Soil Mapping standards, *Site-Specific Soil Mapping Standards for NH & VT, SSSNNE Special Publication No. 3*.
- ☐ Infiltration Feasibility Report (example online) [Env-Wq 1503.08(f)(3)]
- ☐ Registration and Notification Form for Storm Water Infiltration to Groundwater (UIC Registration-for underground systems only, including drywells and trenches): (http://des.nh.gov/organization/divisions/water/dwgb/dwspp/gw_discharge)
- ☐ Inspection and maintenance manual with, if applicable, long term maintenance agreements [Env-Wq 1503.08(g)]
- ☐ Source control plan

PLANS:

- ☐ One set of design plans on 34 - 36" by 22 - 24" white paper (see Application Checklist for details)
- ☐ Pre & post-development color coded soil plans on 11" x 17" (see Application Checklist for details)
- ☐ Pre & post-development drainage area plans on 34 - 36" by 22 - 24" white paper (see Application Checklist for details)

100-YEAR FLOODPLAIN REPORT:

- ☐ All information required in Env-Wq 1503.09, submitted as a separate report.

ADDITIONAL INFORMATION RE: NUTRIENTS, CLIMATE

- ☒ See Checklist for Details

☒ REVIEW APPLICATION FOR COMPLETENESS & CONFIRM INFORMATION LISTED ON THE APPLICATION IS INCLUDED WITH SUBMITTAL.

12. REQUIRED SIGNATURES

AF By initialing here, I acknowledge that I am required by Env-Wq 1503.20(e) to submit a copy of all approved documents to the department in PDF format on a CD within one week after permit approval.

By signing below, I certify that:

- The information contained in or otherwise submitted with this application is true, complete, and not misleading to the best of my knowledge and belief;
- I understand that the submission of false, incomplete, or misleading information constitutes grounds for the department to deny the application, revoke any permit that is granted based on the information, and/or refer the matter to the board of professional engineers established by RSA 310-A:3 if I am a professional engineer; and
- I understand that I am subject to the penalties specified in New Hampshire law for falsification in official matters, currently RSA 641.

☒ APPLICANT ☐ APPLICANT'S AGENT:

Signature:  Date: 4/11/2023

Name (print or type): Ashley Friend, as agent for Public Service of NH dba Eversource Energy Title: Licensing and Permitting Specialist

☐ PROPERTY OWNER ☐ PROPERTY OWNER'S AGENT:

Signature: _____ Date: _____

Name (print or type): _____ Title: _____

ATTACHMENT A:
ALTERATION OF TERRAIN PERMIT APPLICATION CHECKLIST

Check the box to indicate the item has been provided or provide an explanation why the item does not apply.

DESIGN PLANS

☐ Plans printed on 34 - 36" by 22 - 24" white paper

☐ PE stamp

☒ Wetland delineation

☒ Temporary erosion control measures

☐ Treatment for all stormwater runoff from impervious surfaces such as roadways (including gravel roadways), parking areas, and non-residential roof runoff. Guidance on treatment BMPs can be found in Volume 2, Chapter 4 of the NH Stormwater Management Manual.

☒ Pre-existing 2-foot contours

☐ Proposed 2-foot contours

☐ Drainage easements protecting the drainage/treatment structures

☒ Compliance with the Wetlands Bureau, RSA 482- A http://des.nh.gov/organization/divisions/water/wetlands/index.htm. Note that artificial detention in wetlands is not allowed.

☒ Compliance with the Comprehensive Shoreland Protection Act, RSA 483-B. http://des.nh.gov/organization/divisions/water/wetlands/cspa

☐ Benches. Benching is needed if you have more than 20 feet change in elevation on a 2:1 slope, 30 feet change in elevation on a 3:1 slope, 40 feet change in elevation on a 4:1 slope.

☐ Check to see if any proposed ponds need state Dam permits.
http://des.nh.gov/organization/divisions/water/dam/documents/damdef.pdf

DETAILS

☐ Typical roadway x-section

☐ Detention basin with inverts noted on the outlet structure

☐ Stone berm level spreader

☐ Outlet protection – riprap aprons

☒ A general installation detail for an erosion control blanket

☒ Silt fences or mulch berm

☐ Storm drain inlet protection. Note that since hay bales must be embedded 4 inches into the ground, they are not to be used on hard surfaces such as pavement.

☒ Hay bale barriers

☐ Stone check dams

☒ Gravel construction exit

☐ Temporary sediment trap

☐ The treatment BMP's proposed

☐ Any innovative BMP's proposed

CONSTRUCTION SEQUENCE/EROSION CONTROL

☒ Note that the project is to be managed in a manner that meets the requirements and intent of RSA 430:53 and Chapter Agr 3800 relative to invasive species.

☒ Note that perimeter controls shall be installed prior to earth moving operations.

☐ Note that temporary water diversion (swales, basins, etc) must be used as necessary until areas are stabilized.

☐ Note that ponds and swales shall be installed early on in the construction sequence (before rough grading the site).

☐ Note that all ditches and swales shall be stabilized prior to directing runoff to them.

☐ Note that all roadways and parking lots shall be stabilized within 72 hours of achieving finished grade.

☒ Note that all cut and fill slopes shall be seeded/loamed within 72 hours of achieving finished grade

☒ Note that all erosion controls shall be inspected weekly AND after every half-inch of rainfall.

☒ Note the limits on the open area allowed, see Env-Wq 1505.02 for detailed information.

Example note: The smallest practical area shall be disturbed during construction, but in no case shall exceed 5 acres at any one time before disturbed areas are stabilized.

☒ Note the definition of the word "stable"

Example note: An area shall be considered stable if one of the following has occurred:

Base course gravels have been installed in areas to be paved.

A minimum of 85 percent vegetated growth has been established.

A minimum of 3 inches of non-erosive material such stone or riprap has been installed.

Or, erosion control blankets have been properly installed.

☒ Note the limit of time an area may be exposed
Example note: All areas shall be stabilized within 45 days of initial disturbance.

☒ Provide temporary and permanent seeding specifications. (Reed canary grass is listed in the Green Book; however, this is a problematic species according to the Wetlands Bureau and therefore should not be specified)

☒ Provide winter construction notes that meet or exceed our standards.

Standard Winter Notes:

All proposed vegetated areas that do not exhibit a minimum of 85 percent vegetative growth by October 15, or which are disturbed after October 15, shall be stabilized by seeding and installing erosion control blankets on slopes greater than 3:1, and seeding and placing 3 to 4 tons of mulch per acre, secured with anchored netting, elsewhere. The installation of erosion control blankets or mulch and netting shall not occur over accumulated snow or on frozen ground and shall be completed in advance of thaw or spring melt events.

All ditches or swales which do not exhibit a minimum of 85 percent vegetative growth by October 15, or which are disturbed after October 15, shall be stabilized temporarily with stone or erosion control blankets appropriate for the design flow conditions.

After October 15, incomplete road or parking surfaces, where work has stopped for the winter season, shall be protected with a minimum of 3 inches of crushed gravel per NHDOT item 304.3.

☐ Note at the end of the construction sequence that "Lot disturbance, other than that shown on the approved plans, shall not commence until after the roadway has the base course to design elevation and the associated drainage is complete and stable." – This note is applicable to single/duplex family subdivisions, when lot development is not part of the permit.

DRAINAGE ANALYSES

Please double-side 8 ½" × 11" sheets where possible but, do not reduce the text such that more than one page fits on one side.

☐ PE stamp

☐ Rainfall amount obtained from the Northeast Regional Climate Center- http://precip.eas.cornell.edu/. Include extreme precipitation table as obtained from the above referenced website.

☐ Drainage analyses, in the following order:

Pre-development analysis: Drainage diagram.

Pre-development analysis: Area Listing and Soil Listing.

Pre-development analysis: Node listing 1-year (if applicable), 2-year, 10-year and 50-year.

Pre-development analysis: Full summary of the 10-year storm.

Post-development analysis: Drainage diagram.

Post-development analysis: Area Listing and Soil Listing.

Post-development analysis: Node listing for the 2-year, 10-year and 50-year.

Post-development analysis: Full summary of the 10-year storm.

☐ Review the Area Listing and Soil Listing reports

Hydrologic soil groups (HSG) match the HSGs on the soil maps provided.

There is the same or less HSG A soil area after development (check for each HSG).

There is the same or less "woods" cover in the post-development.

Undeveloped land was assumed to be in "good" condition.

The amount of impervious cover in the analyses is correct.

Note: A good check is to subtract the total impervious area used in the pre analysis from the total impervious area used in the post-analysis. For residential projects without demolition occurring, a good check is to take this change in impervious area, subtract out the roadway and divide the remaining by the number of houses/units proposed. Do these numbers make sense?

☐ Check the storage input used to model the ponds.

☐ Check to see if the artificial berms pass the 50-year storm, i.e., make sure the constructed berms on ponds are not overtopped.

☐ Check the outlet structure proposed and make sure it matches that modeled.

☐ Check to see if the total areas in the pre and post analyses are same.

☐ Confirm the correct NRCS storm type was modeled (Coos, Carroll & Grafton counties are Type II, all others Type III).

.

PRE- AND POST-DEVELOPMENT DRAINAGE AREA PLANS

☐ Plans printed on 34 - 36" by 22 - 24" on white paper.

☐ Submit these plans separate from the soil plans.

☐ A north arrow.

☐ A scale.

☐ Labeled subcatchments, reaches and ponds.

☐ Tc lines.

☐ A clear delineation of the subcatchment boundaries.

☐ Roadway station numbers.

☐ Culverts and other conveyance structures.

PRE AND POST-DEVELOPMENT COLOR-CODED SOIL PLANS

☐ 11" × 17"sheets suitable, as long as it is readable.

☐ Submit these plans separate from the drainage area plans.

☐ A north arrow.

☐ A scale.

☐ Name of the soil scientist who performed the survey and date the soil survey took place.

☐ 2-foot contours (5-foot contours if application is for a gravel pit) as well as other surveyed features.

☐ Delineation of the soil boundaries and wetland boundaries.

☐ Delineation of the subcatchment boundaries.

☐ Soil series symbols (e.g., 26).

☐ A key or legend which identifies each soil series symbol and its associated soil series name (e.g., 26 = Windsor).

☐ The hydrologic soil group color coding (A = Green, B = yellow, C= orange, D=red, Water=blue, & Impervious = gray).

Please note that excavation projects (e.g., gravel pits) have similar requirements to that above, however the following are common exceptions/additions:

☐ Drainage report is not needed if site does not have off-site flow.

☐ 5 foot contours allowed rather than 2 foot.

☐ No PE stamp needed on the plans.

☐ Add a note to the plans that the applicant must submit to the Department of Environmental Services a written update of the project and revised plans documenting the project status every five years from the date of the Alteration of Terrain permit.

☐ Add reclamation notes.

See NRCS publication titled: *Vegetating New Hampshire Sand and Gravel Pits* for a good resource, it is posted online at: http://des.nh.gov/organization/divisions/water/aot/categories/publications.

ADDITIONAL INFORMATION RE: NUTRIENTS, CLIMATE

☐ If project will discharge stormwater to a surface water impaired for phosphorus and/or nitrogen, include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen.

☐ If project will discharge stormwater to a Class A surface water or Outstanding Resource Water, include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen.

☐ If project will discharge stormwater to a lake or pond not covered previously, include information to demonstrate that project will not cause net increase in phosphorus in the lake or pond.

☐ If project is within a Coastal/Great Bay Region community, include info required by Env-Wq 1503.08(l) if applicable.

Appendix B – Abutters List

Appendix B - Parcels Intersecting Project Area

Chester
Tax Map - Lot
3-24-0
3-23-0
2-81-0
2-82-0
2-82-101
2-80-2
2-82-1
2-82-3
2-82-4
2-82-2

Sandown
Tax Map - Lot
18-42-5
13-12
13-13
19-41
17-3-48
20-20-1
18-1
19-24-2-2
20-16-2
19-24-2-1
17-4
18-39-2
14-9
20-8-1
18-42-6
20-8-2
20-16-1
17-3-45
17-3-46
17-3-47
18-42-4
19-20
18-40-23
19-31
18-40
19-40

Danville
Tax Map - Lot
01-010-000000
01-004-000000
01-009-000003

Appendix C – New Hampshire Natural Heritage Bureau Report and E-Mail Review from NHB and New Hampshire Fish and Game

Memo

NH Natural Heritage Bureau
NHB DataCheck Results Letter

Please note: portions of this document are confidential.
Maps and NHB record pages are confidential and should be redacted from public documents.

To: Lindsey White, GZA GeoEnvironmental
5 Commerce Park North
Suite 201
Bedford, NH 03110

From: NHB Review, NH Natural Heritage Bureau
Date: 11/3/2022 (valid until 11/03/2023)
Re: Review by NH Natural Heritage Bureau
Permits: MUNICIPAL POR - Danville, NHDES - Alteration of Terrain Permit, NHDES - Utility activities in rights-of-way Permit by Notification (PBN), NHDES - Utility Statutory Permit by Notification (SPN)

NHB ID: **NHB22-3451** Town: Danville Location: Eversource Right-of-way
Description: Eversource is proposing to replace select utility structures within the existing and maintained H141 and R193 right-of-ways.
cc: NHFG Review

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments **NHB: No comments at this time.**
F&G: Please refer to NHFG consultation requirements below. Please coordinate with Kat Wadiak and provide project timing.

Vertebrate species	**State[1]**	**Federal**	**Notes**
Blanding's Turtle (*Emydoidea blandingii*)	E	--	Contact the NH Fish & Game Dept (see below).
Spotted Turtle (*Clemmys guttata*)	T	--	Contact the NH Fish & Game Dept (see below).

[1]Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

For all animal reviews, refer to 'IMPORTANT: NHFG Consultation' section below.

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

Memo

NH Natural Heritage Bureau
NHB DataCheck Results Letter

Please note: portions of this document are confidential.
Maps and NHB record pages are confidential and should be redacted from public documents.

IMPORTANT: NHFG Consultation

If this NHB Datacheck letter DOES NOT include ANY wildlife species records, then, based on the information submitted, no further consultation with the NH Fish and Game Department pursuant to Fis 1004 is required.

If this NHB Datacheck letter includes a record for a threatened (T) or endangered (E) wildlife species, consultation with the New Hampshire Fish and Game Department under Fis 1004 may be required. To review the Fis 1000 rules (effective February 3, 2022), please go to https://wildlife.state.nh.us/wildlife/environmental-review.html. All requests for consultation and submittals should be sent via email to NHFGreview@wildlife.nh.gov or can be sent by mail, and **must include the NHB Datacheck results letter number and "Fis 1004 consultation request" in the subject line.**

If the NHB DataCheck response letter does not include a threatened or endangered wildlife species but includes other wildlife species (e.g., Species of Special Concern), consultation under Fis 1004 is not required; however, some species are protected under other state laws or rules, so coordination with NH Fish & Game is highly recommended or may be required for certain permits. While some permitting processes are exempt from required consultation under Fis 1004 (e.g., *statutory permit by notification, permit by rule, permit by notification, routine roadway registration, docking structure registration, or conditional authorization by rule)*, coordination with NH Fish & Game may still be required under the rules governing those specific permitting processes, and it is recommended you contact the applicable permitting agency. For projects not requiring consultation under Fis 1004, but where additional coordination with NH Fish and Game is requested, please email: Kim Tuttle *kim.tuttle@wildlife.nh.gov* with a copy to NHFGreview@wildlife.nh.gov, and include the NHB Datacheck results letter number and "review request" in the email subject line.

Contact NH Fish & Game at (603) 271-0467 with questions.

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

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CONFIDENTIAL DNCR

CONFIDENTIAL DNCR

Memo

NH Natural Heritage Bureau
NHB DataCheck Results Letter

Please note: portions of this document are confidential.
Maps and NHB record pages are confidential and should be redacted from public documents.

To: Lindsey White, GZA GeoEnvironmental
5 Commerce Park North
Suite 201
Bedford, NH 03110

From: NHB Review, NH Natural Heritage Bureau
Date: 11/3/2022 (valid until 11/03/2023)
Re: Review by NH Natural Heritage Bureau
Permits: MUNICIPAL POR - Chester, NHDES - Alteration of Terrain Permit, NHDES - Seasonal Dock, Trails and Culvert Repair and Replacement Statutory Permit by Notification (SPN), NHDES - Utility activities in rights-of-way Permit by Notification (PBN)

NHB ID: **NHB22-3452** Town: Chester Location: Eversource Right-of-way
Description: Eversource is proposing to replace select utility structures within the existing and maintained H141 and R193 right-of-ways.
cc: NHFG Review

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments **NHB: No comments at this time.**
F&G: Please refer to NHFG consultation requirements below. Please coordinate with Kat Wadiak and provide project timing.

Vertebrate species	**State[1]**	**Federal**	**Notes**
Blanding's Turtle (*Emydoidea blandingii*)	E	--	Contact the NH Fish & Game Dept (see below).
Wood Turtle (*Glyptemys insculpta*)	SC	--	Contact the NH Fish & Game Dept (see below).

[1]Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

For all animal reviews, refer to 'IMPORTANT: NHFG Consultation' section below.

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

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172 Pembroke Rd.
Concord, NH 03301

Memo

NH Natural Heritage Bureau
NHB DataCheck Results Letter

Please note: portions of this document are confidential.
Maps and NHB record pages are confidential and should be redacted from public documents.

IMPORTANT: NHFG Consultation

If this NHB Datacheck letter DOES NOT include ANY wildlife species records, then, based on the information submitted, no further consultation with the NH Fish and Game Department pursuant to Fis 1004 is required.

If this NHB Datacheck letter includes a record for a threatened (T) or endangered (E) wildlife species, consultation with the New Hampshire Fish and Game Department under Fis 1004 may be required. To review the Fis 1000 rules (effective February 3, 2022), please go to https://wildlife.state.nh.us/wildlife/environmental-review.html. All requests for consultation and submittals should be sent via email to NHFGreview@wildlife.nh.gov or can be sent by mail, and **must include the NHB Datacheck results letter number and "Fis 1004 consultation request" in the subject line.**

If the NHB DataCheck response letter does not include a threatened or endangered wildlife species but includes other wildlife species (e.g., Species of Special Concern), consultation under Fis 1004 is not required; however, some species are protected under other state laws or rules, so coordination with NH Fish & Game is highly recommended or may be required for certain permits. While some permitting processes are exempt from required consultation under Fis 1004 (e.g., *statutory permit by notification, permit by rule, permit by notification, routine roadway registration, docking structure registration, or conditional authorization by rule)*, coordination with NH Fish & Game may still be required under the rules governing those specific permitting processes, and it is recommended you contact the applicable permitting agency. For projects not requiring consultation under Fis 1004, but where additional coordination with NH Fish and Game is requested, please email: Kim Tuttle *kim.tuttle@wildlife.nh.gov* with a copy to NHFGreview@wildlife.nh.gov, and include the NHB Datacheck results letter number and "review request" in the email subject line.

Contact NH Fish & Game at (603) 271-0467 with questions.

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
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Memo

NH Natural Heritage Bureau
NHB DataCheck Results Letter

Please note: portions of this document are confidential.
Maps and NHB record pages are confidential and should be redacted from public documents.

To: Lindsey White, GZA GeoEnvironmental
5 Commerce Park North
Suite 201
Bedford, NH 03110

From: NHB Review, NH Natural Heritage Bureau
Date: 11/3/2022 (valid until 11/03/2023)
Re: Review by NH Natural Heritage Bureau
Permits: MUNICIPAL POR - Sandown, NHDES - Alteration of Terrain Permit, NHDES - Utility activities in rights-of-way Permit by Notification (PBN), NHDES - Utility Statutory Permit by Notification (SPN)

NHB ID: **NHB22-3448** Town: Sandown Location: Eversource Right-of-way
Description: Eversource is proposing to replace select utility structures within the existing and maintained H141 and R193 right-of-ways.
cc: NHFG Review

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments **NHB: No comments at this time.**
F&G: Please refer to NHFG consultation requirements below. Please coordinate with Kat Wadiak, and provide project timing.

Vertebrate species	**State[1]**	**Federal**	**Notes**
Blanding's Turtle (*Emydoidea blandingii*)	E	--	Contact the NH Fish & Game Dept (see below).
Spotted Turtle (*Clemmys guttata*)	T	--	Contact the NH Fish & Game Dept (see below).
Wood Turtle (*Glyptemys insculpta*)	SC	--	Contact the NH Fish & Game Dept (see below).

[1]Codes: "E" = Endangered, "T" = Threatened, “SC” = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

For all animal reviews, refer to ‘IMPORTANT: NHFG Consultation’ section below.

Disclaimer: A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences,

Department of Natural and Cultural Resources
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(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

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Maps and NHB record pages are confidential and should be redacted from public documents.

based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

IMPORTANT: NHFG Consultation

If this NHB Datacheck letter DOES NOT include ANY wildlife species records, then, based on the information submitted, no further consultation with the NH Fish and Game Department pursuant to Fis 1004 is required.

If this NHB Datacheck letter includes a record for a threatened (T) or endangered (E) wildlife species, consultation with the New Hampshire Fish and Game Department under Fis 1004 may be required. To review the Fis 1000 rules (effective February 3, 2022), please go to https://wildlife.state.nh.us/wildlife/environmental-review.html. All requests for consultation and submittals should be sent via email to NHFGreview@wildlife.nh.gov or can be sent by mail, and **must include the NHB Datacheck results letter number and "Fis 1004 consultation request" in the subject line.**

If the NHB DataCheck response letter does not include a threatened or endangered wildlife species but includes other wildlife species (e.g., Species of Special Concern), consultation under Fis 1004 is not required; however, some species are protected under other state laws or rules, so coordination with NH Fish & Game is highly recommended or may be required for certain permits. While some permitting processes are exempt from required consultation under Fis 1004 (e.g., *statutory permit by notification, permit by rule, permit by notification, routine roadway registration, docking structure registration, or conditional authorization by rule)*, coordination with NH Fish & Game may still be required under the rules governing those specific permitting processes, and it is recommended you contact the applicable permitting agency. For projects not requiring consultation under Fis 1004, but where additional coordination with NH Fish and Game is requested, please email: Kim Tuttle *kim.tuttle@wildlife.nh.gov* with a copy to NHFGreview@wildlife.nh.gov, and include the NHB Datacheck results letter number and "review request" in the email subject line.

Contact NH Fish & Game at (603) 271-0467 with questions.

Department of Natural and Cultural Resources
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Conor Madison

From: Wadiak, Kathleen <Kathleen.P.Wadiak@wildlife.nh.gov>
Sent: Friday, March 31, 2023 3:19 PM
To: Friend, Ashley C
Cc: Winters, Melissa; FGC: NHFG review; Conor Madison; Tracy Tarr; Mauck, Ridgely; Erausquin, Richard
Subject: [EXTERNAL] RE: NHFG Review NHB22-3448 NHB22-3451 NHB22-3452 Eversource H141 R193 Sandown Danville Chester
Attachments: H141 R193 Permitting Plans 030823_opt.pdf; Eversource H141 R193 Further Consultation.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Ashley,

New Hampshire Fish and Game (NHFG) provided recommendations for NHB22-3448, NHB22-3451, and NHB22-3452, the Eversource H141 and R193 structure replacement project in Sandown, Danville, and Chester on February 23, 2023. You requested further consultation pursuant to FIS 1004.12 on March 9, 2023. See attached NHFG recommendations and further consultation request.

NHFG understands that there are areas where impacts to vernal pool buffers are unavoidable. These areas are shown in "H141 R193 Permitting Plans 030823" dated March 8, 2023 and provided to NHFG March 9, 2023 (see attached). If the areas shown in these plans change, notify NHFG.

Revisions have also been made to recommendation 9 in order to more closely match current language and provide a definition of a "trained individual."

Please provide revised plan sheets to NHFG.

If you require an extension to the further consultation deadline of April 8th, 2023 in order to review these recommendations, please request the extension in writing prior to April 8th, 2023 (FIS 1004.10(a)). Further consultation may be deemed complete prior to the end of the extension time period.

Permit applications associated with this review:

- NHDES Alteration of Terrain permit
- NHDES Utility Statutory Permit by Notification

Notify NHFG if/when phases (vegetation removal, structure replacements, restoration, etc.) on this project begin and finish. Please use subject line "NHB22-3448 NHB22-3451 NHB22-3452 Eversource H141 R193 Work Start/End Notification." Notify NHFG if there are any breaks in the schedule for active work zones.

Please note that "active season" dates for rare species are variable based on weather and other environmental factors. NHFG may recommend dates that vary from initial reviews based on available information of animal activity.

As stated in the recommendations below, provide NHFG with the locations of waterbodies that are proposed to be impacted that have been identified as suitable hibernating habitat for rare turtles at least two weeks prior to the start of

work. This includes Blanding's, spotted, and wood turtles. Provide a brief explanation of who made this assessment and how they drew their conclusions.

Vernal pools should be identified on plan sheets and provided to NHFG.

Recommended BMPs shall apply to all work areas unless otherwise specified by NHFG.

Based on the NHB datacheck results letter and the information provided in the submission, we request the following recommended permit conditions. These conditions are recommended to be included in the permit if approved. Please incorporate recommendations along with associated materials as detailed, into the sheet plans as written below (updated highlighted text as applicable) and provide to NHDES and cc NHFG for final review.

New Hampshire Fish and Game Permit Conditions:

1. Blanding's turtle (state endangered), spotted turtle (state threatened), and wood turtle (state species of special concern) occur within the vicinity of the project area. All operators and personnel working on or entering the site shall be made aware of the potential presence of these species and shall be provided flyers that help to identify these species, along with NHFG contact information. Rare species information (e.g. identification, observation and reporting of observations, when to contact NHFG immediately and NHFG contact information) shall be posted on site at all times and communicated during morning tailgate meetings prior to work commencement. See Plan Sheet xxxxxx. *Include attached flyers to plan sheet set.*
2. **For all work areas from Wells Village Road to Main Street in Sandown:**
    a. All material shall be staged/placed within pre-established work pads which have been cleared for and isolated from turtle entry, and all work pads around structures shall be cleared and isolated from turtle entry with wildlife exclusion silt fence prior to work. These areas shall be cleared by a qualified biologist or herpetologist.
    b. Silt fence used for wildlife exclusion should fully enclose the work areas and should be buried to a depth no less than 6-8" and be 18" above grade with ground stakes on the active site side of the fence. Access gates shall be weighed down and lay flat on the ground to prevent wildlife entry. There should be no gaps between the gate and the silt fence or the gate and the ground.
    c. Any failings in silt fence for wildlife exclusion shall be reported to NHFG immediately.
3. Turtles may be attracted to disturbed ground during nesting season. Turtle nesting season occurs approximately May 15th – June 30th. Nesting areas may include work pads and access roads that are not hard pack gravel and other sandy/gravel work areas. All turtle species nests are protected by NH laws. Be aware of the potential to encounter nesting wildlife in these areas.
4. If a nest is observed or suspected, operators shall contact Melissa Winters (603-479-1129) or Josh Megyesy (978-578-0802) at NHFG immediately for further consultation. The nest or suspected nest shall be marked (surrounding roped off or cone buffer) and avoided; this shall be communicated to all personnel onsite. Site activities shall not occur in the area surrounding the nest or suspected nest until further guidance is provided by NHFG.
5. **Vernal pools and potential vernal pools shall be flagged prior to work, and impacts shall be avoided. No disturb vegetative buffers of 50' shall be maintained wherever possible.**
    a. **Where disturbance to the 50' vegetative vernal pool buffer is unavoidable as shown in "H141 R193 Permitting Plans 030823" dated March 8, 2023 and provided to NHFG March 9, 2023, disturbance shall be minimized and the area will be restored upon completion of work. If impacts to vernal pool buffers change from these plans, notify NHFG.**
6. All matting which will be placed in waterbodies deemed suitable for hibernating rare turtles will be placed prior to the start of the inactive season (October 16-March 31) so as to prevent accidental placement atop hibernating turtles. Immediately prior to matting placement in these wetlands, the area shall be swept by a qualified biologist or herpetologist. They shall watch for signs that turtles are being disturbed in the area (ex. Heads coming above water, animals moving in water). Contact NHFG if biologist/herpetologist sees or suspects turtles in matting areas. Areas identified as suitable hibernation habitat shall be identified on plan sheets and provided to NHFG at least two weeks prior to beginning work. Biologist qualifications shall be provided to NHFG.

7. Immediately prior to the placement of matting in wetlands during the active season (April 1-October 15), the areas shall be cleared by a qualified biologist or herpetologist. Biologist qualifications shall be provided to NHFG.
8. All work activities shall be restricted to the defined roads, construction areas, and staging areas, with no equipment or materials staged or stored outside of the defined areas as shown on plan sheets.
9. **Searches and sweeps shall be conducted by trained individuals immediately before the start of work and movement of equipment in order to minimize the chance of animals entering an area between the sweep and work. A trained individual shall be defined as any contractor who has gone through project-species protection education conducted by the qualified biologist on rare wildlife species at the site.**
10. Work, pull pads, and access shall be minimized to the greatest extent possible.
11. Works pads shall be reduced post-construction to 30' x 60' and restored with a native vegetation seed mix.
12. All manufactured erosion and sediment control products, with the exception of turf reinforcement mats, utilized for, but not limited to, slope protection, runoff diversion, slope interruption, perimeter control, inlet protection, check dams, and sediment traps shall not contain plastic, or multifilament or monofilament polypropylene netting or mesh with an opening size of greater than 1/8 inches;
13. All observations of threatened or endangered species on the project site shall be reported immediately to the NHFG nongame and endangered wildlife environmental review program by phone at 603-271-2461 and by email at NHFGreview@wildlife.nh.gov, with the email subject line containing the NHB DataCheck tool results letter assigned number, the project name, and the term Wildlife Species Observation;
14. Photographs of the observed species and nearby elements of habitat or areas of land disturbance shall be provided to NHFG in digital format at the above email address for verification, as feasible;
15. In the event a threatened or endangered species is observed on the project site during the term of the permit, the species shall not be disturbed, handled, or harmed in any way prior to consultation with NHFG and implementation of corrective actions recommended by NHFG.
    a. Site operators shall be allowed to relocate wildlife encountered if discovered within the active work zone and if in direct harm from project activities. Wildlife shall be relocated in close proximity to the capture location but outside of the work zone and in the direction the individual was heading. NHFG shall be contacted immediately if this action occurs.
16. The NHFG, including its employees and authorized agents, shall have access to the property during the term of the permit.

NHFG has completed our review of materials submitted for consultation under FIS 1004. No further coordination with NHFG is requested, and the final recommendations have been transmitted to the applicable permitting agency. Questions or concerns on NHFG recommendations must follow FIS 1004.12. Note that NHFG recommendations may be withdrawn pursuant to FIS 1004.13.

Let me know if you have any questions.

Thank you,
Kat

From: Friend, Ashley C <ashley.friend@eversource.com>
Sent: Friday, March 10, 2023 2:37 PM
To: Wadiak, Kathleen <Kathleen.P.Wadiak@wildlife.nh.gov>
Cc: Winters, Melissa <Melissa.J.Winters@wildlife.nh.gov>; FGC: NHFG review <NHFGreview@wildlife.nh.gov>; Conor Madison <Conor.Madison@gza.com>; Tracy Tarr <Tracy.Tarr@gza.com>; Mauck, Ridgely <Addison.R.Mauck@des.nh.gov>; Erausquin, Richard <Richard.Erausquin@des.nh.gov>
Subject: RE: NHFG Review NHB22-3448 NHB22-3451 NHB22-3452 Eversource H141 R193 Sandown Danville Chester

---

Thanks Kat!

Have a nice weekend.

Ashley

ASHLEY FRIEND
Specialist - Licensing & Permitting
EVERSOURCE
13 Legends Drive, Hooksett, NH 03106
603-634-2992
Ashley.Friend@Eversource.com

From: Wadiak, Kathleen <Kathleen.P.Wadiak@wildlife.nh.gov>
Sent: Friday, March 10, 2023 2:30 PM
To: Friend, Ashley C <ashley.friend@eversource.com>
Cc: Winters, Melissa <Melissa.J.Winters@wildlife.nh.gov>; FGC: NHFG review <NHFGreview@wildlife.nh.gov>; Conor Madison <Conor.Madison@gza.com>; Tracy Tarr <Tracy.Tarr@gza.com>; Mauck, Ridgely <Addison.R.Mauck@des.nh.gov>; Erausquin, Richard <Richard.Erausquin@des.nh.gov>
Subject: RE: NHFG Review NHB22-3448 NHB22-3451 NHB22-3452 Eversource H141 R193 Sandown Danville Chester

---

Hi Ashley,

Thank you for your request for further consultation. This is deemed as a 30 day extension to the consultation process. Your request was made on March 9, 2023, extending the consolation deadline to April 8, 2023. Extensions to this deadline may be requested in writing (FIS 1004.10(a)). We will review the information that you provided with your request.

Let me know if you have any questions or concerns in the meantime.

Thank you,
Kat

From: Friend, Ashley C <ashley.friend@eversource.com>
Sent: Thursday, March 9, 2023 1:55 PM
To: Wadiak, Kathleen <Kathleen.P.Wadiak@wildlife.nh.gov>
Cc: Winters, Melissa <Melissa.J.Winters@wildlife.nh.gov>; FGC: NHFG review <NHFGreview@wildlife.nh.gov>; Conor Madison <Conor.Madison@gza.com>; Tracy Tarr <Tracy.Tarr@gza.com>; Mauck, Ridgely <Addison.R.Mauck@des.nh.gov>; Erausquin, Richard <Richard.Erausquin@des.nh.gov>
Subject: RE: NHFG Review NHB22-3448 NHB22-3451 NHB22-3452 Eversource H141 R193 Sandown Danville Chester

---

Hey Kat,

Thank you for meeting with me on the V182/F139 Project and W157 Project earlier today. I will be following up shortly with the info we presented and follow up items requested.

After further discussion with the Project team, we formally request further consultation on the Eversource H141 R193 Project (Sandown Danville Chester NHB22-3448 NHB22-3451 NHB22-3452)BMPs issued on 2/2323 by NHFG under FIS 1004.12.

While Eversource can accommodate the majority of the recommendations, Eversource needs to request a change to the vernal pool recommendation (fourth comment). As is typical, Eversource will flag vernal pools prior to work, and avoid impacts to vernal pool basins. However, given the existing configuration of poles and access roads, 50-foot vernal pool buffers cannot be avoided. I have attached a permitting planset with the PVPs identified with a 50' foot buffer to show the overlapping areas.

Most of the proposed impact within the 50' foot buffer of the PVPs is associated with the access road. The proposed access road is an existing off-road vehicle path with minimal vegetation within the road. Moving and shifting the proposed access road would be more impactful than utilizing the existing road, and would increase wetland impact (see Page 7).

Two work pads (H141 Structures 307 and 306) are also within the 50' foot buffer zone of a PVP. To maintain vegetation, Eversource proposes to mat the 50' foot buffer within the work area at H141 Structure 307 with timber matting. However, the work area at H141 Structure 306 is significantly sloped which presents a safety issue when installing upland matting. This work area will require grading and stone installation for the structure replacement construction.

Please reach out with any questions or comments. If you'd like to have a call to discuss these Project specifics, let me know and we can set up a time to meet.

Thanks,
Ashley

ASHLEY FRIEND
Specialist - Licensing & Permitting
EVERSOURCE
13 Legends Drive, Hooksett, NH 03106
603-634-2992
Ashley.Friend@Eversource.com

From: Wadiak, Kathleen <Kathleen.P.Wadiak@wildlife.nh.gov>
Sent: Thursday, February 23, 2023 12:20 PM
To: Friend, Ashley C <ashley.friend@eversource.com>
Cc: Winters, Melissa <Melissa.J.Winters@wildlife.nh.gov>; FGC: NHFG review <NHFGreview@wildlife.nh.gov>; Conor Madison <Conor.Madison@gza.com>; Tracy Tarr <Tracy.Tarr@gza.com>; Mauck, Ridgely <Addison.R.Mauck@des.nh.gov>; Erausquin, Richard <Richard.Erausquin@des.nh.gov>
Subject: NHFG Review NHB22-3448 NHB22-3451 NHB22-3452 Eversource H141 R193 Sandown Danville Chester

Ashley,

NHFG has reviewed the materials submitted for consultation on January 10, 2023 by Conor Madison of GZA for consultation on NHB22-3448, NHB22-3451, and NHB22-3452. The proposed project is for the replacement of 40 structures on the H141 and R193 transmission lines along with associated work pads and access in Sandown, Danville, and Chester.

Permit applications associated with this review:

- NHDES Alteration of Terrain permit
- NHDES Utility Statutory Permit by Notification

Notify NHFG if/when phases (vegetation removal, structure replacements, restoration, etc.) on this project begin and finish. Please use subject line "NHB22-3448 NHB22-3451 NHB22-3452 Eversource H141 R193 Work Start/End Notification." Notify NHFG if there are any breaks in the schedule for active work zones.

Please note that "active season" dates for rare species are variable based on weather and other environmental factors. NHFG may recommend dates that vary from initial reviews based on available information of animal activity.

As stated in the recommendations below, provide NHFG with the locations of waterbodies that are proposed to be impacted that have been identified as suitable hibernating habitat for rare turtles at least two weeks prior to the start of work. This includes Blanding's, spotted, and wood turtles. Provide a brief explanation of who made this assessment and how they drew their conclusions.

Vernal pools should be identified on plan sheets and provided to NHFG.

Recommended BMPs shall apply to all work areas unless otherwise specified by NHFG.

Based on the NHB datacheck results letter and the information provided in the submission, we request the following recommended permit conditions. These conditions are recommended to be included in the permit if approved. Please incorporate recommendations along with associated materials as detailed, into the sheet plans as written below (updated highlighted text as applicable) and provide to NHDES and cc NHFG for final review.

New Hampshire Fish and Game Permit Conditions:

- Blanding's turtle (state endangered), spotted turtle (state threatened), and wood turtle (state species of special concern) occur within the vicinity of the project area. All operators and personnel working on or entering the site shall be made aware of the potential presence of these species and shall be provided flyers that help to identify these species, along with NHFG contact information. Rare species information (e.g. identification, observation and reporting of observations, when to contact NHFG immediately and NHFG contact information) shall be posted on site at all times and communicated during morning tailgate meetings prior to work commencement. See Plan Sheet xxxxxx. *Include attached flyers to plan sheet set.*
- **For all work areas from Wells Village Road to Main Street in Sandown:**
    - All material shall be staged/placed within pre-established work pads which have been cleared for and isolated from turtle entry, and all work pads around structures shall be cleared and isolated from turtle entry with wildlife exclusion silt fence prior to work. These areas shall be cleared by a qualified biologist or herpetologist.
    - Silt fence used for wildlife exclusion should fully enclose the work areas and should be buried to a depth no less than 6-8" and be 18" above grade with ground stakes on the active site side of the fence. Access gates shall be weighed down and lay flat on the ground to prevent wildlife entry. There should be no gaps between the gate and the silt fence or the gate and the ground.
    - Any failings in silt fence for wildlife exclusion shall be reported to NHFG immediately.
- Turtles may be attracted to disturbed ground during nesting season. Turtle nesting season occurs approximately May 15th – June 30th. Nesting areas may include work pads and access roads that are not hard pack gravel and

other sandy/gravel work areas. All turtle species nests are protected by NH laws. Be aware of the potential to encounter nesting wildlife in these areas.

- If a nest is observed or suspected, operators shall contact Melissa Winters (603-479-1129) or Josh Megyesy (978-578-0802) at NHFG immediately for further consultation. The nest or suspected nest shall be marked (surrounding roped off or cone buffer) and avoided; this shall be communicated to all personnel onsite. Site activities shall not occur in the area surrounding the nest or suspected nest until further guidance is provided by NHFG.
- Vernal pools and potential vernal pools shall be flagged prior to work, and impacts shall be avoided. No disturb vegetative buffers of 50' shall be maintained.
- All matting which will be placed in waterbodies deemed suitable for hibernating rare turtles will be placed prior to the start of the inactive season (October 16-March 31) so as to prevent accidental placement atop hibernating turtles. Immediately prior to matting placement in these wetlands, the area shall be swept by a qualified biologist or herpetologist. They shall watch for signs that turtles are being disturbed in the area (ex. Heads coming above water, animals moving in water). Contact NHFG if biologist/herpetologist sees or suspects turtles in matting areas. Areas identified as suitable hibernation habitat shall be identified on plan sheets and provided to NHFG at least two weeks prior to beginning work. Biologist qualifications shall be provided to NHFG.
- Immediately prior to the placement of matting in wetlands during the active season (April 1-October 15), the areas shall be cleared by a qualified biologist or herpetologist. Biologist qualifications shall be provided to NHFG.
- All work activities shall be restricted to the defined roads, construction areas, and staging areas, with no equipment or materials staged or stored outside of the defined areas as shown on plan sheets.
- Searches and sweeps shall be conducted immediately by trained personnel before the start of work and movement of equipment in order to minimize the chance of animals entering an area between the sweep and work.
- Work, pull pads, and access shall be minimized to the greatest extent possible.
- Works pads shall be reduced post-construction to 30' x 60' and restored with a native vegetation seed mix.
- All manufactured erosion and sediment control products, with the exception of turf reinforcement mats, utilized for, but not limited to, slope protection, runoff diversion, slope interruption, perimeter control, inlet protection, check dams, and sediment traps shall not contain plastic, or multifilament or monofilament polypropylene netting or mesh with an opening size of greater than 1/8 inches;
- All observations of threatened or endangered species on the project site shall be reported immediately to the NHFG nongame and endangered wildlife environmental review program by phone at 603-271-2461 and by email at NHFGreview@wildlife.nh.gov, with the email subject line containing the NHB DataCheck tool results letter assigned number, the project name, and the term Wildlife Species Observation;
- Photographs of the observed species and nearby elements of habitat or areas of land disturbance shall be provided to NHFG in digital format at the above email address for verification, as feasible;
- In the event a threatened or endangered species is observed on the project site during the term of the permit, the species shall not be disturbed, handled, or harmed in any way prior to consultation with NHFG and implementation of corrective actions recommended by NHFG.
    - Site operators shall be allowed to relocate wildlife encountered if discovered within the active work zone and if in direct harm from project activities. Wildlife shall be relocated in close proximity to the capture location but outside of the work zone and in the direction the individual was heading. NHFG shall be contacted immediately if this action occurs.
- The NHFG, including its employees and authorized agents, shall have access to the property during the term of the permit.

NHFG has completed our review of materials submitted for consultation under FIS 1004. No further coordination with NHFG is requested, and the final recommendations have been transmitted to the applicable permitting agency. Questions or concerns on NHFG recommendations must follow FIS 1004.12. Note that NHFG recommendations may be withdrawn pursuant to FIS 1004.13.

Let me know if you have any questions.

Thank you,
Kat

Kat Wadiak
Wildlife Biologist
Nongame & Endangered Wildlife Program
NH Fish and Game
11 Hazen Drive
Concord, NH 03301
603-271-3017

New Hampshire Fish and Game requirements for environmental review consultation can be found at: https://gencourt.state.nh.us/rules/state_agencies/fis1000.html. ALL requests for consultation and submittals should be sent via email to NHFGreview@wildlife.nh.gov or can be sent hardcopy by mail. **The NHB datacheck results letter number needs to be included in the email subject line to read as "NHB*xx-xxxx_Project Name*_FIS 1004 Consultation Submittal".**

The requirements for consultation (Fis 1004) shall not apply to the following: statutory permit by notification, permit by rule, permit by notification, routine roadway registration, docking structure registration, or conditional authorization by rule. Review requests for these projects or other project types should be submitted to NHFGreview@wildlife.nh.gov or can be sent hardcopy by mail – email or mail subject line for these review requests should read **"NHBxx-xxxx_Project Name_ Env. Review Request".**

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Appendix D – Natural Resources Conservation Service Web Soil Survey

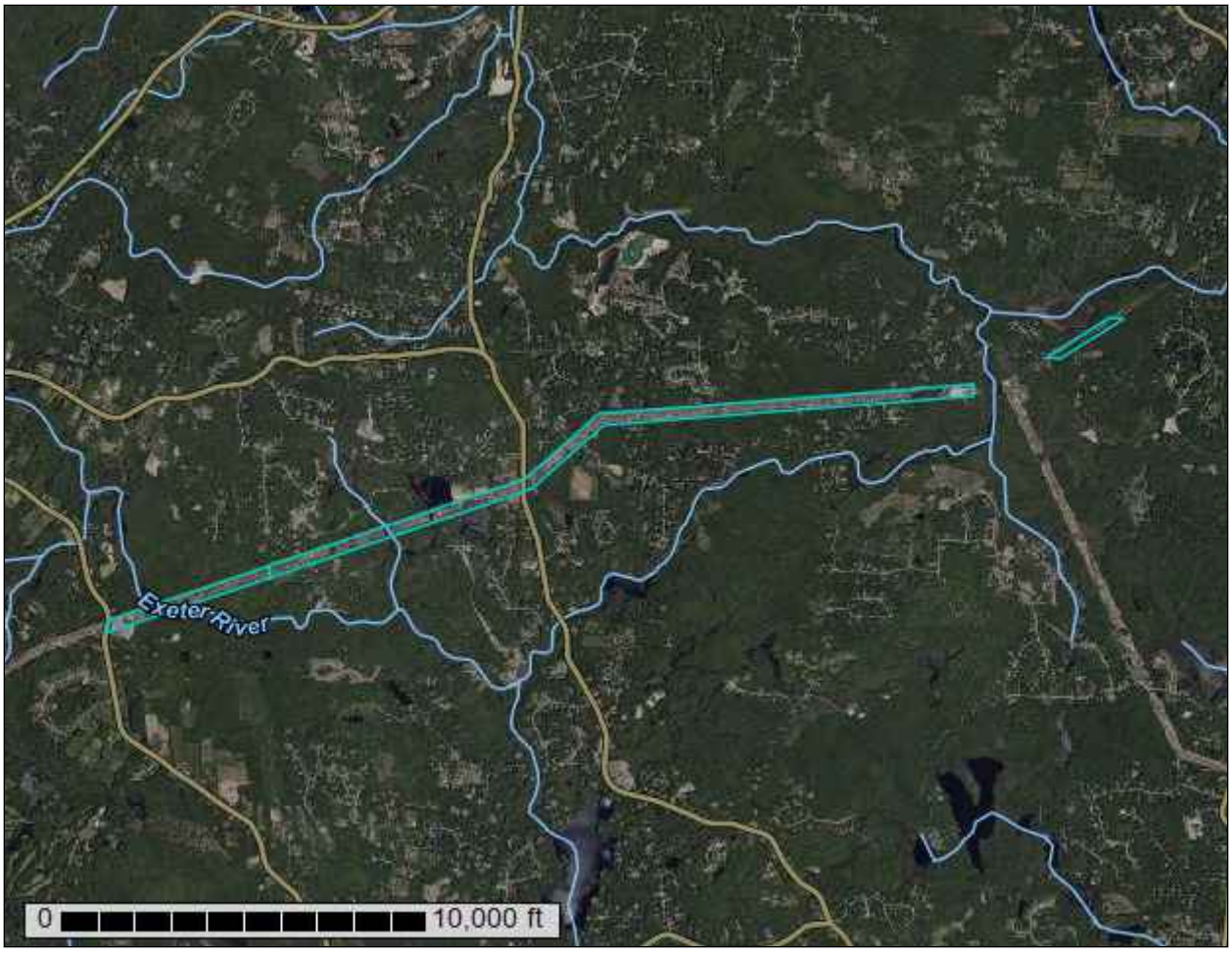
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Rockingham County, New Hampshire



March 8, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

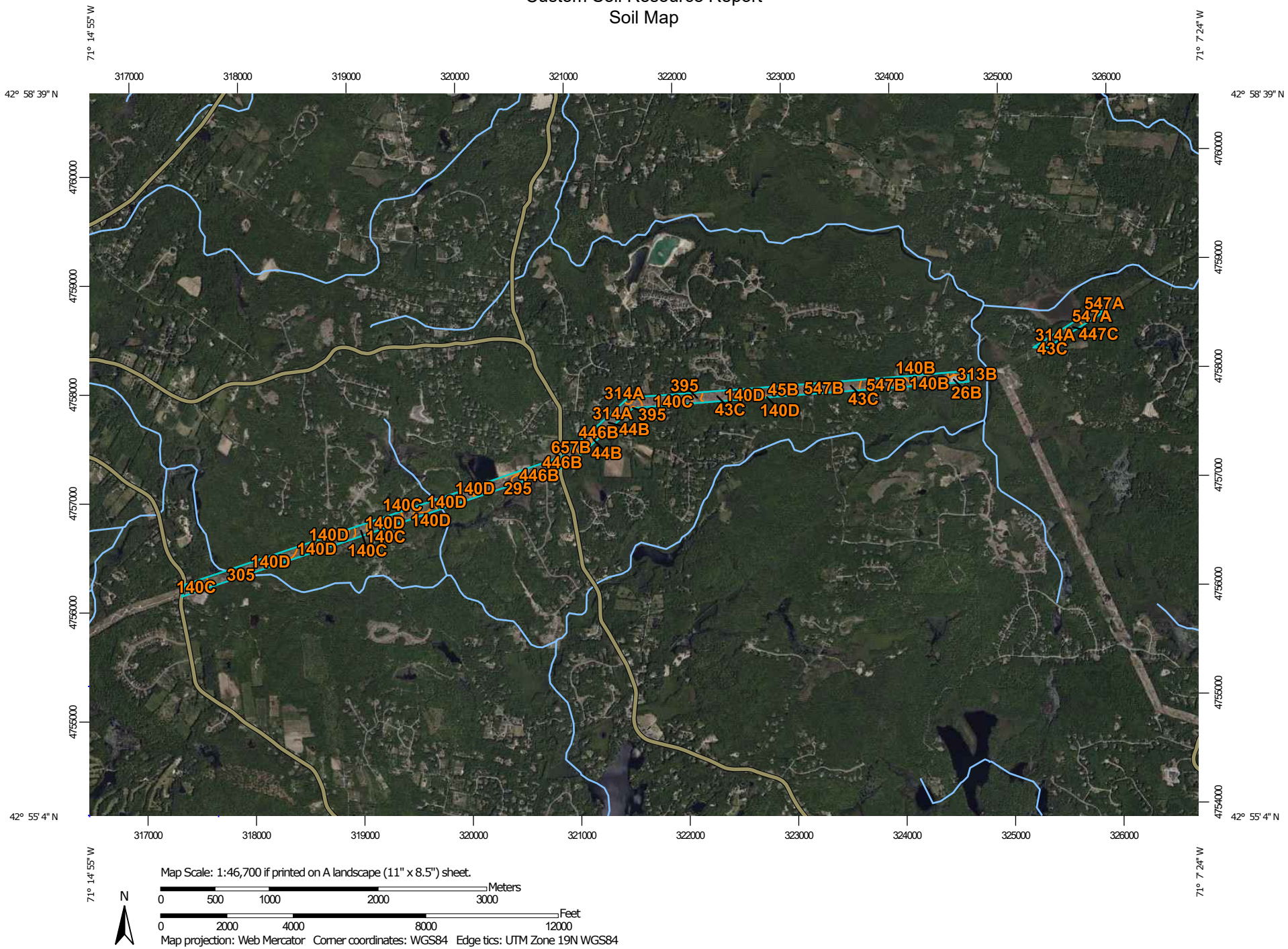
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



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 1:24,000.

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
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: Rockingham County, New Hampshire
Survey Area Data: Version 25, Sep 12, 2022

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

Date(s) aerial images were photographed: May 22, 2022—Jun 5, 2022

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

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
12B	Hinckley loamy sand, 3 to 8 percent slopes	9.6	5.0%
26B	Windsor loamy sand, 3 to 8 percent slopes	8.2	4.3%
43B	Canton fine sandy loam, 0 to 8 percent slopes, very stony	3.0	1.5%
43C	Canton fine sandy loam, 8 to 15 percent slopes, very stony	26.8	13.9%
43D	Canton fine sandy loam, 15 to 25 percent slopes, very stony	1.6	0.8%
44B	Montauk fine sandy loam, 3 to 8 percent slopes	10.1	5.2%
45B	Montauk fine sandy loam, 0 to 8 percent slopes, very stony	6.6	3.4%
140B	Chatfield-Hollis-Canton complex, 0 to 8 percent slopes, rocky	7.5	3.9%
140C	Chatfield-Hollis-Canton complex, 8 to 15 percent slopes, rocky	41.2	21.3%
140D	Chatfield-Hollis-Canton complex, 15 to 35 percent slopes, rocky	35.2	18.2%
295	Freetown mucky peat, 0 to 2 percent slopes	11.0	5.7%
305	Lim-Pootatuck complex	1.6	0.8%
313B	Deerfield loamy fine sand, 3 to 8 percent slopes	1.1	0.6%
314A	Pipestone sand, 0 to 5 percent slopes	1.4	0.7%
395	Swansea mucky peat, 0 to 2 percent slopes	2.1	1.1%
446B	Scituate-Newfields complex, 3 to 8 percent slopes	3.5	1.8%
447B	Scituate-Newfields complex, 3 to 8 percent slopes, very stony	11.0	5.7%
447C	Scituate-Newfields complex, 8 to 15 percent slopes, very stony	2.8	1.4%
547A	Walpole very fine sandy loam, 0 to 3 percent slopes, very stony	0.9	0.5%
547B	Walpole very fine sandy loam, 3 to 8 percent slopes, very stony	4.7	2.4%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
657B	Ridgebury fine sandy loam, 3 to 8 percent slopes, very stony	3.5	1.8%
Totals for Area of Interest		**193.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Rockingham County, New Hampshire

12B—Hinckley loamy sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2svm8
Elevation: 0 to 1,430 feet
Mean annual precipitation: 36 to 53 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Hinckley and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hinckley

Setting

Landform: Outwash deltas, outwash terraces, moraines, kames, outwash plains, kame terraces, eskers
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Nose slope, side slope, base slope, crest, riser, tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Parent material: Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 8 inches: loamy sand
Bw1 - 8 to 11 inches: gravelly loamy sand
Bw2 - 11 to 16 inches: gravelly loamy sand
BC - 16 to 19 inches: very gravelly loamy sand
C - 19 to 65 inches: very gravelly sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A

Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Windsor
Percent of map unit: 8 percent
Landform: Outwash deltas, outwash terraces, moraines, kames, outwash plains, kame terraces, eskers
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Nose slope, side slope, base slope, crest, riser, tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Sudbury
Percent of map unit: 5 percent
Landform: Outwash deltas, outwash terraces, moraines, outwash plains, kame terraces
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Head slope, side slope, base slope, tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Hydric soil rating: No

Agawam
Percent of map unit: 2 percent
Landform: Outwash deltas, outwash terraces, moraines, kames, outwash plains, kame terraces, eskers
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Nose slope, side slope, base slope, crest, riser, tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

26B—Windsor loamy sand, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: 2svkf
Elevation: 0 to 1,210 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of local importance

Map Unit Composition
Windsor, loamy sand, and similar soils: 85 percent
Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor, Loamy Sand

Setting

Landform: Outwash terraces, outwash plains, dunes, deltas
Landform position (three-dimensional): Tread, riser
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

O - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loamy sand
Bw - 3 to 25 inches: loamy sand
C - 25 to 65 inches: sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Hinckley, loamy sand

Percent of map unit: 10 percent
Landform: Kames, outwash plains, eskers, deltas
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Head slope, nose slope, crest, side slope, rise
Down-slope shape: Convex
Across-slope shape: Convex, linear
Hydric soil rating: No

Deerfield, loamy sand

Percent of map unit: 5 percent
Landform: Terraces, outwash plains, deltas
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear

Across-slope shape: Linear
Hydric soil rating: No

43B—Canton fine sandy loam, 0 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2w81l
Elevation: 0 to 1,180 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of local importance

Map Unit Composition

Canton, very stony, and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton, Very Stony

Setting

Landform: Hills, ridges, moraines
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 5 inches: fine sandy loam
Bw1 - 5 to 16 inches: fine sandy loam
Bw2 - 16 to 22 inches: gravelly fine sandy loam
2C - 22 to 67 inches: gravelly loamy sand

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Scituate, very stony

Percent of map unit: 9 percent
Landform: Hills, ground moraines, drumlins
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Montauk, very stony

Percent of map unit: 5 percent
Landform: Recessionial moraines, hills, ground moraines, drumlins
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Gloucester, very stony

Percent of map unit: 4 percent
Landform: Ridges, moraines, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Swansea

Percent of map unit: 2 percent
Landform: Bogs, swamps, marshes, kettles, depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

43C—Canton fine sandy loam, 8 to 15 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2w814
Elevation: 0 to 1,160 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F

Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Canton, very stony, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton, Very Stony

Setting

Landform: Ridges, moraines, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 5 inches: fine sandy loam
Bw1 - 5 to 16 inches: fine sandy loam
Bw2 - 16 to 22 inches: gravelly fine sandy loam
2C - 22 to 67 inches: gravelly loamy sand

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Montauk, very stony

Percent of map unit: 6 percent
Landform: Recessionial moraines, hills, ground moraines, drumlins
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex

Hydric soil rating: No

Scituate, very stony

Percent of map unit: 5 percent
Landform: Hills, ground moraines, drumlins
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Chatfield, very stony

Percent of map unit: 3 percent
Landform: Ridges, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Swansea

Percent of map unit: 1 percent
Landform: Swamps, marshes, kettles, depressions, bogs
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

43D—Canton fine sandy loam, 15 to 25 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2w81h
Elevation: 70 to 1,120 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Canton, very stony, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton, Very Stony

Setting

Landform: Ridges, moraines, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex

Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 5 inches: fine sandy loam
Bw1 - 5 to 16 inches: fine sandy loam
Bw2 - 16 to 22 inches: gravelly fine sandy loam
2C - 22 to 67 inches: gravelly loamy sand

Properties and qualities

Slope: 15 to 25 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Chatfield, very stony

Percent of map unit: 6 percent
Landform: Ridges, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

Montauk, very stony

Percent of map unit: 5 percent
Landform: Recessionial moraines, hills, ground moraines, drumlins
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Newfields, very stony

Percent of map unit: 4 percent
Landform: Moraines, hills, ground moraines
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope

Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

44B—Montauk fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2tyrh
Elevation: 0 to 1,030 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Montauk and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montauk

Setting

Landform: Recessionial moraines, hills, ground moraines, drumlins
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Ap - 0 to 4 inches: fine sandy loam
Bw1 - 4 to 26 inches: fine sandy loam
Bw2 - 26 to 34 inches: sandy loam
2Cd - 34 to 72 inches: gravelly loamy sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 20 to 39 inches to densic material
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Scituate

Percent of map unit: 6 percent
Landform: Hills, ground moraines, drumlins
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Canton

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Ridgebury

Percent of map unit: 4 percent
Landform: Hills, ground moraines, drainageways, depressions
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

45B—Montauk fine sandy loam, 0 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2w80v
Elevation: 0 to 1,070 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of local importance

Map Unit Composition

Montauk, very stony, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montauk, Very Stony

Setting

Landform: Recessionial moraines, hills, ground moraines, drumlins
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 6 inches: fine sandy loam
Bw1 - 6 to 28 inches: fine sandy loam
Bw2 - 28 to 36 inches: sandy loam
2Cd - 36 to 74 inches: gravelly loamy sand

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Scituate, very stony

Percent of map unit: 6 percent
Landform: Hills, ground moraines, drumlins
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Canton, very stony

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear

Across-slope shape: Convex
Hydric soil rating: No

Ridgebury, very stony

Percent of map unit: 4 percent
Landform: Hills, ground moraines, drainageways, depressions
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

140B—Chatfield-Hollis-Canton complex, 0 to 8 percent slopes, rocky

Map Unit Setting

National map unit symbol: 2w82m
Elevation: 380 to 1,070 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Chatfield, very stony, and similar soils: 35 percent
Canton, very stony, and similar soils: 25 percent
Hollis, very stony, and similar soils: 25 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Chatfield, Very Stony

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest
Down-slope shape: Convex
Across-slope shape: Linear, convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 2 inches: fine sandy loam
Bw - 2 to 30 inches: gravelly fine sandy loam
2R - 30 to 40 inches: bedrock

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 41 inches to lithic bedrock
Drainage class: Well drained

Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Canton, Very Stony

Setting

Landform: Ridges, moraines, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 5 inches: fine sandy loam
Bw1 - 5 to 16 inches: fine sandy loam
Bw2 - 16 to 22 inches: gravelly fine sandy loam
2C - 22 to 67 inches: gravelly loamy sand

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Hollis, Very Stony

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest
Down-slope shape: Convex
Across-slope shape: Linear, convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 7 inches: gravelly fine sandy loam
Bw - 7 to 16 inches: gravelly fine sandy loam
2R - 16 to 26 inches: bedrock

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 8 to 23 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: F144AY033MA - Shallow Dry Till Uplands
Hydric soil rating: No

Minor Components

Freetown

Percent of map unit: 5 percent
Landform: Swamps, marshes, kettles, depressions, bogs
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Newfields, very stony

Percent of map unit: 5 percent
Landform: Moraines, hills, ground moraines
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Walpole, very stony

Percent of map unit: 3 percent
Landform: Depressions, outwash terraces, outwash plains, depressions, deltas
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Rock outcrop

Percent of map unit: 2 percent
Landform: Ridges, hills
Hydric soil rating: Unranked

140C—Chatfield-Hollis-Canton complex, 8 to 15 percent slopes, rocky

Map Unit Setting

National map unit symbol: 2w82s
Elevation: 0 to 980 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Chatfield, very stony, and similar soils: 35 percent
Canton, very stony, and similar soils: 25 percent
Hollis, very stony, and similar soils: 25 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Chatfield, Very Stony

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest
Down-slope shape: Convex
Across-slope shape: Linear, convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 2 inches: fine sandy loam
Bw - 2 to 30 inches: gravelly fine sandy loam
2R - 30 to 40 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 41 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Hollis, Very Stony

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest
Down-slope shape: Convex
Across-slope shape: Linear, convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 7 inches: gravelly fine sandy loam
Bw - 7 to 16 inches: gravelly fine sandy loam
2R - 16 to 26 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 8 to 23 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D

Ecological site: F144AY033MA - Shallow Dry Till Uplands
Hydric soil rating: No

Description of Canton, Very Stony

Setting

Landform: Ridges, moraines, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 5 inches: fine sandy loam
Bw1 - 5 to 16 inches: fine sandy loam
Bw2 - 16 to 22 inches: gravelly fine sandy loam
2C - 22 to 67 inches: gravelly loamy sand

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Newfields, very stony

Percent of map unit: 5 percent
Landform: Moraines, hills, ground moraines
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Freetown

Percent of map unit: 5 percent
Landform: Swamps, marshes, kettles, depressions, bogs

Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Scarboro, very stony

Percent of map unit: 3 percent
Landform: Outwash deltas, outwash terraces, drainageways, depressions
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave, linear
Hydric soil rating: Yes

Rock outcrop

Percent of map unit: 2 percent
Landform: Ridges, hills
Hydric soil rating: Unranked

140D—Chatfield-Hollis-Canton complex, 15 to 35 percent slopes, rocky

Map Unit Setting

National map unit symbol: 2w82p
Elevation: 0 to 1,340 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Chatfield, very stony, and similar soils: 35 percent
Canton, very stony, and similar soils: 25 percent
Hollis, very stony, and similar soils: 25 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Chatfield, Very Stony

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest
Down-slope shape: Convex
Across-slope shape: Linear, convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 2 inches: fine sandy loam

Bw - 2 to 30 inches: gravelly fine sandy loam
2R - 30 to 40 inches: bedrock

Properties and qualities

Slope: 15 to 35 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 41 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Canton, Very Stony

Setting

Landform: Ridges, moraines, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 5 inches: fine sandy loam
Bw1 - 5 to 16 inches: fine sandy loam
Bw2 - 16 to 22 inches: gravelly fine sandy loam
2C - 22 to 67 inches: gravelly loamy sand

Properties and qualities

Slope: 15 to 35 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Hollis, Very Stony

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest
Down-slope shape: Convex
Across-slope shape: Linear, convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 7 inches: gravelly fine sandy loam
Bw - 7 to 16 inches: gravelly fine sandy loam
2R - 16 to 26 inches: bedrock

Properties and qualities

Slope: 15 to 35 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 8 to 23 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: F144AY033MA - Shallow Dry Till Uplands
Hydric soil rating: No

Minor Components

Montauk, very stony

Percent of map unit: 7 percent
Landform: Recessionial moraines, hills, ground moraines, drumlins
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Scarboro, very stony

Percent of map unit: 6 percent
Landform: Outwash deltas, outwash terraces, drainageways, depressions
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave, linear
Hydric soil rating: Yes

Rock outcrop

Percent of map unit: 2 percent
Landform: Ridges, hills
Hydric soil rating: Unranked

295—Freetown mucky peat, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2w68v
Elevation: 0 to 860 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Freetown and similar soils: 82 percent
Minor components: 18 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Freetown

Setting

Landform: Marshes, kettles, swamps, depressions, bogs
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Moderately decomposed organic material

Typical profile

Oe1 - 0 to 2 inches: mucky peat
Oe2 - 2 to 79 inches: mucky peat

Properties and qualities

Slope: 0 to 1 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)

Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water supply, 0 to 60 inches: Very high (about 20.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: B/D
Ecological site: F144AY043MA - Acidic Organic Wetlands
Hydric soil rating: Yes

Minor Components

Swansea

Percent of map unit: 8 percent
Landform: Swamps, marshes, kettles, depressions, bogs
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Natchaug

Percent of map unit: 6 percent
Landform: Depressions, depressions, depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Scarboro

Percent of map unit: 3 percent
Landform: Outwash deltas, outwash terraces, drainageways, depressions
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Whitman

Percent of map unit: 1 percent
Landform: Hills, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

305—Lim-Pootatuck complex

Map Unit Setting

National map unit symbol: 9cmx
Elevation: 0 to 740 feet
Mean annual precipitation: 46 to 49 inches

Mean annual air temperature: 48 degrees F
Frost-free period: 155 to 160 days
Farmland classification: Farmland of local importance

Map Unit Composition

Lim and similar soils: 45 percent
Pootatuck and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lim

Setting

Landform: Flood plains
Parent material: Alluvium

Typical profile

H1 - 0 to 8 inches: very fine sandy loam
H2 - 8 to 38 inches: very fine sandy loam
H3 - 38 to 44 inches: fine sandy loam
H4 - 44 to 60 inches: fine sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 0 to 18 inches
Frequency of flooding: NoneFrequent
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: B/D
Ecological site: F144AY015NY - Wet Silty Low Floodplain
Hydric soil rating: Yes

Description of Pootatuck

Setting

Parent material: Sandy and/or coarse-loamy alluvium derived from granite, gneiss or schist

Typical profile

H1 - 0 to 4 inches: very fine sandy loam
H2 - 4 to 26 inches: very fine sandy loam
H3 - 26 to 60 inches: loamy fine sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: NoneFrequent
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B
Ecological site: F144AY015NY - Wet Silty Low Floodplain
Hydric soil rating: No

Minor Components

Not named wet

Percent of map unit: 15 percent
Landform: Flood plains
Hydric soil rating: Yes

313B—Deerfield loamy fine sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2xfg9
Elevation: 0 to 1,190 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Deerfield and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Deerfield

Setting

Landform: Outwash deltas, outwash terraces, outwash plains, kame terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Parent material: Sandy outwash derived from granite, gneiss, and/or quartzite

Typical profile

Ap - 0 to 9 inches: loamy fine sand
Bw - 9 to 25 inches: loamy fine sand
BC - 25 to 33 inches: fine sand
Cg - 33 to 60 inches: sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: About 15 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum: 11.0
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: A
Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: No

Minor Components

Windsor

Percent of map unit: 7 percent
Landform: Outwash deltas, outwash terraces, outwash plains, kame terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Wareham

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Sudbury

Percent of map unit: 2 percent
Landform: Outwash deltas, outwash terraces, outwash plains, kame terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Ninigret

Percent of map unit: 1 percent
Landform: Outwash plains, outwash terraces, kame terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex, linear
Across-slope shape: Convex, concave
Hydric soil rating: No

314A—Pipestone sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 9cn2
Elevation: 0 to 2,100 feet
Mean annual precipitation: 28 to 55 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 100 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Pipestone and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pipestone

Setting

Landform: Outwash terraces

Typical profile

H1 - 0 to 6 inches: sand
H2 - 6 to 33 inches: sand
H3 - 33 to 60 inches: sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: Yes

Minor Components

Scarboro

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Deerfield
Percent of map unit: 5 percent
Hydric soil rating: No

Chocorua
Percent of map unit: 5 percent
Landform: Bogs
Hydric soil rating: Yes

Not named wet
Percent of map unit: 5 percent
Landform: Outwash terraces
Hydric soil rating: Yes

Squamscott
Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

395—Swansea mucky peat, 0 to 2 percent slopes

Map Unit Setting
National map unit symbol: 2w68x
Elevation: 0 to 950 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition
Swansea and similar soils: 83 percent
Minor components: 17 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Swansea

Setting
Landform: Swamps, marshes, kettles, depressions, bogs
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Moderately decomposed organic material over sandy and gravelly glaciofluvial deposits

Typical profile
Oe1 - 0 to 12 inches: mucky peat
Oe2 - 12 to 25 inches: mucky peat
Cg - 25 to 79 inches: sand

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water supply, 0 to 60 inches: High (about 11.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: B/D
Ecological site: F144AY043MA - Acidic Organic Wetlands
Hydric soil rating: Yes

Minor Components

Freetown

Percent of map unit: 7 percent
Landform: Swamps, marshes, kettles, depressions, bogs
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Walpole

Percent of map unit: 5 percent
Landform: Outwash deltas, outwash terraces, drainageways, depressions
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Scarboro

Percent of map unit: 5 percent
Landform: Outwash deltas, outwash terraces, drainageways, depressions
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

446B—Scituate-Newfields complex, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9cnp
Elevation: 0 to 1,000 feet
Mean annual precipitation: 35 to 48 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 120 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Scituate and similar soils: 50 percent
Newfields and similar soils: 25 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Scituate

Typical profile

H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 32 inches: cobbly fine sandy loam
H3 - 32 to 60 inches: gravelly loamy sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Description of Newfields

Setting

Parent material: Till

Typical profile

H1 - 0 to 9 inches: fine sandy loam
H2 - 9 to 35 inches: fine sandy loam
H3 - 35 to 64 inches: gravelly loamy sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 24 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C
Ecological site: F144AY008CT - Moist Till Uplands
Hydric soil rating: No

Minor Components

Paxton
Percent of map unit: 5 percent
Hydric soil rating: No

Walpole
Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Ridgebury
Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Montauk
Percent of map unit: 5 percent
Hydric soil rating: No

Canton
Percent of map unit: 5 percent
Hydric soil rating: No

447B—Scituate-Newfields complex, 3 to 8 percent slopes, very stony

Map Unit Setting
National map unit symbol: 9cnr
Elevation: 0 to 1,000 feet
Mean annual precipitation: 35 to 56 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 120 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition
Scituate and similar soils: 50 percent
Newfields and similar soils: 25 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Scituate

Typical profile
H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 32 inches: cobbly fine sandy loam
H3 - 32 to 60 inches: gravelly loamy sand

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Description of Newfields

Setting

Parent material: Till

Typical profile

H1 - 0 to 9 inches: fine sandy loam
H2 - 9 to 35 inches: fine sandy loam
H3 - 35 to 64 inches: gravelly loamy sand

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 24 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: F144AY008CT - Moist Till Uplands
Hydric soil rating: No

Minor Components

Walpole

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Ridgebury
Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Canton
Percent of map unit: 5 percent
Hydric soil rating: No

Montauk
Percent of map unit: 5 percent
Hydric soil rating: No

Not named
Percent of map unit: 5 percent
Hydric soil rating: No

447C—Scituate-Newfields complex, 8 to 15 percent slopes, very stony

Map Unit Setting
National map unit symbol: 9cns
Elevation: 0 to 1,000 feet
Mean annual precipitation: 35 to 56 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 120 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition
Scituate and similar soils: 50 percent
Newfields and similar soils: 25 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Scituate

Typical profile
H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 32 inches: cobbly fine sandy loam
H3 - 32 to 60 inches: gravelly loamy sand

Properties and qualities
Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None

Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Description of Newfields

Setting
Parent material: Till

Typical profile
H1 - 0 to 9 inches: fine sandy loam
H2 - 9 to 35 inches: fine sandy loam
H3 - 35 to 64 inches: gravelly loamy sand

Properties and qualities
Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 24 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.4 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: F144AY008CT - Moist Till Uplands
Hydric soil rating: No

Minor Components

Not named
Percent of map unit: 5 percent
Hydric soil rating: No

Montauk
Percent of map unit: 5 percent
Hydric soil rating: No

Ridgebury
Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Walpole
Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Canton

Percent of map unit: 5 percent
Hydric soil rating: No

547A—Walpole very fine sandy loam, 0 to 3 percent slopes, very stony

Map Unit Setting

National map unit symbol: 9cpc
Elevation: 0 to 2,100 feet
Mean annual precipitation: 28 to 49 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 100 to 195 days
Farmland classification: Not prime farmland

Map Unit Composition

Walpole and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Walpole

Setting

Landform: Depressions

Typical profile

H1 - 0 to 7 inches: very fine sandy loam
H2 - 7 to 16 inches: sandy loam
H3 - 16 to 60 inches: gravelly loamy sand

Properties and qualities

Slope: 0 to 3 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A/D
Ecological site: F144AY028MA - Wet Outwash
Hydric soil rating: Yes

Minor Components

Scarboro
Percent of map unit: 10 percent
Landform: Depressions
Hydric soil rating: Yes

Newfields
Percent of map unit: 5 percent
Hydric soil rating: No

547B—Walpole very fine sandy loam, 3 to 8 percent slopes, very stony

Map Unit Setting
National map unit symbol: 9cpd
Elevation: 0 to 2,100 feet
Mean annual precipitation: 28 to 48 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 100 to 195 days
Farmland classification: Not prime farmland

Map Unit Composition
Walpole and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Walpole

Setting
Landform: Depressions

Typical profile
H1 - 0 to 7 inches: very fine sandy loam
H2 - 7 to 16 inches: sandy loam
H3 - 16 to 60 inches: gravelly loamy sand

Properties and qualities
Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.6 inches)

Interpretive groups
Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A/D
Ecological site: F144AY028MA - Wet Outwash
Hydric soil rating: Yes

Minor Components

Scarboro
Percent of map unit: 10 percent
Landform: Depressions
Hydric soil rating: Yes

Newfields
Percent of map unit: 5 percent
Hydric soil rating: No

Squamscott
Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

657B—Ridgebury fine sandy loam, 3 to 8 percent slopes, very stony

Map Unit Setting
National map unit symbol: 2xffx
Elevation: 40 to 1,320 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition
Ridgebury, very stony, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ridgebury, Very Stony

Setting
Landform: Hills, ground moraines, drumlins, drainageways, depressions
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile
Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 6 inches: fine sandy loam
Bw - 6 to 10 inches: sandy loam

Bg - 10 to 19 inches: gravelly sandy loam
Cd - 19 to 66 inches: gravelly sandy loam

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 15 to 35 inches to densic material
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: D
Ecological site: F144AY009CT - Wet Till Depressions
Hydric soil rating: Yes

Minor Components

Woodbridge, very stony

Percent of map unit: 7 percent
Landform: Hills, ground moraines, drumlins
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Whitman, very stony

Percent of map unit: 4 percent
Landform: Hills, ground moraines, drumlins, drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Scituate, very stony

Percent of map unit: 2 percent
Landform: Hills, ground moraines, drumlins
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Walpole

Percent of map unit: 2 percent
Landform: Outwash terraces, drainageways, depressions
Landform position (three-dimensional): Tread

Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

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Appendix E – Photo Log

PHOTO LOG
H141 & R193 Transmission Structure Replacement Project
Chester, Sandown, and Danville, New Hampshire
Photos Taken: January 20-22, 2023

Photograph No. 1: Looking at proposed access and work pad location for R193 Structure 351.

Photograph No. 2: Looking at proposed access to R193 Structure 350.

Photograph No. 3: Looking at proposed access and work pad location for R193 Structure 350.

Photograph No. 4: Looking at proposed access and work pad location for R193 Structure 349, facing south-southwest towards H141 Structure 315.

Photograph No. 5: Looking at proposed access and work pad location for R193 Structure 349 (right), adjacent to H141 Structure 314.

Photograph No. 6: Looking at proposed access and work pad location for R193 Structure 348 (right).

Photograph No. 7: Looking at proposed access and work pad location for H141 Structure 312 (left).

Photograph No. 8: Looking at proposed access to H141 Structure 311 (center).

Photograph No. 9: Looking at proposed access and work pad location for H141 Structure 310 (left).

Photograph No. 10: Looking at proposed access and work pad location for H141 Structure 308.

Photograph No. 11: Looking at proposed access to H141 Structure 307.

Photograph No. 12: Looking at proposed access for H141 Structure 306.

Photograph No. 13: Looking at proposed access and work pad location for H141 Structure 299 (right), from Pheasant Run Drive.

Photograph No. 14: Looking at proposed access and work pad location for H141 Structure 300 (left).

Photograph No. 15: Looking at proposed access and work pad location for H141 Structure 301 (center).

Photograph No. 16: Looking at proposed access to H141 Structure 302 (right).

Photograph No. 17: Looking at proposed access and work pad location for R193 Structure 326.

Photograph No. 18: View of Wetland SW-17, R193 Structure 326, and proposed access to R193 Structure 327 (back right), and H141 Structure 294 (back left).

Photograph No. 19: Looking at proposed access and work pad locations for H141 Structure 292 (center) and R193 Structure 325 (left).

Photograph No. 20: Looking at proposed access and work pad location for R193 Structure 325.

Photograph No. 21: Looking at proposed access and work pad locations for H141 Structure 291 (center) and R193 Structure 324 (left) from the driveway of 28 Sargent Road.

Photograph No. 22: Looking at proposed access and work pad location for R193 Structure 324.

Photograph No. 23: Looking at proposed access and work pad location for H141 Structure 290.

Photograph No. 24: Looking at proposed access and work pad location for H141 Structure 287.

Photograph No. 25: Looking at proposed access and work pad location for H141 Structure 286.

Photograph No. 26: Looking at proposed access and work pad location for H141 Structure 285.

Photograph No. 27: Looking at proposed access to H141 Structure 284, facing west towards 363 Structure 154.

Photograph No. 28: Looking at proposed access and work pad location for H141 Structure 283.

Photograph No. 29: Looking at proposed access to H141 Structure 282.

Photograph No. 30: Looking at proposed access and work pad location for H141 Structure 281.

Photograph No. 31: Looking at proposed access and work pad location for R193 Structure 303 (far left), to the east across Fremont Road.

Photograph No. 32: Looking at proposed access and work pad location for H141 Structure 304 (right).

Photograph No. 33: Looking at proposed access and work pad location for R193 Structure 305 (right).

Photograph No. 34: Looking at proposed access and work pad locations for R193 Structure 306 and H141 Structure 274, adjacent to the left and right, respectively.

Photograph No. 35: Looking at proposed access and work pad locations for R193 Structure 306 (left) and H141 Structure 274 (right).

Photograph No. 36: Looking at proposed access to H141 Structure 275 and R193 Structure 307.

Photograph No. 37: Looking at proposed access and work pad location for H141 Structure 264.

Photograph No. 38: Looking at proposed access to H141 Structure 263.

Photograph No. 39: Looking at proposed access to H141 Structure 262.

Photograph No. 40: Looking at proposed access and work pad for H141 Structure 262, facing south from the base of R193 Structure 291.

Photograph No. 41: Looking at proposed access adjacent to H141 Structure 261 (left).

Appendix F – Waiver Request

Alteration of Terrain Waiver Request

RSA/Rule: RSA 485-A:17, Env – WQ 1500

Water Division / Alteration of Terrain Bureau / Land resources Management
29 Hazen Drive, PO Box 95
Concord, New Hampshire 03302-0095

A. PROJECT INFORMATION	
H141 and R193 Transmission Line Structure Replacement Project Project Name	
Existing H141 and R193 Transmission Line Right-of-Way Street Address	
Chester, Sandown, and Danville City/Town	Multiple Zip Code
Multiple – see attached Tax Map/Lot Number	

B. APPLICANT/OWNER INFORMATION		
Ashley First Name	Friend Last Name	
Eversource Energy Organization		
13 Legends Drive Street Address		
Hooksett City/Town	New Hampshire State	03106 Zip Code
Ashley.friend@eversource.com Email	603-634-2992 Telephone Number	

C. APPLICANT/OWNER AGENT INFORMATION		
Conor First Name	Madison Last Name	
GZA GeoEnvironmental, Inc. Organization		
5 Commerce Park North, Suite 201 Street Address		
Bedford City/Town	New Hampshire State	03110 Zip Code
Conor.madison@gza.com Email	603-232-8784 Telephone Number	

D. WAIVER REQUESTS

Env-Wq 1504.09 Rule Section Waiver Request	Stormwater Drainage Report; Drainage Area Plans; Hydrologic Soil Group Plans Name of Rule

Reason for Waiver Request

Eversource is requesting a waiver for preparing a Stormwater Drainage Report, Drainage Area Plans and Hydrologic Soil Group Plans for proposed access improvements and work pad grading associated with maintenance of the existing H141 and R193 Transmission Line structures. The proposed access and work pad improvements for continued transmission line maintenance work will not result in new impervious surfaces. As a result, stormwater treatment practices are not proposed.

Waiver Timeline

Permanent

Proposed Alternative

The proposed access and work pad improvements will not result in new impervious surface. Therefore, there is no proposed alternative to substitute the requirements of Env-Wq 1504.09.

Compliance with Env- WQ 1509.04

The project proposes to improve access routes and work pads around utility structures for the purpose of maintaining existing utility infrastructure. This project is necessary in order to maintain the safety and reliability of the electrical infrastructure. Access and work pad improvements will be completed using stone and gravel, and therefore stormwater drainage should not be affected by the proposed project. In addition, it is not anticipated that stormwater drainage area plans would show significant differences between existing and proposed conditions. An NRCS Web Soil Survey report was generated to show general soil information within the project area. Since there is no new impervious surface area proposed and stormwater drainage is not anticipated to be affected by the proposed project, it is not anticipated that soils will be significantly impacted by the project.

Best Management Practices will be utilized to protect wetlands from erosion, sedimentation, or other environmental degradation. In addition, gravel work pads will be coated with seed and mulch to allow vegetation growth on the surface, further minimizing and preventing erosion and sedimentation. As a result, Eversource respectfully requests that a Stormwater Drainage Report, Drainage Area Plans, and Hydrologic Soil Group Plans be waived for the purposes of the proposed utility line maintenance project.

E. SIGNATURES

4/11/2023

Applicant/Owner, Ashley Friend, Date
as agent for Public Service Company of New Hampshire dba Eversource Energy

4/11/2023

Applicant/Owner Agent, Conor Madison, Date
GZA GeoEnvironmental, Inc.

Alteration of Terrain Waiver Request

RSA/Rule: RSA 485-A:17, Env – WQ 1500

Water Division / Alteration of Terrain Bureau / Land resources Management
29 Hazen Drive, PO Box 95
Concord, New Hampshire 03302-0095

A. PROJECT INFORMATION	
H141 and R193 Transmission Line Structure Replacement Project Project Name	
Existing H141 and R193 Transmission Line Right-of-Way Street Address	
Chester, Sandown, and Danville City/Town	Multiple Zip Code
Multiple – see attached plans Tax Map/Lot Number	

B. APPLICANT/OWNER INFORMATION		
Ashley First Name	Friend Last Name	
Public Service Company of New Hampshire dba Eversource Energy Organization		
13 Legends Drive Street Address		
Hooksett City/Town	New Hampshire State	03106 Zip Code
Ashley.friend@eversource.com Email	603-634-2992 Telephone Number	

C. APPLICANT/OWNER AGENT INFORMATION		
Conor First Name	Madison Last Name	
GZA GeoEnvironmental, Inc. Organization		
5 Commerce Park North, Suite 201 Street Address		
Bedford City/Town	New Hampshire State	03110 Zip Code
conor.madison@gza.com Email	603-232-8784 Telephone Number	

D. WAIVER REQUESTS

Env-Wq 1503.12 (d)(1&2) Rule Section Waiver Request	Measurement of Contiguous Area Disturbed; Inclusion in Plans Name of Rule

Reason for Waiver Request

Eversource is requesting a waiver for including past terrain disturbance in the measurement of contiguous disturbed area included in this H141 and R193 Line AOT application. Future disturbance, beyond the scope of H141 and R193 line structure replacement project described in this application is not known at this time.

Waiver Timeline

Permanent

Proposed Alternative

Any existing trails or access roads that may have been created within the last 10 years will be utilized and/or improved as part of this project and have been included in the current calculations within this application. Future structure maintenance may occur within the H141 and R193 ROW. Eversource, through consultation with NHDES, will evaluate whether future terrain disturbances within the H141 and R193 ROW will be permitted with an amendment to this application or subject to a new, separate application.

Compliance with Env-Wq 1503.12 (d)(1&2)

The project proposes to improve access routes and work pads around utility structures for the purpose of maintaining existing utility infrastructure. This project is necessary to maintain the safety and reliability of the electrical infrastructure. Proposed disturbances anticipated for 2023 within the H141 and R193 ROW are included in this application and shown on Figures 3 and 4. Project disturbances included in this application and subsequent permit approvals will be considered if future structure maintenance is proposed within the H141 and R193 ROW. Eversource respectfully requests a waiver from including past disturbance in this application. Future disturbances within the H141 and R193 ROW will be evaluated and discussed with NHDES and permit amendments or new permit applications will be submitted, if necessary.

E. SIGNATURES

4/11/2023

Applicant/Owner, Ashley Friend, Specialist — Date
as agent for Public Service Company of New Hampshire dba Eversource Energy

4/11/2023

Applicant/Owner Agent, Conor Madison, — Date
GZA GeoEnvironmental, Inc.

Alteration of Terrain Waiver Request

RSA/Rule: RSA 485-A:17, Env – WQ 1500

Water Division / Alteration of Terrain Bureau / Land resources Management
29 Hazen Drive, PO Box 95
Concord, New Hampshire 03302-0095

A. PROJECT INFORMATION	
H141 and R193 Transmission Line Structure Replacement Project Project Name	
Existing H141 and R193 Transmission Line Right-of-Way Street Address	
Chester, Sandown, and Danville City/Town	Multiple Zip Code
Multiple – see attached plans Tax Map/Lot Number	

B. APPLICANT/OWNER INFORMATION		
Ashley First Name	Friend Last Name	
Eversource Energy Organization		
13 Legends Drive Street Address		
Hooksett City/Town	New Hampshire State	03106 Zip Code
Ashley.friend@eversource.com Email	603-634-2992 Telephone Number	

C. APPLICANT/OWNER AGENT INFORMATION		
Conor First Name	Madison Last Name	
GZA GeoEnvironmental, Inc. Organization		
5 Commerce Park North, Suite 201 Street Address		
Bedford City/Town	New Hampshire State	03310 Zip Code
Conor.madison@gza.com Email	603-232-8784 Telephone Number	

D. WAIVER REQUESTS	
Env-Wq 1503.21 (d)(6&7) Rule Section Waiver Request	Notification; Certification Name of Rule

Reason for Waiver Request

Eversource is requesting a waiver for deviations from the approved plans without applying for an amended permit or a new permit if shifts in the proposed project layout occur. Changes in project layout are frequently identified during construction by Eversource and their contractors and may be necessary to safely perform the work. Access shifts would be limited to the extent necessary for safety, would not impact new resources, and access would remain within the existing and maintained ROW. The need for additional permit applications can impact construction schedules and incur costly delays.

Waiver Timeline

Permanent

Proposed Alternative

Allow for the access road centerlines to be relocated during construction, if necessary, up to a distance equal to the approximate width of the ROW (approximately 225-320 feet on the H141 and R193 Lines). Shifts would not create greater than 5% increase in disturbed area along the individual access segment, which is assumed to be the length of the access road between two work pads/structures.

Allow for the center point of the parking area, assumed to be the structure replacement work pads for transmission line projects, to be relocated during construction, if necessary, up to a distance equal to half the approximate width of the ROW (approximately 225-320 feet on the H141 and R193 Lines). Shifts would not create greater than 5% increase in disturbed area at each work pad.

This would allow contractors to avoid steep terrain or other hazardous areas, or areas that may require significant grading or earthwork that may not have been identified during initial constructability reviews. Landowners may also request layout changes be made after project permitting is complete. In most cases this shift is done to reduce the amount of disturbed area.

Compliance with Env-Wq 1503.21 (d)(6&7)

The project proposes to improve access routes and work pads around utility structures for the purpose of maintaining existing utility infrastructure. This project is necessary to maintain the safety and reliability of the electrical infrastructure. Proposed disturbances shown on Figures 3 and 4 are the result of avoidance and minimization measures and constructability reviews. Layout changes and shifts will be limited to the proposed alternative above. A reduction in disturbed area is often the result. As previously mentioned, access shifts would be limited to the extent necessary to safely perform work. Access routes will remain within the existing and maintained ROW and would not disturb new resources. Best Management Practices will be utilized to protect wetlands from erosion, sedimentation, or other environmental degradation as originally proposed. Eversource respectfully requests a waiver from limiting shifts of the project road centerlines and parking areas to 20 feet.

E. SIGNATURES

4/11/2023

Applicant/Owner, Ashley Friend, Date
as agent for Public Service Company of New Hampshire dba Eversource Energy

4/11/2023

Applicant/Owner Agent, Conor Madison, Date
GZA GeoEnvironmental, Inc.

Appendix G – Certified Mail Receipts
[Reserved for DES certified mailing receipts]

GZA GeoEnvironmental, Inc.

Revised Plan Pages

CONSTRUCTION SEQUENCE:

1. WETLAND BOUNDARIES TO BE CLEARLY MARKED PRIOR TO THE START OF CONSTRUCTION.

2. SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAIL PROVIDED, AS NECESSARY, AND CONSISTENT WITH THE NHDES MARCH 2019 BMP MANUAL FOR UTILITY MAINTENANCE.

3. WETLAND IMPACTS ASSOCIATED WITH WETLAND CROSSINGS ARE REQUIRED FOR ACCESS BETWEEN STRUCTURES WITHIN THE RIGHT OF WAY.

4. ADEQUATE PRECAUTION SHALL BE EXERCISED TO AVOID SPILLAGE OF FUEL OILS, CHEMICALS, OR SIMILAR SUBSTANCES; NO FUELS, LUBRICANTS, CHEMICALS OR SIMILAR SUBSTANCES SHALL BE STORED BENEATH TREES OR IN THE VICINITY OF ANY WETLANDS, RIVER, STREAM OR OTHER BODY OF WATER; OR IN THE VICINITY OF NATURAL OR MAN-MADE CHANNELS LEADING THERETO. NO POWER EQUIPMENT SHALL BE STORED, MAINTAINED, OR FUELED IN ANY AREA ADJACENT TO A WETLAND, RIVER, STREAM OR OTHER BODY OF WATER.

5. REMOVE COMPLETELY ALL CONTAMINATION FROM ANY SPILLAGE OF CHEMICALS OR PETROLEUM PRODUCT WITH COMPLETE REHABILITATION OF THE AFFECTED AREA.

6. ACCESS ROUTES HAVE BEEN SELECTED TO PREVENT DEGRADATION OF THE RIGHT-OF-WAY AND MINIMIZE ENVIRONMENTAL IMPACT. OPERATIONS SHALL BE CONFINED TO THE SPECIFIED ACCESS ROUTES WITHIN THE PROPOSED WETLAND IMPACT AREA. ACCESS ROUTES SHALL NOT EXCEED A 16 FOOT-WIDTH.

7. IMPACT TO VEGETATION WITHIN WETLANDS WILL BE LIMITED TO THE EXTENT NECESSARY TO PLACE THE SWAMP MATS WHERE REQUIRED.

8. LOW GROWING VARIETIES OF VEGETATION ADJACENT TO WETLANDS SHALL BE PRESERVED TO THE EXTENT POSSIBLE. STUMPS AND ROCKS SHALL NOT BE REMOVED, AND THERE SHALL BE NO EXCAVATIONS, FILLS OR GRADING DONE ADJACENT TO WETLANDS, UNLESS MINOR EXCAVATIONS IS NEEDED FOR ACCESS.

9. TIMBER MATS AND PERIMETER CONTROLS WILL BE USED ALONG ACCESS ROUTES AND WORK PADS WITHIN WETLAND AREAS. THESE MATS ARE CONSTRUCTED OF HEAVY TIMBERS OR COMPOSITE MATERIAL, BOLTED TOGETHER, AND ARE PLACED END-TO-END IN THE WETLAND TO SUPPORT HEAVY EQUIPMENT. ALL SWAMP MATS SHALL BE PLACED AND REMOVED SO AS NOT TO CAUSE ANY RUTS, CHANNELS OR DEPRESSIONS, OR OTHERWISE CAUSE ANY UNDUE DISTURBANCE TO WETLANDS.

10. IF TIMBER MAT BMP IS NOT SUFFICIENT DUE TO HIGH WATER, ADDITIONAL BMP'S MAY INCLUDE THE PLACEMENT OF GEOTEXTILE FABRIC, 3"-4" STONE, AND GRAVEL TO PROVIDE A SUITABLE ROAD BED. A TEMPORARY CULVERT MAY BE REQUIRED IN AREAS OF HIGH FLOW TO MAINTAIN HYDROLOGIC CONNECTIVITY. ALL MATERIAL WILL BE REMOVED FROM JURISDICTIONAL AREAS AFTER CONSTRUCTION COMPLETION.

11. NO MATERIAL SHALL BE PLACED IN ANY LOCATION OR IN ANY MANNER SO AS TO IMPAIR SURFACE WATER FLOW INTO, THROUGH OR OUT OF ANY WETLAND AREA. NO INSTALLATION SHALL CREATE AN IMPOUNDMENT THAT WILL IMPEDE THE FLOW OF WATER OR CAUSE FLOODING.

12. NO MATERIAL SHALL BE TAKEN FROM THE WETLANDS AREA EXCEPT THAT WHICH MUST NECESSARILY BE REMOVED FOR THE STRUCTURE OR FOUNDATION PLACEMENT OR STABILIZATION. ALL EXCESS MATERIAL TAKEN FROM THE WETLAND WILL BE REMOVED FROM THE SITE.

13. ANY PROPOSED SUPPORT FILLS SHALL BE CLEAN GRAVEL AND STONE, FREE OF WASTE METAL PRODUCTS, ORGANIC MATERIALS AND SIMILAR DEBRIS AND SHALL NOT EXCEED THE AMOUNT PERMITTED. THIS ALLOWABLE FILL IS THE ONLY FILL THAT MAY REMAIN IN THE WETLAND AFTER CONSTRUCTION. ALL CUT AND FILLS SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.

14. INSTALL NEW POLES IN THE LOCATIONS DESIGNATED ON THE PERMITTING PLANS.

15. CABLE INSTALLATION WILL BE PERFORMED IN A MANNER SO AS TO AVOID, OR LIMIT TO THE MAXIMUM EXTENT POSSIBLE, TRAVERSING WETLANDS WITH HEAVY EQUIPMENT. IN SOME CASES, A HELICOPTER MAY BE USED DURING THE INSTALLATION TO MINIMIZE IMPACTS.

16. REMOVAL OF THE OLD POLE WILL OCCUR ONCE THE CABLE HAS BEEN INSTALLED ON THE NEW STRUCTURE. THE OLD STRUCTURES WILL BE REMOVED FROM THE SITE. POLES WILL BE CUT AT THE GROUND SURFACE. FOOTINGS WILL BE ABANDONED IN PLACE TO MINIMIZE IMPACTS.

17. ALL TIMBER MATS, MATERIAL, AND DEBRIS WILL BE REMOVED FROM THE WORK AREA UPON THE COMPLETION OF CONSTRUCTION.

18. UPLAND DISTURBED AREAS SHALL BE RESTORED AND STABILIZED UPON COMPLETION OF CONSTRUCTION. WORK PAD RESTORATION SHOULD INCLUDE REDUCING THE WORK PAD TO A 30 BY 60 FOOT AREA, AND REDUCING SLOPES TO A MAXIMUM OF 25%. STOCKPILED MATERIAL SHOULD BE SPREAD TO REDUCE ANY UNNECESSARY SLOPES. GRAVEL WORK PADS AND SLOPES SHOULD BE SCARIFIED TO A MINIMUM OF 3" BEFORE SPREADING TOPSOIL/LOAM.

19. ALL TEMPORARY WETLAND IMPACTS WILL BE RE-GRADED TO ORIGINAL CONTOURS FOLLOWING CONSTRUCTION. NEW ENGLAND EROSION CONTROL/RESTORATION MIX, AVAILABLE THROUGH NEW ENGLAND WETLAND PLANTS, INC., 820 WEST STREET, AMHERST, MA 01002, 413-548-8000, OR EQUIVALENT SEED MIX SHALL BE APPLIED IN WETLAND AREAS THAT ARE NOT INUNDATED, AS NECESSARY.

20. MULCH USED FOR STABLIZATION SHALL CONSIST OF SEEDLESS STRAW.

21. SEDIMENT AND EROSION CONTROL MEASURES WILL BE EVALUATED AND REMOVED IF NECESSARY UPON THE COMPLETION OF CONSTRUCTION.

22. COMMERCIAL LOAM WILL NOT BE USED AS PART OF RESTORATION. ONLY IN-SITU TOPSOIL WILL BE USED TO RESTORE DISTURBED AREAS.

23. WHERE OPTIMAL TURTLE BREEDING AREAS OVERLAP WITH DISTURBANCE (AS DETERMINED BY AN ENVIRONMENTAL MONITOR), MINERAL SOILS WILL BE SCARIFIED TO ALLEVIATE COMPACTION AND BECOME MORE SUITED FOR TURTLE BREEDING.

24. NATURALLY VEGETATED LOCAL WETLAND BUFFER AREAS OUTSIDE OF EXISTING TRAILS MUST BE RESTORED UPON COMPLETION OF WORK.

WINTER CONSTRUCTION NOTES

1. PROP0SED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED. STABILIZATION METHODS SHALL INCLUDE SEEDING AND MULCH, AND INSTALLATION OF EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.

2. DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE TEMPORARILY STABILIZED WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

3. AFTER NOVEMBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL (NHDOT 304.3).

GENERAL NOTES:

OWNER: EVERSOURCE ENERGY
13 LEGENDS DRIVE
HOOKSETT, NH 03106

1. BASE PLAN PROVIDED BY EVERSOURCE ENERGY. EVERSOURCE ENERGY PROVIDED THE WETLAND DATA. EVERSOURCE ENERGY PROVIDED THE UTILITY DESIGN.

2. JURISDICTIONAL WETLANDS WERE CONFIRMED IN 2023 BY GZA, IN ACCORDANCE WITH THE 1987 U.S. ARMY CORPS OF ENGINEERS' "WETLANDS DELINEATION MANUAL, TECHNICAL REPORT Y-87-1," AND REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTH CENTRAL AND NORTHEAST REGION," JANUARY 2012. WETLANDS WILL BE REVIEWED BY GZA GEOENVIRONMENTAL, INC. PRIOR TO START OF WORK.

3. GZA WILL EVALUATE WETLANDS AS POTENTIAL VERNAL POOLS IN 2023 IN ACCORDANCE WITH "IDENTIFICATION AND DOCUMENTATION OF VERNAL POOLS IN NEW HAMPSHIRE," 1997, NEW HAMPSHIRE FISH AND GAME DEPARTMENT, NONGAME AND ENDANGERED WILDLIFE PROGRAM.

4. GZA WILL COMPLETE WETLANDS FUNCTION AND VALUES ASSESSMENT IN 2023 IN ACCORDANCE WITH THE ACOE'S "HIGHWAY METHODOLOGY WORKBOOK SUPPLEMENT," SEPTEMBER 1999.

5. SITE PLAN IS FOR PERMITTING PURPOSES ONLY AND DOES NOT REPRESENT A PROPERTY BOUNDARY SURVEY.

6. THE PROJECT WILL BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.

7. IN ACCORANCE WITH ENV-WQ 1505.02, THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
   - A MINIMUM 85 PERCENT VEGETATED GROWTH HAS BEEN ESTABLISHED
   - A MINIMUM OF 3 INCHES OF NON-EROSIVE MATERIAL HAS BEEN INSTALLED
   - OR, EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

EROSION CONTROL NOTES:

1. INSTALLATION OF EROSION CONTROL GRINDINGS AND/OR SILT FENCES SHALL BE COMPLETE PRIOR TO THE START OF WORK IN ANY GIVEN AREA. EROSION CONTROLS SHALL BE USED DURING CONSTRUCTION AND REMOVED WHEN ALL SLOPES HAVE A HEALTHY STAND OF VEGETATION COVER. EROSION CONTROL MEASURES SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER .25" OR GREATER RAINFALL EVENTS.

2. AS REQUIRED, CONSTRUCT TEMPORARY BERMS, SILTATION FENCES, SEDIMENT TRAPS, ETC. TO PREVENT EROSION & SEDIMENTATION OF WETLANDS.

3. THE WORK AREA SHALL BE GRADED AND OTHERWISE SHAPED IN SUCH A MANNER AS TO MINIMIZE SOIL EROSION, SILTATION OF DRAINAGE CHANNELS, DAMAGE TO EXISTING VEGETATION, AND DAMAGE TO PROPERTY OUTSIDE LIMITS OF THE WORK AREA. EROSION CONTROL GRINDINGS WILL BE NECESSARY TO ACCOMPLISH THIS END.

4. ANY STRIPPED TOPSOIL SHALL BE STOCKPILED, WITHOUT COMPACTION, AND STABILIZED WITH BMPS.

5. PERMANENT OR TEMPORARY COVER MUST BE IN PLACE BEFORE THE GROWING SEASON ENDS. WHEN SEEDED AREAS ARE NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20 OR FROM AUGUST 15 TO SEPTEMBER 15. NO DISTURBED AREA SHALL BE LEFT EXPOSED DURING WINTER MONTHS, PLANT ANNUAL RYEGRASS PRIOR TO OCTOBER 15TH.

6. EROSION CONTROLS SHALL BE INSPECTED WEEKLY AND AFTER EVERY HALF-INCH OF RAINFALL.

7. EROSION CONTROL MATTING, IF REQUIRED, WILL CONSIST OF JUTE MATTING. MATTING WITH WELDED PLASTIC OR 'BIODEGRADABLE PLASTIC' NETTING OR THREAD WILL BE AVOIDED TO LIMIT UNINTENTIONAL MORTALITY TO SNAKES.

H141 & R193 TRANSMISSION LINE
STRUCTURE REPLACEMENT PROJECT

DANVILLE, SANDOWN, AND CHESTER,
NEW HAMPSHIRE

NOTES

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: EVERSOURCE ENERGY	
PROJ MGR: LEW	REVIEWED BY: TLT	CHECKED BY: DMZ	SHEET 1
DESIGNED BY: MJD	DRAWN BY: PJP	SCALE:	
DATE: 04/03/2023	PROJECT NO. 04.0191410.64	REVISION NO.	

Best Management Practices (BMP's) for Straw wattles

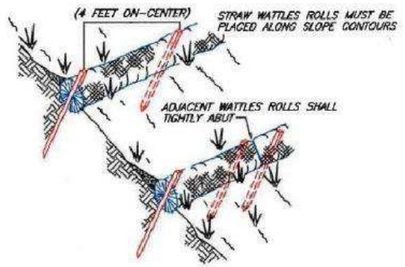
Definition and purpose:
Straw wattles are burlap rolls filled with straw that trap sediment and interrupt water flow by reducing slope lengths.

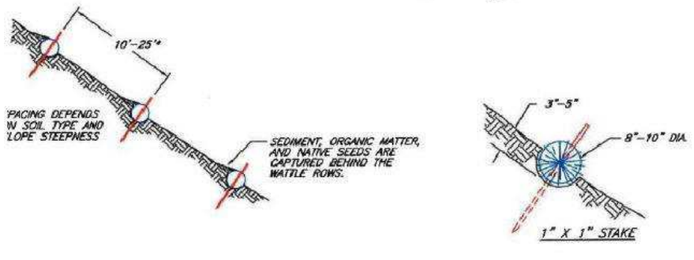
Applications:
* Along erodible or unstablizied slopes
* Spread overland waterflow
* Trap sediment
* Around storm drain inlets to slow water and settle out sediment
* Overlap ends approximately 6 inches

Installation:
Straw wattles are installed parallel to slope contours and perpendicular to sheet flow.

Spacing* - Dependent on slope length, soil steepness and soil type (general range 10 - 25').

Trenching - 2"-5" inch trench
Stacking - at each end and four foot on center (i.e. 25 foot wattle uses 6 stacks)





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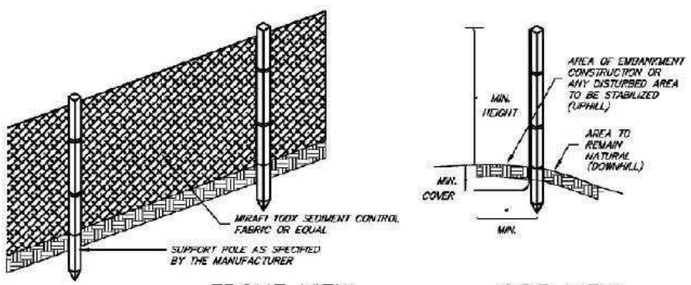
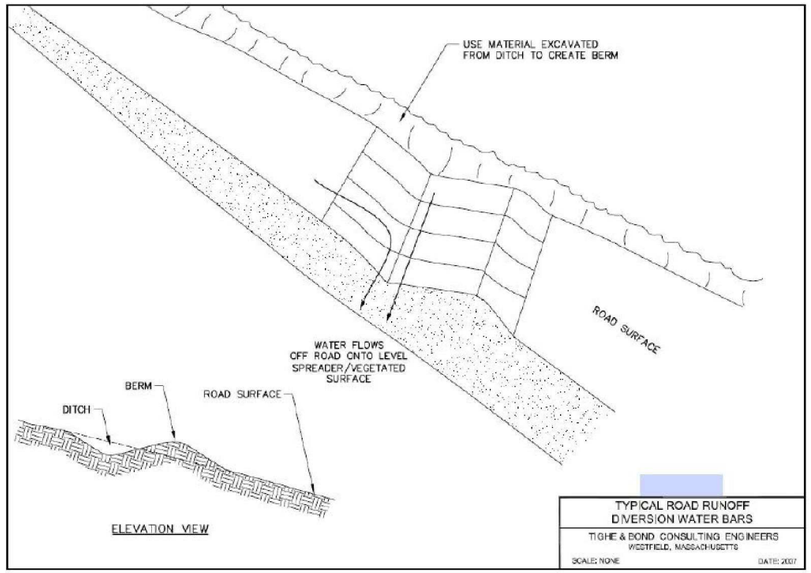
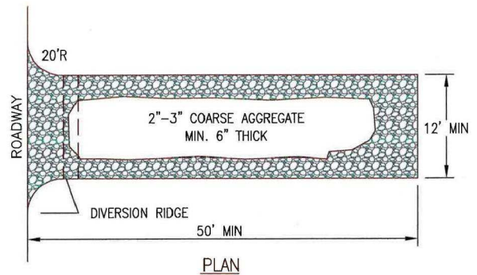


NOTES (SILT FENCE)
1. THE HEIGHT OF THE BARRIER SHALL NOT EXEED 36 INCHES.
2. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6—INCH OVERLAP, AND SECURELY SEALED. SEE MANUFACTURER'S RECOMMENDATIONS.
3 POSTS SHALL BE PLACED AT A MAXIMUM OF 10 FEET APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 12 INCHES). WHEN EXTRA STRENGTH FABRIC IS USED WITHOUT THE WIRE SUPPORT FENCE, POST SPACING SHALL BE AS MANUFACTURER RECOMMENDS.
4. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 6 INCHES WIDE AND 6 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE OF THE BARRIER IN ACCORDANCE WITH RECOMMENDATIONS
5. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE, AND WILL EXTEND A MINIMUM OF 8 INCHES INTO THE TRENCH. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.
6. THE TRENCH SHALL BE BACKFILLED AND THE SOIL COMPACTED OVER THE FILTER FABRIC.
7. FABRIC BARRIERS SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
8. FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST ONCE DAILY DURING PROLONGED RAINFALL AND ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
9. SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
10. SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN THEY REACH APPROXIMATELY ONE—HALF THE HEIGHT OF THE BARRIER.
11. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.





NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT—OF—WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT—OF—WAY.

CONSTRUCTION ENTRANCE

NOT TO SCALE

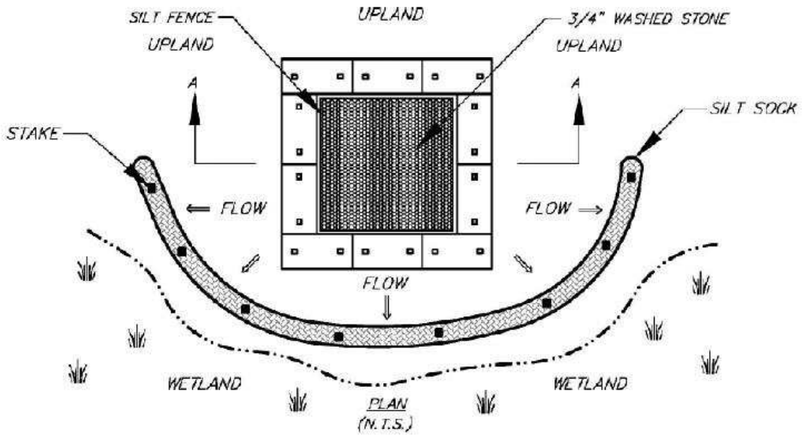
Figure 5

H141 & R193 TRANSMISSION LINE
STRUCTURE REPLACEMENT PROJECT

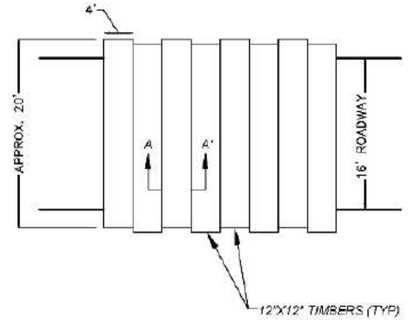
DANVILLE, SANDOWN, AND CHESTER,
NEW HAMPSHIRE

BMP DETAILS

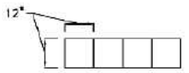
PREPARED BY:		PREPARED FOR:	
GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		EVERSOURCE ENERGY	
PROJ MGR: CEM	REVIEWED BY: TLT	CHECKED BY: DMZ	SHEET S2
DESIGNED BY: MJD	DRAWN BY: MJD	SCALE:	
DATE: 04/03/2023	PROJECT NO. 04.0191410.64	REVISION NO.	



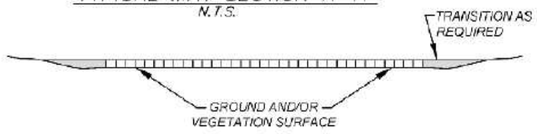
DEWATERING DETAIL
N.T.S.



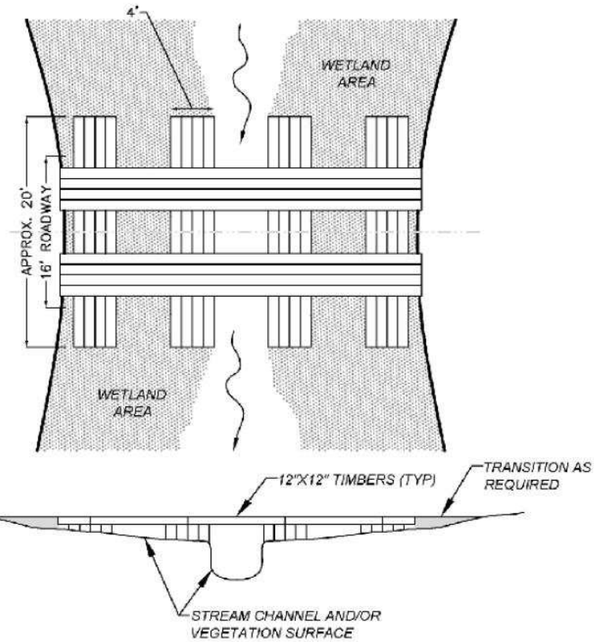
TYPICAL SWAMP MAT PLAN VIEW
N.T.S.



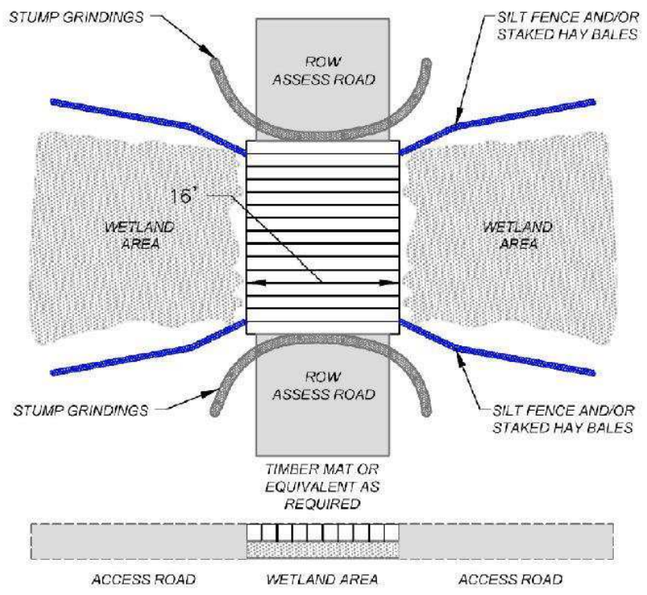
TYPICAL MAT SECTION A-A
N.T.S.



TYPICAL SWAMP MAT SECTION DETAIL
N.T.S.



TYPICAL STREAM CROSSING
N.T.S.



TYPICAL WETLAND CROSSING
N.T.S.

H141 AND R193 TRANSMISSION LINE
STRUCTURE REPLACEMENT PROJECT

DANVILLE, SANDOWN, AND CHESTER,
NEW HAMPSHIRE

BMP DETAILS

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
EVERSOURCE ENERGY

PROJ MGR: LEW	REVIEWED BY: TLT	CHECKED BY: DMZ	SHEET S3
DESIGNED BY: MJD	DRAWN BY: MJD	SCALE:	
DATE: 04/03/2023	PROJECT NO. 04.0191410.64	REVISION NO.	

NEW HAMPSHIRE FISH AND GAME AOT PERMIT CONDITIONS IN ACCORDANCE WITH ENV-WQ 1504.18 – WILDLIFE PROTECTION NOTES:

NHB22-3448 (SANDOWN), NHB22-3451 (DANVILLE), AND NHB22-3452 (CHESTER)

1 BLANDING'S TURTLE (STATE ENDANGERED), SPOTTED TURTLE (STATE THREATENED), AND WOOD TURTLE (STATE SPECIES OF SPECIAL CONCERN) OCCUR WITHIN THE VICINITY OF THE PROJECT AREA. ALL OPERATORS AND PERSONNEL WORKING ON OR ENTERING THE SITE SHALL BE MADE AWARE OF THE POTENTIAL PRESENCE OF THESE SPECIES AND SHALL BE PROVIDED FLYERS THAT HELP TO IDENTIFY THESE SPECIES, ALONG WITH NHFG CONTACT INFORMATION. RARE SPECIES INFORMATION (E.G. IDENTIFICATION, OBSERVATION AND REPORTING OF OBSERVATIONS, WHEN TO CONTACT NHFG IMMEDIATELY AND NHFG CONTACT INFORMATION) SHALL BE POSTED ON SITE AT ALL TIMES AND COMMUNICATED DURING MORNING TAILGATE MEETINGS PRIOR TO WORK COMMENCEMENT. SEE PLAN SHEET 4-5. INCLUDE ATTACHED FLYERS TO PLAN SHEET SET.

2. FOR ALL WORK AREAS FROM WELLS VILLAGE ROAD TO MAIN STREET IN SANDOWN:
   -.ALL MATERIAL SHALL BE STAGED/PLACED WITHIN PRE-ESTABLISHED WORK PADS WHICH HAVE BEEN CLEARED FOR AND ISOLATED FROM TURTLE ENTRY, AND ALL WORK PADS AROUND STRUCTURES SHALL BE CLEARED AND ISOLATED FROM TURTLE ENTRY WITH WILDLIFE EXCLUSION SILT FENCE PRIOR TO WORK. THESE AREAS SHALL BE CLEARED BY A QUALIFIED BIOLOGIST OR HERPETOLOGIST.
   -.SILT FENCE USED FOR WILDLIFE EXCLUSION SHOULD FULLY ENCLOSE THE WORK AREAS AND SHOULD BE BURIED TO A DEPTH NO LESS THAN 6-8" AND BE 18" ABOVE GRADE WITH GROUND STAKES ON THE ACTIVE SITE SIDE OF THE FENCE. ACCESS GATES SHALL BE WEIGHED DOWN AND LAY FLAT ON THE GROUND TO PREVENT WILDLIFE ENTRY. THERE SHOULD BE NO GAPS BETWEEN THE GATE AND THE SILT FENCE OR THE GATE AND THE GROUND.
   -.ANY FAILINGS IN SILT FENCE FOR WILDLIFE EXCLUSION SHALL BE REPORTED TO NHFG IMMEDIATELY.

3. TURTLES MAY BE ATTRACTED TO DISTURBED GROUND DURING NESTING SEASON. TURTLE NESTING SEASON OCCURS APPROXIMATELY MAY 15TH – JUNE 30TH. NESTING AREAS MAY INCLUDE WORK PADS AND ACCESS ROADS THAT ARE NOT HARD PACK GRAVEL AND OTHER SANDY/GRAVEL WORK AREAS. ALL TURTLE SPECIES NESTS ARE PROTECTED BY NH LAWS. BE AWARE OF THE POTENTIAL TO ENCOUNTER NESTING WILDLIFE IN THESE AREAS.

4. IF A NEST IS OBSERVED OR SUSPECTED, OPERATORS SHALL CONTACT MELISSA WINTERS (603-479-1129) OR JOSH MEGYESY (978-578-0802) AT NHFG IMMEDIATELY FOR FURTHER CONSULTATION. THE NEST OR SUSPECTED NEST SHALL BE MARKED (SURROUNDING ROPED OFF OR CONE BUFFER) AND AVOIDED; THIS SHALL BE COMMUNICATED TO ALL PERSONNEL ONSITE. SITE ACTIVITIES SHALL NOT OCCUR IN THE AREA SURROUNDING THE NEST OR SUSPECTED NEST UNTIL FURTHER GUIDANCE IS PROVIDED BY NHFG.

5. VERNAL POOLS AND POTENTIAL VERNAL POOLS SHALL BE FLAGGED PRIOR TO WORK, AND IMPACTS SHALL BE AVOIDED. NO DISTURB VEGETATIVE BUFFERS OF 50' SHALL BE MAINTAINED WHEREVER POSSIBLE.
   -WHERE DISTURBANCE TO THE 50' VEGETATIVE VERNAL POOL BUFFER IS UNAVOIDABLE AS SHOWN IN "H141 R193 PERMITTING PLANS 030823" DATED MARCH 8, 2023 AND PROVIDED TO NHFG MARCH 9, 2023, DISTURBANCE SHALL BE MINIMIZED AND THE AREA WILL BE RESTORED UPON COMPLETION OF WORK. IF IMPACTS TO VERNAL POOL BUFFERS CHANGE FROM THESE PLANS, NOTIFY NHFG.

6. ALL MATTING WHICH WILL BE PLACED IN WATERBODIES DEEMED SUITABLE FOR HIBERNATING RARE TURTLES WILL BE PLACED PRIOR TO THE START OF THE INACTIVE SEASON (OCTOBER 16-MARCH 31) SO AS TO PREVENT ACCIDENTAL PLACEMENT ATOP HIBERNATING TURTLES. IMMEDIATELY PRIOR TO MATTING PLACEMENT IN THESE WETLANDS, THE AREA SHALL BE SWEPT BY A QUALIFIED BIOLOGIST OR HERPETOLOGIST. THEY SHALL WATCH FOR SIGNS THAT TURTLES ARE BEING DISTURBED IN THE AREA (EX. HEADS COMING ABOVE WATER, ANIMALS MOVING IN WATER). CONTACT NHFG IF BIOLOGIST/HERPETOLOGIST SEES OR SUSPECTS TURTLES IN MATTING AREAS. AREAS IDENTIFIED AS SUITABLE HIBERNATION HABITAT SHALL BE IDENTIFIED ON PLAN SHEETS AND PROVIDED TO NHFG AT LEAST TWO WEEKS PRIOR TO BEGINNING WORK. BIOLOGIST QUALIFICATIONS SHALL BE PROVIDED TO NHFG.

7. IMMEDIATELY PRIOR TO THE PLACEMENT OF MATTING IN WETLANDS DURING THE ACTIVE SEASON (APRIL 1-OCTOBER 15), THE AREAS SHALL BE CLEARED BY A QUALIFIED BIOLOGIST OR HERPETOLOGIST. BIOLOGIST QUALIFICATIONS SHALL BE PROVIDED TO NHFG.

8. ALL WORK ACTIVITIES SHALL BE RESTRICTED TO THE DEFINED ROADS, CONSTRUCTION AREAS, AND STAGING AREAS, WITH NO EQUIPMENT OR MATERIALS STAGED OR STORED OUTSIDE OF THE DEFINED AREAS AS SHOWN ON PLAN SHEETS.

9. SEARCHES AND SWEEPS SHALL BE CONDUCTED BY TRAINED INDIVIDUALS IMMEDIATELY BEFORE THE START OF WORK AND MOVEMENT OF EQUIPMENT IN ORDER TO MINIMIZE THE CHANCE OF ANIMALS ENTERING AN AREA BETWEEN THE SWEEP AND WORK. A TRAINED INDIVIDUAL SHALL BE DEFINED AS ANY CONTRACTOR WHO HAS GONE THROUGH PROJECT-SPECIES PROTECTION EDUCATION CONDUCTED BY THE QUALIFIED BIOLOGIST ON RARE WILDLIFE SPECIES AT THE SITE.

10. WORK, PULL PADS, AND ACCESS SHALL BE MINIMIZED TO THE GREATEST EXTENT POSSIBLE.

11. WORKS PADS SHALL BE REDUCED POST-CONSTRUCTION TO 30' X 60' AND RESTORED WITH A NATIVE VEGETATION SEED MIX.

12. ALL MANUFACTURED EROSION AND SEDIMENT CONTROL PRODUCTS, WITH THE EXCEPTION OF TURF REINFORCEMENT MATS, UTILIZED FOR, BUT NOT LIMITED TO, SLOPE PROTECTION, RUNOFF DIVERSION, SLOPE INTERRUPTION, PERIMETER CONTROL, INLET PROTECTION, CHECK DAMS, AND SEDIMENT TRAPS SHALL NOT CONTAIN PLASTIC, OR MULTIFILAMENT OR MONOFILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING SIZE OF GREATER THAN 1/8 INCHES;

13. ALL OBSERVATIONS OF THREATENED OR ENDANGERED SPECIES ON THE PROJECT SITE SHALL BE REPORTED IMMEDIATELY TO THE NHFG NONGAME AND ENDANGERED WILDLIFE ENVIRONMENTAL REVIEW PROGRAM BY PHONE AT 603-271-2461 AND BY EMAIL AT NHFGREVIEW@WILDLIFE.NH.GOV, WITH THE EMAIL SUBJECT LINE CONTAINING THE NHB DATACHECK TOOL RESULTS LETTER ASSIGNED NUMBER, THE PROJECT NAME, AND THE TERM WILDLIFE SPECIES OBSERVATION;

14. PHOTOGRAPHS OF THE OBSERVED SPECIES AND NEARBY ELEMENTS OF HABITAT OR AREAS OF LAND DISTURBANCE SHALL BE PROVIDED TO NHFG IN DIGITAL FORMAT AT THE ABOVE EMAIL ADDRESS FOR VERIFICATION, AS FEASIBLE;

15. IN THE EVENT A THREATENED OR ENDANGERED SPECIES IS OBSERVED ON THE PROJECT SITE DURING THE TERM OF THE PERMIT, THE SPECIES SHALL NOT BE DISTURBED, HANDLED, OR HARMED IN ANY WAY PRIOR TO CONSULTATION WITH NHFG AND IMPLEMENTATION OF CORRECTIVE ACTIONS RECOMMENDED BY NHFG.
   -SITE OPERATORS SHALL BE ALLOWED TO RELOCATE WILDLIFE ENCOUNTERED IF DISCOVERED WITHIN THE ACTIVE WORK ZONE AND IF IN DIRECT HARM FROM PROJECT ACTIVITIES. WILDLIFE SHALL BE RELOCATED IN CLOSE PROXIMITY TO THE CAPTURE LOCATION BUT OUTSIDE OF THE WORK ZONE AND IN THE DIRECTION THE INDIVIDUAL WAS HEADING. NHFG SHALL BE CONTACTED IMMEDIATELY IF THIS ACTION OCCURS.

16. THE NHFG, INCLUDING ITS EMPLOYEES AND AUTHORIZED AGENTS, SHALL HAVE ACCESS TO THE PROPERTY DURING THE TERM OF THE PERMIT.

H141 & R193 TRANSMISSION LINE STRUCTURE REPLACEMENT PROJECT
CHESTER, SANDOWN, AND CHESTER, NEW HAMPSHIRE

NOTES

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
EVERSOURCE ENERGY

PROJ MGR: LEW	REVIEWED BY: TLT	CHECKED BY: DMZ	SHEET S4
DESIGNED BY: MJD	DRAWN BY: MJD	SCALE:	
DATE: 04/04/2023	PROJECT NO. 04.0191410.64	REVISION NO.	

WOOD TURTLE (GLYPTEMYS INSCULPTA)

STATE SPECIES OF SPECIAL CONCERN

WOOD TURTLE IDENTIFICATION

1. NECK AND FORELIMBS ARE ORANGE.
2. CHARACTERIZED BY ITS HIGHLY SCULPTED SHELL WITH EACH LARGE SCUTE TAKING ON AN IRREGULAR PYRAMIDAL SHAPE.
3. ADULTS CAN BE 5-8 INCHES LONG.

SPOTTED TURTLE (CLEMMYS GUTTATA)

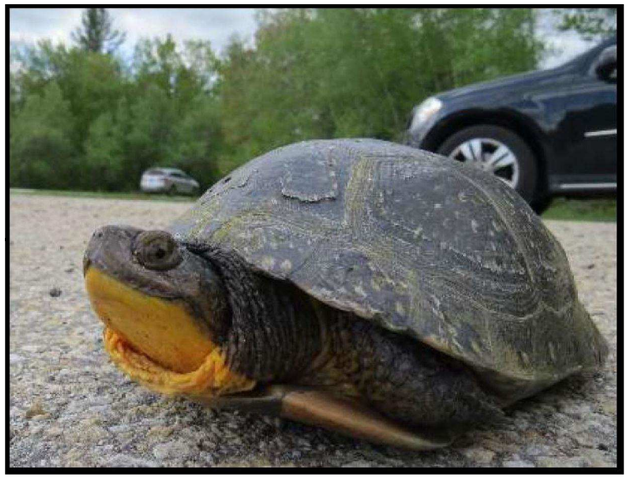
STATE THREATENED

SPOTTED TURTLE IDENTIFICATION

1.SMALL, MOSTLY AQUATIC WITH BLACK OR DARK BROWN WITH YELLOW SPOTS.
2. FAIRLY FLAT SHELL COMPARED TO BLANDING'S TURTLE.
3. SPOTS VARY IN COLOR AND NUMBER.

BLANDING'S TURTLE (EMYDOIDEA BLANDINGII)

STATE ENDANGERED



BLANDING'S TURTLE IDENTIFICATION

1. LARGE, DARK/BLACK DOMED SHELL WITH LIGHTER SPECKLES.
2. DISTINCT YELLOW THROAT/CHIN.
3. AQUATIC BUT OFTEN MOVES ON LAND.

**ALL PHOTOS AND IDENTIFICATION INFORMATION COURTESY OF NEW HAMPSHIRE FISH AND GAME DEPARTMENT.*

H141 & R193 TRANSMISSION LINE
STRUCTURE REPLACEMENT PROJECT
CHESTER, SANDOWN, AND DANVILLE,
NEW HAMPSHIRE

WILDLIFE NOTES

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
EVERSOURCE ENERGY

PROJ MGR: LEW	REVIEWED BY: TLT	CHECKED BY: DMZ	SHEET
DESIGNED BY: MJD	DRAWN BY: MJD	SCALE:	S5
DATE: 03/08/2023	PROJECT NO. 04.0191410.64	REVISION NO.	

Redaction Log

Total Number of Redactions in Document: 24

Redaction Reasons by Page

Page	Reason	Description	Occurrences
61	CONFIDENTIAL DNCR	NH RSA 91-A:5, IV Confidential information. NH Department of Natural and Cultural Resources (DNCR) has asserted a claim of confidentiality. See also NH RSA 212-A, RSA 212-B, RSA 217-A, and/or RSA 227-C:11.	1
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Redaction Log

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75	CONFIDENTIAL DNCR	NH RSA 91-A:5, IV Confidential information. NH Department of Natural and Cultural Resources (DNCR) has asserted a claim of confidentiality. See also NH RSA 212-A, RSA 212-B, RSA 217-A, and/or RSA 227-C:11.	1
76	CONFIDENTIAL DNCR	NH RSA 91-A:5, IV Confidential information. NH Department of Natural and Cultural Resources (DNCR) has asserted a claim of confidentiality. See also NH RSA 212-A, RSA 212-B, RSA 217-A, and/or RSA 227-C:11.	1
77	CONFIDENTIAL DNCR	NH RSA 91-A:5, IV Confidential information. NH Department of Natural and Cultural Resources (DNCR) has asserted a claim of confidentiality. See also NH RSA 212-A, RSA 212-B, RSA 217-A, and/or RSA 227-C:11.	1
78	CONFIDENTIAL DNCR	NH RSA 91-A:5, IV Confidential information. NH Department of Natural and Cultural Resources (DNCR) has asserted a claim of confidentiality. See also NH RSA 212-A, RSA 212-B, RSA 217-A, and/or RSA 227-C:11.	1
79	CONFIDENTIAL DNCR	NH RSA 91-A:5, IV Confidential information. NH Department of Natural and Cultural Resources (DNCR) has asserted a claim of confidentiality. See also NH RSA 212-A, RSA 212-B, RSA 217-A, and/or RSA 227-C:11.	1
80	CONFIDENTIAL DNCR	NH RSA 91-A:5, IV Confidential information. NH Department of Natural and Cultural Resources (DNCR) has asserted a claim of confidentiality. See also NH RSA 212-A, RSA 212-B, RSA 217-A, and/or RSA 227-C:11.	1
81	CONFIDENTIAL DNCR	NH RSA 91-A:5, IV Confidential information. NH Department of Natural and Cultural Resources (DNCR) has asserted a claim of confidentiality. See also NH RSA 212-A, RSA 212-B, RSA 217-A, and/or RSA 227-C:11.	1

Redaction Log

Page	Reason	Description	Occurrences
82	CONFIDENTIAL DNCR	NH RSA 91-A:5, IV Confidential information. NH Department of Natural and Cultural Resources (DNCR) has asserted a claim of confidentiality. See also NH RSA 212-A, RSA 212-B, RSA 217-A, and/or RSA 227-C:11.	1
83	CONFIDENTIAL DNCR	NH RSA 91-A:5, IV Confidential information. NH Department of Natural and Cultural Resources (DNCR) has asserted a claim of confidentiality. See also NH RSA 212-A, RSA 212-B, RSA 217-A, and/or RSA 227-C:11.	1
84	CONFIDENTIAL DNCR	NH RSA 91-A:5, IV Confidential information. NH Department of Natural and Cultural Resources (DNCR) has asserted a claim of confidentiality. See also NH RSA 212-A, RSA 212-B, RSA 217-A, and/or RSA 227-C:11.	1
85	CONFIDENTIAL DNCR	NH RSA 91-A:5, IV Confidential information. NH Department of Natural and Cultural Resources (DNCR) has asserted a claim of confidentiality. See also NH RSA 212-A, RSA 212-B, RSA 217-A, and/or RSA 227-C:11.	1
86	CONFIDENTIAL DNCR	NH RSA 91-A:5, IV Confidential information. NH Department of Natural and Cultural Resources (DNCR) has asserted a claim of confidentiality. See also NH RSA 212-A, RSA 212-B, RSA 217-A, and/or RSA 227-C:11.	1
87	CONFIDENTIAL DNCR	NH RSA 91-A:5, IV Confidential information. NH Department of Natural and Cultural Resources (DNCR) has asserted a claim of confidentiality. See also NH RSA 212-A, RSA 212-B, RSA 217-A, and/or RSA 227-C:11.	1
88	CONFIDENTIAL DNCR	NH RSA 91-A:5, IV Confidential information. NH Department of Natural and Cultural Resources (DNCR) has asserted a claim of confidentiality. See also NH RSA 212-A, RSA 212-B, RSA 217-A, and/or RSA 227-C:11.	1

Redaction Log

Redaction Reasons by Exemption

Reason	Description	Pages (Count)
CONFIDENTIAL DNCR	NH RSA 91-A:5, IV Confidential information. NH Department of Natural and Cultural Resources (DNCR) has asserted a claim of confidentiality. See also NH RSA 212-A, RSA 212-B, RSA 217-A, and/or RSA 227-C:11.	61(1) 62(1) 63(1) 64(1) 67(1) 68(1) 69(1) 70(1) 73(1) 74(1) 75(1) 76(1) 77(1) 78(1) 79(1) 80(1) 81(1) 82(1) 83(1) 84(1) 85(1) 86(1) 87(1) 88(1)