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March 20, 2020
File: 195601677

Attention: Mr. Ridgely Mauck
Program Supervisor – Permitting
NHDES Land Resources Management
Alteration of Terrain Bureau
29 Hazen Drive
P.O. Box 95
Concord, NH 03302

Reference: Alteration of Terrain Permit Application, S136 Transmission Line Structure Replacement Project, Whitefield, Jefferson, and Randolph, New Hampshire

Dear Mr. Mauck,

On behalf of the Public Service of New Hampshire d/b/a Eversource Energy (Eversource), Stantec Consulting Services Inc. (Stantec) is submitting this Alteration of Terrain (AoT) permit application for the proposed S136 Transmission Line Structure Replacement Project in accordance with Terrain Alteration Law (RSA 485-A:17), New Hampshire Department of Environmental Services (NHDES) Administrative Rules (Env-Wq 1500 Alteration of Terrain), and recent discussions between the NHDES AoT Bureau and Eversource.

The proposed project includes replacement of 56 existing utility structures and replacement of the optical ground wire along the S136 Transmission Line, which runs approximately 27 miles between Whitefield and Berlin, New Hampshire. Of the 56 replacement structures, 32 are located in 3 separate areas subject to AoT permitting in Whitefield, Jefferson, and Randolph (project area). Replacement of the existing utility structures is necessary to maintain the safety and reliability of the system. To more efficiently conduct routine maintenance of the existing S136 Transmission Line, work pad grading and access road improvements are proposed as part of this project.

The proposed project will require disturbance subject to AoT permitting through the NHDES as a result of the three separate impact areas each exceeding 100,000 square feet of contiguous disturbed area. The application fee of \$8,125 is based on the amount of total ground disturbance, minus wetland matting (500,219 square feet) and the latest NHDES fee schedule.

Included with this permit application is a completed AoT Permit Application Form, a detailed project description and narrative, required plans and figures, and additional required materials. A waiver request for the preparation of a stormwater drainage report, drainage area plans, and hydrologic soil group plans is enclosed as required by Env-Wq 1509.04. The application fee check is being sent separately. The proposed project is scheduled to start in the late spring or summer of 2020. Eversource appreciates the efforts of the AoT Bureau in helping to maintain the anticipated construction schedule.

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Mr. Ridgely Mauck
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Please contact me if you need additional information or have any questions or concerns regarding the enclosed application materials.

Regards,

Stantec Consulting Services Inc.



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Attachment: Alteration of Terrain Permit Application

- c. Town of Whitefield, New Hampshire
- Town of Jefferson, New Hampshire
- Town of Randolph, New Hampshire



**NHDES Alteration of Terrain Permit
Application**

S136 Transmission Line Structure
Replacement Project
Whitefield, Jefferson, and Randolph,
New Hampshire

March 24, 2020

Prepared for:

Eversource Energy
13 Legends Drive
Hooksett, NH 03106

Prepared by:

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Project Background and Purpose
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1.0 PROJECT BACKGROUND AND PURPOSE

The proposed project involves replacement of select structures along the Eversource Energy (Eversource) S136 transmission line. The S136 transmission line is located between a substation off Route 3 in Whitefield and a substation on Geobel Street in Berlin. The aging utility structures require replacement due to wreathing, rot, and/or woodpecker damage. The structures will be replaced so the line can continue to function safely and reliably and to reduce the risk of a widespread outage due to failure. The project will also involve the replacement of the Optical Ground Wire (OPGW) overhead line for the entire length of the S136 line to improve reliability of the overall line. Natural resource impacts have been minimized and avoided to the greatest extent practicable through careful siting of access roads and work pads.

In the towns of Whitefield, Jefferson, and Randolph, 32 structures require replacement along with the replacement of the OPGW line. The project requires approximately 619,669 square feet (sf) of total disturbance, including 119,450 sf of temporary wetland matting and 500,219 sf of ground disturbance. Three separate portions of the proposed replacement project are subject to the Alteration of Terrain (AoT) disturbance threshold (Env-Wq 1500 and RSA 485-A:17), as identified below (See Figure 4 – Alteration of Terrain Permitting Plans and Appendix A – Alteration of Terrain Application Form).

1. Area A (Whitefield): approximately 122,871 sf of work pad grading and associated access improvements between structures 21 to 36.
2. Area B (Jefferson/Randolph): approximately 217,213 sf of work pad grading and associated access improvements between structures 149 to 178.
3. Area C (Randolph): approximately 160,135 sf of work pad grading and associated access improvements between structures 190 to 218.

Areas A, B, and C will collectively be referred to hereinafter as the AoT project area.

2.0 SITE INFORMATION

2.1 SITE LOCATION AND DESCRIPTION

The AoT project area includes portions of the S136 transmission line right-of-way (ROW) in Whitefield, Jefferson, and Randolph. In these areas, work areas within the ROW total approximately 5.2 miles in length and are approximately 150 ft in width.

The AoT project area crosses 21 streams, 14 perennial streams and 7 intermittent or ephemeral streams (See Figure 4 – Alteration of Terrain Permitting Plans). There are 41 wetlands located within the AoT project area. The AoT project area does not cross public roads, though it is accessed from three public roads and one private road located in the towns of Whitefield, Jefferson, and Randolph. The majority of



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the ground disturbance resulting from the project is associated with establishment of access roads and work pads.

2.2 TAX MAP AND LOT INFORMATION

Eversource holds easements for all parcels located within the AoT project area (See Figure 4).

There are 19 abutting properties that contain pre-existing Eversource easements for ROW within the AoT project area. Within the AoT project area, the ROW is considered the “subject property” because Eversource is the applicant/owner and only has control over the easement area. AoT project area abutters have been identified and are listed in Appendix B.

2.3 IDENTIFICATION OF NATURAL AND CULTURAL RESOURCES

Stantec Consulting Services Inc. (Stantec) has been retained by Eversource to provide professional services related to natural and cultural resource identification and assessment for this project. Stantec is also preparing permit applications for natural resource and AoT impacts required to complete the project. Stantec has conducted and coordinated field evaluations and has corresponded with appropriate agencies to identify natural and cultural resources present within the vicinity of the AoT project area.

2.3.1 Identification of Jurisdictional Wetlands and Vernal Pools

Wetland boundaries were delineated by Stantec in November and December 2016 using the technical criteria described in the United States Army Corps of Engineers (Corps) *Corps of Engineers Wetlands Delineation Manual*¹ and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2)*.² Wetland communities were classified according to the *Classification of Wetlands and Deepwater Habitats of the United States*³. The wetland delineation was led by Stantec’s New Hampshire Certified Wetland Scientist (CWS) Charles Ferris (CWS #279). Wetland boundaries throughout select portions of the S136 ROW have been reviewed and confirmed by Stantec’s Tom Tetreau (CWS #283) between 2017 and 2019. No changes to the wetland boundaries have been documented since the original delineation.

A vernal pool evaluation was conducted concurrently with the wetland delineation in November and December 2016 and was based on the characteristics outlined in the *Identification and Documentation of Vernal Pools in New Hampshire*.⁴ Stantec wetland scientists identified twenty-four (24) potential vernal pools based on observed signs of hydrology at the time of the delineation. All potential vernal pools are

¹ Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1. U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS.

² U.S. Army Corps of Engineers. 2012. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0)*, ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

³ Federal Geographic Data Committee. 2013. *Classification of wetlands and deepwater habitats of the United States*. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, DC.

⁴ Marchand, M. 2016. *Identifying and Documenting Vernal Pools in New Hampshire*. Third Edition, New Hampshire Fish and Game Department, Nongame and Endangered Wildlife Program.



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considered vernal pools for the purposes of impact avoidance and minimization for the project. Therefore, no temporary or permanent impacts are proposed to documented or 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 delineated and confirmed by Stantec in accordance with their definition in RSA 485-A:2 XIV, 482-A:4 II and rule Env-Wt 101.99. Surface waters included 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. The limits of jurisdiction for surface waters were delineated as the top of bank (where a natural bank occurs) or its ordinary high-water mark (where a natural bank is not present). Surface waters within the AoT project area include 2 named perennial riverine systems (Israel River and Cold Brook), 12 unnamed perennial streams, and 7 unnamed intermittent streams.

2.3.3 Identification of Rare, Threatened, and Endangered Species

Stantec utilized the New Hampshire Natural Heritage Bureau's (NHB) online data check tool to review the AoT project area for known occurrences of rare, threatened, and endangered species. In Whitefield and Randolph, the NHB results indicate that, although there was an NHB record of rare wildlife, plant, and/or natural community in the vicinity, the NHB does not expect that it will be impacted by the proposed project. In Jefferson, NHB results show a historical record of red goosefoot (*Oxybasis rubra var. rubra*) near Route 115A, in an area not subject to AoT permitting but near a proposed replacement structure. The project will follow NHB recommendations by working under frozen conditions, keeping equipment on gravel or paved surfaces whenever possible, and using ground-pressure reducing temporary timber construction mats in wetlands when working in the vicinity of the historic rare plant occurrence. NHB results for Whitefield, Jefferson, and Randolph are included in Appendix C.

The United States Fish and Wildlife Service's Information for Planning and Consultation (IPaC) tool was used to determine the potential presence of federally listed species and designated critical habitat within the AoT project area. According to the IPaC results, there are two federally listed threatened species potentially occurring within the AoT project area: northern long-eared bat (*Myotis septentrionalis*) and Canada lynx (*Lynx canadensis*).

It was determined that the project will not impact the threatened species identified above. No tree clearing will be required during construction, and all work will occur within the existing, cleared transmission line ROW and access roads. Therefore, the project will not affect northern long-eared bat. Furthermore, according to the New Hampshire Wildlife Action Plan, none of the action area is within the core range or localized range of the northern long-eared bat.

The project will not affect Canada lynx, as none of the project area is within the area identified as containing a consistent population or occupation of Canada lynx. The only consistent population or occupation in New Hampshire by Canada lynx occurs in the northern portions of the Town of Pittsburg. Historically, Canada lynx occurred throughout the White Mountain National Forest and Coos County;



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however, Canada lynx occurrence in these areas is currently sporadic. Additionally, Canada lynx typically inhabit spruce-fir forests. All work will occur within the existing, cleared transmission line ROW and access roads and therefore will not impact spruce-fir forests. The official species lists are also included in Appendix C.

2.3.4 Identification of Cultural and Historical Resources

Eversource and Stantec retained Archaeological and Historical Services, Inc., and Victoria Bunker Inc. to conduct Phase 1A archaeological assessments over the entire S136 ROW. The Phase 1A assessments identified historical and culturally sensitive areas within the ROW. Phase 1B assessments were performed in association with previous structure replacement work that has occurred within the S136 ROW when structure replacements and access roads were located within sensitive areas. Phase 1B identified several archaeological sites that have been and will be avoided by all project construction work. Additional Phase 1B assessments are scheduled to be performed within sensitive areas in the project area in the spring of 2020. Avoidance and minimization best management practices will be utilized in these sensitive areas depending on the results of the additional Phase 1B assessments.

3.0 EXISTING CONDITIONS

The proposed structure and OPGW replacement work is located within the existing and maintained S136 transmission line ROW. The proposed AoT project areas cross through portions of Whitefield, Jefferson, and Randolph. 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 part of a routine structure and OPGW maintenance project. In areas where no existing access routes or trails are present, new gravel roads will be established. According to the Natural Resource Conservation Service (NRCS) soil survey for Coos County, New Hampshire, existing upland soils are generally very stony and suitable for construction of gravel access roads and work pads. The NRCS web soil survey report for the AoT project area is included in Appendix D. As previously noted, the proposed AoT project area comprises three separate areas that are subject to AoT permitting and are referred to as Areas A, B, and C.

The AoT project area includes uplands and wetlands located in primarily rural areas. Upland areas consist primarily of shrubs and herbaceous vegetation including eastern white pine (*Pinus strobus*), gray birch (*Betula populifolia*), yellow birch (*Betula alleghaniensis*), quaking aspen (*Populus tremuloides*), red maple (*Acer rubrum*), Allegheny blackberry (*Rubus alleghaniensis*), common red raspberry (*Rubus ideaus*), and northern bracken fern (*Pteridium aquilinum*). Wetlands in the ROW are primarily palustrine emergent (PEM) or palustrine scrub-shrub (PSS) systems that are seasonally saturated and contain hydric soils. Representative hydrophytic vegetation within the wetlands includes speckled alder (*Alnus incana*), common winterberry (*Ilex verticillata*), catberry (*Nemopanthus mucronatus*), pussy willow (*Salix discolor*), gray willow (*Salix bebbiana*), broad-leaf meadowsweet (*Spiraea latifolia*), sensitive fern (*Onoclea sensibilis*), cottongrass bulrush (*Scirpus cyperinus*), interrupted fern (*Osmunda claytoniana*), broad-leaf cat-tail (*Typha latifolia*), and lamp rush (*Juncus effusus*).



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AoT screening layers were requested from the New Hampshire Department of Environmental Services (NHDES) for each town within the AoT project area and are shown on Figure 3 – Surface Water and Groundwater Overlay Plans if they fall within the vicinity of the project area. AoT screening layers include:

- Coastal and Great Bay Communities
- Groundwater Protection Areas (Groundwater Classification Areas GA1, Groundwater Classification Areas GA2, Wellhead Protection Areas)
- Wellhead Protection Areas
- Water Supply Intake Protection Areas
- Outstanding Resource Waters
- Class A Water Watersheds
- Surface Water Impairments
- Local Potential Contamination Sources
- Designated Rivers within ¼ mile
- All Lakes within ¼ mile
- Surface Waters with Impairments (2016)
- Watersheds with Chloride Impairments (2016)

AoT screening layers crossed by the AoT project area are described within each of the AoT jurisdictional areas below.

Existing conditions within each AoT jurisdictional area are further described below and consistent with recent guidance and discussion between Eversource and NHDES. Representative photographs of the AoT project area are included in Appendix E.

3.1 AOT AREA A: WHITEFIELD

Area A begins at Jefferson Road (Route 116) in Whitefield, near structure 21, and continues easterly for approximately 1.2 miles to structure 36. This section of ROW includes upland and wetland areas with relatively flat topography and elevations ranging from approximately 1,047 ft to 1,083 ft. This portion of the ROW is in a rural, forested portion of Whitefield with small agricultural fields located adjacent to the ROW near Jefferson Road. The proposed access route will utilize an existing entrance off Jefferson Road that may contain a culvert within the roadside ditch. No other drainage structures are documented or known to exist along the proposed access road.



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Land disturbance subject to AoT Laws and Rules under Env-Wq 1502.58 (b) (2) (see Section 5.1.2 below) within Area A includes:

- Structure 22 to 36 work pads and OPGW pull pads.
- Access roads between Jefferson Road and the OPGW pull pad east of structure 36.

3.1.1 Surface and Groundwater Protection – Area A

There is one surface water located within Area A, perennial stream S01, which crosses the ROW through wetland W013 between structures 21 and 22 (see Figure 3 – Surface Water and Groundwater Overlay Plans). Area A includes temporary matting in nine wetland systems for access and work pad placement: W013, W014, W015, W016, W17, W018, W021, W024, and W025. Temporary matting impact totals are summarized in the table below. AoT disturbance area is summarized in Section 5.1.2.

| Temporary Matting | Impact (sf) |
|-------------------|-------------|
| Access | 26,807 |
| Work/Pull Pad | 34,345 |

According to Figure 3, the entirety of Area A is located outside of the AoT screening layers.

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

According to the FEMA Flood Insurance layer on Figure 3, there are no 100-year floodplain zones within Area A.

According to the Consolidated List of Water Bodies Subject to RSA 483-B (May 22, 2019) and the NHDES Designated River Corridor Map, there are no rivers within Area A that are protected under RSA 483-B.

3.2 AOT AREA B: JEFFERSON AND RANDOLPH

Area B begins at Jefferson Notch Road in Jefferson near structure 149 and continues east approximately 2.2 miles to structure 178. This area contains uplands and wetlands with relatively flat topography and approximate elevations ranging from 1,413 ft near Jefferson Notch Road to 1,547 ft near structure 178. The area is located within a rural, forested portion of Jefferson. Except for the parcel immediately adjacent to Jefferson Notch Road, the ROW within Area B is located with the White Mountain National Forest. The proposed access route will utilize an existing trail entrance off Jefferson Notch Road. No drainage structures are documented or known to exist along the proposed access road.



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3.2.1 Surface and Groundwater Protection – Area B

There are three surface waters located within Area B, perennial streams S30, S31, and S32 (Israel River). Only stream S31 is associated with a wetland, wetland W098 (see Figure 3). Area B includes temporary matting in 22 wetland systems for access and work pad placement: W077, W078, W079, W081, W083, W084, W085, W086, W088, W089, W090, W091, W092, W093, W094, W096, W097, W098, W099, W100, W101, W102. Temporary matting impact totals are summarized in the table below. AoT disturbance area is summarized in Section 5.1.2.

| Temporary Matting | Impact (sf) |
|-------------------|-------------|
| Access | 30,327 |
| Work/Pull Pad | 8,409 |

According to Figure 3, nearly all of Area B is located within the Outstanding Resource Watershed associated with National Forest Lands. All other AoT screening layers are located outside of Area B.

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

According to the FEMA Flood Insurance layer on Figure 3, there are no 100-year floodplain zones within Area B.

According to the Consolidated List of Water Bodies Subject to RSA 483-B (May 22, 2019) and the NHDES Designated River Corridor Map, there are no rivers within Area B that are protected under RSA 483-B.

3.3 AOT AREA C: RANDOLPH

Area C begins near structure 213, off Route 2 near Cold Brook, and continues east approximately 0.3 miles to structure 218. Area C also continues west of structure 213 approximately 1.8 miles to structure 190. This area contains uplands and wetlands with topography generally sloping down to the north towards Route 2. Approximate elevations range from 1,335 ft near structure 218 to 1,525 ft near structure 196. The areas from structures 190 to 198 and structures 212 to 218 are located within the White Mountain National Forest. The proposed access route will utilize an existing road entrance off Route 2 and an existing access road and trails within the ROW. No drainage structures are documented or known to exist along the proposed access roads.

3.3.1 Surface and Groundwater Protection – Area B

There are 17 surface waters located within Area C. Perennial streams include S53, S52, S48, S37, S39, S40, S41, S55, S54, S49, and intermittent streams include S47, S45, S38, S42, S44, S43, S50. The streams are generally steep and flashy due to their position on the steep side slope. Area C includes temporary matting in 10 wetland systems for access road and work pad placement: W113, W114, W115,



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W118, W119, W128, W130, W131, W132, and W133. Temporary matting impact totals are summarized in the table below. AoT disturbance area is summarized in Section 5.1.2.

| Temporary Matting | Impact (sf) |
|-------------------|-------------|
| Access | 14,878 |
| Work/Pull Pad | 4,684 |

According to Figure 3, all of Area C is located within the Outstanding Resource Watershed associated with National Forest Lands. The access roads and work pads around structures 217 and 218 are located within the ¼-mile buffer of Lake Durand, an impoundment located on the north side of Route 2. All other AoT screening layers are located outside of Area C.

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

According to the FEMA Flood Insurance layer on Figure 3, there are no 100-year floodplain zones within Area C.

According to the Consolidated List of Water Bodies Subject to RSA 483-B (May 22, 2019) and the NHDES Designated River Corridor Map, there are no rivers within Area C that are protected under RSA 483-B.

4.0 PROJECT DESCRIPTION

4.1 STRUCTURE REPLACEMENT, OPGW REPLACEMENT, AND MAINTENANCE

The proposed project includes replacement of 32 existing utility structures within the AoT project area along the S136 transmission line ROW. The structure replacement process consists of drilling approximately 4-ft-diameter holes near the existing structures. A caisson, or can, is installed approximately 15 to 20 ft below the ground surface. The new structure is installed in the can and backfilled with clean, suitable rock or gravel material. Spoils produced from drilling the hole will be disposed of in an approved upland location away from wetland areas. Spoil piles will be stabilized with seed and mulch. Some replacement structures may require anchors. Anchors will be installed by excavating trenches, installing concrete block anchors, and backfilling trenches. If anchors are installed in wetlands, backfill material will consist of the same excavated soil to maintain hydric soil conditions. Once the new structure is installed and stable, the wires from the old structure will be transferred to the new structure. Old structures will be cut and removed from the ground in upland locations. Old structures located in wetlands will be cut at ground level. All construction materials and old structure pieces will be removed and disposed of off-site.

Following completion of the structure replacement and OPGW work, all temporary timber construction mats will be removed. Disturbed wetland areas will be restored and stabilized with weed free straw mulch.



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Disturbed upland areas will also be restored and stabilized. Upland work pads will be restored by reducing the work pad size to 30 ft by 60 ft by covering perimeter areas with stockpiled loam. Slopes will be reduced to less than 25% where necessary and exposed soils will be stabilized with seed and mulch. Seed and mulch will be applied along the shoulders and side slopes of the access roads as necessary, and the established access roads will be left in place.

OPGW replacement work involves restringing the upper most wire across all structures along the entire length of the S136 transmission line. Access roads will be established to most corner structures to install equipment that allows the wire to move around the corner. Access roads will also be established to pull pads, where the wire will be pulled from one location to another across the structures and spliced together. OPGW work will be completed following the structure replacement work and will utilize the access roads and work pads created during the replacement work wherever possible.

4.1.1 Access

The proposed structure replacement and OPGW project utilizes existing access routes within the S136 ROW wherever possible. The majority of the existing access routes are comprised of dirt or grassy areas and are proposed to be improved as part of the project to allow for construction vehicle access. Proposed access routes are shown on Figures 3 and 4. Access road entrances are located off state and local roadways and utilize existing roads or trails onto the ROW. Temporary driveway permits for access from Route 116 and Route 2 will be obtained from the New Hampshire Department of Transportation prior to the start of construction. The proposed access routes were sited to minimize ground disturbance and temporary wetland impacts to the greatest extent practicable while providing safe and efficient access to the existing structures. Timber matting will be used to cross all wetland and stream resources.

4.1.1.1 Road Construction

Proposed access road improvements include construction of approximately 12-ft-wide gravel and stone roads within the ROW. The roads will provide access to existing utility structures for routine maintenance activities. The improved access roads will provide reliable, permanent access to utility infrastructure during future maintenance or emergency repairs. Where possible, the proposed access roads will be located on top of existing dirt or grass roads or trails. If no existing routes are available or suitable, a new road will be constructed. Minor grading may be necessary to remove large boulders and create a flat surface for the new rock or gravel. Vehicle turnouts are also proposed for select upland locations to allow for safe passage of construction vehicles on long stretches of the narrow access roads.

4.1.1.2 Wetland and Upland Temporary Matting

Access through delineated wetlands in the project area will utilize temporary timber construction mats to minimize and prevent rutting in the wetlands (see Figure 4). Where necessary in overly saturated conditions, runners (mats placed parallel to the direction of travel) will be placed on the wetland surface prior to setting the top, perpendicular layer of mats. This increases the surface area of the mats and helps reduce settling and overall wetland disturbance. Upland timber construction mats are occasionally



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requested by the landowner where fields or lawn areas may be crossed by the proposed access road. No upland matting is proposed for the AoT project area.

4.1.2 Work Pad Construction

The proposed project includes construction of structure replacement work pads, pull pads, and OPGW corner pads. Structure replacement pads will be 100 ft by 100 ft at corner structures and 80 ft by 80 ft at all other replacement structures. Pull pads will be 50 ft by 100 ft, and OPGW corner pads will be 30 ft by 30 ft. All work pads will be constructed using clean, 6 to 8-inch diameter riprap or equivalent stone. The work pads will be top dressed with compacted 1.5- to 3-inch-diameter clean stone. Proposed work pads located in wetland areas will be constructed using temporary timber construction mats and will be removed upon completion of the work. Upland work pads will be restored by reducing the work pad size to 30 ft by 60 ft by covering perimeter areas with stockpiled loam. Slopes will be reduced to less than 25% where necessary, and exposed soils will be stabilized with seed and mulch.

4.2 CONSTRUCTION SEQUENCE

The proposed project is scheduled to begin construction in late-spring 2020 following receipt of all regulatory approvals and suitable, dry ground conditions. An anticipated construction sequence for the structure replacement and OPGW work is described below. Upon Eversource's selection of their construction contractors, a more detailed and finalized construction sequence and schedule will be determined.

1. Install sediment and erosion controls in the proposed locations shown on Figure 4.
2. Construct access routes and build work pads. Temporary timber construction mats will be used at wetland and stream crossings as depicted on Figure 4.
3. Conduct structure replacement activities including installation of new structures, transfer of wires, and removal of old structures.
4. Remove temporary timber construction mats, restore any disturbed wetland areas and stabilize with weed free straw mulch, and restore and stabilize work pads and side slopes and any other disturbances created by construction within the ROW.
5. Remove erosion and sedimentation controls following permanent stabilization and approximately 90% revegetation of upslope areas.

4.3 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 (March 2019). Following these BMPs will minimize and avoid impacts to wetland and stream resources and the surrounding upland to the greatest extent practicable. Erosion control notes are also provided on the Notes sheet of Figures 3 and 4.



NHDES ALTERATION OF TERRAIN PERMIT APPLICATION

Regulatory Compliance

March 24, 2020

Perimeter erosion controls consisting of silt fence, straw wattles, mulch, and straw bales will be installed as necessary around the work areas to minimize potential impacts to adjacent resource areas. Water bars, also known as diversion ditches, will be installed along access roads with steep slopes, where necessary, to prevent water from traveling long distances down the road causing erosion. Water bars will direct water off the road into adjacent upland areas. Exposed soil created during construction will be stabilized with seed and mulch as soon as possible after active work in the area is complete. No equipment or material will be stored within wetland areas. Erosion control details are shown on BMP detail sheets 1 and 2 of Figures 3 and 4. Temporary timber construction mats will be used in all wetland areas and will be used to cross all streams within the project area.

5.0 REGULATORY COMPLIANCE

5.1 ALTERATION OF TERRAIN

The NHDES requires an AoT permit whenever a project proposes to disturb more than 100,000 sf of terrain or 50,000 sf if within a protected shoreland (Env-Wq-1500). The NHDES rule is intended to protect New Hampshire surface waters by controlling soil erosion and managing stormwater runoff from developed areas. The AoT project area contains three distinct AoT regulated areas (Area A, B, and C) within the S136 transmission line ROW based on contiguous areas of disturbance. Details on impacts in each AoT regulated area are provided below in Section 5.1.2 – Quantification of Impacts Subject to AoT.

5.1.1 Waiver Requests

Per Env-Wq 1509.2, Eversource is requesting a waiver from the requirements to prepare a Stormwater Drainage Report, Drainage Area Plans, and Hydrologic Soil Group Plans. New impervious surfaces associated with the project are limited to the footprint of the new transmission line structures. It is not anticipated that the proposed structures will have a significant impact on site drainage patterns, and stormwater treatment practices are not proposed. A formal waiver request form is provided in Appendix F.

5.1.2 Quantification of Impacts Subject to AoT

There is approximately 619,669 sf of total disturbance, including 119,450 sf of temporary wetland matting and 500,219 sf of ground disturbances, proposed within the AoT project area that requires an AoT permit in accordance with Env-Wq 1502.58. Specific areas are detailed below that exceed the AoT disturbance thresholds for Env-Wq 1502.58(b)(2) “An area that, over a 10-year period, cumulatively exceeds 100,000 square feet of contiguous area...” The width of the proposed disturbance for new access roads is assumed to average approximately 12 ft throughout the AoT project area, and temporary timber construction mats are 16 ft wide. Additional details are shown on Figure 4.



NHDES ALTERATION OF TERRAIN PERMIT APPLICATION

Regulatory Compliance
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AoT Area A: Whitefield

Structures 21 to 36
Map sheets 1 to 5

| Disturbance Type | Impact (sf) |
|-----------------------------|--------------------|
| New Access | 44,046 |
| Gravel Work/Pull Pad | 78,825 |
| Total Disturbed Area | 122,871 |

AoT Area B: Jefferson and Randolph

Structures 149 to 178
Map sheets 6 to 13

| Disturbance Type | Impact (sf) |
|-----------------------------|--------------------|
| New Access | 108,220 |
| Gravel Work/Pull Pad | 108,993 |
| Total Disturbed Area | 217,213 |

AoT Area C: Randolph

Structures 190 to 218
Map sheets 14 to 21

| Disturbance Type | Impact (sf) |
|-----------------------------|--------------------|
| New Access | 141,219 |
| Gravel Work/Pull Pad | 18,916 |
| Total Disturbed Area | 160,135 |

5.2 OTHER REGULATORY PROGRAMS

Other regulatory permits and notifications required for the proposed AoT project are summarized below. Eversource and Stantec have corresponded with the towns of Whitefield, Jefferson, and Randolph regarding the proposed work as well as similar maintenance work that has been completed between 2016 and 2019. There are no town permits or approvals necessary to complete the proposed work. The towns will receive a copy of all state permit applications.



NHDES ALTERATION OF TERRAIN PERMIT APPLICATION

Regulatory Compliance
 March 24, 2020

| Agency | Permit/Notification | Status | |
|-----------------------------------|--------------------------------------|----------|-----------------|
| NHDES | Statutory Permit by Notification | Pending | |
| | Town/City | | SPN File Number |
| | Whitefield | | Pending |
| | Jefferson | | Pending |
| | Randolph | | Pending |
| EPA (Construction General Permit) | Stormwater Pollution Prevention Plan | Approved | |
| U.S. Fish and Wildlife Service | Special Use Permit | Pending | |
| U.S. Forest Service | Special Use Permit | Pending | |



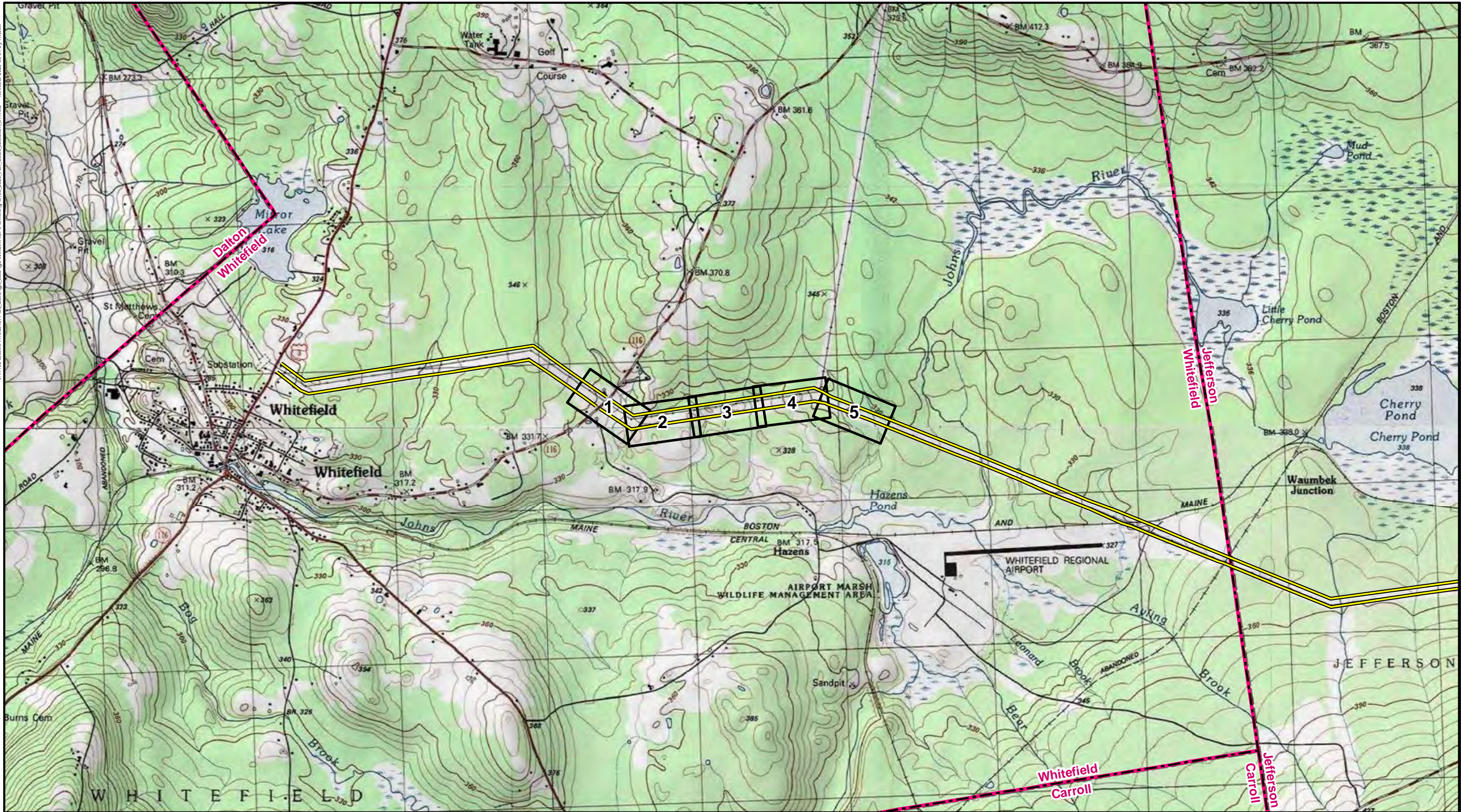
NHDES ALTERATION OF TERRAIN PERMIT APPLICATION




Regulatory Compliance
March 24, 2020

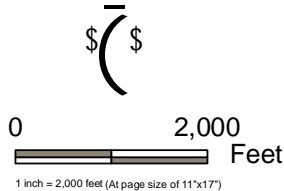
FIGURES



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- Legend**
-  Approximate ROW
 -  AOT Map Sheet
 -  Municipal Boundary



Map Notes:
 Coordinate System: NAD 1983 StatePlane New Hampshire FIPS 2600 Feet
 Data source: Right-of-way data provided by Eversource Energy. Base features from NH GRANIT database.
 Basemap: USGS Imagery/Topo provided by The National Map Mapping Service
 (<http://basemap.nationalmap.gov/arcgis/services/USGSImageryTopo>).

The information/data provided in this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation or parcel level analysis. The maps should not be used for construction purposes.

**2020 S136 Line
 Structure Replacement
 Locus Plan**
 Whitefield, Jefferson, and Randolph,
 New Hampshire

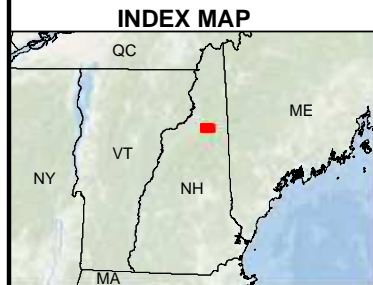
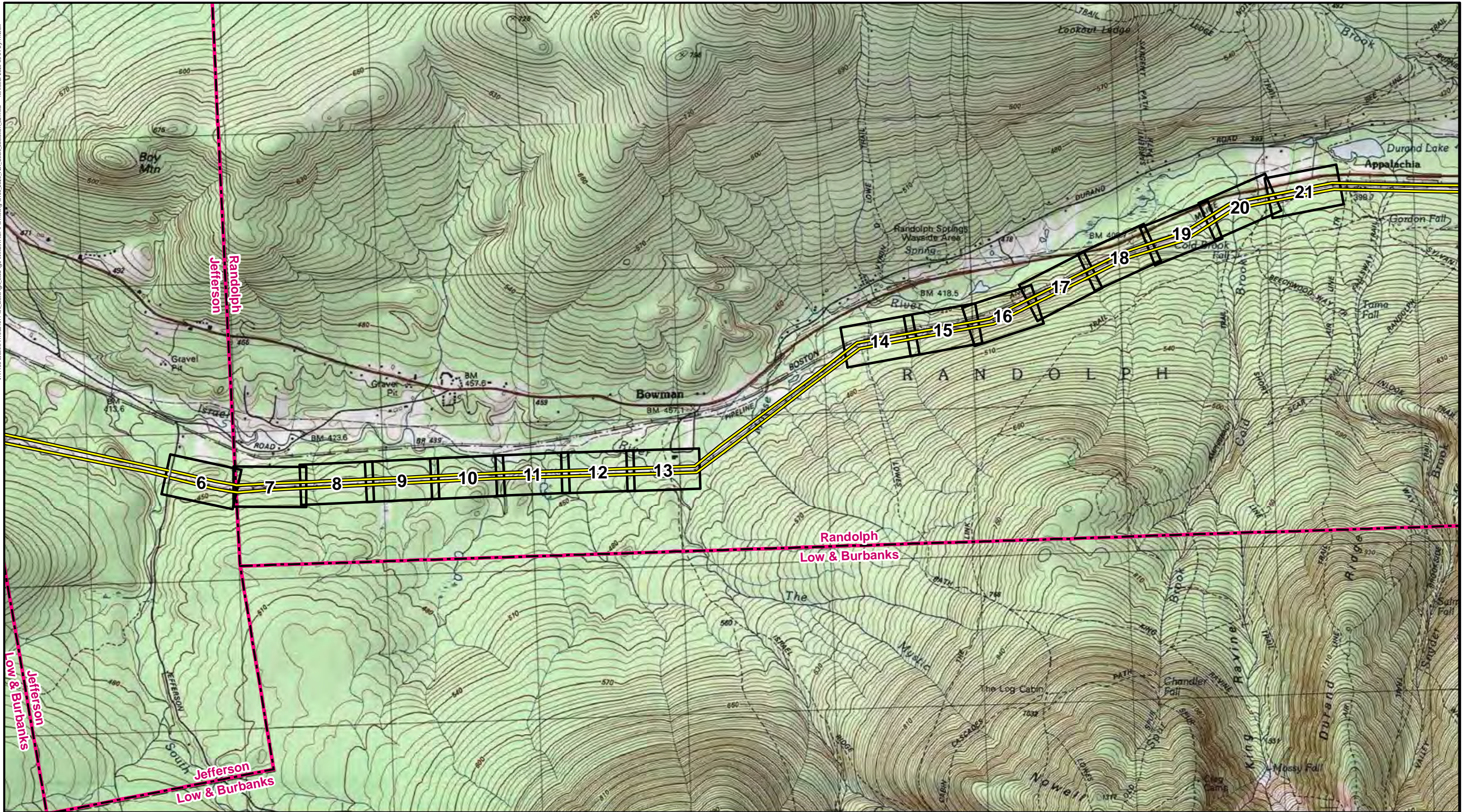
Sheet 1 of 2

EVERSOURCE
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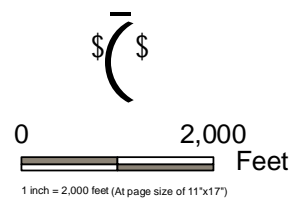
 **Stantec**

March 4, 2020

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- Legend**
- Approximate ROW
 - AOT Map Sheet
 - Municipal Boundary



Map Notes:
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**2020 S136 Line
 Structure Replacement
 Locus Plan**
 Whitefield, Jefferson, and Randolph,
 New Hampshire

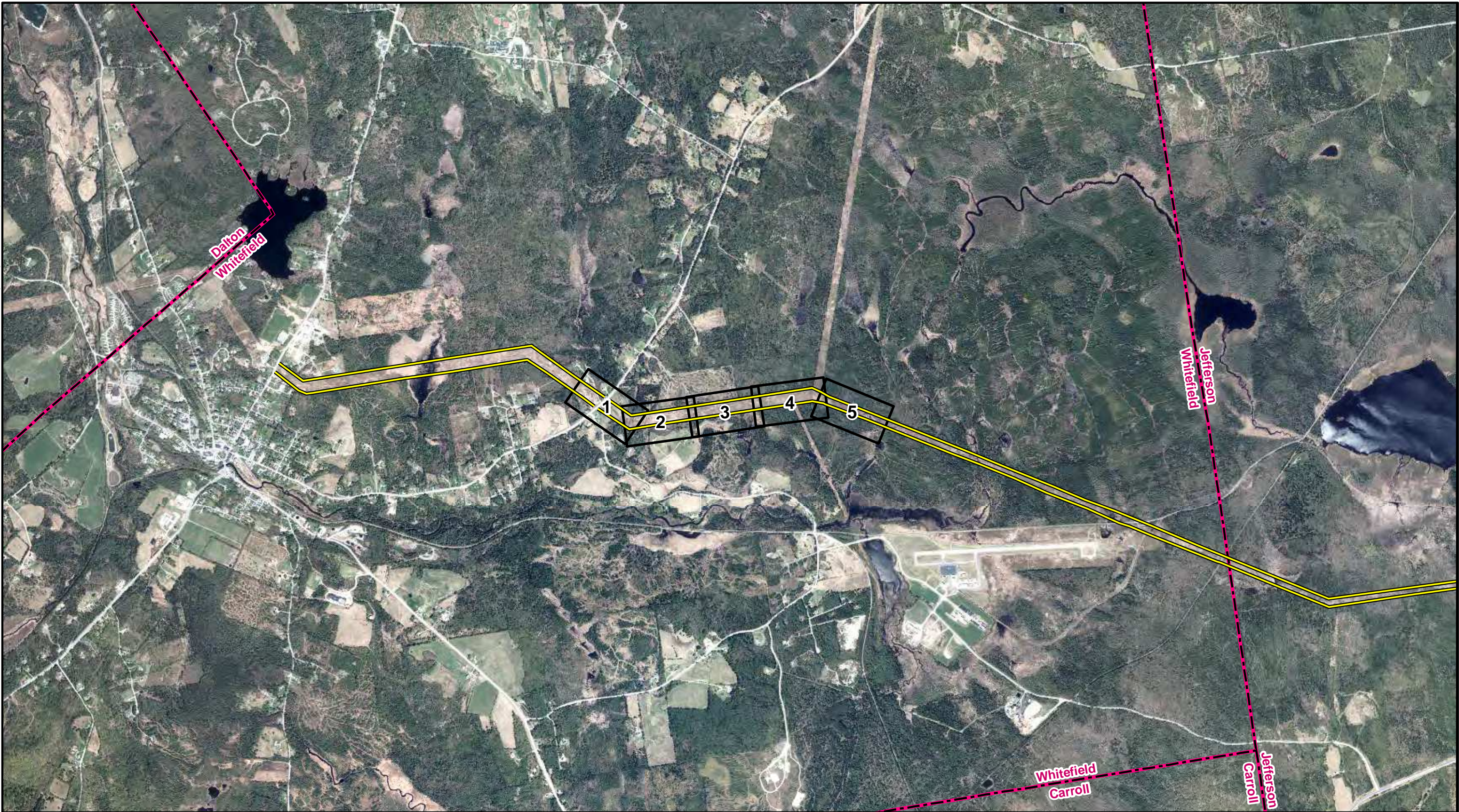
Sheet 2 of 2

EVERSOURCE
 ENERGY

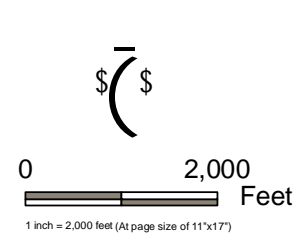
Stantec

March 4, 2020

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- Legend**
- Approximate ROW
 - AoT Map Sheet
 - Municipal Boundary



Map Notes:
 Coordinate System: NAD 1983 StatePlane New Hampshire FIPS 2600 Feet
 Data source: Right-of-way data provided by Eversource Energy; Base features from NH GRANIT database.
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**2020 S136 Line
 Structure Replacement
 Aerial Site Plan**

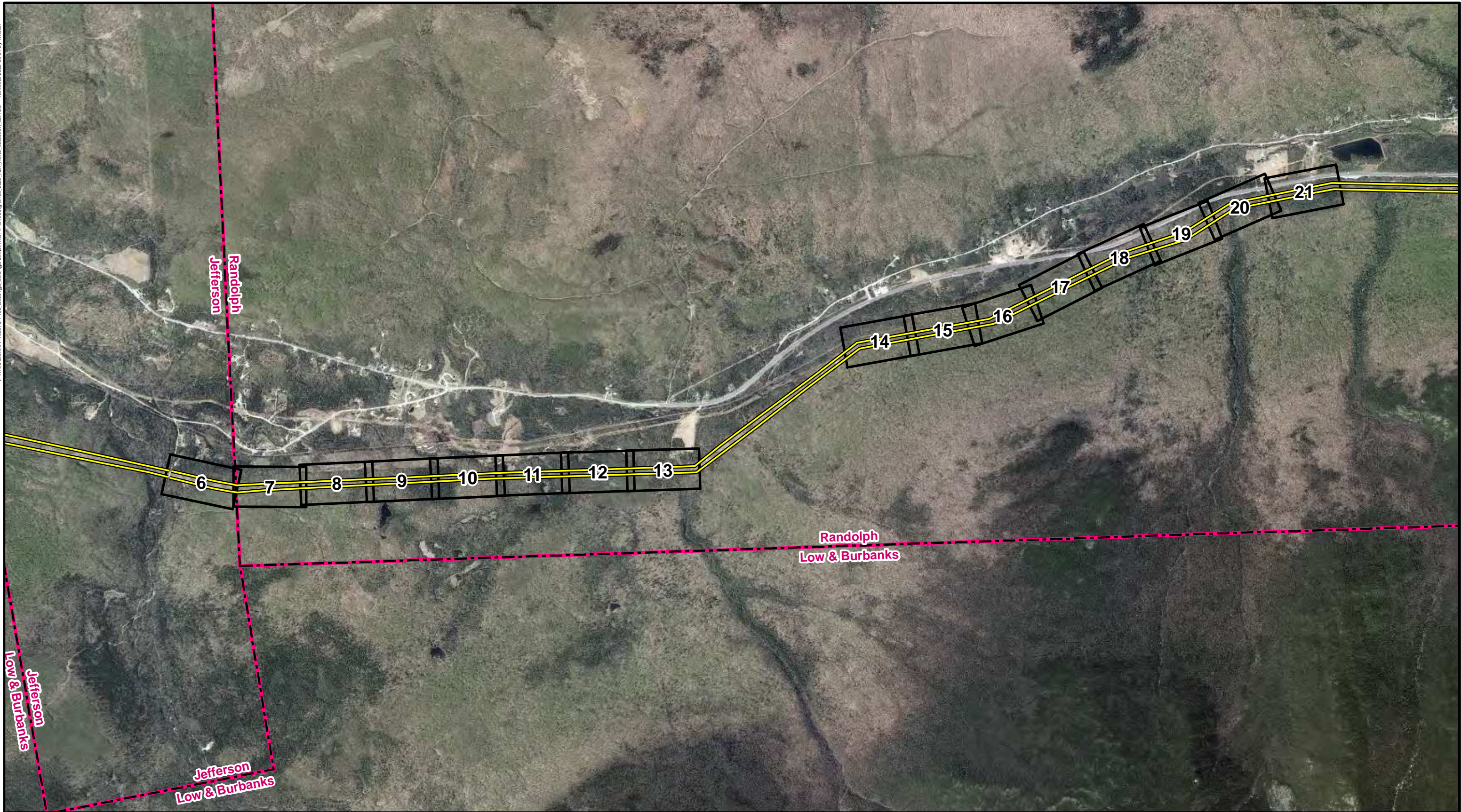
Whitefield, Jefferson, and Randolph,
 New Hampshire




Sheet 1 of 2

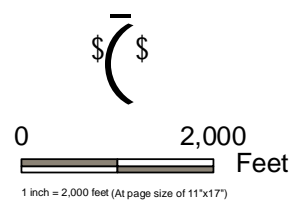


March 4, 2020

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- Legend**
-  Approximate ROW
 -  AOT Map Sheet
 -  Municipal Boundary



Map Notes:
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 FIPS 2600 Feet
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**2020 S136 Line
 Structure Replacement
 Aerial Site Plan**

Whitefield, Jefferson, and Randolph,
 New Hampshire

Sheet 2 of 2

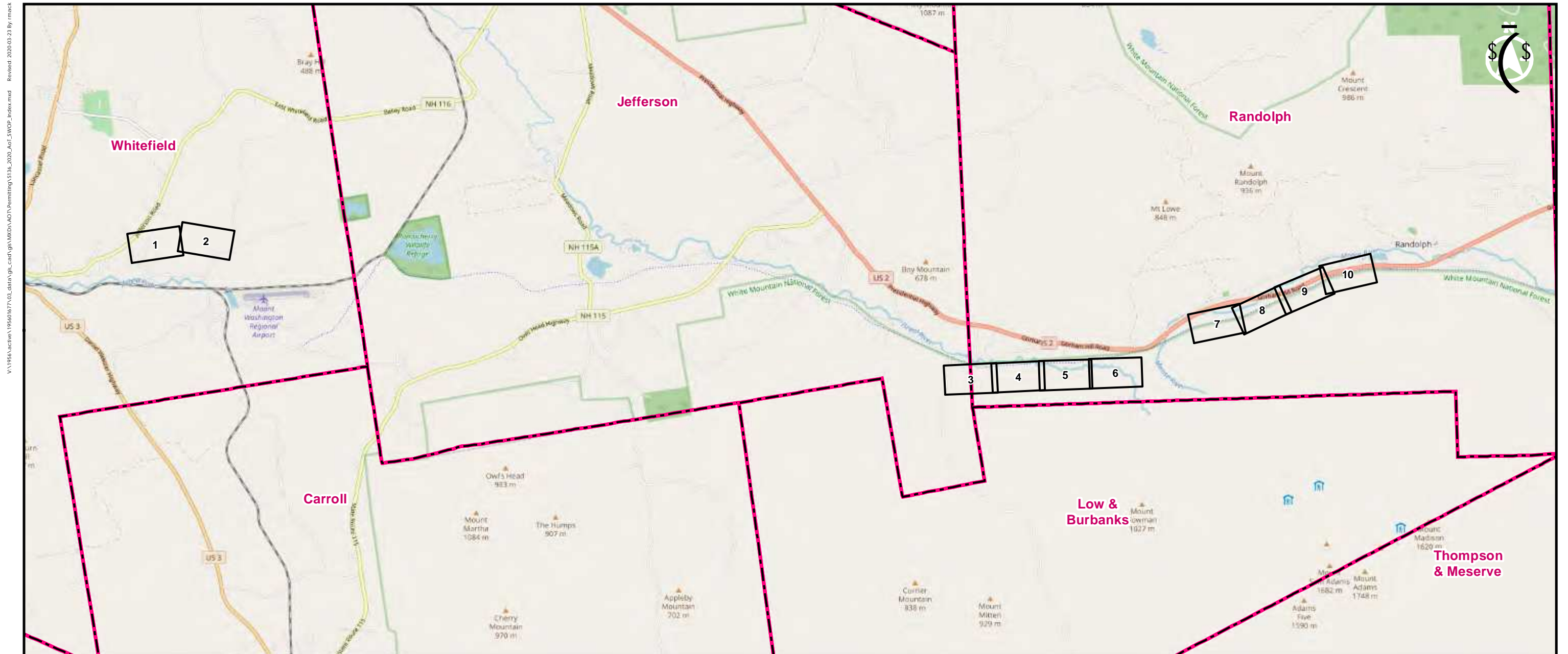


March 4, 2020

2020 S136 Line Structure Replacement

Surface Water and Groundwater Overlay Plans
Whitefield, Jefferson, and Randolph,
New Hampshire

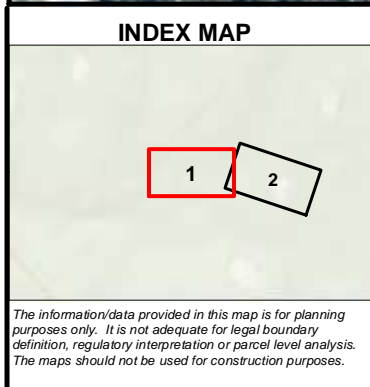
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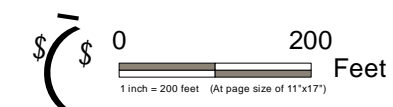
INDEX OF FIGURES

- Title Sheet
- 1 - 10 Map Sheets
- Notes
- Details

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 Revised: 2020-03-23 By: jmacck



| Legend | |
|--|--|
| # Local Potential Contamination Sources (none) | Surface Waters with Impairments 2016 with Quarter Mile Buffer (none) |
| Wellhead Protection Areas (none) | Water Supply Intake Protection Areas (none) |
| Class A Surface Waters RSA 485A9 (none) | Watersheds with Chloride Impairments 2016 (none) |
| Coastal and Great Bay Region Communities (none) | Proposed Structure |
| Designated Rivers Quartermile Buffer (none) | Existing Structure |
| Groundwater Classification Areas GA1 (none) | Overhead Eversource Line |
| Groundwater Classification Areas GA2 (none) | Existing Right-of-Way (ROW) |
| Groundwater Classification Areas GAA (none) | Proposed Alternate Access |
| All Lakes with a Quarter Mile Buffer | Erosion and Sediment Control (TYP) |
| Class A Surface Waters RSA 485A9 Lakes Only Quarter Mile Buffer (none) | AoT Disturbance Area - New Access/Turnout |
| Outstanding Resource Water Watersheds | AoT Disturbance Area - Pad |
| Temporary Construction Matting | Eversource Fee-Owned Property |
| State-Owned Property | Parcel Boundary |
| Municipal Boundary | US National Forest Lands |
| FEMA 100-Year Flood Zone | Floodway |
| Fence | 10' Contour |
| 2' Contour | Potential Vernal Pool |
| Delineated Intermittent Stream | Delineated Perennial Stream |
| Delineated Wetland Boundary Outline | Field Delineated Wetland |
| Culvert | |



Map Notes:
 Coordinate System: NAD 1983 StatePlane New Hampshire FIPS 2800 Feet
 Notes: Wetland boundaries delineated by Stantec in 2016 in accordance with USACE Wetland Delineation Manual (1987) or subsequent versions. Wetland and vernal pool boundaries were located utilizing a Trimble GeoXH GeoExplorer 6000 Series Receiver. Expected accuracy of GPS data is within 1 meter of actual position.
 Data source: Structure, centerline, ROW, and abutter data provided by Eversource Energy. Base features from NH GRANIT database.
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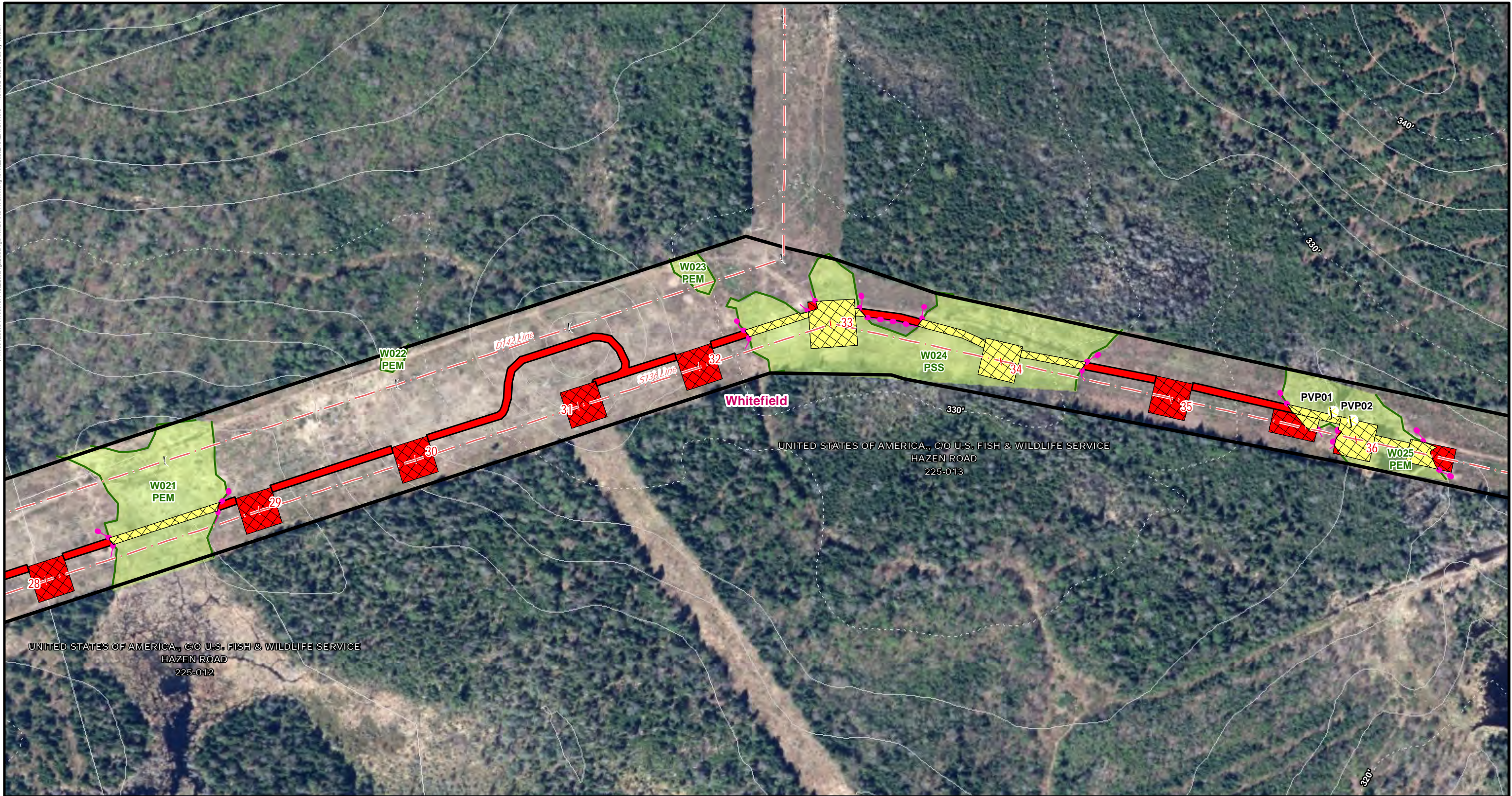
**2020 S136 Line
 Alteration of Terrain
 Water Resource Plans**

 Whitefield,
 New Hampshire

 Map Sheet 1 of 10

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 Stantec
 March 23, 2020

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Legend

| | | | |
|--|--|--------------------------------|-------------------------------------|
| # Local Potential Contamination Sources (none) | Surface Waters with Impairments 2016 with Quarter Mile Buffer (none) | Temporary Construction Matting | Potential Vernal Pool |
| Wellhead Protection Areas (none) | Water Supply Intake Protection Areas (none) | Eversource Fee-Owned Property | Delineated Intermittent Stream |
| Class A Surface Waters RSA 485A9 (none) | Watersheds with Chloride Impairments 2016 (none) | State-Owned Property | Delineated Perennial Stream |
| Coastal and Great Bay Region Communities (none) | Proposed Structure | Parcel Boundary | Delineated Wetland Boundary Outline |
| Designated Rivers Quartermile Buffer (none) | Existing Structure | Municipal Boundary | Field Delineated Wetland |
| Groundwater Classification Areas GA1 (none) | Overhead Eversource Line | US National Forest Lands | H Culvert |
| Groundwater Classification Areas GA2 (none) | Existing Right-of-Way (ROW) | FEMA 100-Year Flood Zone | |
| Groundwater Classification Areas GAA (none) | Proposed Alternate Access | Floodway | |
| All Lakes with a Quarter Mile Buffer | Erosion and Sediment Control (TYP) | [=] Fence | |
| Class A Surface Waters RSA 485A9 Lakes Only Quarter Mile Buffer (none) | AoT Disturbance Area - New Access/Turnout | - - - 10' Contour | |
| Outstanding Resource Water Watersheds | AoT Disturbance Area - Pad | - - - 2' Contour | |

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**2020 S136 Line
 Alteration of Terrain
 Water Resource Plans**

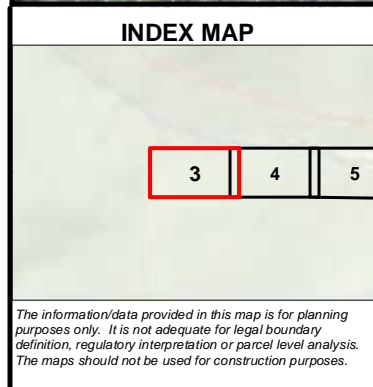
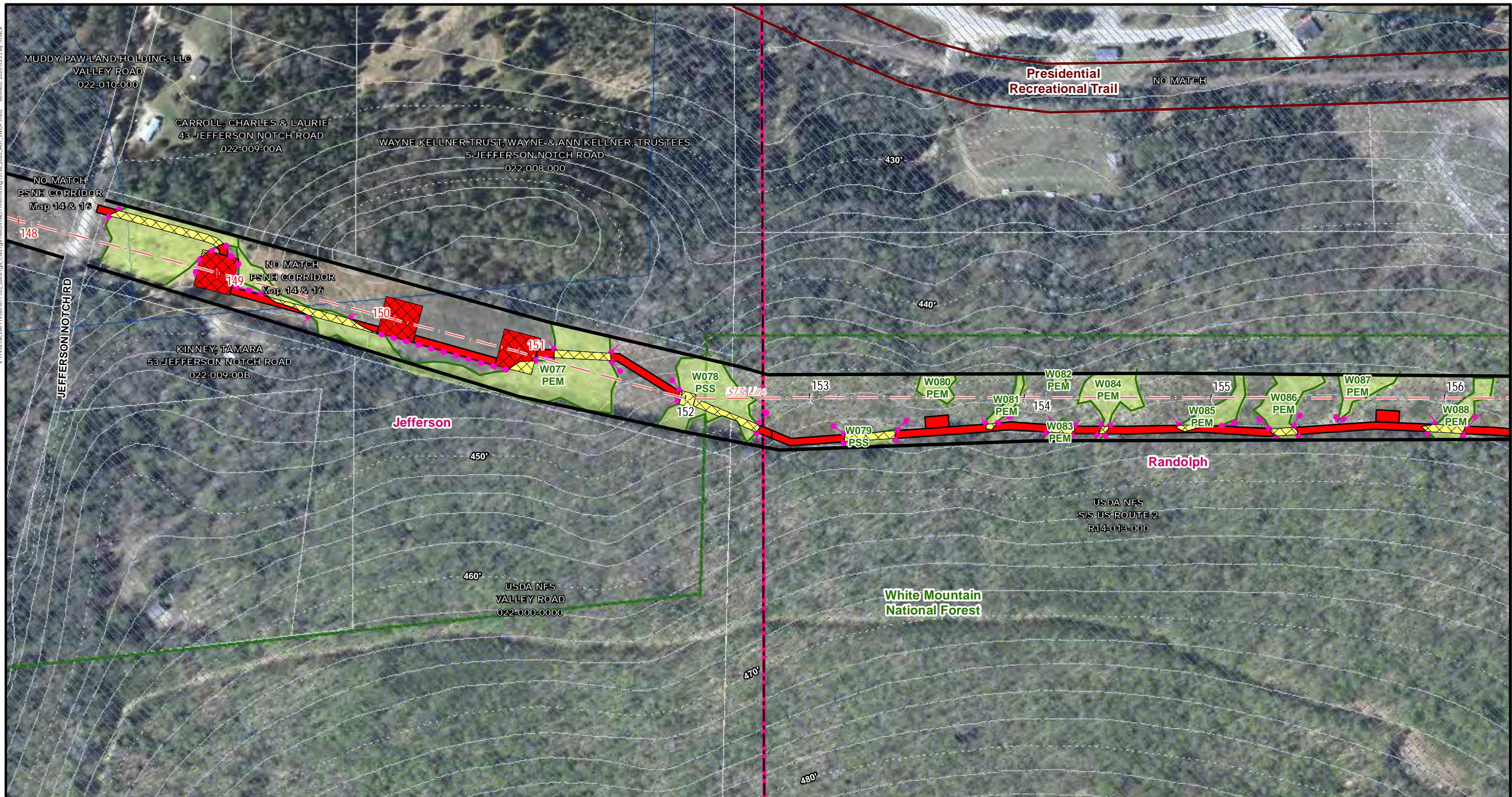
**Whitefield,
 New Hampshire**

Map Sheet 2 of 10

EVERSOURCE ENERGY

March 23, 2020

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| # Local Potential Contamination Sources (none) | Surface Waters with Impairments 2016 with Quarter Mile Buffer (none) | Temporary Construction Matting | Potential Vernal Pool |
| Wellhead Protection Areas (none) | Water Supply Intake Protection Areas (none) | Eversource Fee-Owned Property | Delineated Intermittent Stream |
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| Outstanding Resource Water Watersheds | AoT Disturbance Area - Pad | - - - 2' Contour | |

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1 inch = 200 feet (At page size of 11"x17")

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**2020 S136 Line
Alteration of Terrain
Water Resource Plans**

**Jefferson, Randolph,
New Hampshire**

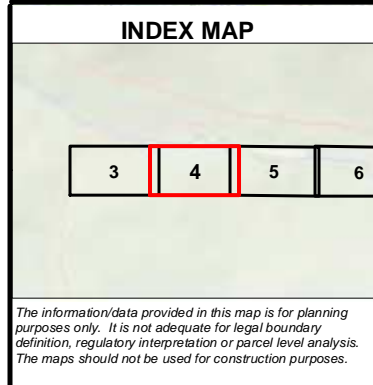
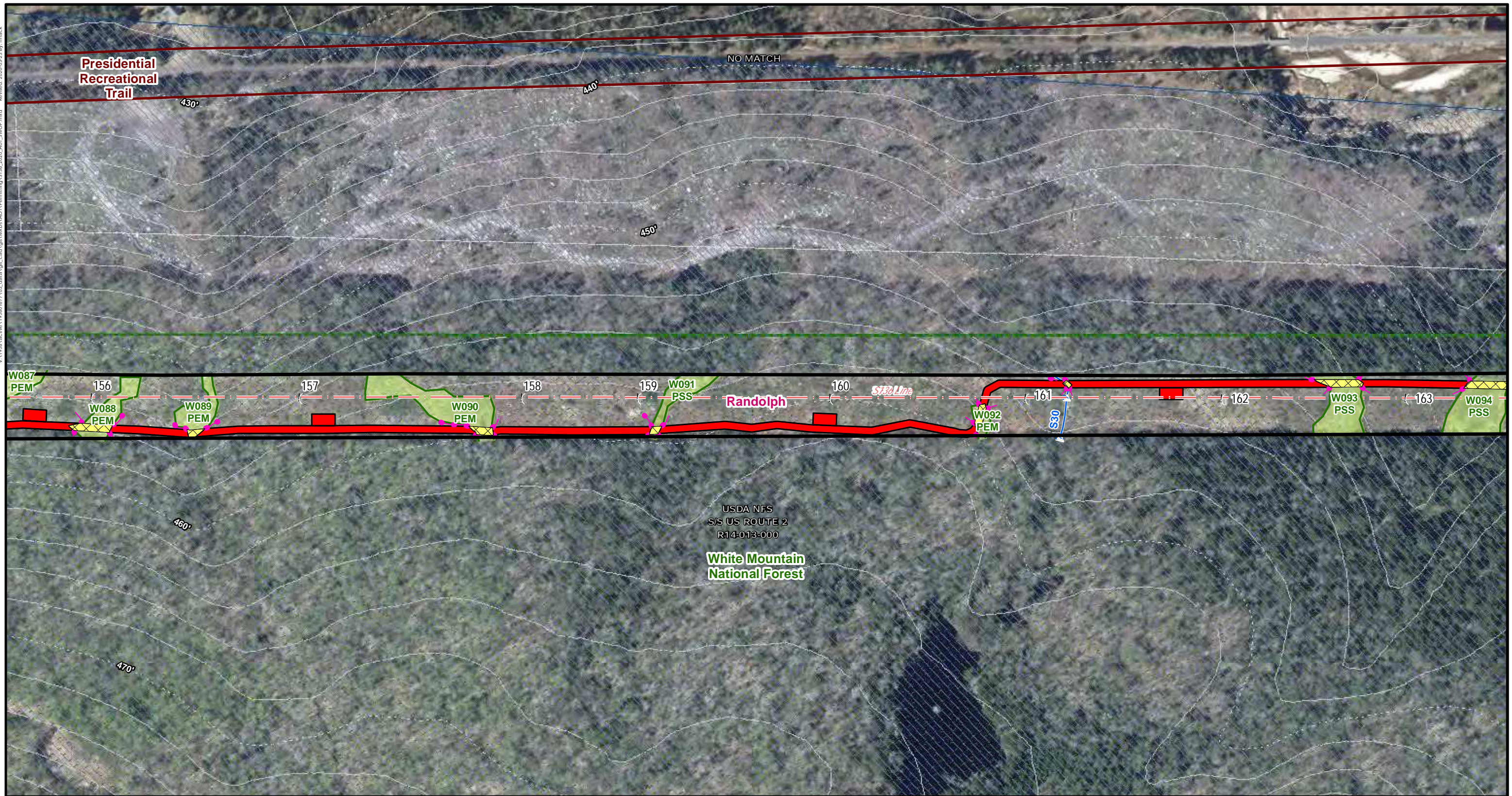
Map Sheet 3 of 10

EVERSOURCE ENERGY

Stantec

March 23, 2020

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Legend

| | | | |
|--|--|--------------------------------|-------------------------------------|
| # Local Potential Contamination Sources (none) | Surface Waters with Impairments 2016 with Quarter Mile Buffer (none) | Temporary Construction Matting | Potential Vernal Pool |
| Wellhead Protection Areas (none) | Water Supply Intake Protection Areas (none) | Eversource Fee-Owned Property | Delineated Intermittent Stream |
| Class A Surface Waters RSA 485A9 (none) | Watersheds with Chloride Impairments 2016 (none) | State-Owned Property | Delineated Perennial Stream |
| Coastal and Great Bay Region Communities (none) | Proposed Structure | Parcel Boundary | Delineated Wetland Boundary Outline |
| Designated Rivers Quartermile Buffer (none) | Existing Structure | Municipal Boundary | Field Delineated Wetland |
| Groundwater Classification Areas GA1 (none) | Overhead Eversource Line | US National Forest Lands | H Culvert |
| Groundwater Classification Areas GA2 (none) | Existing Right-of-Way (ROW) | FEMA 100-Year Flood Zone | |
| Groundwater Classification Areas GAA (none) | Proposed Alternate Access | Floodway | |
| All Lakes with a Quarter Mile Buffer | Erosion and Sediment Control (TYP) | [=] Fence | |
| Class A Surface Waters RSA 485A9 Lakes Only Quarter Mile Buffer (none) | AoT Disturbance Area - New Access/Turnout | - - - 10' Contour | |
| Outstanding Resource Water Watersheds | AoT Disturbance Area - Pad | — 2' Contour | |

Scale: 0 to 200 Feet
 1 inch = 200 feet (At page size of 11"x17")

Map Notes:
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 Basemap: 2015 aerial imagery provided by NH GRANIT.

2020 S136 Line Alteration of Terrain Water Resource Plans

Randolph, New Hampshire

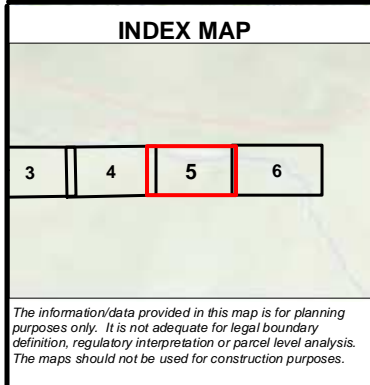
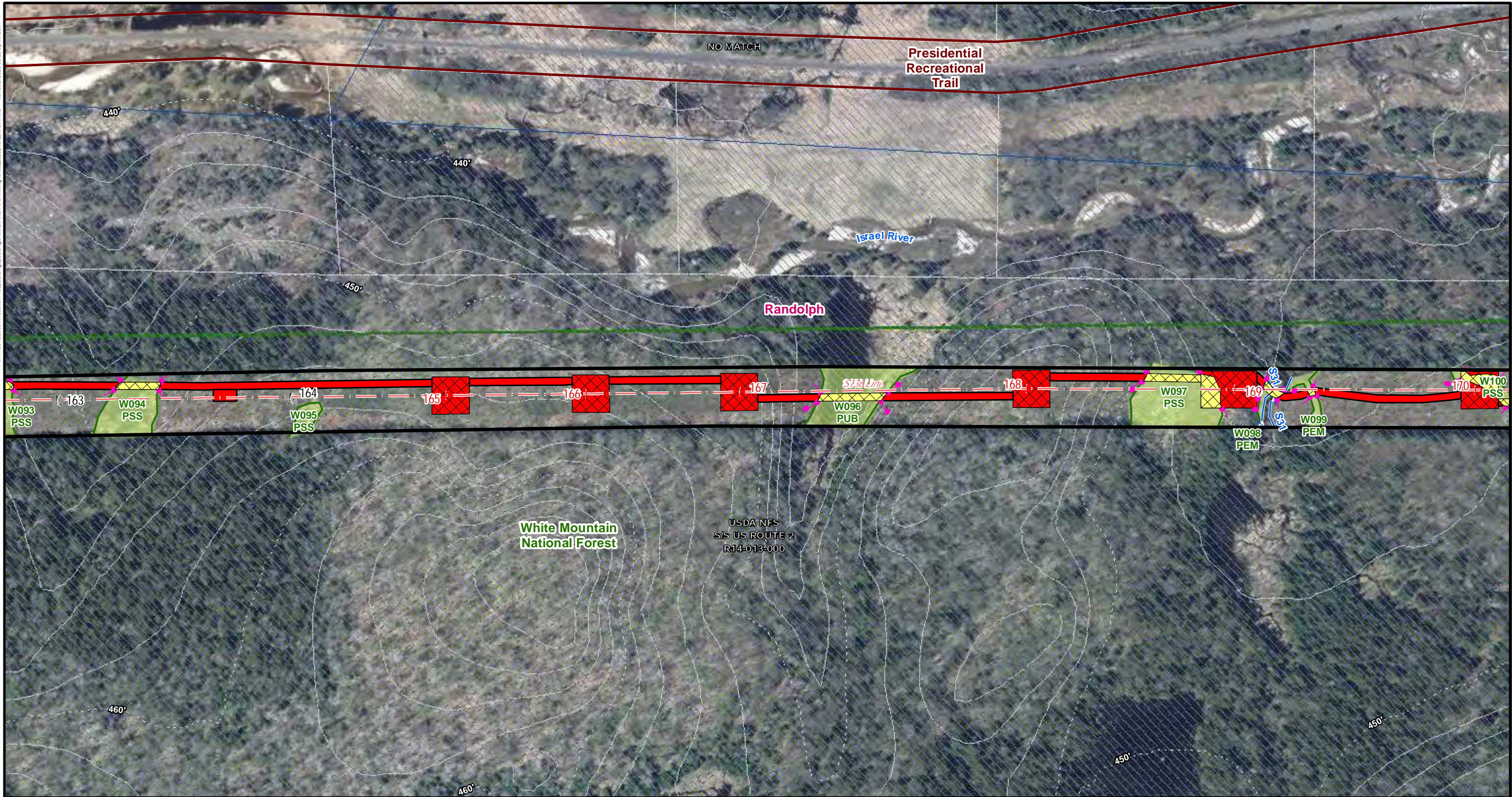
Map Sheet 4 of 10

EVERSOURCE ENERGY

Stantec

March 23, 2020

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|--|--|--------------------------------|---|
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| Wellhead Protection Areas (none) | Water Supply Intake Protection Areas (none) | Eversource Fee-Owned Property | --- Delineated Intermittent Stream |
| Class A Surface Waters RSA 485A9 (none) | Watersheds with Chloride Impairments 2016 (none) | State-Owned Property | --- Delineated Perennial Stream |
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2020 S136 Line Alteration of Terrain Water Resource Plans

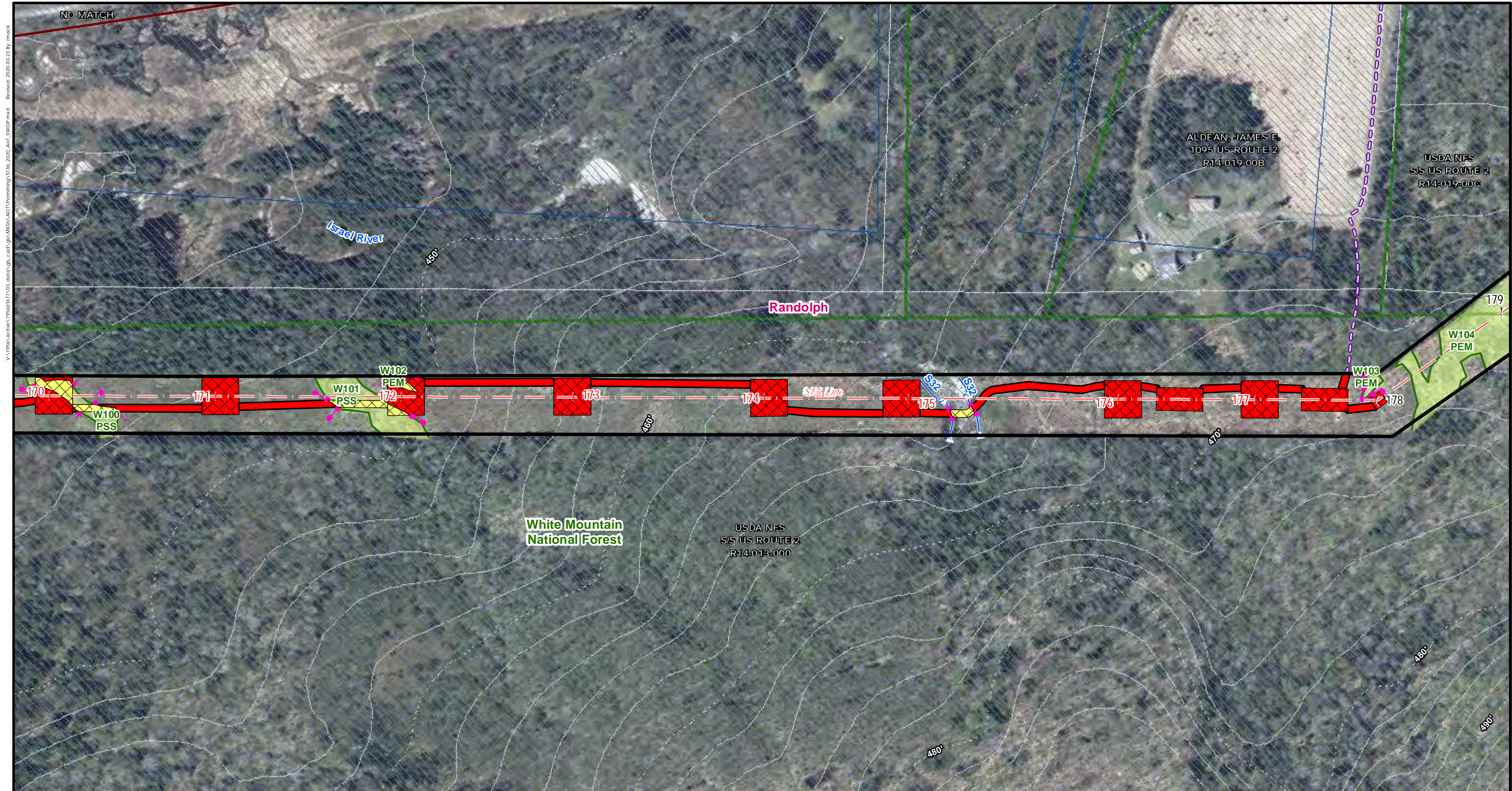
Randolph, New Hampshire

Map Sheet 5 of 10

EVERSOURCE ENERGY

Stantec

March 23, 2020



Legend

| | | | |
|--|--|--------------------------------|-------------------------------------|
| # Local Potential Contamination Sources (none) | Surface Waters with Impairments 2016 with Quarter Mile Buffer (none) | Temporary Construction Matting | Potential Vernal Pool |
| Wellhead Protection Areas (none) | Water Supply Intake Protection Areas (none) | Eversource Fee-Owned Property | Delineated Intermittent Stream |
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| Groundwater Classification Areas GA2 (none) | Existing Right-of-Way (ROW) | FEMA 100-Year Flood Zone | |
| Groundwater Classification Areas GAA (none) | Proposed Alternate Access | Floodway | |
| All Lakes with a Quarter Mile Buffer | Erosion and Sediment Control (TYP) | [=] Fence | |
| Class A Surface Waters RSA 485A9 Lakes Only Quarter Mile Buffer (none) | AoT Disturbance Area - New Access/Turnout | - - - 10' Contour | |
| Outstanding Resource Water Watersheds | AoT Disturbance Area - Pad | - - - 2' Contour | |

Map Notes:
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 Notes: Wetland boundaries delineated by Stantec in 2016 in accordance with USACE Wetland Delineation Manual (1987) or subsequent versions. Wetland and vernal pool boundaries were located utilizing a Trimble Geo-XH GeoExplorer 6000 Series Receiver. Expected accuracy of GPS data is within 1 meter of actual position.
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 Basemap: 2015 aerial imagery provided by NH GRANIT.

Scale: 1 inch = 200 feet (At page size of 11"x17")

2020 S136 Line Alteration of Terrain Water Resource Plans

Randolph, New Hampshire

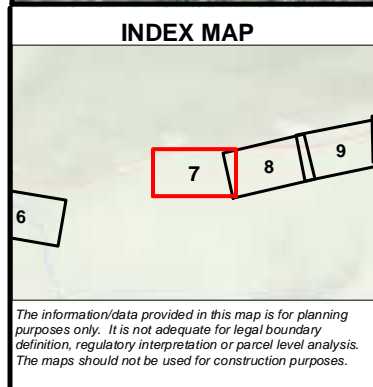
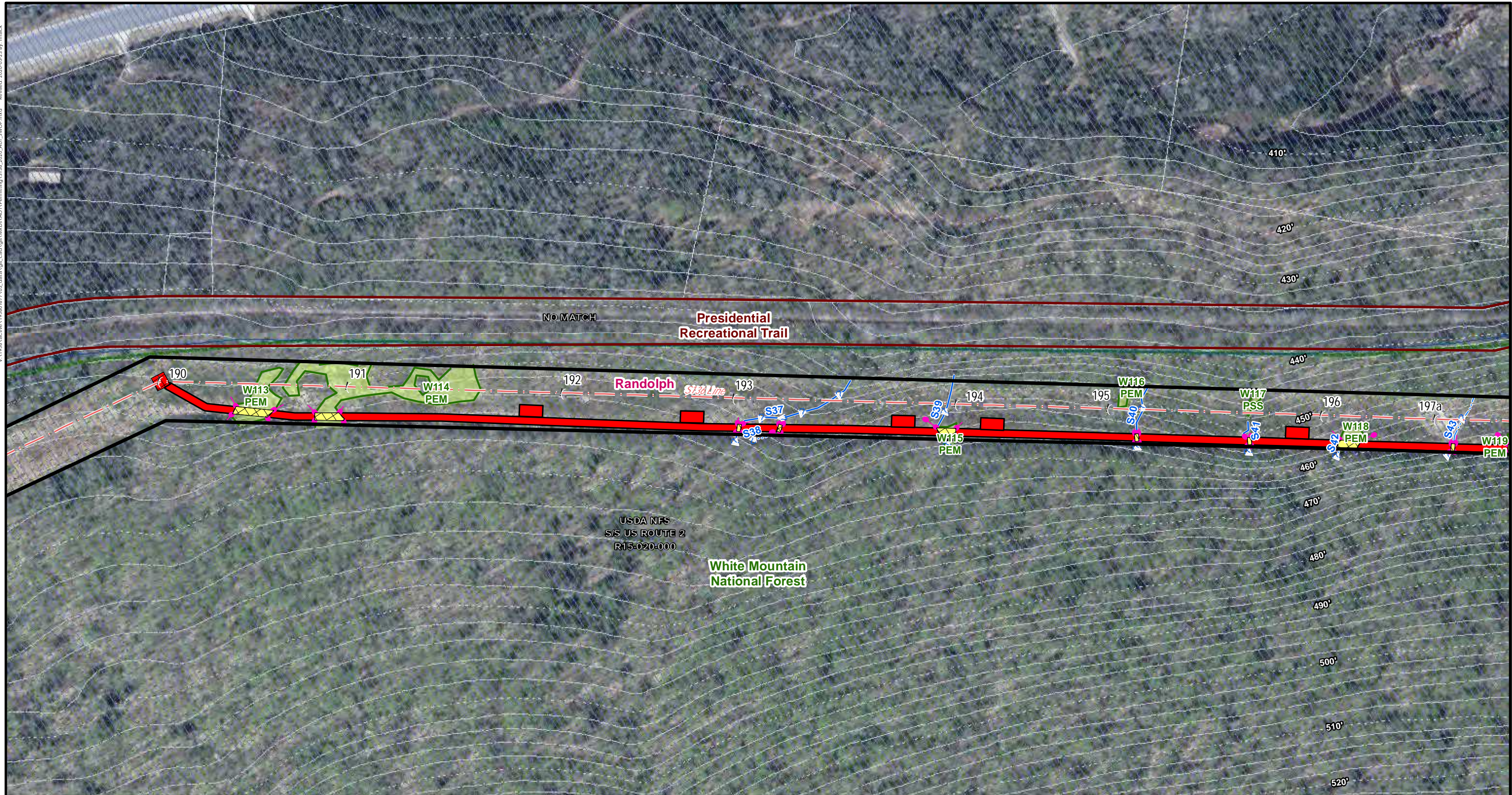
Map Sheet 6 of 10

EVERSOURCE ENERGY

Stantec

March 23, 2020

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 Revised: 2020-02-23 By: jmbck



Legend

| | | | |
|--|--|--------------------------------|------------------------------------|
| # Local Potential Contamination Sources (none) | Surface Waters with Impairments 2016 with Quarter Mile Buffer (none) | Temporary Construction Matting | J Potential Vernal Pool |
| Wellhead Protection Areas (none) | Water Supply Intake Protection Areas (none) | Eversource Fee-Owned Property | Delimited Intermittent Stream |
| Class A Surface Waters RSA 485A9 (none) | Watersheds with Chloride Impairments 2016 (none) | State-Owned Property | Delimited Perennial Stream |
| Coastal and Great Bay Region Communities (none) | Proposed Structure | Parcel Boundary | Delimited Wetland Boundary Outline |
| Designated Rivers Quartermile Buffer (none) | Existing Structure | Municipal Boundary | Field Delineated Wetland |
| Groundwater Classification Areas GA1 (none) | Overhead Eversource Line | US National Forest Lands | H Culvert |
| Groundwater Classification Areas GA2 (none) | Existing Right-of-Way (ROW) | FEMA 100-Year Flood Zone | |
| Groundwater Classification Areas GAA (none) | Proposed Alternate Access | Floodway | |
| All Lakes with a Quarter Mile Buffer | Erosion and Sediment Control (TYP) | [=] Fence | |
| Class A Surface Waters RSA 485A9 Lakes Only Quarter Mile Buffer (none) | AoT Disturbance Area - New Access/Turnout | - - - 10' Contour | |
| Outstanding Resource Water Watersheds | AoT Disturbance Area - Pad | - - - 2' Contour | |

0 200 Feet
 1 inch = 200 feet (At page size of 11"x17")

Map Notes:
 Coordinate System: NAD 1983 StatePlane New Hampshire FIPS 2800 Feet
 Notes: Wetland boundaries delineated by Stantec in 2016 in accordance with USACE Wetland Delineation Manual (1987) or subsequent versions. Wetland and vernal pool boundaries were located utilizing a Trimble Geo-XH GeoExplorer 6000 Series Receiver. Expected accuracy of GPS data is within 1 meter of actual position.
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 Basemap: 2015 aerial imagery provided by NH GRANIT.

2020 S136 Line Alteration of Terrain Water Resource Plans

Randolph, New Hampshire

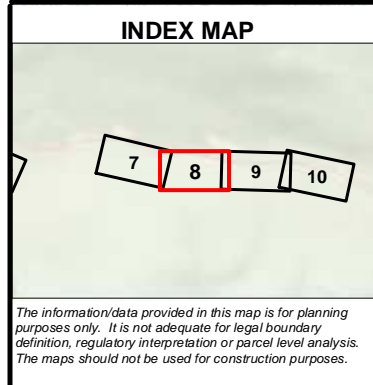
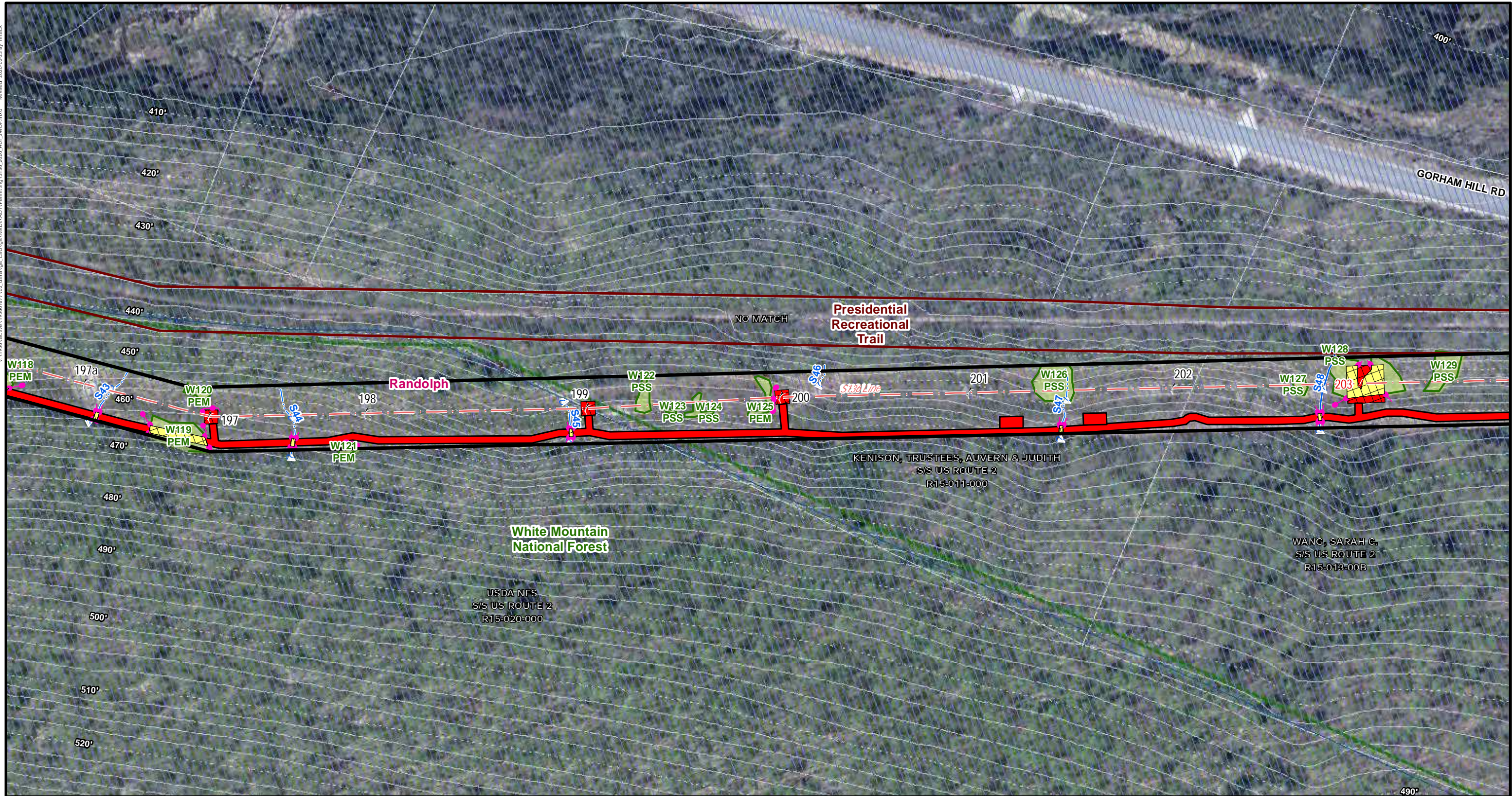
Map Sheet 7 of 10

EVERSOURCE ENERGY

Stantec

March 23, 2020

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 Revised: 2020-03-23 By: jmacck



Legend

| | | | |
|--|--|--------------------------------|---------------------------------------|
| # Local Potential Contamination Sources (none) | Surface Waters with Impairments 2016 with Quarter Mile Buffer (none) | Temporary Construction Matting | J Potential Vernal Pool |
| Wellhead Protection Areas (none) | Water Supply Intake Protection Areas (none) | Eversource Fee-Owned Property | ?-.- Delineated Intermittent Stream |
| Class A Surface Waters RSA 485A9 (none) | Watersheds with Chloride Impairments 2016 (none) | State-Owned Property | ?- Delineated Perennial Stream |
| Coastal and Great Bay Region Communities (none) | Proposed Structure | Parcel Boundary | - Delineated Wetland Boundary Outline |
| Designated Rivers Quartermile Buffer (none) | Existing Structure | Municipal Boundary | - Field Delineated Wetland |
| Groundwater Classification Areas GA1 (none) | Overhead Eversource Line | US National Forest Lands | H Culvert |
| Groundwater Classification Areas GA2 (none) | Existing Right-of-Way (ROW) | FEMA 100-Year Flood Zone | |
| Groundwater Classification Areas GAA (none) | Proposed Alternate Access | Floodway | |
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| Class A Surface Waters RSA 485A9 Lakes Only Quarter Mile Buffer (none) | AoT Disturbance Area - New Access/Turnout | - - - 10' Contour | |
| Outstanding Resource Water Watersheds | AoT Disturbance Area - Pad | - - - 2' Contour | |

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Scale: 1 inch = 200 feet (At page size of 11"x17")

**2020 S136 Line
 Alteration of Terrain
 Water Resource Plans**

**Randolph,
 New Hampshire**

Map Sheet 8 of 10

EVERSOURCE ENERGY

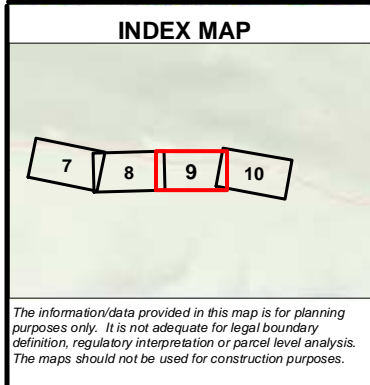
Stantec

March 23, 2020

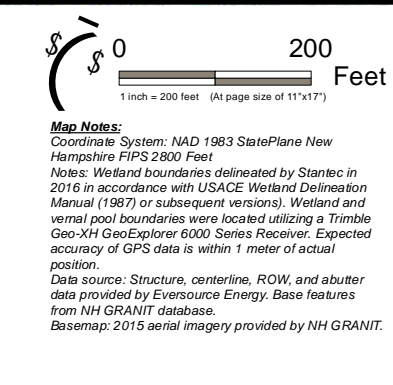
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 Revised: 2020.03.23 By: jmacck



USDA-NFS
 S/S US ROUTE 2
 R16-001-000
White Mountain National Forest



| Legend | |
|--|--|
| # Local Potential Contamination Sources (none) | Surface Waters with Impairments 2016 with Quarter Mile Buffer (none) |
| Wellhead Protection Areas (none) | Water Supply Intake Protection Areas (none) |
| Class A Surface Waters RSA 485A9 (none) | Watersheds with Chloride Impairments 2016 (none) |
| Coastal and Great Bay Region Communities (none) | Proposed Structure |
| Designated Rivers Quartermile Buffer (none) | Existing Structure |
| Groundwater Classification Areas GA1 (none) | Overhead Eversource Line |
| Groundwater Classification Areas GA2 (none) | Existing Right-of-Way (ROW) |
| Groundwater Classification Areas GAA (none) | Proposed Alternate Access |
| All Lakes with a Quarter Mile Buffer | Erosion and Sediment Control (TYP) |
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| Outstanding Resource Water Watersheds | AoT Disturbance Area - Pad |
| Temporary Construction Matting | Eversource Fee-Owned Property |
| Fence | State-Owned Property |
| 10' Contour | Parcel Boundary |
| 2' Contour | Municipal Boundary |
| | US National Forest Lands |
| | FEMA 100-Year Flood Zone |
| | Floodway |
| | Potential Vernal Pool |
| | Delineated Intermittent Stream |
| | Delineated Perennial Stream |
| | Delineated Wetland Boundary Outline |
| | Field Delineated Wetland |
| | Culvert |



2020 S136 Line Alteration of Terrain Water Resource Plans

Randolph, New Hampshire

Map Sheet 9 of 10

EVERSOURCE ENERGY

 March 23, 2020

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INDEX MAP

The information/data provided in this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation or parcel level analysis. The maps should not be used for construction purposes.

Legend

| | | | |
|--|--|--------------------------------|-------------------------------------|
| # Local Potential Contamination Sources (none) | Surface Waters with Impairments 2016 with Quarter Mile Buffer (none) | Temporary Construction Matting | Potential Vernal Pool |
| Wellhead Protection Areas (none) | Water Supply Intake Protection Areas (none) | Eversource Fee-Owned Property | Delineated Intermittent Stream |
| Class A Surface Waters RSA 485A9 (none) | Watersheds with Chloride Impairments 2016 (none) | State-Owned Property | Delineated Perennial Stream |
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| Outstanding Resource Water Watersheds | AoT Disturbance Area - Pad | — 2' Contour | |

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Map Notes:
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 Basemap: 2015 aerial imagery provided by NH GRANIT.

**2020 S136 Line
Alteration of Terrain
Water Resource Plans**

**Randolph,
New Hampshire**

Map Sheet 10 of 10

EVERSOURCE ENERGY

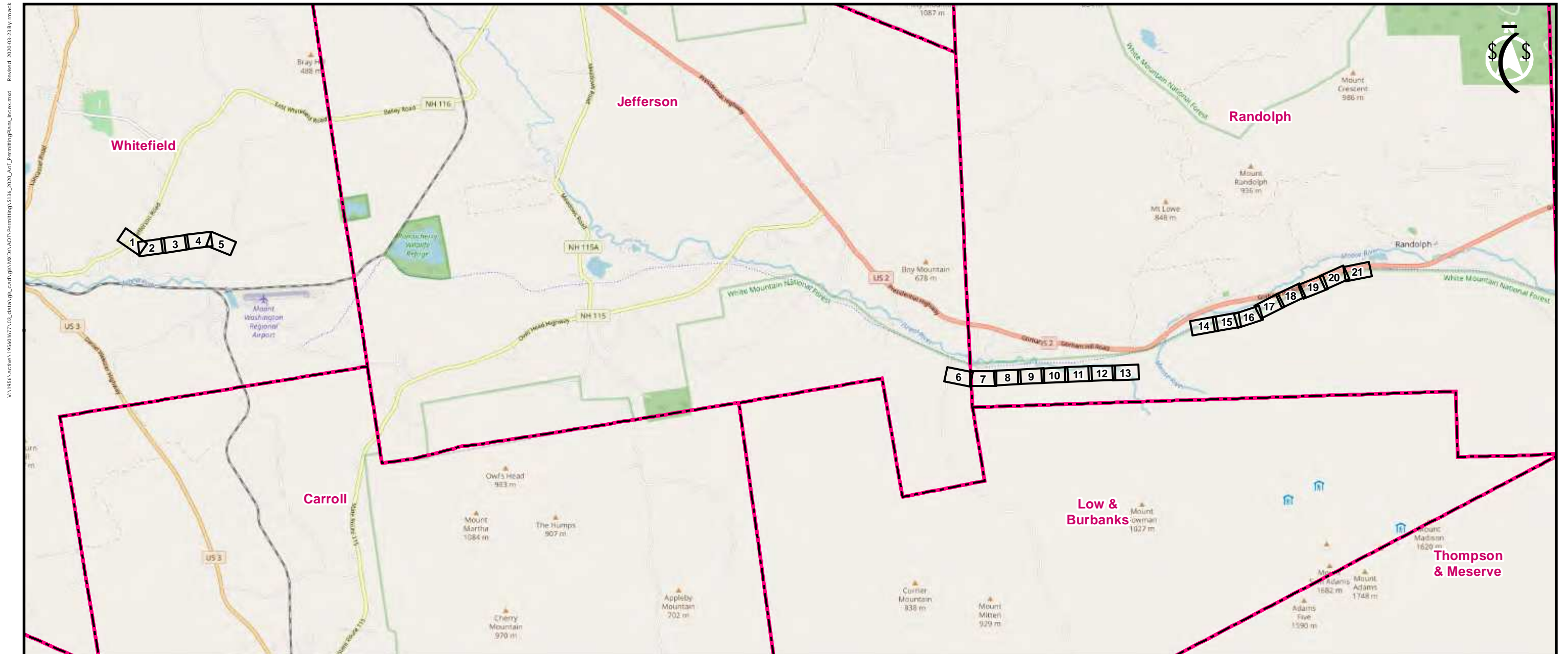
Stantec

March 23, 2020

2020 S136 Line Structure Replacement

Alteration of Terrain Permitting Plans
Whitefield, Jefferson, and Randolph,
New Hampshire

Date: March 23, 2020



INDEX OF FIGURES

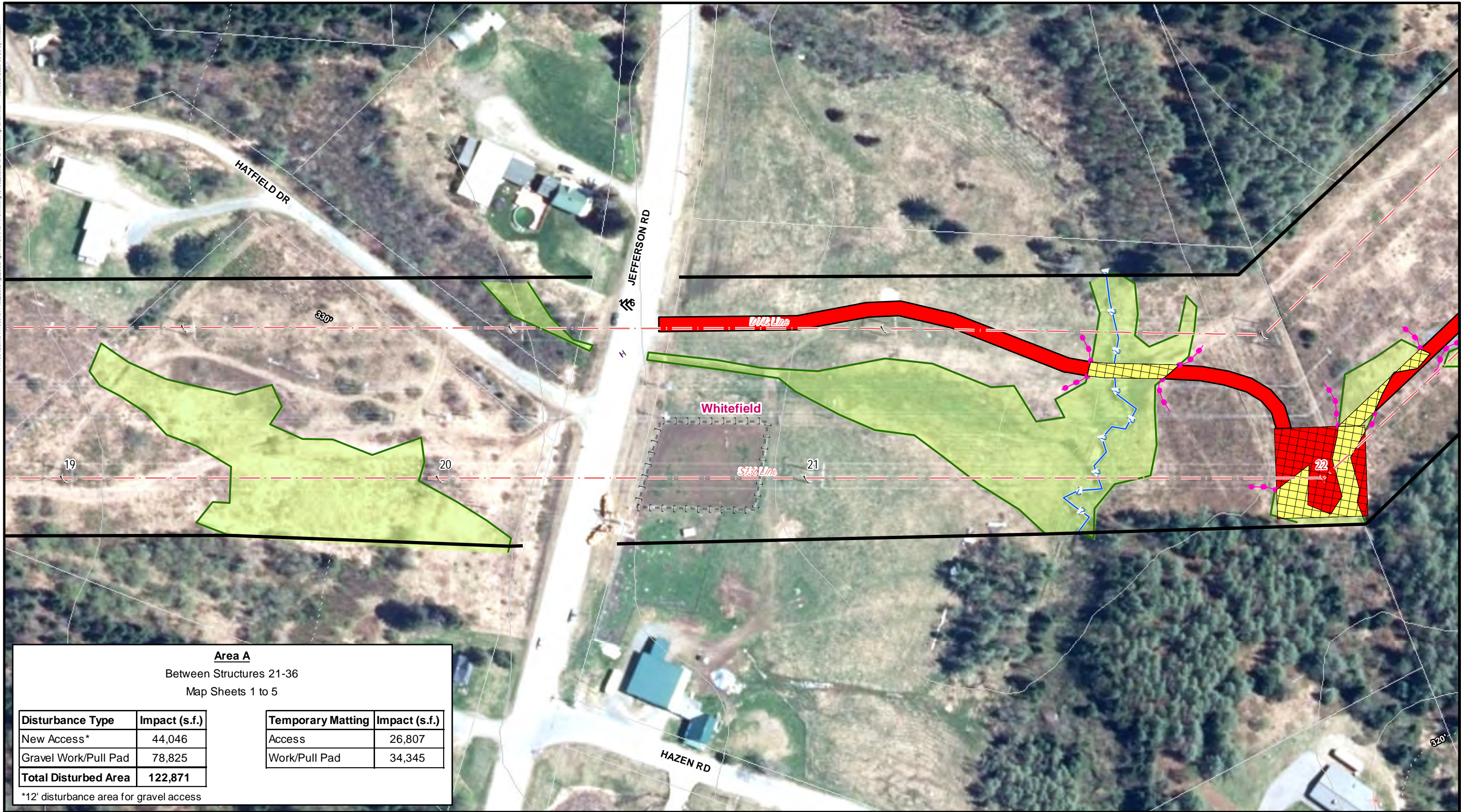
- Title Sheet
- 1 - 21 Map Sheets
- Notes
- Details

PREPARED FOR
EVERSOURCE
ENERGY

PREPARED BY
 **Stantec**

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Area A

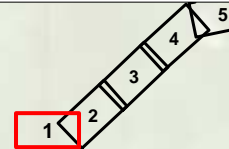
Between Structures 21-36
Map Sheets 1 to 5

| Disturbance Type | Impact (s.f.) |
|-----------------------------|----------------|
| New Access* | 44,046 |
| Gravel Work/Pull Pad | 78,825 |
| Total Disturbed Area | 122,871 |

| Temporary Matting | Impact (s.f.) |
|-------------------|---------------|
| Access | 26,807 |
| Work/Pull Pad | 34,345 |

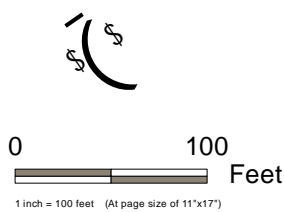
*12' disturbance area for gravel access

INDEX MAP



Legend

- ! Proposed Structure
- ! Existing Structure
- Overhead Eversource Line
- Existing Right-of-Way (ROW)
- Proposed Alternate Access
- Erosion and Sediment Control (TYP)
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- AoT Disturbance Area - Pad
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- Eversource Fee-Owned Property
- State-Owned Property
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- US National Forest Lands
- Fence
- 10' Contour
- 2' Contour
- H Culvert
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- ? Delineated Intermittent Stream
- ? Delineated Perennial Stream
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Map Notes:
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**2020 S136 Line
Alteration of Terrain
Permitting Plans**

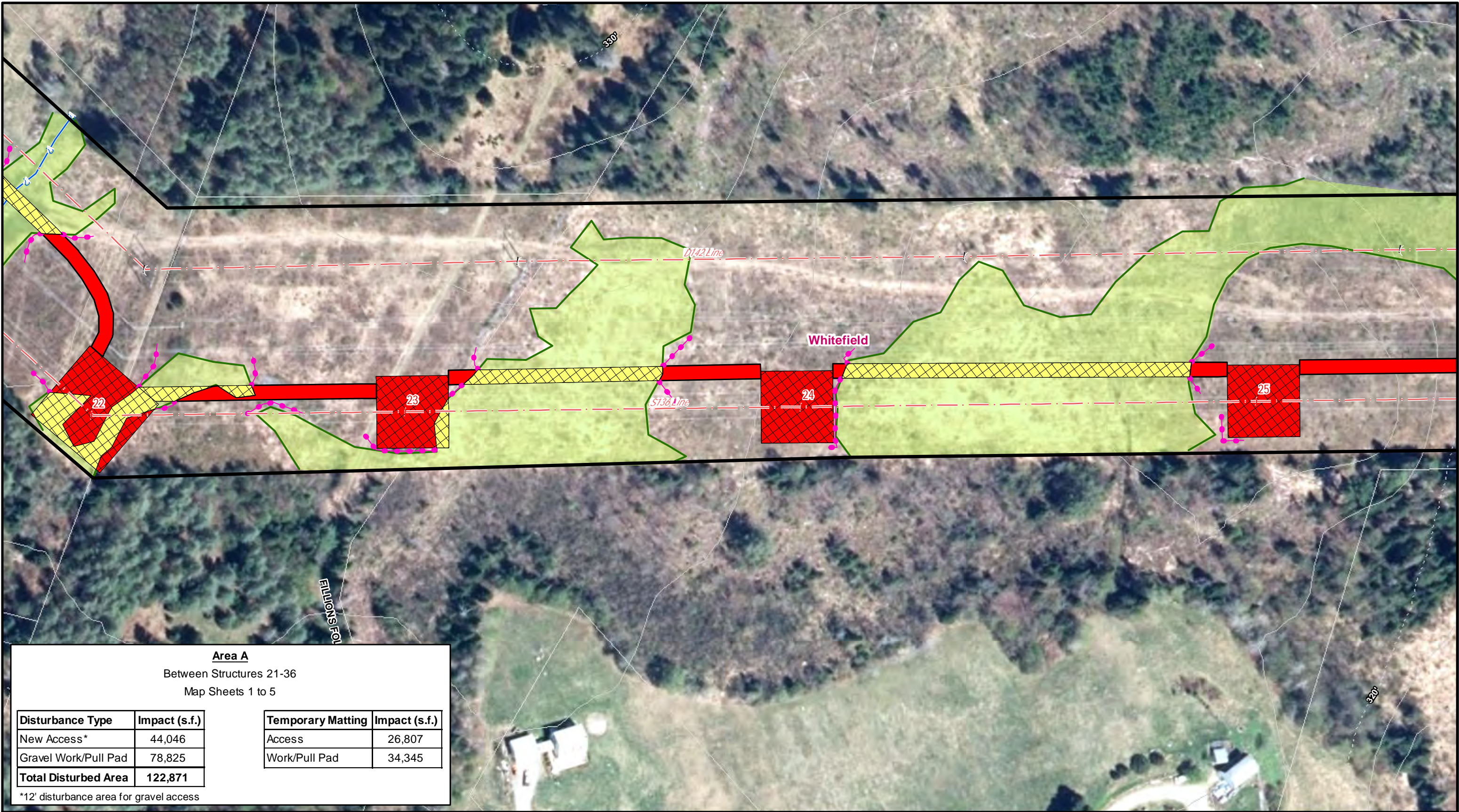
Whitefield,
New Hampshire

Map Sheet 1 of 21



March 23, 2020

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Area A

Between Structures 21-36

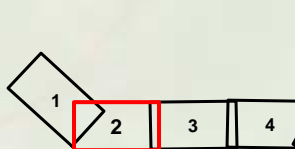
Map Sheets 1 to 5

| Disturbance Type | Impact (s.f.) |
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| New Access* | 44,046 |
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| Temporary Matting | Impact (s.f.) |
|-------------------|---------------|
| Access | 26,807 |
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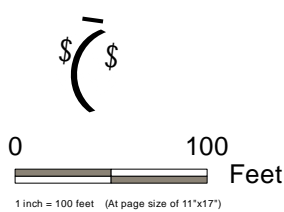
*12' disturbance area for gravel access

INDEX MAP



Legend

- ! Proposed Structure
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- [-] Fence
- - - 10' Contour
- - - 2' Contour
- H Culvert
- ⌋ Potential Vernal Pool
- ⋯ Delineated Intermittent Stream
- ⋯ Delineated Perennial Stream
- ⋯ Delineated Wetland Boundary Outline
- Field Delineated Wetland
- FEMA 100-Year Flood Zone
- ⌋ Floodway



Map Notes:
 Coordinate System: NAD 1983 StatePlane New Hampshire FIPS 2800 Feet
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**2020 S136 Line
 Alteration of Terrain
 Permitting Plans**

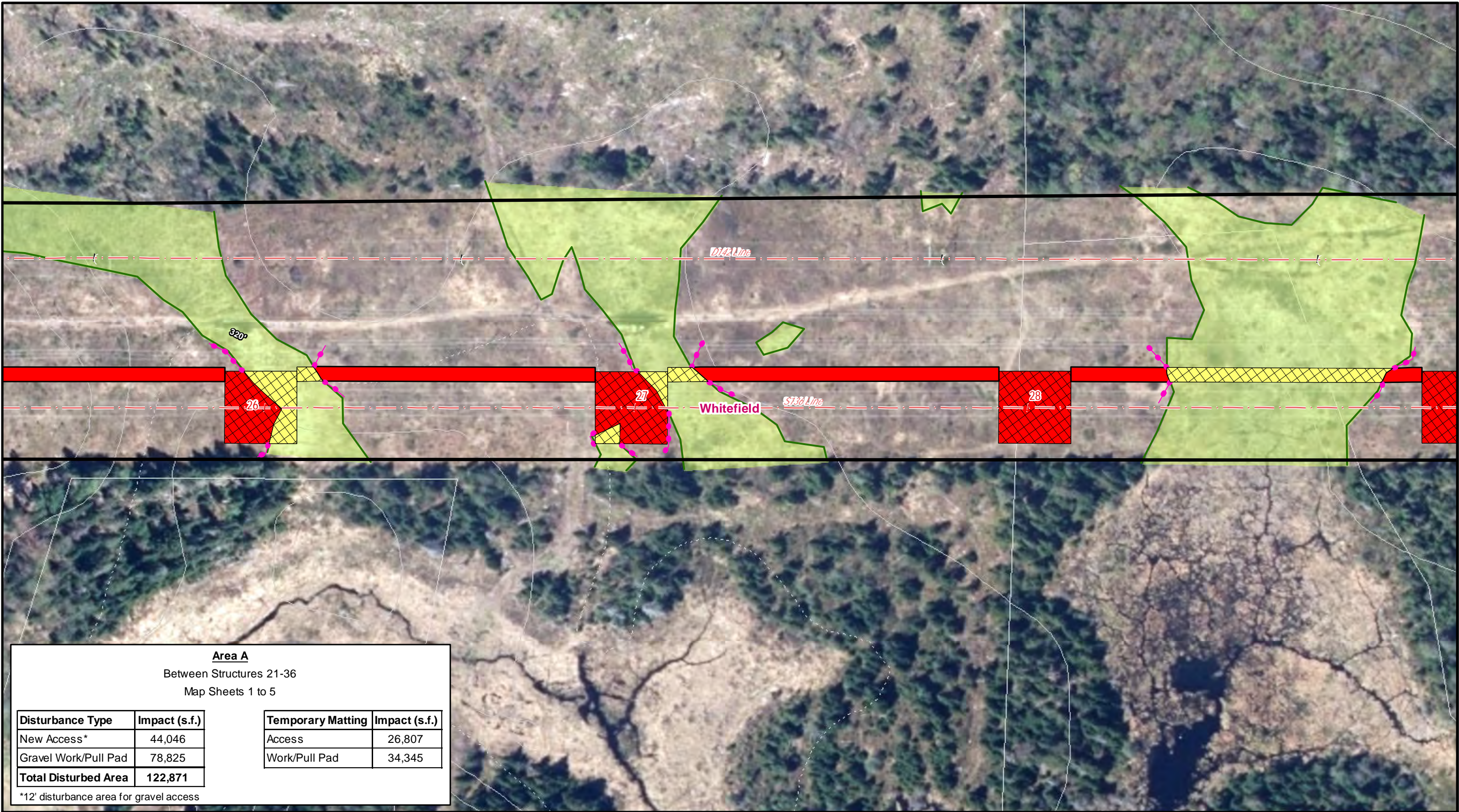
Whitefield,
 New Hampshire

Map Sheet 2 of 21



March 23, 2020

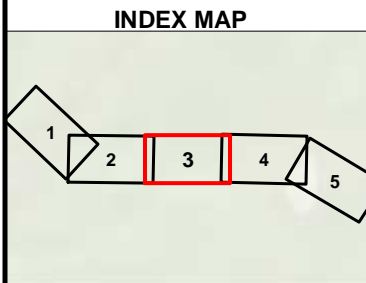
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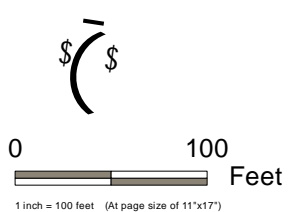
Area A
 Between Structures 21-36
 Map Sheets 1 to 5

| Disturbance Type | Impact (s.f.) | Temporary Matting | Impact (s.f.) |
|-----------------------------|----------------|-------------------|---------------|
| New Access* | 44,046 | Access | 26,807 |
| Gravel Work/Pull Pad | 78,825 | Work/Pull Pad | 34,345 |
| Total Disturbed Area | 122,871 | | |

*12' disturbance area for gravel access



- Legend**
- ! Proposed Structure
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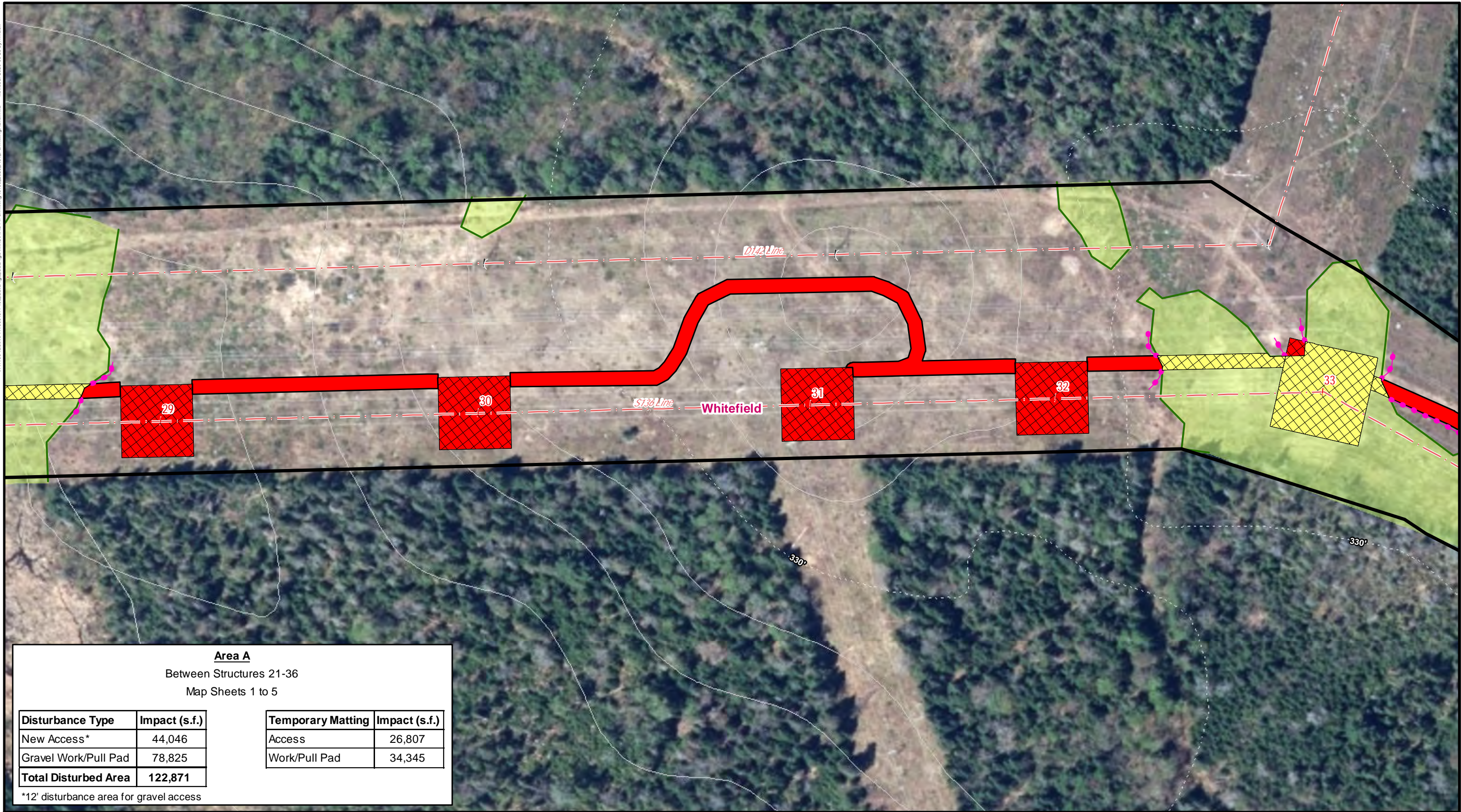
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**2020 S136 Line
 Alteration of Terrain
 Permitting Plans**
 Whitefield,
 New Hampshire
 Map Sheet 3 of 21

EVERSOURCE ENERGY

March 23, 2020

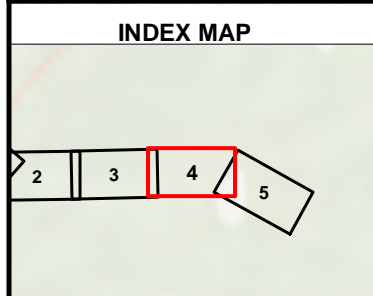
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 Revised: 2020.03.23 By: rmacck



Area A
Between Structures 21-36
Map Sheets 1 to 5

| Disturbance Type | Impact (s.f.) | Temporary Matting | Impact (s.f.) |
|-----------------------------|----------------|-------------------|---------------|
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*12' disturbance area for gravel access



Legend

| | | |
|---|--|---|
| <ul style="list-style-type: none"> ! Proposed Structure ! Existing Structure — Overhead Eversource Line — Existing Right-of-Way (ROW) — Proposed Alternate Access — Erosion and Sediment Control (TYP) AoT Disturbance Area - New Access/Turnout AoT Disturbance Area - Pad Temporary Construction Matting | <ul style="list-style-type: none"> Eversource Fee-Owned Property State-Owned Property Parcel Boundary Municipal Boundary US National Forest Lands Fence 10' Contour 2' Contour | <ul style="list-style-type: none"> H Culvert j Potential Vernal Pool ? Delineated Intermittent Stream ? Delineated Perennial Stream — Delineated Wetland Boundary Outline Field Delineated Wetland FEMA 100-Year Flood Zone / Floodway |
|---|--|---|

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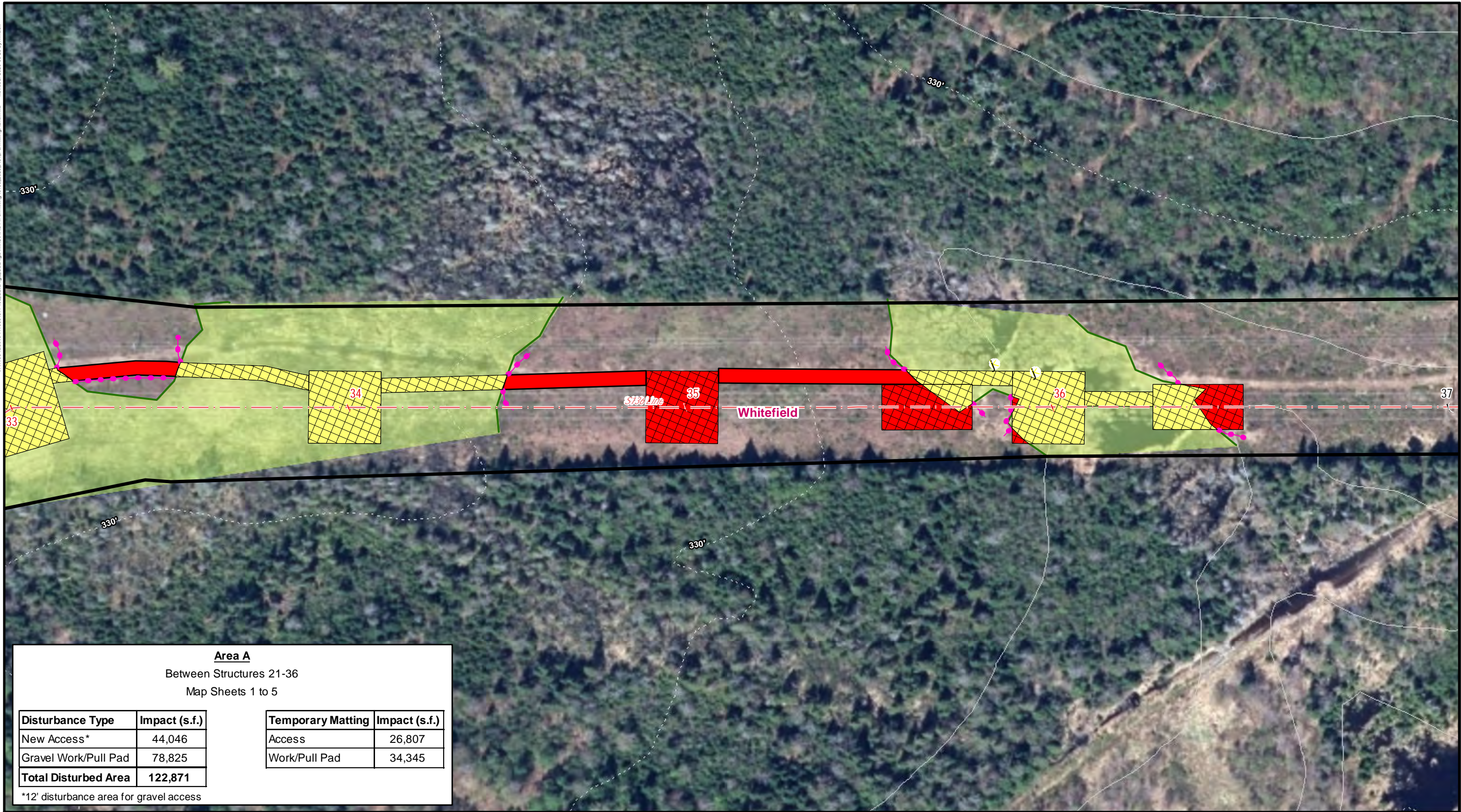
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**2020 S136 Line
 Alteration of Terrain
 Permitting Plans**
 Whitefield,
 New Hampshire
 Map Sheet 4 of 21

March 23, 2020

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Area A

Between Structures 21-36

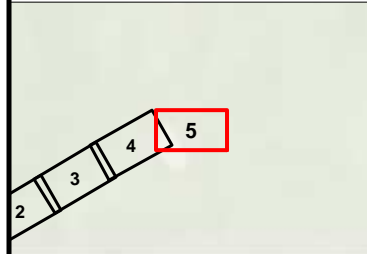
Map Sheets 1 to 5

| Disturbance Type | Impact (s.f.) |
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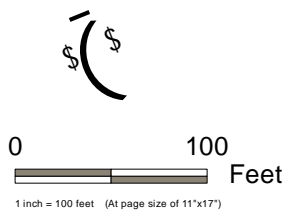
*12' disturbance area for gravel access

INDEX MAP



Legend

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**2020 S136 Line
 Alteration of Terrain
 Permitting Plans**

**Whitefield,
 New Hampshire**

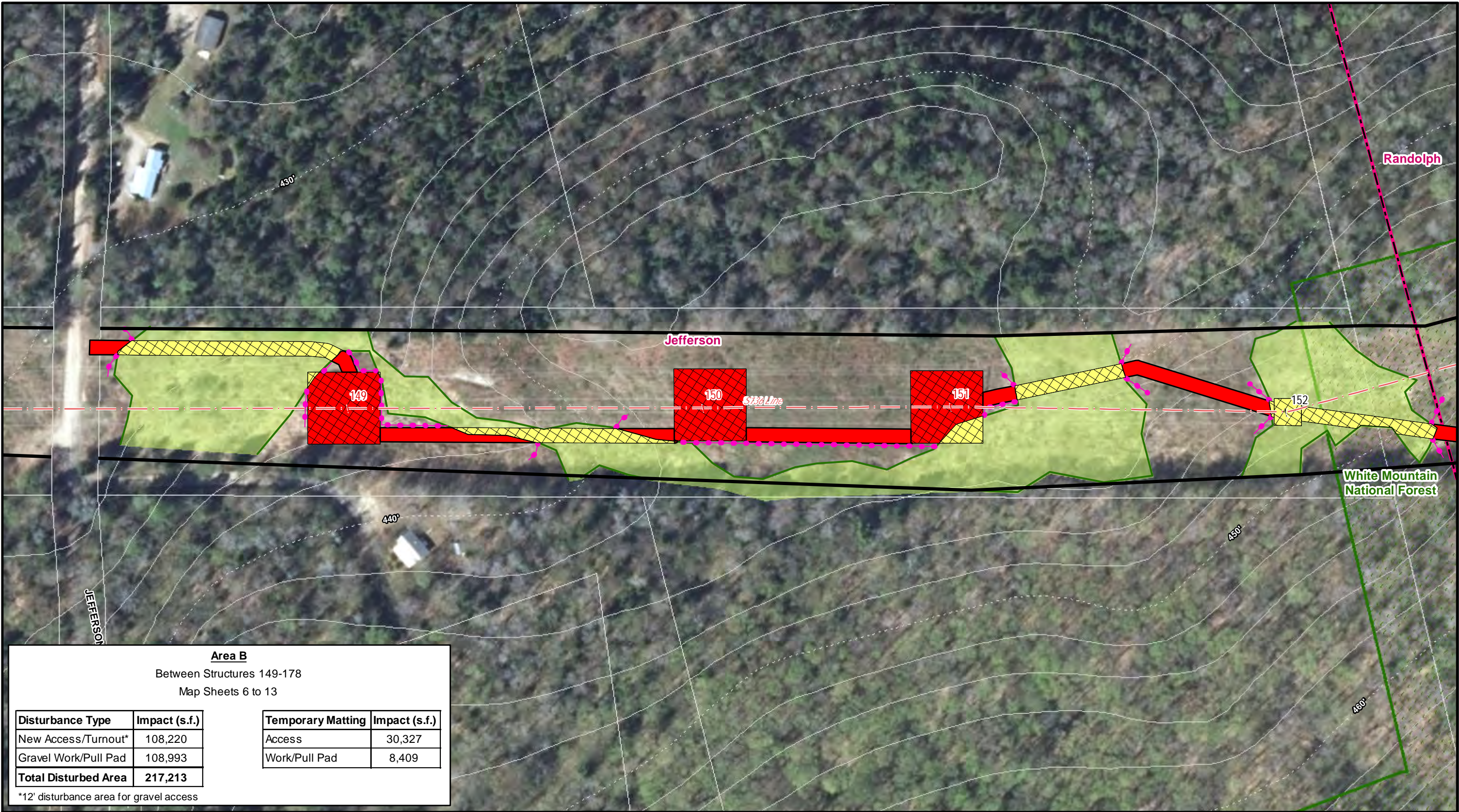
Map Sheet 5 of 21

**EVERSOURCE
 ENERGY**

Stantec

March 23, 2020

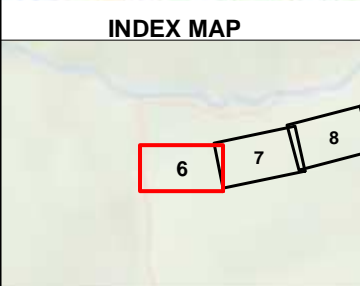
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Area B
 Between Structures 149-178
 Map Sheets 6 to 13

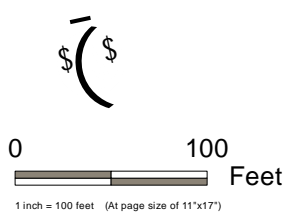
| Disturbance Type | Impact (s.f.) | Temporary Matting | Impact (s.f.) |
|-----------------------------|----------------|-------------------|---------------|
| New Access/Turnout* | 108,220 | Access | 30,327 |
| Gravel Work/Pull Pad | 108,993 | Work/Pull Pad | 8,409 |
| Total Disturbed Area | 217,213 | | |

*12' disturbance area for gravel access



Legend

| | | |
|---|--|--|
| <ul style="list-style-type: none"> ! Proposed Structure ! Existing Structure - Overhead Eversource Line - Existing Right-of-Way (ROW) - Proposed Alternate Access • Erosion and Sediment Control (TYP) ■ AoT Disturbance Area - New Access/Turnout ■ AoT Disturbance Area - Pad ■ Temporary Construction Matting | <ul style="list-style-type: none"> ■ Eversource Fee-Owned Property ■ State-Owned Property □ Parcel Boundary ■ Municipal Boundary ■ US National Forest Lands [-] Fence - - - 10' Contour - - - 2' Contour | <ul style="list-style-type: none"> H Culvert ⌋ Potential Vernal Pool ⋯ Delineated Intermittent Stream ⋯ Delineated Perennial Stream — Delineated Wetland Boundary Outline ■ Field Delineated Wetland ■ FEMA 100-Year Flood Zone ⌋ Floodway |
|---|--|--|



Map Notes:
 Coordinate System: NAD 1983 StatePlane New Hampshire FIPS 2800 Feet
 Notes: Wetland boundaries delineated by Stantec in 2016 in accordance with USACE Wetland Delineation Manual (1987) or subsequent versions. Wetland and vernal pool boundaries were located utilizing a Trimble Geo-XH GeoExplorer 6000 Series Receiver. Expected accuracy of GPS data is within 1 meter of actual position.
 Data source: Structure, centerline, ROW, and abutter data provided by Eversource Energy. Base features from NH GRANIT database. Basemap: 2015 aerial imagery provided by NH GRANIT.

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**2020 S136 Line
 Alteration of Terrain
 Permitting Plans**

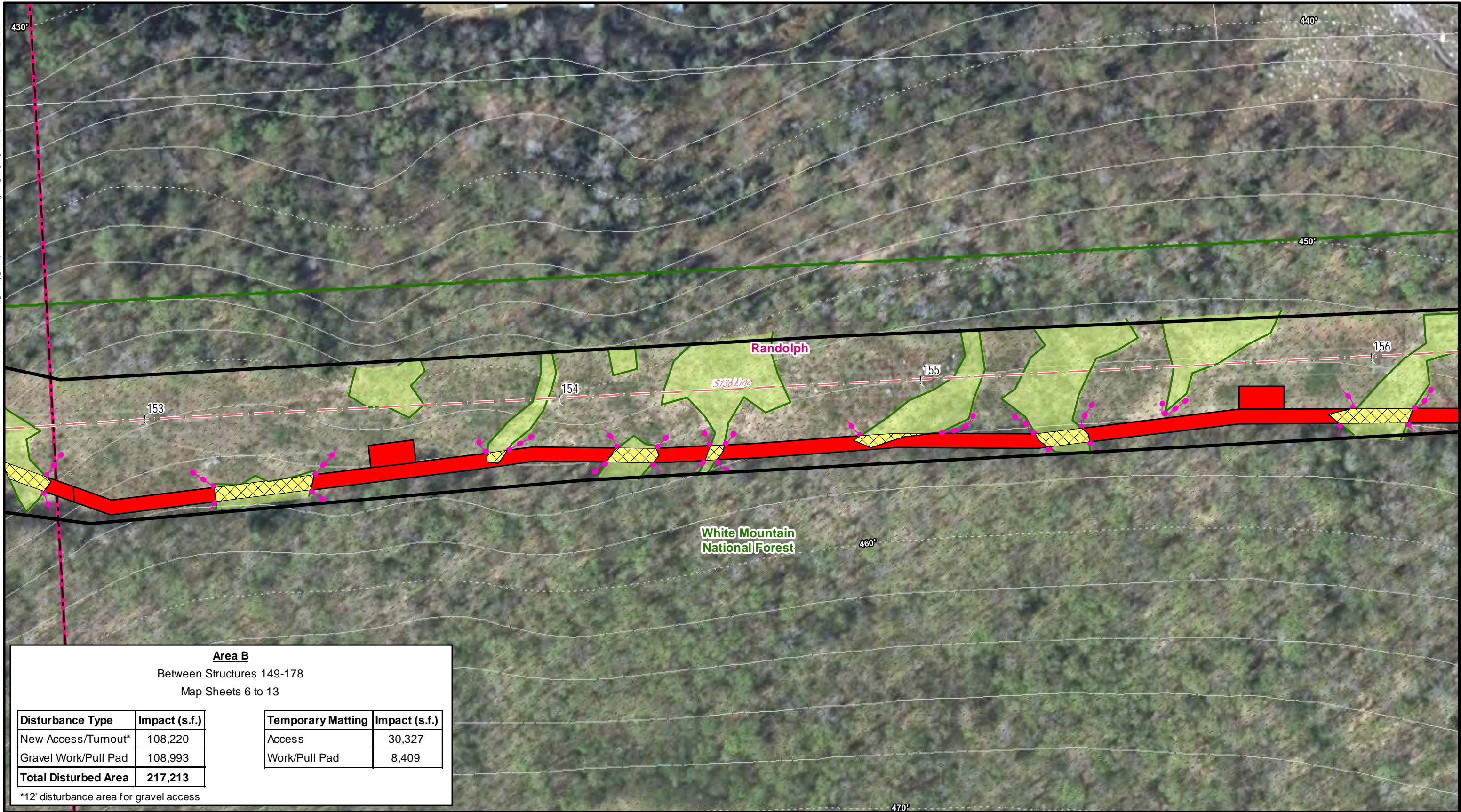
**Jefferson,
 New Hampshire**

Map Sheet 6 of 21

EVERSOURCE ENERGY

March 23, 2020

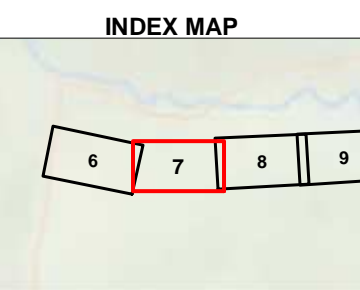
V:\1984\active\19840717\03_data\gk_cad\gk\AKD\AO\Permitting\314_2020_AoT_PermittingPlan.mxd Revised: 2020-03-23 By: jmacck



Area B
Between Structures 149-178
Map Sheets 6 to 13

| Disturbance Type | Impact (s.f.) | Temporary Matting | Impact (s.f.) |
|-----------------------------|----------------|-------------------|---------------|
| New Access/Turnout* | 108,220 | Access | 30,327 |
| Gravel Work/Pull Pad | 108,993 | Work/Pull Pad | 8,409 |
| Total Disturbed Area | 217,213 | | |

*12' disturbance area for gravel access



Legend

| | | | |
|---|--|---|--|
| <ul style="list-style-type: none"> ! Proposed Structure ! Existing Structure - Overhead Eversource Line - Existing Right-of-Way (ROW) - Proposed Alternate Access - Erosion and Sediment Control (TYP) ■ AoT Disturbance Area - New Access/Turnout ■ AoT Disturbance Area - Pad ■ Temporary Construction Matting | <ul style="list-style-type: none"> Eversource Fee-Owned Property State-Owned Property Parcel Boundary Municipal Boundary US National Forest Lands Fence 10' Contour 2' Contour | <ul style="list-style-type: none"> H Culvert j Potential Vernal Pool ? Delineated Intermittent Stream ? Delineated Perennial Stream - Delineated Wetland Boundary Outline ■ Field Delineated Wetland ■ FEMA 100-Year Flood Zone / Floodway | <div style="text-align: center;"> </div> <div style="text-align: center;"> <p>1 inch = 100 feet (At page size of 11"x17")</p> </div> |
|---|--|---|--|

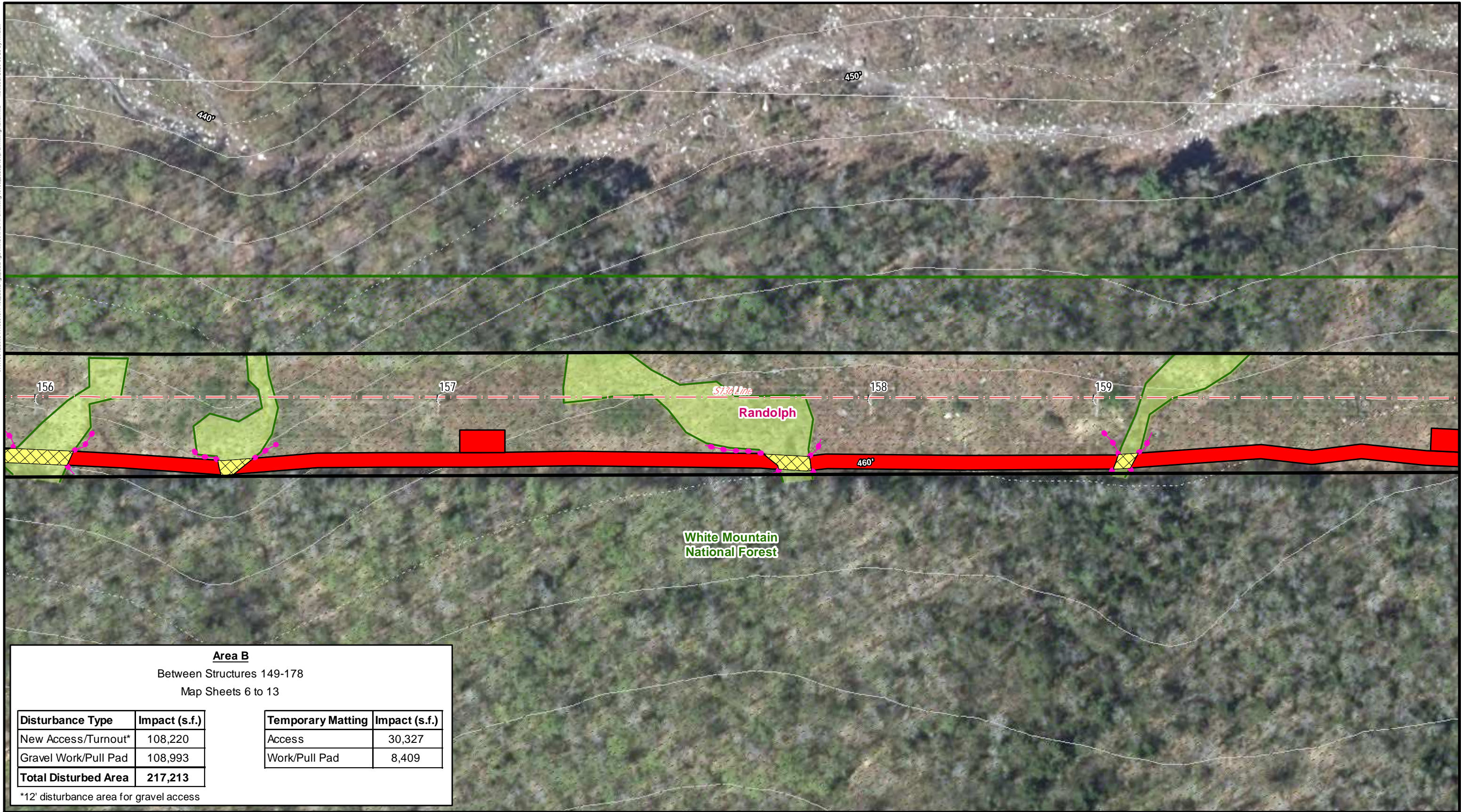
Map Notes:
 Coordinate System: NAD 1983 StatePlane New Hampshire FIPS 2800 Feet
 Notes: Wetland boundaries delineated by Stantec in 2016 in accordance with USACE Wetland Delineation Manual (1987) or subsequent versions. Wetland and vernal pool boundaries were located utilizing a Trimble Geo-XH GeoExplorer 6000 Series Receiver. Expected accuracy of GPS data is within 1 meter of actual position.
 Data source: Structure, centerline, ROW, and abutter data provided by Eversource Energy. Base features from NH GRANIT database. Basemap: 2015 aerial imagery provided by NH GRANIT.

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**2020 S136 Line
 Alteration of Terrain
 Permitting Plans**
 Randolph,
 New Hampshire
 Map Sheet 7 of 21

March 23, 2020

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 Revised: 2020.03.23 By: imack

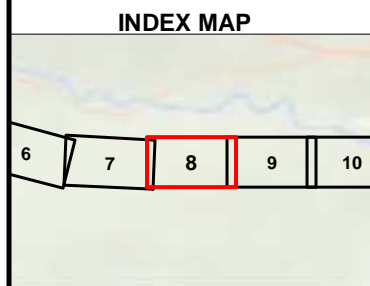


Area B
 Between Structures 149-178
 Map Sheets 6 to 13

| Disturbance Type | Impact (s.f.) |
|-----------------------------|----------------|
| New Access/Turnout* | 108,220 |
| Gravel Work/Pull Pad | 108,993 |
| Total Disturbed Area | 217,213 |

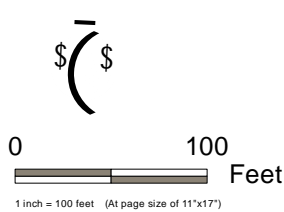
| Temporary Matting | Impact (s.f.) |
|-------------------|---------------|
| Access | 30,327 |
| Work/Pull Pad | 8,409 |

*12' disturbance area for gravel access



Legend

- ! Proposed Structure
- ! Existing Structure
- Overhead Eversource Line
- Existing Right-of-Way (ROW)
- Proposed Alternate Access
- Erosion and Sediment Control (TYP)
- AoT Disturbance Area - New Access/Turnout
- AoT Disturbance Area - Pad
- Temporary Construction Matting
- Eversource Fee-Owned Property
- State-Owned Property
- Parcel Boundary
- Municipal Boundary
- US National Forest Lands
- Fence
- 10' Contour
- 2' Contour
- H Culvert
- j Potential Vernal Pool
- ? Delineated Intermittent Stream
- ? Delineated Perennial Stream
- Delineated Wetland Boundary Outline
- Field Delineated Wetland
- FEMA 100-Year Flood Zone
- Floodway



Map Notes:
 Coordinate System: NAD 1983 StatePlane New Hampshire FIPS 2800 Feet
 Notes: Wetland boundaries delineated by Stantec in 2016 in accordance with USACE Wetland Delineation Manual (1987) or subsequent versions. Wetland and vernal pool boundaries were located utilizing a Trimble Geo-XH GeoExplorer 6000 Series Receiver. Expected accuracy of GPS data is within 1 meter of actual position.
 Data source: Structure, centerline, ROW, and abutter data provided by Eversource Energy. Base features from NH GRANIT database. Basemap: 2015 aerial imagery provided by NH GRANIT.

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**2020 S136 Line
 Alteration of Terrain
 Permitting Plans**

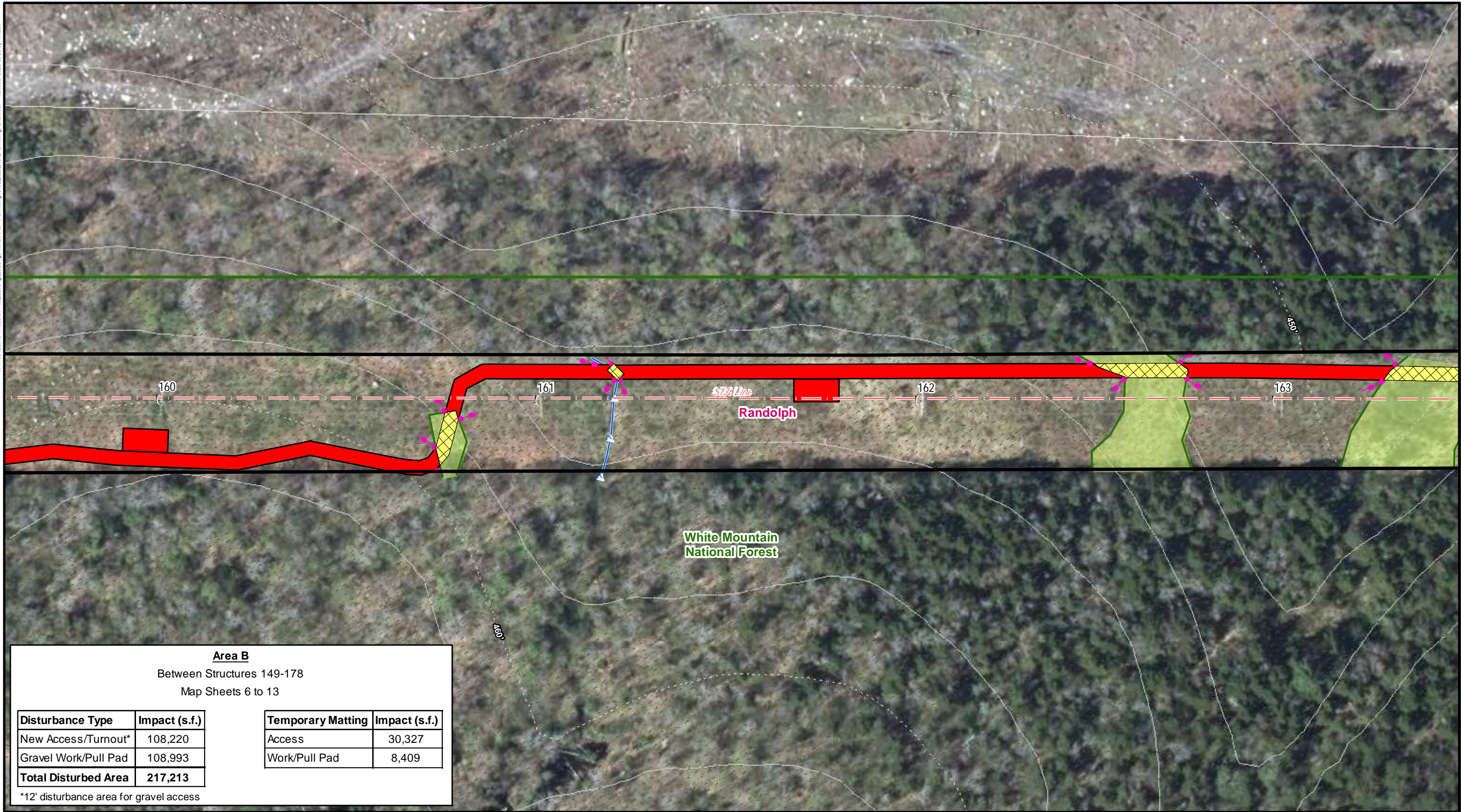
**Randolph,
 New Hampshire**

Map Sheet 8 of 21



March 23, 2020

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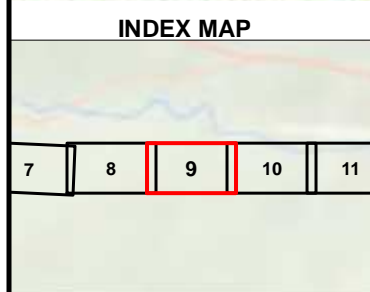


Area B
Between Structures 149-178
Map Sheets 6 to 13

| Disturbance Type | Impact (s.f.) |
|-----------------------------|----------------|
| New Access/Turnout* | 108,220 |
| Gravel Work/Pull Pad | 108,993 |
| Total Disturbed Area | 217,213 |

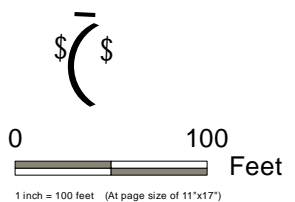
| Temporary Matting | Impact (s.f.) |
|-------------------|---------------|
| Access | 30,327 |
| Work/Pull Pad | 8,409 |

*12' disturbance area for gravel access



Legend

| | | |
|---|--|--|
| <ul style="list-style-type: none"> ! Proposed Structure ! Existing Structure - Overhead Eversource Line - Existing Right-of-Way (ROW) - Proposed Alternate Access • Erosion and Sediment Control (TYP) ■ AoT Disturbance Area - New Access/Turnout ■ AoT Disturbance Area - Pad ■ Temporary Construction Matting | <ul style="list-style-type: none"> ■ Eversource Fee-Owned Property ■ State-Owned Property □ Parcel Boundary □ Municipal Boundary ■ US National Forest Lands [-] Fence - - - 10' Contour - - - 2' Contour | <ul style="list-style-type: none"> H Culvert ⌋ Potential Vernal Pool ⋯ Delineated Intermittent Stream ⋯ Delineated Perennial Stream ⋯ Delineated Wetland Boundary Outline ■ Field Delineated Wetland ■ FEMA 100-Year Flood Zone ⌋ Floodway |
|---|--|--|



Map Notes:
 Coordinate System: NAD 1983 StatePlane New Hampshire FIPS 2800 Feet
 Notes: Wetland boundaries delineated by Stantec in 2016 in accordance with USACE Wetland Delineation Manual (1987) or subsequent versions. Wetland and vernal pool boundaries were located utilizing a Trimble Geo-XH GeoExplorer 6000 Series Receiver. Expected accuracy of GPS data is within 1 meter of actual position.
 Data source: Structure, centerline, ROW, and abutter data provided by Eversource Energy. Base features from NH GRANIT database. Basemap: 2015 aerial imagery provided by NH GRANIT.
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**2020 S136 Line
Alteration of Terrain
Permitting Plans**

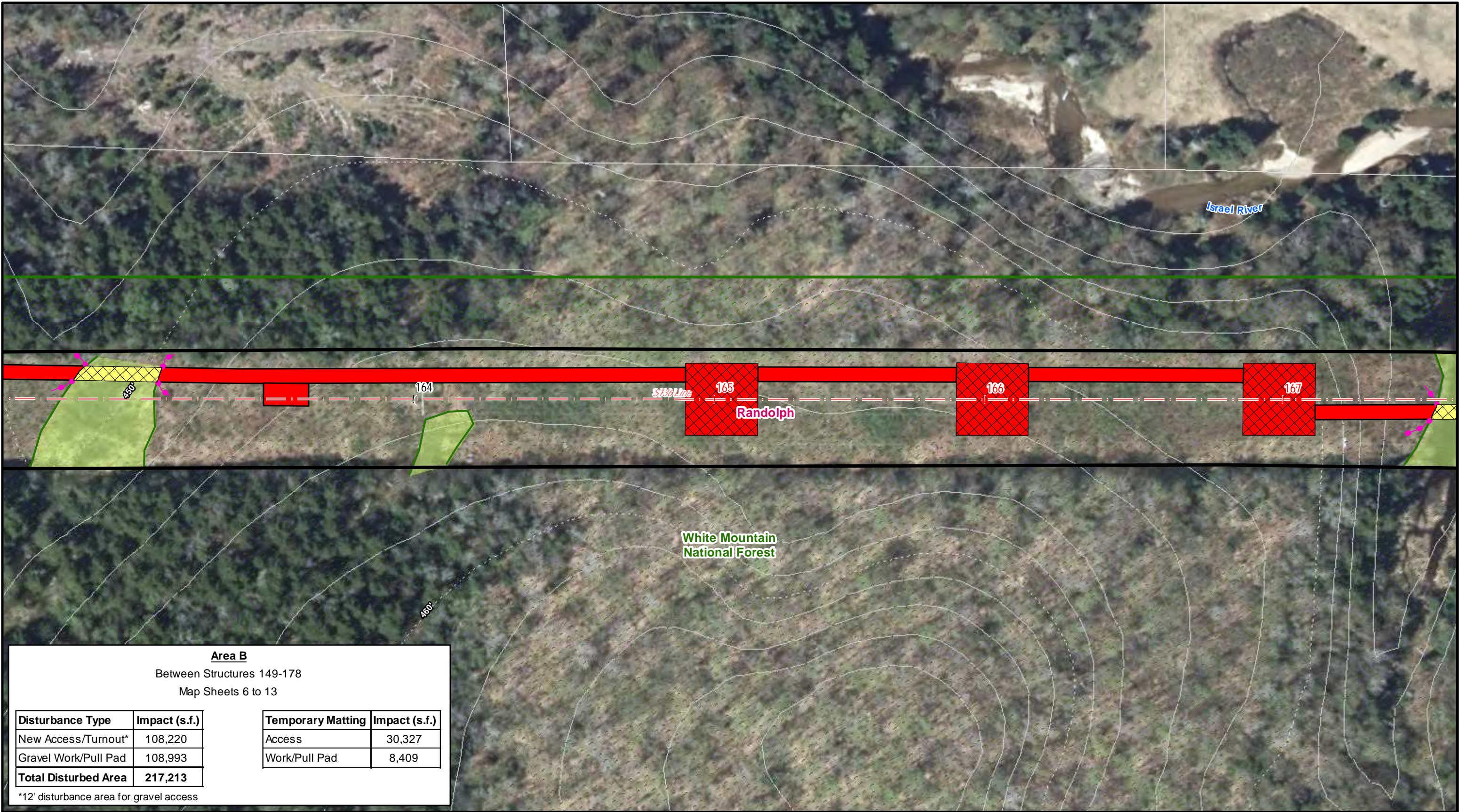
**Randolph,
New Hampshire**

Map Sheet 9 of 21

EVERSOURCE ENERGY

March 23, 2020

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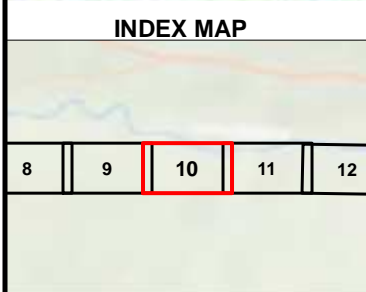


Area B
Between Structures 149-178
Map Sheets 6 to 13

| Disturbance Type | Impact (s.f.) |
|-----------------------------|----------------|
| New Access/Turnout* | 108,220 |
| Gravel Work/Pull Pad | 108,993 |
| Total Disturbed Area | 217,213 |

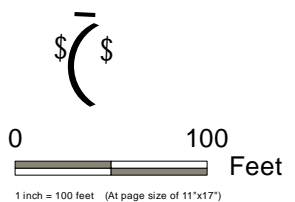
| Temporary Matting | Impact (s.f.) |
|-------------------|---------------|
| Access | 30,327 |
| Work/Pull Pad | 8,409 |

*12' disturbance area for gravel access



Legend

| | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|----------------------|----------------------------|-------------------------------|-----------------------------|--------------------------------------|---|------------------------------|----------------------------------|---------------------------------|------------------------|-------------------|----------------------|----------------------------|-----------|-----------------|----------------|-----------|-------------------------|------------------------------------|---------------------------------|---|----------------------------|----------------------------|------------|
| ! Proposed Structure | ! Existing Structure | — Overhead Eversource Line | — Existing Right-of-Way (ROW) | — Proposed Alternate Access | — Erosion and Sediment Control (TYP) | ■ AoT Disturbance Area - New Access/Turnout | ■ AoT Disturbance Area - Pad | ■ Temporary Construction Matting | ■ Eversource Fee-Owned Property | ■ State-Owned Property | — Parcel Boundary | — Municipal Boundary | ■ US National Forest Lands | [—] Fence | --- 10' Contour | --- 2' Contour | H Culvert | j Potential Vernal Pool | --- Delineated Intermittent Stream | --- Delineated Perennial Stream | --- Delineated Wetland Boundary Outline | ■ Field Delineated Wetland | ■ FEMA 100-Year Flood Zone | ■ Floodway |
|----------------------|----------------------|----------------------------|-------------------------------|-----------------------------|--------------------------------------|---|------------------------------|----------------------------------|---------------------------------|------------------------|-------------------|----------------------|----------------------------|-----------|-----------------|----------------|-----------|-------------------------|------------------------------------|---------------------------------|---|----------------------------|----------------------------|------------|



Map Notes:
Coordinate System: NAD 1983 StatePlane New Hampshire FIPS 2800 Feet
Notes: Wetland boundaries delineated by Stantec in 2016 in accordance with USACE Wetland Delineation Manual (1987) or subsequent versions. Wetland and vernal pool boundaries were located utilizing a Trimble Geo-XH GeoExplorer 6000 Series Receiver. Expected accuracy of GPS data is within 1 meter of actual position.
Data source: Structure, centerline, ROW, and abutter data provided by Eversource Energy. Base features from NH GRANIT database. Basemap: 2015 aerial imagery provided by NH GRANIT.

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**2020 S136 Line
Alteration of Terrain
Permitting Plans**

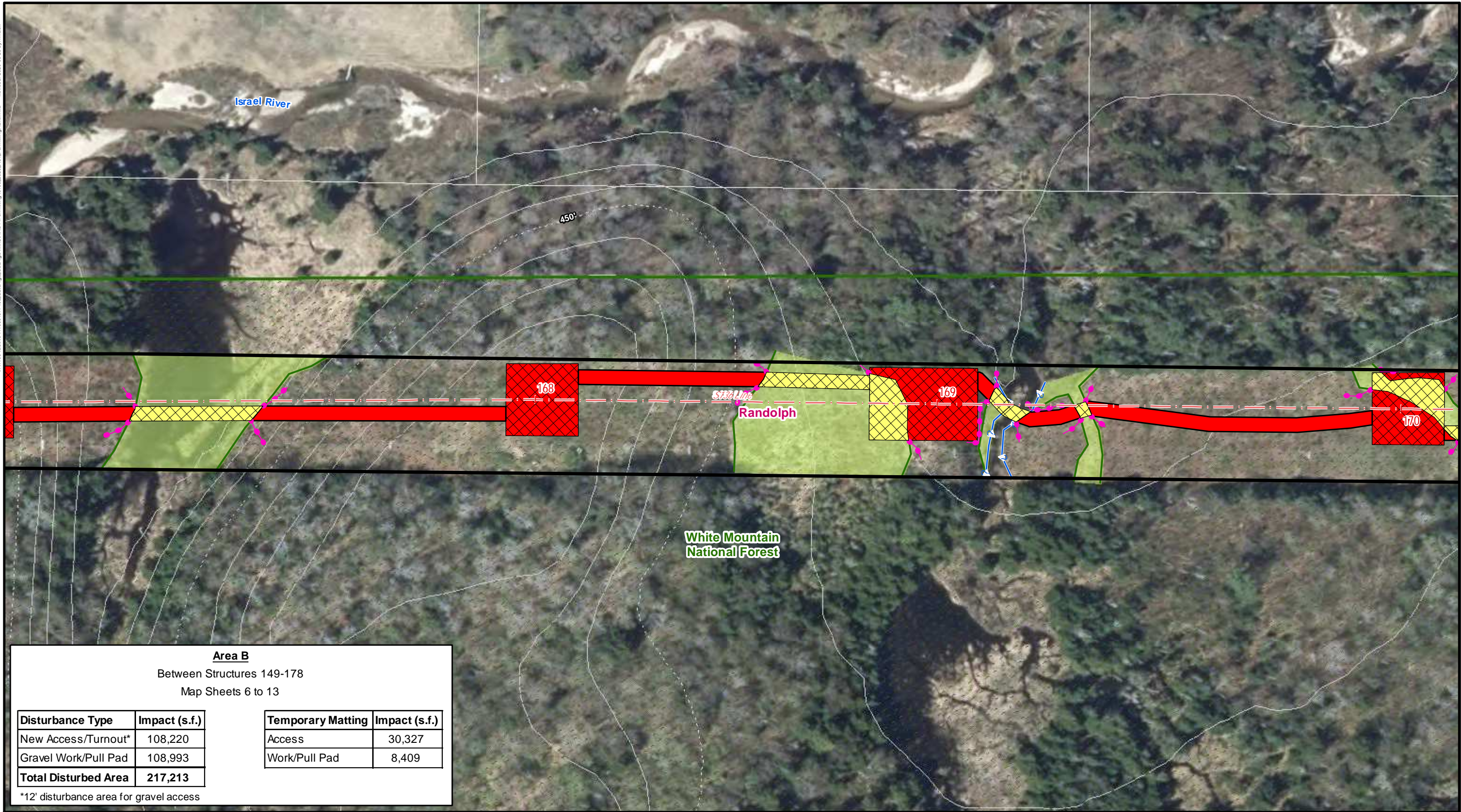
**Randolph,
New Hampshire**

Map Sheet 10 of 21

EVERSOURCE ENERGY

March 23, 2020

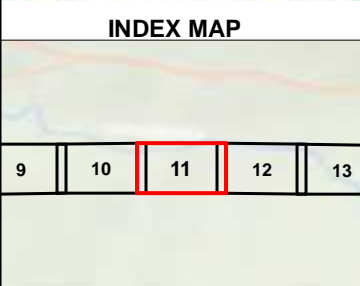
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Area B
 Between Structures 149-178
 Map Sheets 6 to 13

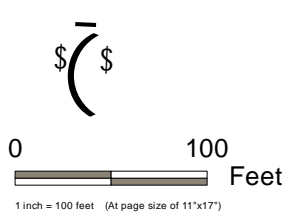
| Disturbance Type | Impact (s.f.) | Temporary Matting | Impact (s.f.) |
|-----------------------------|----------------|-------------------|---------------|
| New Access/Turnout* | 108,220 | Access | 30,327 |
| Gravel Work/Pull Pad | 108,993 | Work/Pull Pad | 8,409 |
| Total Disturbed Area | 217,213 | | |

*12' disturbance area for gravel access



Legend

| | | |
|---|--|---|
| <ul style="list-style-type: none"> ! Proposed Structure ! Existing Structure - Overhead Eversource Line - Existing Right-of-Way (ROW) - Proposed Alternate Access • Erosion and Sediment Control (TYP) ■ AoT Disturbance Area - New Access/Turnout ■ AoT Disturbance Area - Pad ■ Temporary Construction Matting | <ul style="list-style-type: none"> ■ Eversource Fee-Owned Property ■ State-Owned Property □ Parcel Boundary ■ Municipal Boundary ■ US National Forest Lands [-] Fence - - - 10' Contour - - - 2' Contour | <ul style="list-style-type: none"> H Culvert jk Potential Vernal Pool --- Delineated Intermittent Stream --- Delineated Perennial Stream --- Delineated Wetland Boundary Outline ■ Field Delineated Wetland ■ FEMA 100-Year Flood Zone ■ Floodway |
|---|--|---|



Map Notes:
 Coordinate System: NAD 1983 StatePlane New Hampshire FIPS 2800 Feet
 Notes: Wetland boundaries delineated by Stantec in 2016 in accordance with USACE Wetland Delineation Manual (1987) or subsequent versions). Wetland and vernal pool boundaries were located utilizing a Trimble GeoXH GeoExplorer 6000 Series Receiver. Expected accuracy of GPS data is within 1 meter of actual position.
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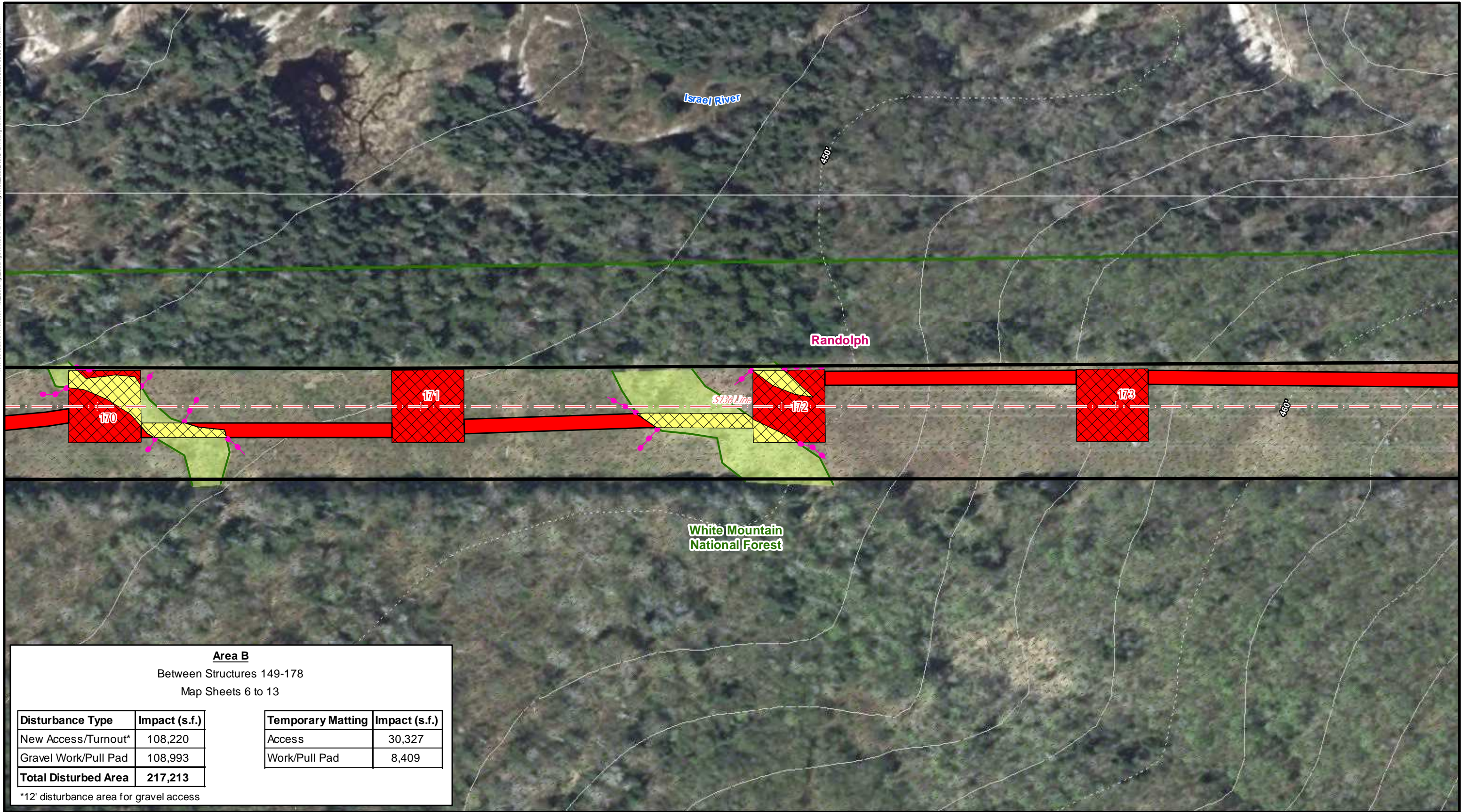
**2020 S136 Line
 Alteration of Terrain
 Permitting Plans**

**Randolph,
 New Hampshire**

Map Sheet 11 of 21

March 23, 2020

V:\1984\active\19840717\03_data\gk_cad\gk\AKD\AO\Permitting\314_2020_AoT_PermittingPlan.mxd Revised: 2020-03-23 By: jmacck

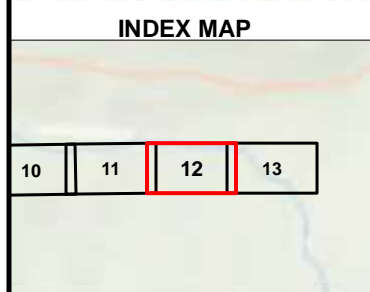


Area B
 Between Structures 149-178
 Map Sheets 6 to 13

| Disturbance Type | Impact (s.f.) |
|-----------------------------|----------------|
| New Access/Turnout* | 108,220 |
| Gravel Work/Pull Pad | 108,993 |
| Total Disturbed Area | 217,213 |

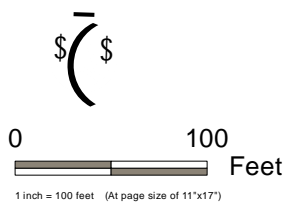
| Temporary Matting | Impact (s.f.) |
|-------------------|---------------|
| Access | 30,327 |
| Work/Pull Pad | 8,409 |

*12' disturbance area for gravel access



Legend

| | | |
|---|--|--|
| <ul style="list-style-type: none"> ! Proposed Structure ! Existing Structure - Overhead Eversource Line - Existing Right-of-Way (ROW) - Proposed Alternate Access • Erosion and Sediment Control (TYP) ■ AoT Disturbance Area - New Access/Turnout ■ AoT Disturbance Area - Pad ■ Temporary Construction Matting | <ul style="list-style-type: none"> ■ Eversource Fee-Owned Property ■ State-Owned Property □ Parcel Boundary ■ Municipal Boundary ■ US National Forest Lands [-] Fence - - - 10' Contour - - - 2' Contour | <ul style="list-style-type: none"> H Culvert ⌋ Potential Vernal Pool ⋯ Delineated Intermittent Stream ⋯ Delineated Perennial Stream ⋯ Delineated Wetland Boundary Outline ■ Field Delineated Wetland ■ FEMA 100-Year Flood Zone ⌋ Floodway |
|---|--|--|



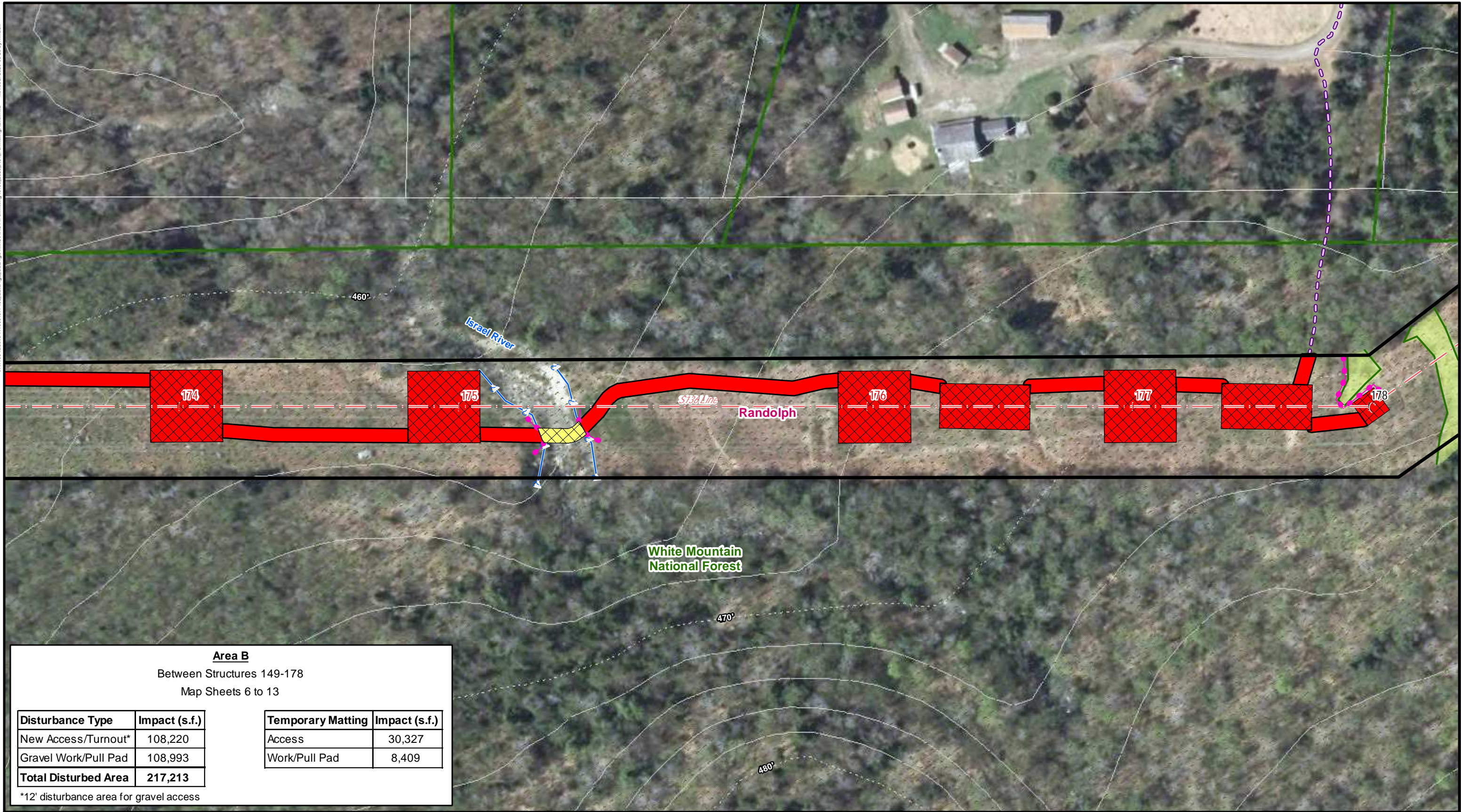
Map Notes:
 Coordinate System: NAD 1983 StatePlane New Hampshire FIPS 2800 Feet
 Notes: Wetland boundaries delineated by Stantec in 2016 in accordance with USACE Wetland Delineation Manual (1987) or subsequent versions). Wetland and vernal pool boundaries were located utilizing a Trimble Geo-XH GeoExplorer 6000 Series Receiver. Expected accuracy of GPS data is within 1 meter of actual position.
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**2020 S136 Line
 Alteration of Terrain
 Permitting Plans**
 Randolph,
 New Hampshire
 Map Sheet 12 of 21

EVERSOURCE ENERGY

March 23, 2020

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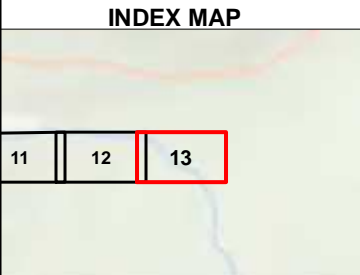


Area B
Between Structures 149-178
Map Sheets 6 to 13

| Disturbance Type | Impact (s.f.) |
|-----------------------------|----------------|
| New Access/Turnout* | 108,220 |
| Gravel Work/Pull Pad | 108,993 |
| Total Disturbed Area | 217,213 |

| Temporary Matting | Impact (s.f.) |
|-------------------|---------------|
| Access | 30,327 |
| Work/Pull Pad | 8,409 |

*12' disturbance area for gravel access

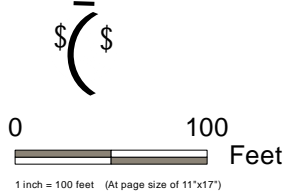


Legend

| | | |
|---|--|--|
| <ul style="list-style-type: none"> ! Proposed Structure ! Existing Structure - Overhead Eversource Line - Existing Right-of-Way (ROW) - Proposed Alternate Access ● Erosion and Sediment Control (TYP) ■ AoT Disturbance Area - New Access/Turnout ■ AoT Disturbance Area - Pad ■ Temporary Construction Matting | <ul style="list-style-type: none"> ■ Eversource Fee-Owned Property ■ State-Owned Property ▭ Parcel Boundary ▭ Municipal Boundary ▭ US National Forest Lands - Fence - 10' Contour - 2' Contour | <ul style="list-style-type: none"> H Culvert ⌋ Potential Vernal Pool ⋯ Delineated Intermittent Stream ⋯ Delineated Perennial Stream ▭ Delineated Wetland Boundary Outline ▭ Field Delineated Wetland ▭ FEMA 100-Year Flood Zone ▭ Floodway |
|---|--|--|

Map Notes:
 Coordinate System: NAD 1983 StatePlane New Hampshire FIPS 2800 Feet
 Notes: Wetland boundaries delineated by Stantec in 2016 in accordance with USACE Wetland Delineation Manual (1987) or subsequent versions. Wetland and vernal pool boundaries were located utilizing a Trimble Geo-XH GeoExplorer 6000 Series Receiver. Expected accuracy of GPS data is within 1 meter of actual position.
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**2020 S136 Line
Alteration of Terrain
Permitting Plans**

**Randolph,
New Hampshire**

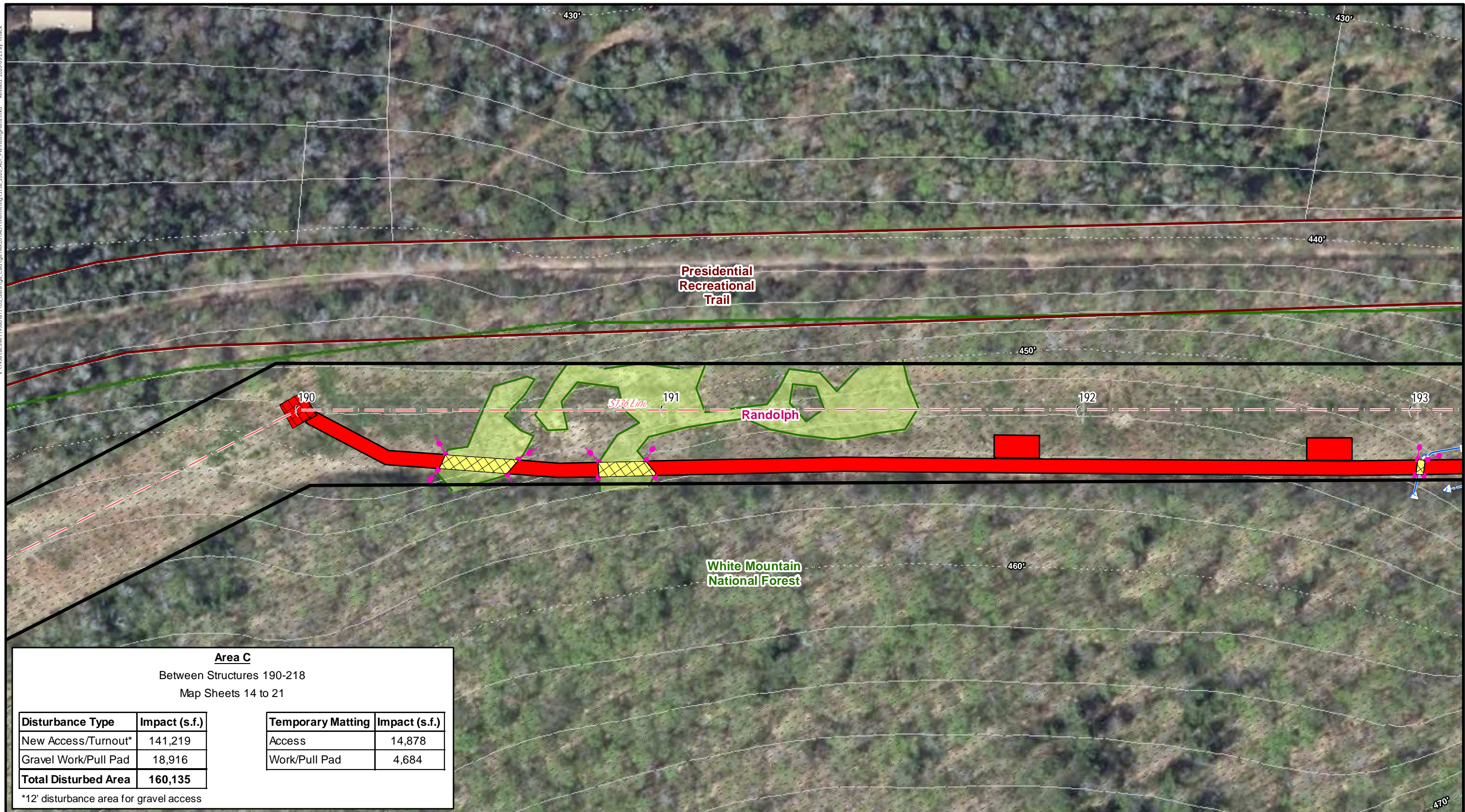
Map Sheet 13 of 21

EVERSOURCE ENERGY

Stantec

March 23, 2020

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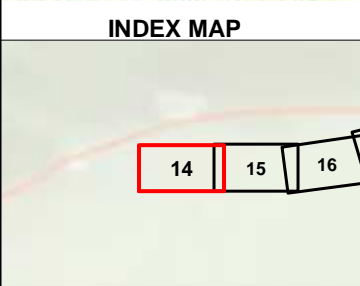


Area C
 Between Structures 190-218
 Map Sheets 14 to 21

| Disturbance Type | Impact (s.f.) |
|-----------------------------|----------------|
| New Access/Turnout* | 141,219 |
| Gravel Work/Pull Pad | 18,916 |
| Total Disturbed Area | 160,135 |

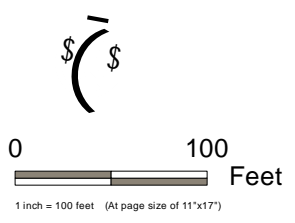
| Temporary Matting | Impact (s.f.) |
|-------------------|---------------|
| Access | 14,878 |
| Work/Pull Pad | 4,684 |

*12' disturbance area for gravel access



Legend

| | | |
|---|--|--|
| <ul style="list-style-type: none"> ! Proposed Structure ! Existing Structure - Overhead Eversource Line - Existing Right-of-Way (ROW) - Proposed Alternate Access • Erosion and Sediment Control (TYP) ■ AoT Disturbance Area - New Access/Turnout ■ AoT Disturbance Area - Pad ■ Temporary Construction Matting | <ul style="list-style-type: none"> ■ Eversource Fee-Owned Property ■ State-Owned Property □ Parcel Boundary ■ Municipal Boundary ■ US National Forest Lands - Fence - 10' Contour - 2' Contour | <ul style="list-style-type: none"> H Culvert ⌋ Potential Vernal Pool ⋯ Delineated Intermittent Stream ⋯ Delineated Perennial Stream — Delineated Wetland Boundary Outline ■ Field Delineated Wetland ■ FEMA 100-Year Flood Zone ⌋ Floodway |
|---|--|--|



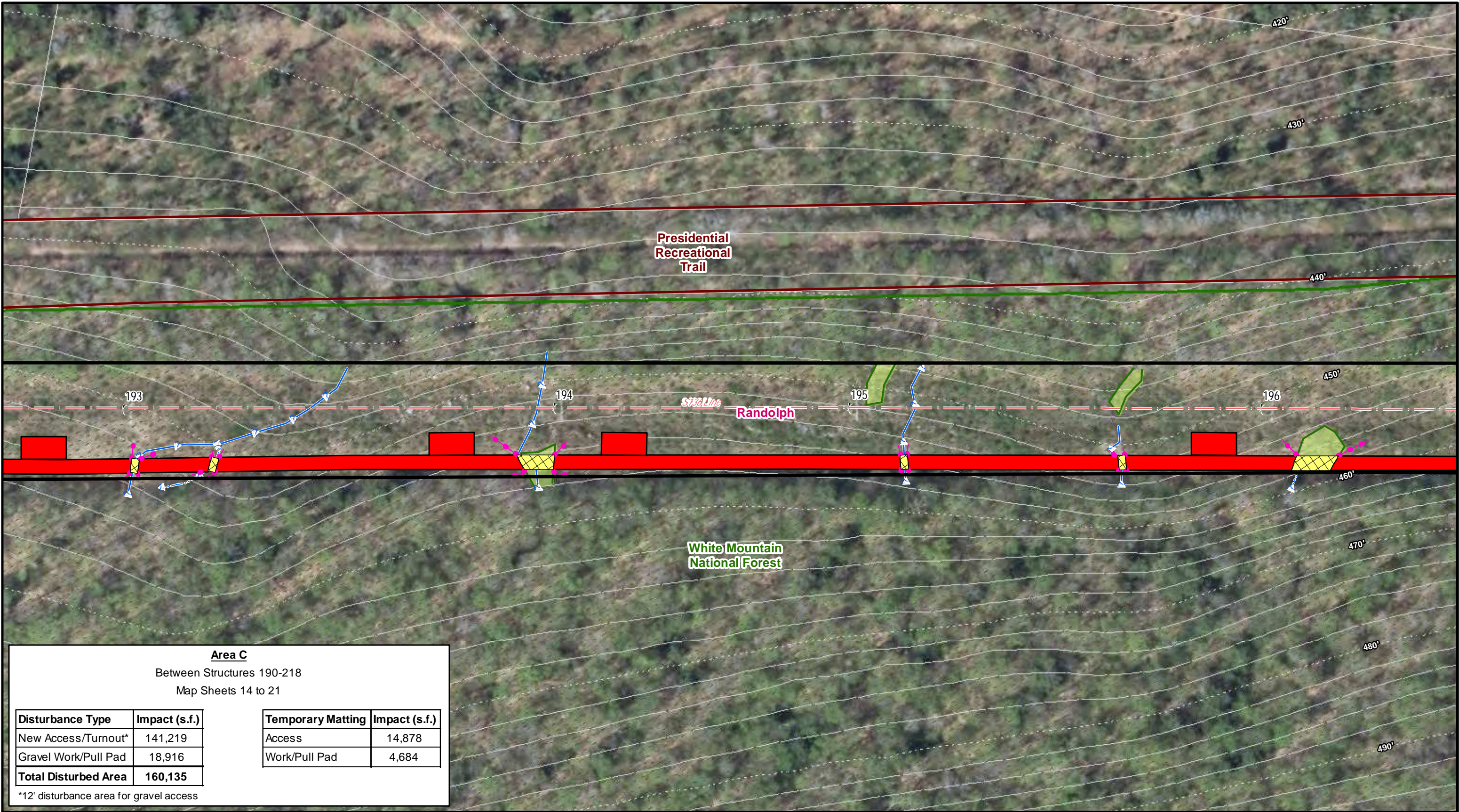
Map Notes:
 Coordinate System: NAD 1983 StatePlane New Hampshire FIPS 2800 Feet
 Notes: Wetland boundaries delineated by Stantec in 2016 in accordance with USACE Wetland Delineation Manual (1987) or subsequent versions. Wetland and vernal pool boundaries were located utilizing a Trimble Geo-XH GeoExplorer 6000 Series Receiver. Expected accuracy of GPS data is within 1 meter of actual position.
 Data source: Structure, centerline, ROW, and abutter data provided by Eversource Energy. Base features from NH GRANIT database. Basemap: 2015 aerial imagery provided by NH GRANIT.
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**2020 S136 Line
 Alteration of Terrain
 Permitting Plans**
 Randolph,
 New Hampshire
 Map Sheet 14 of 21

EVERSOURCE ENERGY

March 23, 2020

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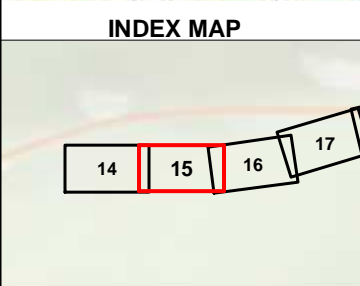


Area C
 Between Structures 190-218
 Map Sheets 14 to 21

| Disturbance Type | Impact (s.f.) |
|-----------------------------|----------------|
| New Access/Turnout* | 141,219 |
| Gravel Work/Pull Pad | 18,916 |
| Total Disturbed Area | 160,135 |

| Temporary Matting | Impact (s.f.) |
|-------------------|---------------|
| Access | 14,878 |
| Work/Pull Pad | 4,684 |

*12' disturbance area for gravel access



Legend

| | | |
|---|--|--|
| <ul style="list-style-type: none"> ! Proposed Structure ! Existing Structure - Overhead Eversource Line - Existing Right-of-Way (ROW) - Proposed Alternate Access • Erosion and Sediment Control (TYP) ■ AoT Disturbance Area - New Access/Turnout ■ AoT Disturbance Area - Pad ■ Temporary Construction Matting | <ul style="list-style-type: none"> ■ Eversource Fee-Owned Property ■ State-Owned Property □ Parcel Boundary □ Municipal Boundary ■ US National Forest Lands [-] Fence - - - 10' Contour - - - 2' Contour | <ul style="list-style-type: none"> H Culvert ⌋ Potential Vernal Pool ⋯ Delineated Intermittent Stream ⋯ Delineated Perennial Stream ⋯ Delineated Wetland Boundary Outline ■ Field Delineated Wetland ■ FEMA 100-Year Flood Zone ⌋ Floodway |
|---|--|--|

Map Notes:
 Coordinate System: NAD 1983 StatePlane New Hampshire FIPS 2800 Feet
 Notes: Wetland boundaries delineated by Stantec in 2016 in accordance with USACE Wetland Delineation Manual (1987) or subsequent versions. Wetland and vernal pool boundaries were located utilizing a Trimble Geo-XH GeoExplorer 6000 Series Receiver. Expected accuracy of GPS data is within 1 meter of actual position.
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**2020 S136 Line
 Alteration of Terrain
 Permitting Plans**

**Randolph,
 New Hampshire**

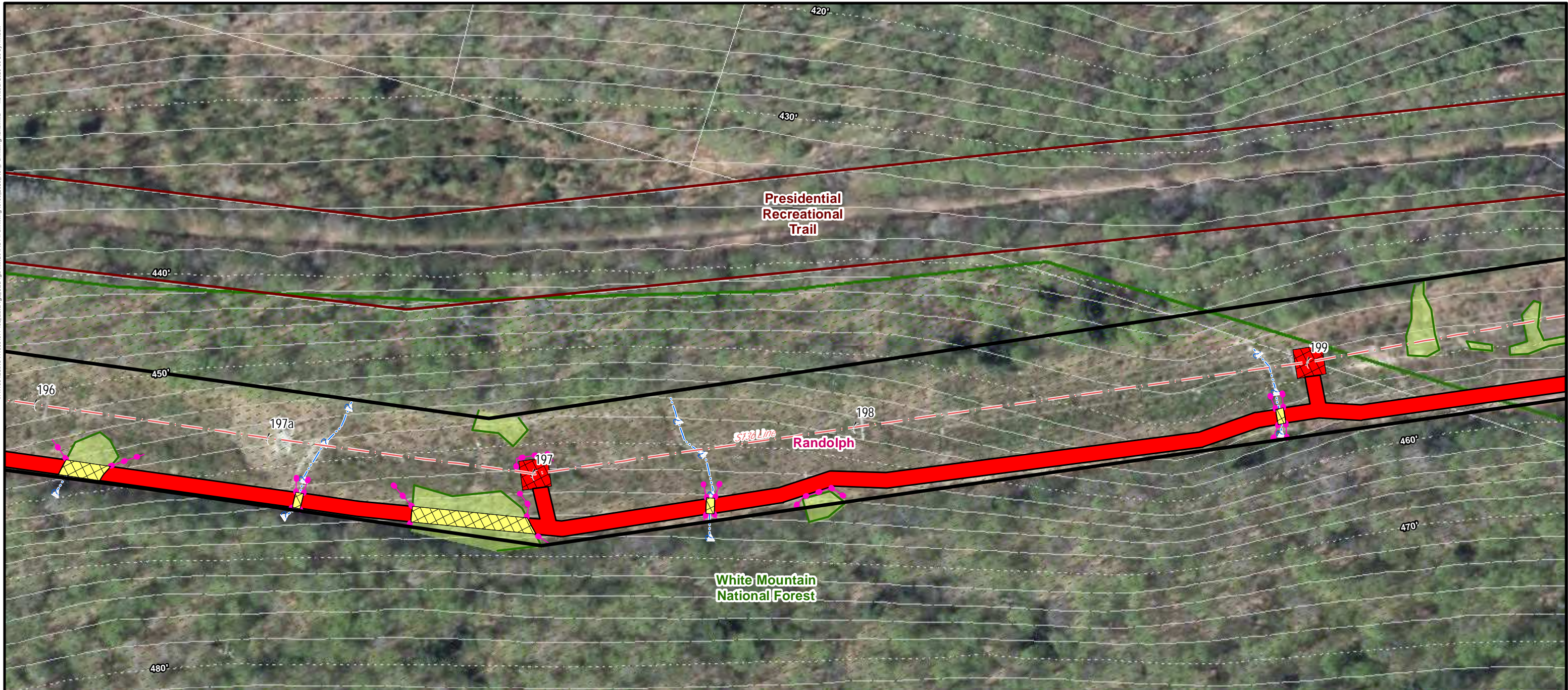
Map Sheet 15 of 21

EVERSOURCE ENERGY

Stantec

March 23, 2020

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 Revised: 2020.03.23 By: imack

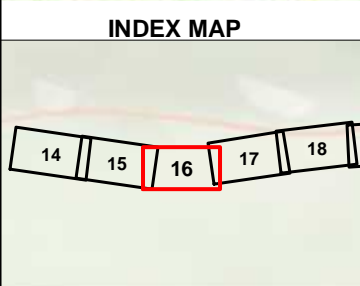


Area C
 Between Structures 190-218
 Map Sheets 14 to 21

| Disturbance Type | Impact (s.f.) |
|-----------------------------|----------------|
| New Access/Turnout* | 141,219 |
| Gravel Work/Pull Pad | 18,916 |
| Total Disturbed Area | 160,135 |

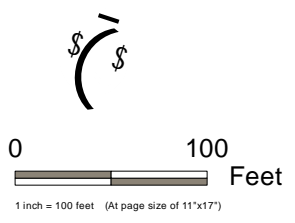
| Temporary Matting | Impact (s.f.) |
|-------------------|---------------|
| Access | 14,878 |
| Work/Pull Pad | 4,684 |

*12' disturbance area for gravel access



Legend

| | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|----------------------|----------------------------|-------------------------------|-----------------------------|--------------------------------------|---|------------------------------|----------------------------------|---------------------------------|------------------------|-------------------|----------------------|----------------------------|-----------|-------------------|------------------|-----------|-------------------------|----------------------------------|-------------------------------|---------------------------------------|----------------------------|----------------------------|------------|
| ! Proposed Structure | ! Existing Structure | - Overhead Eversource Line | - Existing Right-of-Way (ROW) | - Proposed Alternate Access | ● Erosion and Sediment Control (TYP) | ■ AoT Disturbance Area - New Access/Turnout | ■ AoT Disturbance Area - Pad | ■ Temporary Construction Matting | ■ Eversource Fee-Owned Property | ■ State-Owned Property | ■ Parcel Boundary | ■ Municipal Boundary | ■ US National Forest Lands | [=] Fence | - - - 10' Contour | - - - 2' Contour | H Culvert | j Potential Vernal Pool | ⋯ Delineated Intermittent Stream | ⋯ Delineated Perennial Stream | ⋯ Delineated Wetland Boundary Outline | ⋯ Field Delineated Wetland | ⋯ FEMA 100-Year Flood Zone | ⋯ Floodway |
|----------------------|----------------------|----------------------------|-------------------------------|-----------------------------|--------------------------------------|---|------------------------------|----------------------------------|---------------------------------|------------------------|-------------------|----------------------|----------------------------|-----------|-------------------|------------------|-----------|-------------------------|----------------------------------|-------------------------------|---------------------------------------|----------------------------|----------------------------|------------|



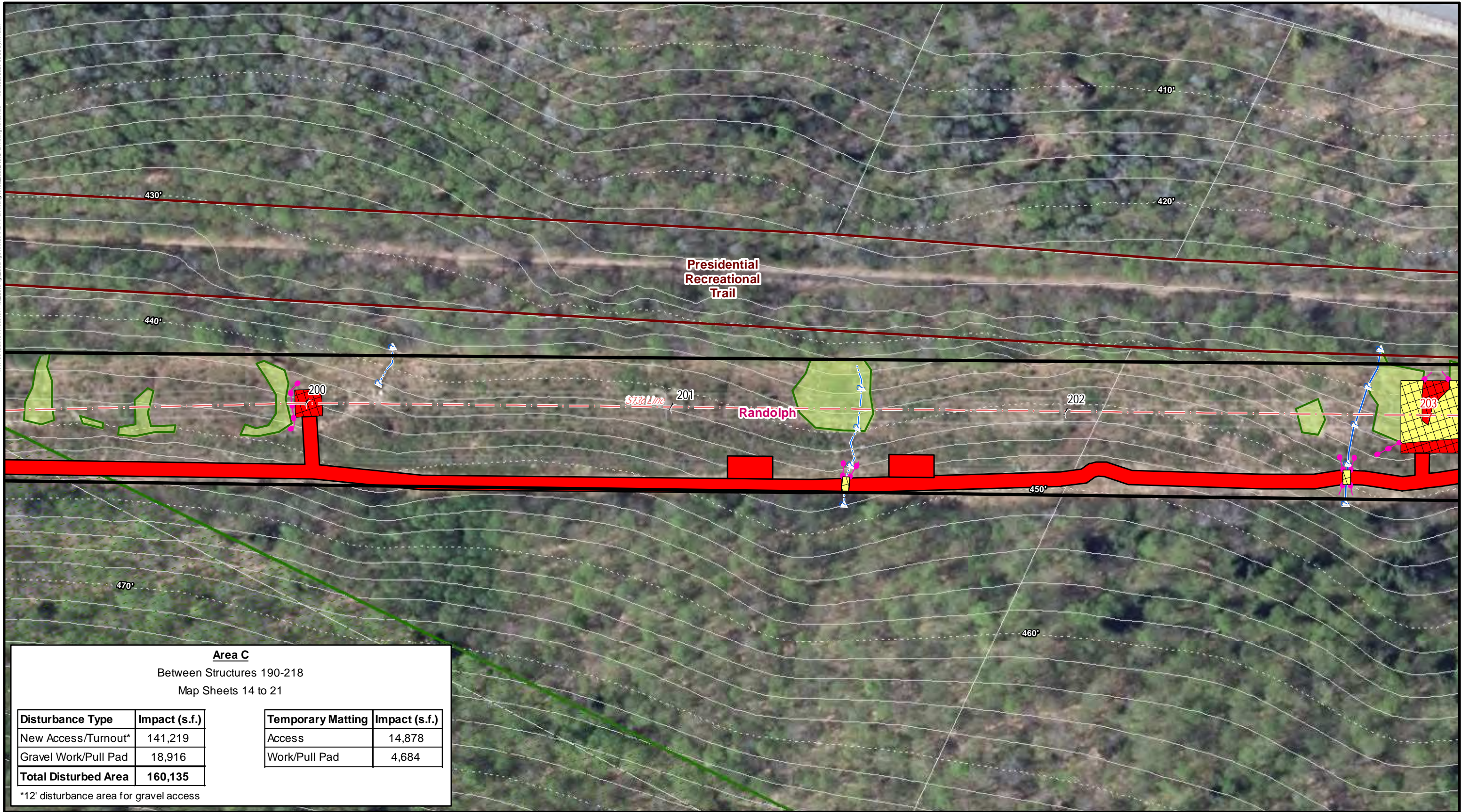
Map Notes:
 Coordinate System: NAD 1983 StatePlane New Hampshire FIPS 2800 Feet
 Notes: Wetland boundaries delineated by Stantec in 2016 in accordance with USACE Wetland Delineation Manual (1987) or subsequent versions). Wetland and vernal pool boundaries were located utilizing a Trimble Geo-XH GeoExplorer 6000 Series Receiver. Expected accuracy of GPS data is within 1 meter of actual position.
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**2020 S136 Line
 Alteration of Terrain
 Permitting Plans**
 Randolph,
 New Hampshire
 Map Sheet 16 of 21

EVERSOURCE ENERGY

March 23, 2020

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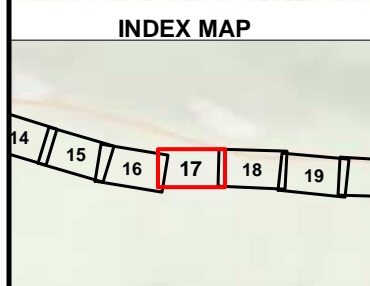


Area C
 Between Structures 190-218
 Map Sheets 14 to 21

| Disturbance Type | Impact (s.f.) |
|-----------------------------|----------------|
| New Access/Turnout* | 141,219 |
| Gravel Work/Pull Pad | 18,916 |
| Total Disturbed Area | 160,135 |

| Temporary Matting | Impact (s.f.) |
|-------------------|---------------|
| Access | 14,878 |
| Work/Pull Pad | 4,684 |

*12' disturbance area for gravel access



Legend

| | | |
|---|--|---|
| <ul style="list-style-type: none"> ! Proposed Structure ! Existing Structure - Overhead Eversource Line - Existing Right-of-Way (ROW) - Proposed Alternate Access • Erosion and Sediment Control (TYP) ■ AoT Disturbance Area - New Access/Turnout ■ AoT Disturbance Area - Pad ■ Temporary Construction Matting | <ul style="list-style-type: none"> ■ Eversource Fee-Owned Property ■ State-Owned Property ■ Parcel Boundary ■ Municipal Boundary ■ US National Forest Lands [-] Fence - - - 10' Contour - - - 2' Contour | <ul style="list-style-type: none"> H Culvert jk Potential Vernal Pool --- Delineated Intermittent Stream --- Delineated Perennial Stream --- Delineated Wetland Boundary Outline ■ Field Delineated Wetland ■ FEMA 100-Year Flood Zone ■ Floodway |
|---|--|---|

Map Notes:
 Coordinate System: NAD 1983 StatePlane New Hampshire FIPS 2800 Feet
 Notes: Wetland boundaries delineated by Stantec in 2016 in accordance with USACE Wetland Delineation Manual (1987) or subsequent versions. Wetland and vernal pool boundaries were located utilizing a Trimble Geo-XH GeoExplorer 6000 Series Receiver. Expected accuracy of GPS data is within 1 meter of actual position.
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**2020 S136 Line
 Alteration of Terrain
 Permitting Plans**

**Randolph,
 New Hampshire**

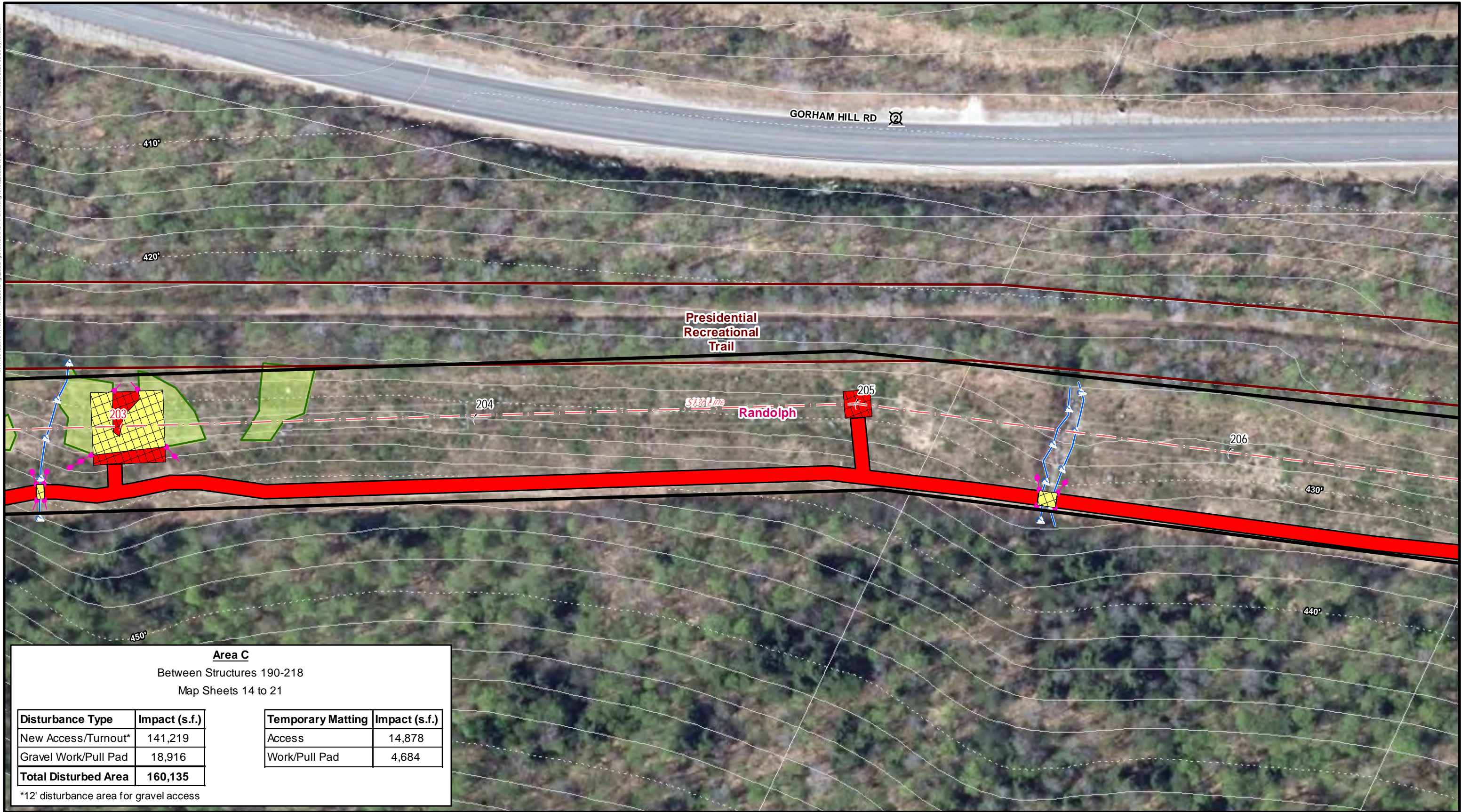
Map Sheet 17 of 21

EVERSOURCE ENERGY

Stantec

March 23, 2020

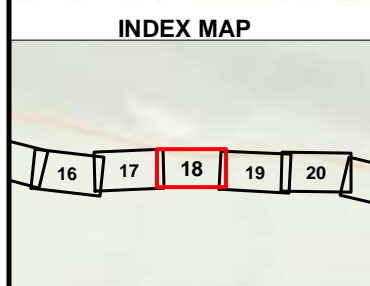
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 Revised: 2020-02-23 By: jmacck



Area C
 Between Structures 190-218
 Map Sheets 14 to 21

| Disturbance Type | Impact (s.f.) | Temporary Matting | Impact (s.f.) |
|-----------------------------|----------------|-------------------|---------------|
| New Access/Turnout* | 141,219 | Access | 14,878 |
| Gravel Work/Pull Pad | 18,916 | Work/Pull Pad | 4,684 |
| Total Disturbed Area | 160,135 | | |

*12' disturbance area for gravel access



Legend

| | | |
|---|--|---|
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|---|--|---|

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**2020 S136 Line
 Alteration of Terrain
 Permitting Plans**

**Randolph,
 New Hampshire**

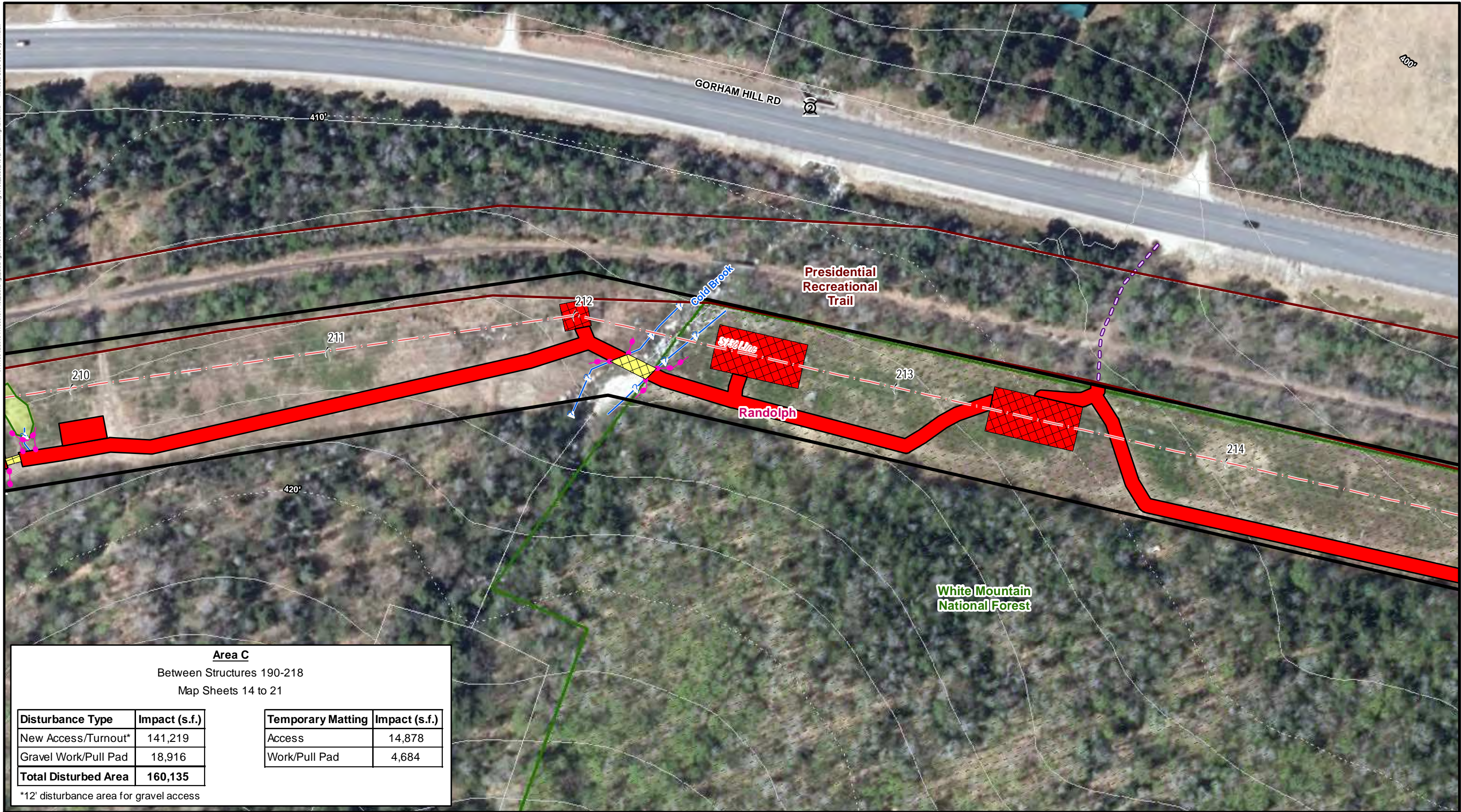
Map Sheet 18 of 21

EVERSOURCE ENERGY

Stantec

March 23, 2020

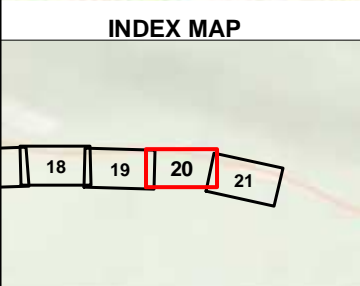
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Area C
 Between Structures 190-218
 Map Sheets 14 to 21

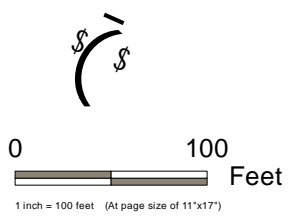
| Disturbance Type | Impact (s.f.) | Temporary Matting | Impact (s.f.) |
|-----------------------------|----------------|-------------------|---------------|
| New Access/Turnout* | 141,219 | Access | 14,878 |
| Gravel Work/Pull Pad | 18,916 | Work/Pull Pad | 4,684 |
| Total Disturbed Area | 160,135 | | |

*12' disturbance area for gravel access



Legend

| | | |
|---|--|--|
| <ul style="list-style-type: none"> ! Proposed Structure ! Existing Structure - Overhead Eversource Line - Existing Right-of-Way (ROW) - Proposed Alternate Access • Erosion and Sediment Control (TYP) ■ AoT Disturbance Area - New Access/Turnout ■ AoT Disturbance Area - Pad ■ Temporary Construction Matting | <ul style="list-style-type: none"> ■ Eversource Fee-Owned Property ■ State-Owned Property □ Parcel Boundary □ Municipal Boundary ■ US National Forest Lands [-] Fence - - - 10' Contour - - - 2' Contour | <ul style="list-style-type: none"> H Culvert ⌋ Potential Vernal Pool ⋯ Delineated Intermittent Stream ⋯ Delineated Perennial Stream ⋯ Delineated Wetland Boundary Outline ■ Field Delineated Wetland ■ FEMA 100-Year Flood Zone ⌋ Floodway |
|---|--|--|



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**2020 S136 Line
 Alteration of Terrain
 Permitting Plans**

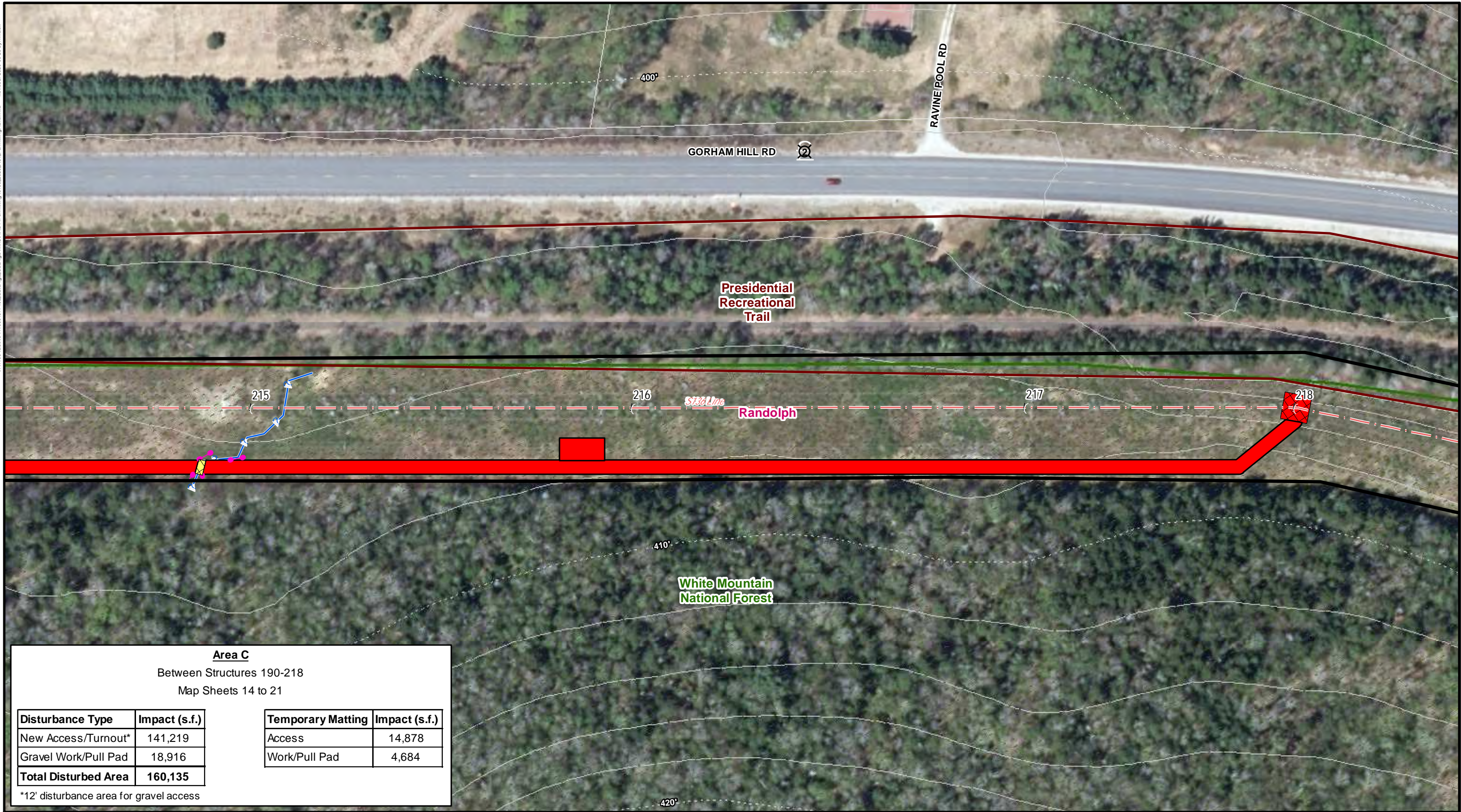
**Randolph,
 New Hampshire**

Map Sheet 20 of 21

EVERSOURCE ENERGY

March 23, 2020

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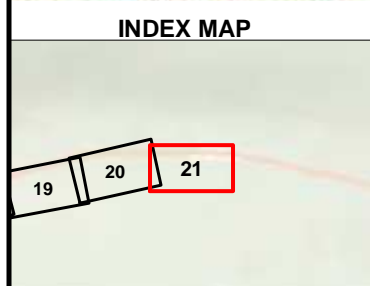


Area C
 Between Structures 190-218
 Map Sheets 14 to 21

| Disturbance Type | Impact (s.f.) |
|-----------------------------|----------------|
| New Access/Turnout* | 141,219 |
| Gravel Work/Pull Pad | 18,916 |
| Total Disturbed Area | 160,135 |

| Temporary Matting | Impact (s.f.) |
|-------------------|---------------|
| Access | 14,878 |
| Work/Pull Pad | 4,684 |

*12' disturbance area for gravel access



Legend

| | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|----------------------|----------------------------|-------------------------------|-----------------------------|--------------------------------------|---|------------------------------|----------------------------------|---------------------------------|------------------------|-------------------|----------------------|----------------------------|-------------|-------------------|------------------|-----------|-------------------------|----------------------------------|-------------------------------|---------------------------------------|----------------------------|----------------------------|------------|
| ! Proposed Structure | ! Existing Structure | - Overhead Eversource Line | - Existing Right-of-Way (ROW) | - Proposed Alternate Access | • Erosion and Sediment Control (TYP) | ■ AoT Disturbance Area - New Access/Turnout | ■ AoT Disturbance Area - Pad | ■ Temporary Construction Matting | ■ Eversource Fee-Owned Property | ■ State-Owned Property | ■ Parcel Boundary | ■ Municipal Boundary | ■ US National Forest Lands | [-] Fence | - - - 10' Contour | - - - 2' Contour | H Culvert | j Potential Vernal Pool | ⋯ Delineated Intermittent Stream | ⋯ Delineated Perennial Stream | ⋯ Delineated Wetland Boundary Outline | ■ Field Delineated Wetland | ■ FEMA 100-Year Flood Zone | ■ Floodway |
|----------------------|----------------------|----------------------------|-------------------------------|-----------------------------|--------------------------------------|---|------------------------------|----------------------------------|---------------------------------|------------------------|-------------------|----------------------|----------------------------|-------------|-------------------|------------------|-----------|-------------------------|----------------------------------|-------------------------------|---------------------------------------|----------------------------|----------------------------|------------|

1 inch = 100 feet (At page size of 11"x17")

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**2020 S136 Line
 Alteration of Terrain
 Permitting Plans**

**Randolph,
 New Hampshire**

Map Sheet 21 of 21

EVERSOURCE ENERGY

Stantec

March 23, 2020

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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.
3. WETLAND IMPACTS ASSOCIATED WITH WETLAND CROSSINGS ARE REQUIRED FOR ACCESS BETWEEN STRUCTURES WITHIN
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 WILL BE USED ALONG ACCESS ROUTES 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. IMPORTATION OF COMMERCIAL LOAM IS PROHIBITED.
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. ALL SWAMP MATS, MATERIAL, AND DEBRIS WILL BE REMOVED FROM THE WORK AREA UPON THE COMPLETION OF CONSTRUCTION.
17. 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.
18. ALL TEMPORARY WETLAND IMPACTS WILL BE RE-GRADED TO ORIGINAL CONTOURS FOLLOWING CONSTRUCTION. NEW ENGLAND EROSION CONTROL/RESTORATION MIX, OR EQUIVALENT SEED MIX SHALL BE APPLIED IN WETLAND AREAS THAT ARE NOT INUNDATED, AS NECESSARY.
19. SEDIMENT AND EROSION CONTROL MEASURES WILL BE EVALUATED AND REMOVED IF NECESSARY UPON THE COMPLETION OF CONSTRUCTION.
20. COMMERCIAL LOAM WILL NOT BE USED AS PART OF RESTORATION. ONLY IN-SITU TOPSOIL WILL BE USED TO RESTORE DISTURBED AREAS.
21. WHERE PEATLANDS ARE MAPPED ADJACENT TO THE ROW, THE ASSOCIATED WETLANDS WITHIN THE ROW SHALL BE TREATED AS A PEATLAND AND PRIORITY RESOURCE AREA. ELEVATED MATTING SHALL BE USED AS NECESSARY TO PREVENT EXCESSIVE GROUND DISTURBANCE WITHIN THESE AREAS.

WINTER CONSTRUCTION NOTES

1. PROPOSED 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

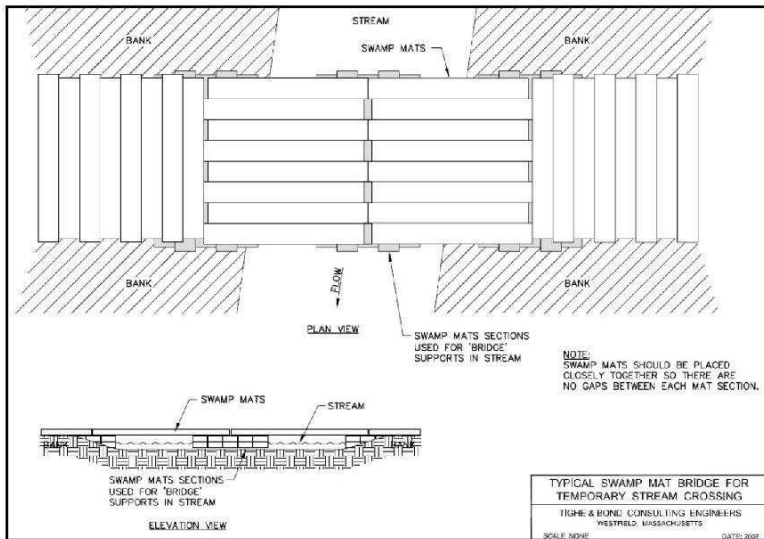
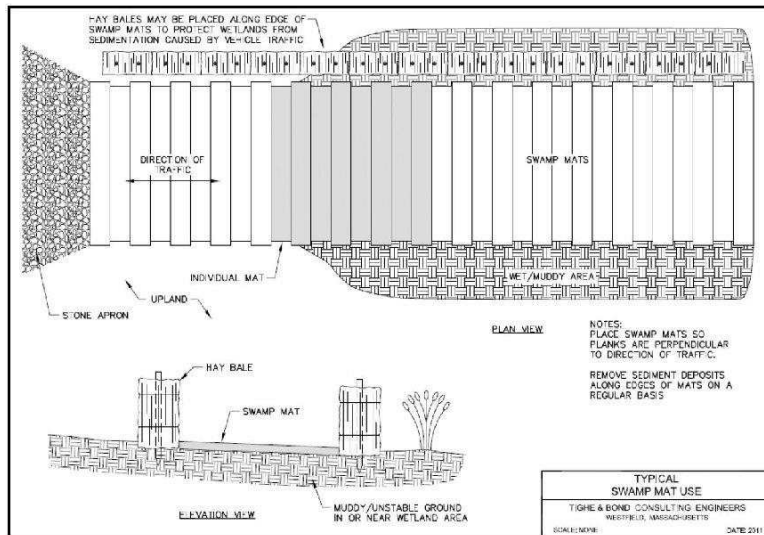
1. BASE PLAN PROVIDED BY EVERSOURCE ENERGY. STANTEC PROVIDED THE WETLAND DATA. EVERSOURCE ENERGY PROVIDED THE UTILITY DESIGN.
2. JURISDICTIONAL WETLANDS WERE DELINEATED BY STANTEC IN 2016. WETLANDS WERE DELINEATED IN ACCORDANCE WITH THE 1987 U.S. ARMY CORPS OF ENGINEERS' "WETLANDS DELINEATION MANUAL, 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 STANTEC. IN 2020.
3. SITE PLAN IS FOR PERMITTING PURPOSES ONLY AND DOES NOT REPRESENT A PROPERTY BOUNDARY SURVEY.
4. 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.
5. 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.
6. IN THE EVENT THAT A RARE OR THREATENED SPECIES IS OBSERVED, THE NEW HAMPSHIRE FISH AND GAME AND NEW HAMPSHIRE NATURAL HERITAGE BUREAU (NHB) WILL BE NOTIFIED. STATE THREATENED AND ENDANGERED PLANT SPECIES WERE IDENTIFIED BY NHB NEAR CASCADE ALPINE BROOK, BETWEEN STRUCTURES 340 AND 341 IN BERLIN. ALL CONSTRUCTION ACTIVITIES WILL AVOID THIS AREA.

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.

| | |
|--|---|
| <p>2020 S136 Line Alteration of Terrain Permitting Plans</p> <p>Whitefield, Jefferson, and Randolph, New Hampshire</p> <p>Notes</p> |  |
| |  |
| | <p>March 5, 2020</p> |

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2020 S136 Line
Alteration of Terrain
Permitting Plans

Whitefield, Jefferson, and Randolph,
New Hampshire

BMP Details
2 of 2

EVERSOURCE ENERGY

Stantec

March 6, 2020

NHDES ALTERATION OF TERRAIN PERMIT APPLICATION

Appendix A Alteration of Terrain Permit Application Form
March 24, 2020

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: Eversource Energy | | Contact Name: Jeremy Fennell | |
| Email: jeremy.fennell@eversource.com | | Daytime Telephone: 603-634-3396 | |
| Mailing Address: 13 Legends Drive | | | |
| Town/City: Hooksett | | State: NH | Zip Code: 03106 |
| 2. APPLICANT'S AGENT INFORMATION If none, check here: <input type="checkbox"/> | | | |
| Business Name: Stantec Consulting Services Inc. | | Contact Name: Tom Tetreau | |
| Email: tom.tetreau@stantec.com | | Daytime Telephone: 207-406-5496 | |
| Address: 30 Park Drive | | | |
| Town/City: Topsham | | State: ME | Zip Code: 04086 |
| 3. PROPERTY OWNER INFORMATION (IF DIFFERENT FROM APPLICANT) | | | |
| Applicant Name: ROW with existing utility easements | | Contact Name: | |
| Email: | | Daytime Telephone: | |
| Mailing Address: | | | |
| Town/City: | | State: | Zip Code: |
| 4. PROPERTY OWNER'S AGENT INFORMATION If none, check here: <input checked="" type="checkbox"/> | | | |
| Business Name: | | Contact Name: | |
| Email: | | Daytime Telephone: | |
| Address: | | | |
| Town/City: | | State: | Zip Code: |
| 5. CONSULTANT INFORMATION If none, check here: <input type="checkbox"/> | | | |
| Engineering Firm: Stantec Consulting Services Inc. | | Contact Name: Tom Tetreau | |
| Email: tom.tetreau@stantec.com | | Daytime Telephone: 207-406-5496 | |
| Address: 30 Park Drive | | | |
| Town/City: Topsham | | State: ME | Zip Code: 04086 |

ridge.mauck@des.nh.gov or (603) 271-2147

NHDES Alteration of Terrain Bureau, PO Box 95, Concord, NH 03303-0095

www.des.nh.gov

6. PROJECT TYPE

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

7. PROJECT LOCATION INFORMATION

Project Name: S136 Transmission Line

Street/Road Address: Existing utility ROW

Town/City: Whitefield, Jefferson, Randolph, Gorham, Berlin County: Coos

Tax Map: Block: Lot Number: Unit:

Location Coordinates: 44.3534°, -71.36797 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: | <input type="checkbox"/> Yes | <input type="checkbox"/> Withdrawal | <input type="checkbox"/> Discharge |
| | <input checked="" type="checkbox"/> No | | |
| 2. Man-made pond created by impounding a stream or wetland Purpose: | <input type="checkbox"/> Yes | <input type="checkbox"/> Withdrawal | <input type="checkbox"/> Discharge |
| | <input checked="" type="checkbox"/> No | | |
| 3. Unlined pond dug into the water table Purpose: | <input type="checkbox"/> Yes | <input type="checkbox"/> Withdrawal | <input type="checkbox"/> Discharge |
| | <input checked="" type="checkbox"/> No | | |

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: _____ cubic feet within the 100-year floodplain
 Fill volume: _____ cubic feet within the 100-year floodplain

Project IS within ¼ mile of a designated river Name of 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 replacement of 32 utility structures along the existing S136 Transmission Line, which crosses through portions of Whitefield, Jefferson, and Randolph, New Hampshire. Access road improvements and work pad grading are proposed as part of the project for the continued maintenance of the existing transmission line.

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

N/A

| 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 : <u>3/25/2020</u> . (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 : <u> / /</u> . (Attach proof of delivery) | | | | |
| C. Type of plan required: <input type="checkbox"/> Land Conversion <input type="checkbox"/> Detailed Development <input checked="" type="checkbox"/> Excavation, Grading & Reclamation <input type="checkbox"/> Steep Slope | | | | |
| D. Additional plans required: <input type="checkbox"/> Stormwater Drainage & Hydrologic Soil Groups <input type="checkbox"/> Source Control <input type="checkbox"/> Chloride Management | | | | |
| E. Total area of disturbance: <u>500,219</u> square feet | | | | |
| F. Additional impervious cover as a result of the project: <u>0</u> square feet (use the "-" symbol to indicate a net reduction in impervious coverage). Total final impervious cover: <u>0</u> square feet | | | | |
| G. Total undisturbed cover: <u>0</u> square feet | | | | |
| H. Number of lots proposed: <u>0</u> | | | | |
| I. Total length of roadway: <u>0</u> linear feet | | | | |
| J. Name(s) of receiving water(s): <u>N/A</u> | | | | |
| 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 | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | <input type="checkbox"/> | Permit number: | |
| 2. Wetlands Permit | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | <input checked="" type="checkbox"/> | Permit number: Multiple towns | |
| 3. Shoreland Permit | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | <input type="checkbox"/> | Permit number: | |
| 4. UIC Registration | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | <input type="checkbox"/> | Registration date: | |
| 5. Large/Small Community Well Approval | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | <input type="checkbox"/> | Approval letter date: | |
| 6. Large Groundwater Withdrawal Permit | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | <input type="checkbox"/> | Permit number: | |
| 7. Other: | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> | Permit number: | |
| L. List all species identified by the Natural Heritage Bureau as threatened or endangered or of concern: <u>N/A</u> | | | | |
| 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." <u>N/A</u> | | | | |
| N. Did the applicant/applicant's agent have a pre-application meeting with AOT staff? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, name of staff member: <u>Ridgely Mauck</u> | | | | |
| O. Will blasting of bedrock be required? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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.nhdfi.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

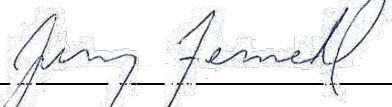
JF By initialing here, I acknowledge that I am required by Env-Wq 1503.20(e) to submit a copy of all approved documents to the department in PDF format on a CD within one week after permit approval.

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: March 24, 2020

Name (print or type): Jeremy Fennell

Title: Senior Environmental 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.

NHDES ALTERATION OF TERRAIN PERMIT APPLICATION

Appendix B Abutters List
March 24, 2020

Appendix B ABUTTERS LIST





Appendix B: Abutters List

S136 TRANSMISSION LINE STRUCTURE REPLACEMENT AND OPGW PROJECT

Whitefield, Jefferson, and Randolph, New Hampshire

Table 1. Abutters List: Parcels Intersecting AoT Project Area

| Whitefield Tax Map-Lot |
|---------------------------|
| 225-012 |
| 225-013 |
| 225-006 |
| 226-045 |
| 226-046 |
| 226-049 |
| 226-050 |

| Jefferson Tax Map-Lot |
|--------------------------|
| 022-009-00A |
| 022-009-00B |
| 022-008-000 |
| 022-000-000 |

| Randolph Tax Map-Lot |
|-------------------------|
| R16-001-000 |
| R15-014-000 |
| R15-011-000 |
| R15-013-00B |
| R15-015-000 |
| R15-021-000 |
| R15-020-000 |
| R14-013-000 |

NHDES ALTERATION OF TERRAIN PERMIT APPLICATION

Appendix C NHB and IPAC Results
March 24, 2020

Appendix C NHB AND IPAC RESULTS





New Hampshire Natural Heritage Bureau
NHB DataCheck Results Letter

To: Tom Tetreau, Stantec
30 Park Drive

Topsham, ME 04086

From: NH Natural Heritage Bureau

Date: 2/3/2020 (valid for one year from this date)

Re: Review by NH Natural Heritage Bureau of request submitted 1/21/2020

VALID ONLY FOR NOTIFICATION OR MINIMUM EXPEDITED
APPLICATIONS SUBMITTED TO THE NHDES WETLANDS BUREAU

NHB File ID: NHB20-0224

Applicant: Jeremy Fennell

Location: Whitefield, NH
Existing utility ROW between Route 115 and Route 3.

Project Description: Replacement of 21 existing wooden poles with new, similar steel poles. Access to structures within existing ROW for overhead line replacement.

The NH Natural Heritage database has been checked by staff of the NH Natural Heritage Bureau and/or the NH Nongame and Endangered Species Program for records of rare species and exemplary natural communities near the area mapped below. The species considered include those listed as Threatened or Endangered by either the state of New Hampshire or the federal government.

It was determined that, although there was a NHB record (e.g., rare wildlife, plant, and/or natural community) present in the vicinity, we do not expect that it will be impacted by the proposed project. This determination was made based on the project information submitted via the NHB Datacheck Tool on 1/21/2020, and cannot be used for any other project.



MAP OF PROJECT BOUNDARIES FOR: **NHB20-0224**

NHB20-0224



CONFIDENTIAL DNCR

CONFIDENTIAL DNCR

CONFIDENTIAL DNCR



New Hampshire Natural Heritage Bureau
NHB DataCheck Results Letter

To: Tom Tetreau, Stantec
30 Park Drive

Topsham, ME 04086

From: NH Natural Heritage Bureau

Date: 2/3/2020 (valid for one year from this date)

Re: Review by NH Natural Heritage Bureau of request submitted 1/21/2020

VALID ONLY FOR NOTIFICATION OR MINIMUM EXPEDITED
APPLICATIONS SUBMITTED TO THE NHDES WETLANDS BUREAU

NHB File ID: NHB20-0223

Applicant: Jeremy Fennell

Location: Randolph, NH
Existing utility ROW along Route 2.

**Project
Description:** Replacement of 21 existing wooden poles with new, similar steel poles. Access to structures within existing ROW for overhead line replacement.

The NH Natural Heritage database has been checked by staff of the NH Natural Heritage Bureau and/or the NH Nongame and Endangered Species Program for records of rare species and exemplary natural communities near the area mapped below. The species considered include those listed as Threatened or Endangered by either the state of New Hampshire or the federal government.

It was determined that, although there was a NHB record (e.g., rare wildlife, plant, and/or natural community) present in the vicinity, we do not expect that it will be impacted by the proposed project. This determination was made based on the project information submitted via the NHB Datacheck Tool on 1/21/2020, and cannot be used for any other project.



MAP OF PROJECT BOUNDARIES FOR: **NHB20-0223**

NHB20-0223





United States Department of the Interior



FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
<http://www.fws.gov/newengland>

In Reply Refer To:

March 03, 2020

Consultation Code: 05E1NE00-2020-SLI-1595

Event Code: 05E1NE00-2020-E-04622

Project Name: S136 Transmission Line

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2020-SLI-1595

Event Code: 05E1NE00-2020-E-04622

Project Name: S136 Transmission Line

Project Type: TRANSMISSION LINE

Project Description: Replacement of old, wooden transmission line poles with new, steel structures. Establishment of access roads and work pads to reach the replacement structure locations. Wetlands and streams will be crossed with temporary matting. Construction to occur in Summer 2020 through Summer 2021.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/44.37319916349199N71.54856735613595W>



Counties: Coos, NH

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

| NAME | STATUS |
|---|------------|
| Canada Lynx <i>Lynx canadensis</i> Population: Wherever Found in Contiguous U.S. There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3652 | Threatened |
| Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 | Threatened |

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
<http://www.fws.gov/newengland>

In Reply Refer To:

June 11, 2019

Consultation Code: 05E1NE00-2019-SLI-1945

Event Code: 05E1NE00-2019-E-04810

Project Name: S136 Line Structure Replacement Project - Jefferson Segment

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

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A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

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Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2019-SLI-1945

Event Code: 05E1NE00-2019-E-04810

Project Name: S136 Line Structure Replacement Project - Jefferson Segment

Project Type: WATER QUALITY MODIFICATION

Project Description: Replacement of 11 transmission line poles within the existing utility right-of-way in Jefferson, NH. The proposed work will involve replacement of the wooden H-frame structures with new, steel H-frame structures. Wetland impact will consist of temporary matting used for access and work pads. No tree clearing will occur for this project. The estimated timing of the project will be July through December of 2019. CGP.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/44.36364698824932N71.45294133859636W>



Counties: Coos, NH

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

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| NAME | STATUS |
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Critical habitats

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United States Department of the Interior



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70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
<http://www.fws.gov/newengland>

In Reply Refer To:

June 11, 2019

Consultation Code: 05E1NE00-2019-SLI-1946

Event Code: 05E1NE00-2019-E-04812

Project Name: S136 Line Structure Replacement Project - Randolph Segment

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

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A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

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This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2019-SLI-1946

Event Code: 05E1NE00-2019-E-04812

Project Name: S136 Line Structure Replacement Project - Randolph Segment

Project Type: WATER QUALITY MODIFICATION

Project Description: Replacement of 3 transmission line poles within the existing utility right-of-way in Rochester, NH. The proposed work will involve replacement of the wooden H-frame structures with new, steel H-frame structures. Wetland impact will consist of temporary matting used for access and work pads. No tree clearing will occur for this project. The estimated timing of the project will be July through December of 2019. CGP.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/44.36667654943207N71.30860472454617W>



Counties: Coos, NH

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

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Mammals

| NAME | STATUS |
|---|------------|
| Canada Lynx <i>Lynx canadensis</i> Population: Wherever Found in Contiguous U.S. There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3652 | Threatened |
| Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 | Threatened |

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

NHDES ALTERATION OF TERRAIN PERMIT APPLICATION

Appendix D NRCS Web Soil Survey
March 24, 2020

Appendix D NRCS WEB SOIL SURVEY





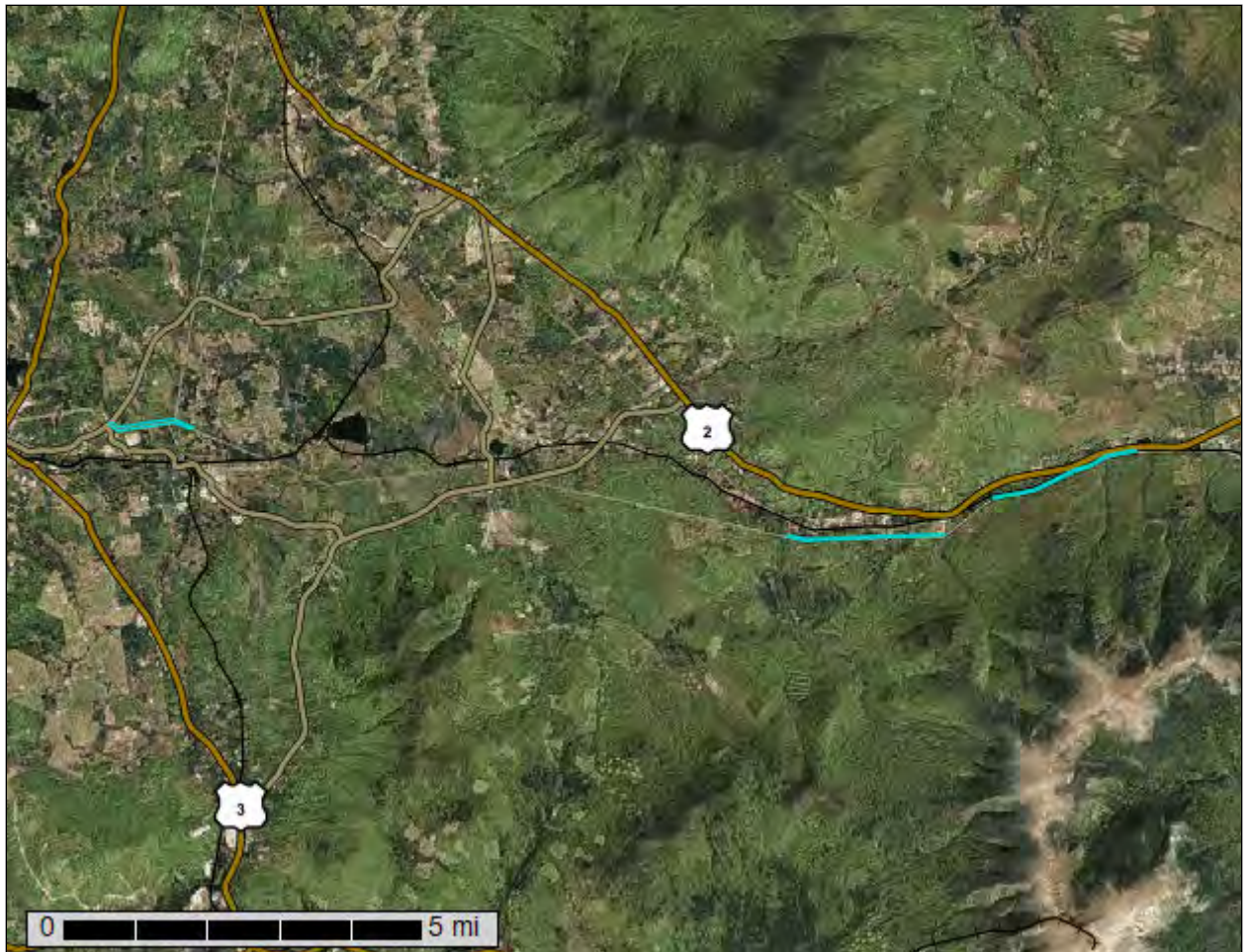
United States
Department of
Agriculture

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 Coos County Area, New Hampshire, and White Mountain National Forest, New Hampshire and Maine S136 Transmission Line - AoT



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.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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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

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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

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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.

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Map Scale: 1:127,000 if printed on A landscape (11" x 8.5") sheet.

0 1500 3000 6000 9000
Meters

0 5000 10000 20000 30000
Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84



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: Coos County Area, New Hampshire
 Survey Area Data: Version 25, Sep 16, 2019

Soil Survey Area: White Mountain National Forest, New Hampshire and Maine
 Survey Area Data: Version 3, Sep 16, 2019

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

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

Date(s) aerial images were photographed: Aug 19, 2010—Jul 16, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

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 |
|---------------------------------------|--|--------------|----------------|
| 14B | Sheepscot cobbly very fine sandy loam, 1 to 8 percent slopes | 0.6 | 0.5% |
| 22B | Colton gravelly sandy loam, 3 to 8 percent slopes | 0.6 | 0.6% |
| 27B | Groveton fine sandy loam, 3 to 8 percent slopes | 0.5 | 0.5% |
| 36A | Adams loamy sand, 0 to 3 percent slopes | 0.5 | 0.4% |
| 36C | Adams loamy sand, 8 to 15 percent slopes | 2.2 | 2.0% |
| 36E | Adams loamy sand, 15 to 60 percent slopes | 1.1 | 1.0% |
| 58B | Waumbek sandy loam, 3 to 8 percent slopes | 1.5 | 1.4% |
| 59C | Waumbek sandy loam, 8 to 15 percent slopes, very stony | 0.1 | 0.1% |
| 73D | Berkshire fine sandy loam, 15 to 25 percent slopes, very stony | 0.7 | 0.6% |
| 143C | Monadnock fine sandy loam, 8 to 15 percent slopes, very stony | 0.5 | 0.5% |
| 169B | Sunapee fine sandy loam, 0 to 8 percent slopes, very stony | 14.8 | 13.3% |
| 415B | Moosilauke loam, 3 to 8 percent slopes, very stony | 16.8 | 15.0% |
| 549A | Peacham mucky peat, 0 to 8 percent slopes, very stony | 0.7 | 0.7% |
| 670D | Tunbridge-Berkshire-Lyman complex, 15 to 25 percent slopes | 0.1 | 0.1% |
| 829B | Waumbek-Hermon association, undulating, very stony | 4.6 | 4.1% |
| 829D | Waumbek-Hermon association, hilly, very stony | 14.9 | 13.3% |
| 895A | Bucksport muck, 0 to 2 percent slopes | 4.8 | 4.3% |
| Subtotals for Soil Survey Area | | 65.1 | 58.2% |
| Totals for Area of Interest | | 111.9 | 100.0% |

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---------------------------------------|---------------------------|--------------|----------------|
| NOTCOM | No Digital Data Available | 46.8 | 41.8% |
| Subtotals for Soil Survey Area | | 46.8 | 41.8% |

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| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|-----------------------------|---------------|--------------|----------------|
| Totals for Area of Interest | | 111.9 | 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.

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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.

Coos County Area, New Hampshire

14B—Sheepscot cobbly very fine sandy loam, 1 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9f22
Elevation: 820 to 2,490 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 37 to 46 degrees F
Frost-free period: 90 to 135 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Sheepscot

Setting

Landform: Terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Outwash

Typical profile

Oi - 0 to 3 inches: slightly decomposed plant material
H1 - 3 to 12 inches: cobbly very fine sandy loam
H2 - 12 to 21 inches: very stony fine sandy loam
H3 - 21 to 65 inches: extremely gravelly sand

Properties and qualities

Slope: 1 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 5.95 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Croghan

Percent of map unit: 3 percent
Landform: Terraces

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Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Naumburg

Percent of map unit: 3 percent
Landform: Terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Colton

Percent of map unit: 3 percent
Landform: Terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Grange

Percent of map unit: 2 percent
Landform: Terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Madawaska

Percent of map unit: 2 percent
Landform: Terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Waumbek

Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Adams

Percent of map unit: 1 percent
Landform: Terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear

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Across-slope shape: Linear
Hydric soil rating: No

22B—Colton gravelly sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2yfp
Elevation: 10 to 2,000 feet
Mean annual precipitation: 31 to 65 inches
Mean annual air temperature: 36 to 52 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Farmland of local importance

Map Unit Composition

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

Description of Colton

Setting

Landform: Outwash deltas
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Base slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy-skeletal glaciofluvial deposits

Typical profile

Ap - 0 to 7 inches: gravelly sandy loam
Bs - 7 to 14 inches: gravelly loamy sand
BC - 14 to 24 inches: very gravelly coarse sand
C - 24 to 65 inches: extremely gravelly coarse sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.42 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 2.5 inches)

Interpretive groups

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

Custom Soil Resource Report

Hydric soil rating: No

Minor Components

Adams

Percent of map unit: 10 percent

Landform: Outwash deltas

Landform position (two-dimensional): Backslope, summit

Landform position (three-dimensional): Base slope

Down-slope shape: Linear

Across-slope shape: Convex

Hydric soil rating: No

Sheepscot

Percent of map unit: 3 percent

Landform: Outwash deltas

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Base slope

Down-slope shape: Concave

Across-slope shape: Linear

Hydric soil rating: No

Croghan

Percent of map unit: 2 percent

Landform: Outwash deltas

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Base slope

Down-slope shape: Linear

Across-slope shape: Concave

Hydric soil rating: No

27B—Groveton fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9dsm

Elevation: 790 to 2,300 feet

Mean annual precipitation: 40 to 50 inches

Mean annual air temperature: 37 to 46 degrees F

Frost-free period: 90 to 135 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Groveton and similar soils: 85 percent

Minor components: 15 percent

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

Description of Groveton

Setting

Landform: Terraces

Landform position (two-dimensional): Footslope

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Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loamy outwash over sandy and/or gravelly outwash derived from granite and gneiss or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material

Oa - 1 to 2 inches: highly decomposed plant material

H1 - 2 to 14 inches: fine sandy loam

H2 - 14 to 29 inches: loamy fine sand

H3 - 29 to 65 inches: sand

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)

Depth to water table: About 72 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Moderate (about 8.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: B

Hydric soil rating: No

Minor Components

Madawaska

Percent of map unit: 5 percent

Landform: Terraces

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Adams

Percent of map unit: 3 percent

Landform: Terraces

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Salmon

Percent of map unit: 3 percent

Landform: Lake terraces

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Tread

Down-slope shape: Linear

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Across-slope shape: Linear
Hydric soil rating: No

Colton

Percent of map unit: 2 percent
Landform: Terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Stetson

Percent of map unit: 2 percent
Landform: Terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

36A—Adams loamy sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2x1c9
Elevation: 10 to 2,000 feet
Mean annual precipitation: 31 to 95 inches
Mean annual air temperature: 27 to 52 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Farmland of local importance

Map Unit Composition

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

Description of Adams

Setting

Landform: Outwash deltas
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy glaciofluvial deposits

Typical profile

Ap - 0 to 7 inches: loamy sand
Bs - 7 to 21 inches: sand
BC - 21 to 27 inches: sand
C - 27 to 65 inches: sand

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Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.42 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Colton

Percent of map unit: 8 percent
Landform: Outwash deltas
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Base slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Croghan

Percent of map unit: 5 percent
Landform: Outwash deltas
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Nicholville

Percent of map unit: 2 percent
Landform: Outwash deltas
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

36C—Adams loamy sand, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2wqn8
Elevation: 10 to 2,000 feet
Mean annual precipitation: 31 to 95 inches
Mean annual air temperature: 27 to 52 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Farmland of local importance

Map Unit Composition

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

Description of Adams

Setting

Landform: Outwash terraces
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy glaciofluvial deposits

Typical profile

Ap - 0 to 7 inches: loamy sand
Bs - 7 to 21 inches: sand
BC - 21 to 27 inches: sand
C - 27 to 65 inches: sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.42 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Colton

Percent of map unit: 8 percent
Landform: Outwash terraces
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Base slope, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Croghan

Percent of map unit: 3 percent
Landform: Outwash terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Nicholville

Percent of map unit: 2 percent
Landform: Outwash terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Sheepscot

Percent of map unit: 2 percent
Landform: Outwash terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

36E—Adams loamy sand, 15 to 60 percent slopes

Map Unit Setting

National map unit symbol: 2wqnf
Elevation: 10 to 2,000 feet
Mean annual precipitation: 31 to 95 inches
Mean annual air temperature: 27 to 52 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Adams and similar soils: 85 percent

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Minor components: 15 percent

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

Description of Adams

Setting

Landform: Eskers

Landform position (two-dimensional): Backslope, summit

Landform position (three-dimensional): Side slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Sandy glaciofluvial deposits

Typical profile

Ap - 0 to 7 inches: loamy sand

Bs - 7 to 21 inches: sand

BC - 21 to 27 inches: sand

C - 27 to 65 inches: sand

Properties and qualities

Slope: 15 to 60 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Somewhat excessively drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.42 to 14.17 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: A

Hydric soil rating: No

Minor Components

Colton

Percent of map unit: 8 percent

Landform: Eskers

Landform position (two-dimensional): Backslope, summit

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Hydric soil rating: No

Croghan

Percent of map unit: 5 percent

Landform: Eskers

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Base slope

Down-slope shape: Linear

Across-slope shape: Concave

Hydric soil rating: No

Salmon

Percent of map unit: 2 percent
Landform: Eskers
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

58B—Waumbek sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9dx9
Elevation: 820 to 2,490 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 37 to 46 degrees F
Frost-free period: 90 to 135 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Waumbek

Setting

Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Ablation till derived from granite and gneiss

Typical profile

H1 - 0 to 9 inches: sandy loam
H2 - 9 to 24 inches: gravelly sandy loam
H3 - 24 to 65 inches: very gravelly loamy sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00 to 20.00 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Moosilauke

Percent of map unit: 5 percent
Landform: Depressions, ground moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Sunapee

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Hermon

Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Sheepscot

Percent of map unit: 2 percent
Landform: Terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Success

Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

59C—Waumbek sandy loam, 8 to 15 percent slopes, very stony

Map Unit Setting

National map unit symbol: 9dxd
Elevation: 820 to 2,490 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 37 to 46 degrees F
Frost-free period: 90 to 135 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Waumbek

Setting

Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Ablation till derived from granite and gneiss

Typical profile

H1 - 0 to 9 inches: sandy loam
H2 - 9 to 24 inches: gravelly sandy loam
H3 - 24 to 65 inches: very gravelly loamy sand

Properties and qualities

Slope: 8 to 15 percent
Percent of area covered with surface fragments: 1.6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00 to 20.00 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Moosilauke

Percent of map unit: 5 percent
Landform: Depressions, ground moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Sunapee

Percent of map unit: 4 percent
Landform: Hillslopes
Landform position (two-dimensional): Foothlope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Skerry

Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Foothlope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Hermon

Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Success

Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Monadnock

Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

73D—Berkshire fine sandy loam, 15 to 25 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2wllx
Elevation: 460 to 1,840 feet
Mean annual precipitation: 31 to 95 inches
Mean annual air temperature: 27 to 55 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Berkshire, very stony, and similar soils: 88 percent
Minor components: 12 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Berkshire, Very Stony

Setting

Landform: Hills, mountains
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Mountainflank, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy supraglacial meltout till derived from phyllite and/or loamy supraglacial meltout till derived from granite and gneiss and/or loamy supraglacial meltout till derived from mica schist

Typical profile

O_i - 0 to 2 inches: slightly decomposed plant material
A - 2 to 4 inches: fine sandy loam
E - 4 to 5 inches: fine sandy loam
B_{s1} - 5 to 7 inches: fine sandy loam
B_{s2} - 7 to 13 inches: fine sandy loam
B_{s3} - 13 to 21 inches: fine sandy loam
BC₁ - 21 to 28 inches: fine sandy loam
BC₂ - 28 to 33 inches: fine sandy loam
C - 33 to 65 inches: fine sandy loam

Properties and qualities

Slope: 15 to 25 percent
Percent of area covered with surface fragments: 1.1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (K_{sat}): 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
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)

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Available water storage in profile: High (about 10.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: B

Hydric soil rating: No

Minor Components

Peru, very stony

Percent of map unit: 5 percent

Landform: Hills, mountains

Landform position (two-dimensional): Backslope, footslope

Landform position (three-dimensional): Mountainflank, side slope, nose slope

Microfeatures of landform position: Open depressions, open depressions

Down-slope shape: Convex, concave

Across-slope shape: Convex, concave

Hydric soil rating: No

Lyman, very stony

Percent of map unit: 4 percent

Landform: Hills, mountains

Landform position (two-dimensional): Shoulder, summit, backslope

Landform position (three-dimensional): Mountainflank, nose slope, side slope

Microfeatures of landform position: Rises, rises

Down-slope shape: Convex

Across-slope shape: Convex

Hydric soil rating: No

Lyme, very stony

Percent of map unit: 2 percent

Landform: Hills, mountains

Landform position (two-dimensional): Footslope, toeslope

Landform position (three-dimensional): Mountainflank, side slope, nose slope

Microfeatures of landform position: Closed depressions, open depressions, closed depressions, open depressions

Down-slope shape: Concave

Across-slope shape: Concave

Hydric soil rating: Yes

Marlow, very stony

Percent of map unit: 1 percent

Landform: Hills, mountains

Landform position (two-dimensional): Summit, shoulder, backslope

Landform position (three-dimensional): Mountainflank, side slope, nose slope

Down-slope shape: Convex

Across-slope shape: Convex

Hydric soil rating: No

143C—Monadnock fine sandy loam, 8 to 15 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2wlm7
Elevation: 360 to 1,670 feet
Mean annual precipitation: 31 to 95 inches
Mean annual air temperature: 27 to 55 degrees F
Frost-free period: 90 to 150 days
Farmland classification: Farmland of local importance

Map Unit Composition

Monadnock, very stony, and similar soils: 79 percent
Minor components: 21 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Monadnock, Very Stony

Setting

Landform: Hills, mountains
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Mountainflank, mountainbase, side slope, nose slope, interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy supraglacial meltout till derived from phyllite and/or granite and gneiss and/or mica schist over sandy and gravelly supraglacial meltout till derived from phyllite and/or granite and gneiss and/or mica schist

Typical profile

Oe - 0 to 3 inches: moderately decomposed plant material
E - 3 to 8 inches: fine sandy loam
Bs1 - 8 to 10 inches: fine sandy loam
Bs2 - 10 to 12 inches: fine sandy loam
Bs3 - 12 to 22 inches: gravelly fine sandy loam
BC - 22 to 25 inches: gravelly fine sandy loam
2C1 - 25 to 45 inches: gravelly loamy sand
2C2 - 45 to 65 inches: gravelly loamy sand

Properties and qualities

Slope: 8 to 15 percent
Percent of area covered with surface fragments: 1.1 percent
Depth to restrictive feature: 18 to 36 inches to strongly contrasting textural stratification
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.03 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

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Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water storage in profile: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: B

Hydric soil rating: No

Minor Components

Becket, very stony

Percent of map unit: 11 percent

Landform: Hills, mountains

Landform position (two-dimensional): Backslope, summit, shoulder

Landform position (three-dimensional): Mountainbase, mountainflank, side slope, nose slope, interfluve

Down-slope shape: Convex

Across-slope shape: Convex

Hydric soil rating: No

Skerry, very stony

Percent of map unit: 5 percent

Landform: Mountains, hills

Landform position (two-dimensional): Backslope, footslope

Landform position (three-dimensional): Mountainflank, mountainbase, interfluve, side slope, nose slope

Microfeatures of landform position: Closed depressions, open depressions, open depressions, closed depressions

Down-slope shape: Convex, concave

Across-slope shape: Linear, concave

Hydric soil rating: No

Tunbridge, very stony

Percent of map unit: 4 percent

Landform: Hills, mountains

Landform position (two-dimensional): Backslope, summit, shoulder

Landform position (three-dimensional): Mountainbase, mountainflank, side slope, nose slope, interfluve

Down-slope shape: Convex

Across-slope shape: Convex

Hydric soil rating: No

Lyme, very stony

Percent of map unit: 1 percent

Landform: Mountains, hills

Landform position (two-dimensional): Footslope, toeslope

Landform position (three-dimensional): Mountainflank, mountainbase, nose slope, interfluve, side slope

Microfeatures of landform position: Open depressions, closed depressions, open depressions, closed depressions

Down-slope shape: Concave

Across-slope shape: Concave

Hydric soil rating: Yes

169B—Sunapee fine sandy loam, 0 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2trs7
Elevation: 620 to 1,800 feet
Mean annual precipitation: 31 to 95 inches
Mean annual air temperature: 27 to 54 degrees F
Frost-free period: 70 to 160 days
Farmland classification: Farmland of local importance

Map Unit Composition

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

Description of Sunapee, Very Stony

Setting

Landform: Hills, mountains
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Mountainbase, interfluve, base slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy supraglacial meltout till derived from phyllite and/or granite and gneiss and/or mica schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 3 inches: fine sandy loam
E - 3 to 5 inches: gravelly fine sandy loam
Bhs - 5 to 6 inches: gravelly fine sandy loam
Bs1 - 6 to 8 inches: gravelly fine sandy loam
Bs2 - 8 to 17 inches: gravelly fine sandy loam
Bs3 - 17 to 26 inches: gravelly fine sandy loam
C1 - 26 to 38 inches: gravelly sandy loam
C2 - 38 to 65 inches: gravelly sandy loam

Properties and qualities

Slope: 0 to 8 percent
Percent of area covered with surface fragments: 1.1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.03 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Berkshire, very stony

Percent of map unit: 5 percent
Landform: Mountains, hills
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Mountainbase, base slope, interfluve
Microfeatures of landform position: Rises, rises
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Monadnock, very stony

Percent of map unit: 4 percent
Landform: Hills, mountains
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Mountainbase, interfluve, base slope
Microfeatures of landform position: Rises, rises
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Lyme, very stony

Percent of map unit: 4 percent
Landform: Hills, mountains
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Mountainbase, interfluve, base slope
Microfeatures of landform position: Closed depressions, closed depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Moosilauke, very stony

Percent of map unit: 2 percent
Landform: Hills, mountains
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Mountainbase, interfluve, base slope
Microfeatures of landform position: Closed depressions, closed depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

415B—Moosilauke loam, 3 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 9dth
Elevation: 820 to 2,490 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 37 to 46 degrees F
Frost-free period: 90 to 135 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Moosilauke

Setting

Landform: Depressions, ground moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Drift derived from granite and gneiss and/or outwash

Typical profile

H1 - 0 to 7 inches: loam
H2 - 7 to 18 inches: gravelly sandy loam
H3 - 18 to 65 inches: very gravelly sand

Properties and qualities

Slope: 3 to 8 percent
Percent of area covered with surface fragments: 1.6 percent
Depth to restrictive feature: More than 80 inches
Natural 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 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A/D
Hydric soil rating: Yes

Minor Components

Lyme

Percent of map unit: 5 percent
Landform: Depressions, hillslopes
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Peacham

Percent of map unit: 5 percent
Landform: Hillslopes, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, side slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Sunapee

Percent of map unit: 3 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Waumbek

Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

549A—Peacham mucky peat, 0 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2ty6t
Elevation: 430 to 1,970 feet
Mean annual precipitation: 31 to 95 inches
Mean annual air temperature: 27 to 52 degrees F
Frost-free period: 70 to 135 days
Farmland classification: Not prime farmland

Map Unit Composition

Peacham, very stony, and similar soils: 78 percent

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Minor components: 22 percent

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

Description of Peacham, Very Stony

Setting

Landform: Mountains, hills

Landform position (two-dimensional): Toeslope, footslope

Landform position (three-dimensional): Mountainbase, interfluve, base slope

Down-slope shape: Concave

Across-slope shape: Concave

Parent material: Organic material over loamy lodgment till derived from schist and/or loamy lodgment till derived from granite and gneiss and/or loamy lodgment till derived from phyllite

Typical profile

Oe - 0 to 2 inches: mucky peat

Oa - 2 to 10 inches: muck

Bg - 10 to 15 inches: fine sandy loam

Cdg1 - 15 to 31 inches: fine sandy loam

Cdg2 - 31 to 65 inches: sandy loam

Properties and qualities

Slope: 0 to 8 percent

Percent of area covered with surface fragments: 1.1 percent

Depth to restrictive feature: 12 to 35 inches to densic material

Natural drainage class: Very poorly drained

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 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water storage in profile: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: D

Hydric soil rating: Yes

Minor Components

Cabot, very stony

Percent of map unit: 11 percent

Landform: Hills, mountains

Landform position (two-dimensional): Toeslope, footslope

Landform position (three-dimensional): Mountainbase, interfluve, base slope

Microfeatures of landform position: Rises, rises

Down-slope shape: Concave, convex

Across-slope shape: Concave, convex

Hydric soil rating: Yes

Wonsqueak

Percent of map unit: 8 percent

Landform: Hills, mountains

Landform position (two-dimensional): Toeslope, footslope

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Landform position (three-dimensional): Mountainbase, interfluve, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Bucksport

Percent of map unit: 2 percent
Landform: Mountains, hills
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Mountainbase, interfluve, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Searsport

Percent of map unit: 1 percent
Landform: Hills, mountains
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Mountainbase, interfluve, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

670D—Tunbridge-Berkshire-Lyman complex, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: 9dy6
Elevation: 820 to 2,490 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 37 to 46 degrees F
Frost-free period: 90 to 135 days
Farmland classification: Not prime farmland

Map Unit Composition

Tunbridge and similar soils: 45 percent
Berkshire and similar soils: 20 percent
Lyman and similar soils: 15 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tunbridge

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex

Typical profile

H1 - 0 to 2 inches: silt loam

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H2 - 2 to 25 inches: silt loam
H3 - 25 to 34 inches: cobbly fine sandy loam
R - 34 to 38 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 6.00 in/hr)
Depth to water table: About 72 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Berkshire

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Ablation till derived from granite and gneiss

Typical profile

Oe - 0 to 4 inches: moderately decomposed plant material
H1 - 4 to 10 inches: fine sandy loam
H2 - 10 to 24 inches: very fine sandy loam
H3 - 24 to 65 inches: very fine sandy loam

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 72 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Hydric soil rating: No

Description of Lyman

Setting

Landform: Hillslopes

Landform position (two-dimensional): Backslope, shoulder

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Ablation till derived from mica schist and/or ablation till derived from granite and gneiss

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material

H1 - 1 to 4 inches: fine sandy loam

H2 - 4 to 13 inches: fine sandy loam

H3 - 13 to 16 inches: gravelly fine sandy loam

R - 16 to 20 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 25 percent

Depth to restrictive feature: 10 to 20 inches to lithic bedrock

Natural drainage class: Somewhat excessively drained

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 5.95 in/hr)

Depth to water table: About 72 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: D

Hydric soil rating: No

Minor Components

Monadnock

Percent of map unit: 5 percent

Landform: Hillslopes

Landform position (two-dimensional): Backslope, shoulder

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Hydric soil rating: No

Sunapee

Percent of map unit: 5 percent

Landform: Hillslopes

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Side slope, base slope

Down-slope shape: Concave

Across-slope shape: Concave

Hydric soil rating: No

Custom Soil Resource Report

Peru

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Marlow

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

Skerry

Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

829B—Waumbek-Hermon association, undulating, very stony

Map Unit Setting

National map unit symbol: 9f0x
Elevation: 820 to 2,490 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 37 to 46 degrees F
Frost-free period: 90 to 135 days
Farmland classification: Not prime farmland

Map Unit Composition

Waumbek and similar soils: 60 percent
Hermon and similar soils: 20 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Waumbek

Setting

Landform: Hillslopes

Custom Soil Resource Report

Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Ablation till derived from granite and gneiss

Typical profile

H1 - 0 to 9 inches: sandy loam
H2 - 9 to 24 inches: gravelly sandy loam
H3 - 24 to 65 inches: very gravelly loamy sand

Properties and qualities

Slope: 0 to 15 percent
Percent of area covered with surface fragments: 1.6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00 to 20.00 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Hydric soil rating: No

Description of Hermon

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy-skeletal supraglacial meltout till derived from granite and gneiss

Typical profile

Oe - 0 to 3 inches: moderately decomposed plant material
H1 - 3 to 9 inches: fine sandy loam
H2 - 9 to 16 inches: very gravelly loamy sand
H3 - 16 to 65 inches: very gravelly loamy sand

Properties and qualities

Slope: 0 to 15 percent
Percent of area covered with surface fragments: 1.6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (1.98 to 19.98 in/hr)
Depth to water table: About 72 inches
Frequency of flooding: None

Custom Soil Resource Report

Frequency of ponding: None

Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: A

Hydric soil rating: No

Minor Components

Sunapee

Percent of map unit: 5 percent

Landform: Hillslopes

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Side slope, base slope

Down-slope shape: Concave

Across-slope shape: Concave

Hydric soil rating: No

Monadnock

Percent of map unit: 4 percent

Landform: Hillslopes

Landform position (two-dimensional): Backslope, shoulder

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Hydric soil rating: No

Skerry

Percent of map unit: 3 percent

Landform: Hillslopes

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Side slope, base slope

Down-slope shape: Concave

Across-slope shape: Concave

Hydric soil rating: No

Success

Percent of map unit: 2 percent

Landform: Hillslopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Hydric soil rating: No

Colton

Percent of map unit: 2 percent

Landform: Terraces

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Sheepscot

Percent of map unit: 2 percent

Custom Soil Resource Report

Landform: Terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Moosilauke

Percent of map unit: 2 percent
Landform: Depressions, ground moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

829D—Waumbek-Hermon association, hilly, very stony

Map Unit Setting

National map unit symbol: 9f0y
Elevation: 820 to 2,490 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 37 to 46 degrees F
Frost-free period: 90 to 135 days
Farmland classification: Not prime farmland

Map Unit Composition

Waumbek and similar soils: 55 percent
Hermon and similar soils: 25 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Waumbek

Setting

Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Ablation till derived from granite and gneiss

Typical profile

H1 - 0 to 9 inches: sandy loam
H2 - 9 to 24 inches: gravelly sandy loam
H3 - 24 to 65 inches: very gravelly loamy sand

Properties and qualities

Slope: 15 to 25 percent
Percent of area covered with surface fragments: 1.6 percent

Custom Soil Resource Report

Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00 to 20.00 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Hydric soil rating: No

Description of Hermon

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy-skeletal supraglacial meltout till derived from granite and gneiss

Typical profile

Oe - 0 to 3 inches: moderately decomposed plant material
H1 - 3 to 9 inches: fine sandy loam
H2 - 9 to 16 inches: very gravelly loamy sand
H3 - 16 to 65 inches: very gravelly loamy sand

Properties and qualities

Slope: 15 to 35 percent
Percent of area covered with surface fragments: 1.6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (1.98 to 19.98 in/hr)
Depth to water table: About 72 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Sunapee

Percent of map unit: 5 percent
Landform: Hillslopes

Custom Soil Resource Report

Landform position (two-dimensional): Foothlope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Monadnock

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Skerry

Percent of map unit: 4 percent
Landform: Hillslopes
Landform position (two-dimensional): Foothlope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Sheepscot

Percent of map unit: 2 percent
Landform: Terraces
Landform position (two-dimensional): Foothlope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Colton

Percent of map unit: 2 percent
Landform: Terraces
Landform position (two-dimensional): Foothlope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Success

Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

895A—Bucksport muck, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2ty6y
Elevation: 390 to 1,970 feet
Mean annual precipitation: 31 to 95 inches
Mean annual air temperature: 27 to 52 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Bucksport and similar soils: 78 percent
Minor components: 22 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bucksport

Setting

Landform: Hills, mountains
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Mountainbase, interflue, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Herbaceous organic material and/or woody organic material

Typical profile

Oa1 - 0 to 12 inches: muck
Oa2 - 12 to 25 inches: muck
Oa3 - 25 to 45 inches: muck
Oa4 - 45 to 65 inches: muck

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
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 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water storage in profile: Very high (about 21.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Hydric soil rating: Yes

Minor Components

Wonsqueak

Percent of map unit: 10 percent
Landform: Mountains, hills
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Mountainbase, interfluve, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Rumney

Percent of map unit: 5 percent
Landform: Mountains, hills
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Mountainbase, interfluve, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Peacham, very stony

Percent of map unit: 4 percent
Landform: Hills, mountains
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Mountainbase, interfluve, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Searsport

Percent of map unit: 3 percent
Landform: Hills, mountains
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Mountainbase, interfluve, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

White Mountain National Forest, New Hampshire and Maine

NOTCOM—No Digital Data Available

Map Unit Composition

Notcom: 100 percent

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

Description of Notcom

Properties and qualities

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Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

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United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

NHDES ALTERATION OF TERRAIN PERMIT APPLICATION

Appendix E Representative Photographs
March 24, 2020

Appendix E REPRESENTATIVE PHOTOGRAPHS



Appendix E: Representative Photographs

AoT Area A: Whitefield, New Hampshire



Photo 1. Proposed entrance location off Route 116 near structure 21.
Stantec, November 14, 2019.



Photo 2. Existing ROW conditions near structure 24.
Stantec, November 29, 2016.



Photo 3. Existing ROW conditions near structure 27.
Stantec, November 29, 2016.



Photo 4. Existing ROW conditions near structure 29.
Stantec, November 29, 2016.



Photo 5. Existing ROW conditions near structure 33.
Stantec, November 29, 2016.



Photo 6. Existing ROW conditions near structure 36.
Stantec, November 30, 2016.

AoT Area B: Jefferson and Randolph



Photo 7. Existing ROW conditions near structure 149 near Jefferson Notch Road.
Stantec, December 5, 2016.



Photo 8. Existing ROW conditions near structure 155.
Stantec, January 24, 2019.



Photo 9. Existing ROW conditions near structure 160.
Stantec, January 24, 2019.



Photo 10. Existing ROW conditions between structures 167 and 168 at wetland W096.
Stantec, December 6, 2016.



Photo 11. Existing ROW conditions near structure 172.
Stantec, December 6, 2016.



Photo 12. Existing ROW conditions at structure 178.
Stantec, December 6, 2016.

AoT Area C: Randolph



Photo 13. Existing ROW conditions near structure 196.
Stantec, December 7, 2016.



Photo 14. Existing ROW conditions near structure 200.
Stantec, October 31, 2019.



Photo 15. Existing ROW conditions near structure 202.
Stantec, November 17, 2016.



Photo 16. Existing ROW conditions near structure 205.
Stantec, November 16, 2016.



Photo 17. Existing ROW conditions near structure 212 at Cold Brook.
Stantec, October 31, 2019.

NHDES ALTERATION OF TERRAIN PERMIT APPLICATION

Appendix F Waiver Request
March 24, 2020

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 | |
|--|----------------------|
| S136 Transmission Line Structure Replacement Project Project Name | |
| Existing S136 Right-of-Way Street Address | |
| Whitefield, Jefferson, Randolph City/Town | Multiple Zip Code |
| Multiple – see attached plans Tax Map/Lot Number | |

| B. APPLICANT/OWNER INFORMATION | | |
|---|----------------------------------|-------------------|
| Jeremy First Name | Fennell Last Name | |
| Eversource Energy Organization | | |
| 13 Legends Drive Street Address | | |
| Hooksett City/Town | New Hampshire State | 03106 Zip Code |
| jeremy.fennell@eversource.com Email | 603-634-3396 Telephone Number | |

| C. APPLICANT/OWNER AGENT INFORMATION | | |
|---|----------------------------------|-------------------|
| Tom First Name | Tetreau Last Name | |
| Stantec Consulting Services Inc. Organization | | |
| 30 Park Drive Street Address | | |
| Topsham City/Town | Maine State | 04086 Zip Code |
| tom.tetreau@stantec.com Email | 207-406-5496 Telephone Number | |

| D. WAIVER REQUESTS | |
|--|--|
| <p>Env-Wq 1504.09</p> <p>Rule Section Waiver Request</p> | <p>Stormwater Drainage Report; Drainage Area Plans; Hydrologic Soil Group Plans</p> <p>Name of Rule</p> |
| <p>Reason for Waiver Request</p> <p>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 S136 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.</p> | |
| <p>Waiver Timeline</p> <p>Permanent</p> | |
| <p>Proposed Alternative</p> <p>The proposed access and work pad improvements will not result in new impervious surfaces. Therefore, there is no proposed alternative to substitute the requirements of Env-Wq 1504.09.</p> | |
| <p>Compliance with Env- WQ 1509.04</p> <p>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. Access and work pad improvements will be completed using stone and gravel; 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.</p> <p>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 a waiver from providing a Stormwater Drainage Report, Drainage Area Plans, and Hydrologic Soil Group Plans for the purposes of the proposed utility line maintenance project.</p> | |

E. SIGNATURES



 Applicant/Owner, **Jeremy Fennell, Eversource Energy**

March 24, 2020

 Date



 Applicant/Owner Agent, **Tom Tetreau, Stantec**

March 24, 2020

 Date

NHDES ALTERATION OF TERRAIN PERMIT APPLICATION

Appendix G Certified Mail Receipts
March 24, 2020

Appendix G CERTIFIED MAIL RECEIPTS

Proof of delivery to be forwarded separately.



Redaction Log

Total Number of Redactions in Document: 4

Redaction Reasons by Page

| Page | Reason | Description | Occurrences |
|------|----------------------|---|-------------|
| 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

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. | 78(1) 79(1) 80(1) 81(1) |