NHDES Standard Dredge and Fill Wetlands Permit Application

Unitil Kingston Solar Project

24 Towle Road
Kingston, NH 03848
Tax Map R-12, Lot 26

Date:
July 5, 2023

Prepared for:
Unitil Energy Systems, Inc.
30 Energy Way
Exeter, NH

TFM Job Number: 20025-00

Prepared by:

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SECTION 1

STANDARD DREDGE AND FILL WETLANDS PERMIT APPLICATION

Water Division/Land Resources Management
Wetlands Bureau

Check the Status of your Application

RSA/Rule: RSA 482-A/Env-Wt 100-900

APPLICANT'S NAME: **Unitil Energy Systems, Inc.** **TOWN NAME:** Kingston

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

A person may request a waiver of the requirements in Rules Env-Wt 100-900 to accommodate situations where strict adherence to the requirements would not be in the best interest of the public or the environment but is still in compliance with RSA 482-A. A person may also request a waiver of the standards for existing dwellings over water pursuant to RSA 482-A:26, III(b). For more information, please consult the Waiver Request Form.

SECTION 1 - REQUIRED PLANNING FOR ALL PROJECTS (Env-Wt 306.05; RSA 482-A:3, I(d)(2)) Please use the Wetland Permit Planning Tool (WPPT), the Natural Heritage Bureau (NHB) DataCheck Tool, the Aquatic Restoration Mapper, or other sources to assist in identifying key features such as: priority resource areas (PRAs), protected species or habitats, coastal areas, designated rivers, or designated prime wetlands.	
Has the required planning been completed?	☒ Yes ☐ No
Does the property contain a PRA? If yes, provide the following information:	☐ Yes ☒ No
• Does the project qualify for an Impact Classification Adjustment (e.g. NH Fish and Game Department (NHF&G) and NHB agreement for a classification downgrade) or a Project-Type Exception (e.g. Maintenance or Statutory Permit-by-Notification (SPN) project)? See Env-Wt 407.02 and Env-Wt 407.04.	☐ Yes ☒ No
• Protected species or habitat? o If yes, species or habitat name(s): Blanding's Turtle, Northern Black Racer, Spotted Turtle o NHB Project ID #: NHB22-3062	☒ Yes ☐ No
• Bog?	☐ Yes ☒ No
• Floodplain wetland contiguous to a tier 3 or higher watercourse?	☐ Yes ☒ No
• Designated prime wetland or duly-established 100-foot buffer?	☐ Yes ☒ No
• Sand dune, tidal wetland, tidal water, or undeveloped tidal buffer zone?	☐ Yes ☒ No
Is the property within a Designated River corridor? If yes, provide the following information: • Name of Local River Management Advisory Committee (LAC): • A copy of the application was sent to the LAC on Month: Day: Year:	☐ Yes ☒ No

For dredging projects, is the subject property contaminated? • If yes, list contaminant:	☐ Yes ☒ No
Is there potential to impact impaired waters, class A waters, or outstanding resource waters?	☐ Yes ☒ No
For stream crossing projects, provide watershed size (see WPPT or Stream Stats):	

SECTION 2 - PROJECT DESCRIPTION (Env-Wt 311.04(i))

Provide a **brief** description of the project and the purpose of the project, outlining the scope of work to be performed and whether impacts are temporary or permanent. DO NOT reply "See attached"; please use the space provided below.

Unitil Energy Systems (Unitil) is proposing utility-scale solar field, more formally known as a Photovoltaic (PV) Solar Array. After an extensive site evaluation period, they have identified land at 14 & 24 Towle Road in Kingston, NH as the preferred site for the facility. The solar field would be a single-axis tracking system (tracks east to west) with an aim to generate approximately 5 megawatts (MW). Additional site improvements include access considerations, specifically improvements to the existing interesction of Towle/Mill Road and a proposed 20-wide gravel drivew way through the Class VI portion of Towle road, electrical infrastructure to connect to the grid, as well as stormwater management areas.

There are five wetlands present on 24 Towle road (lot R-12-26) with no wetlands located on 14 Towle Road (Lot R-12-25). Three low-functioning and low-valued forested wetlands (wetlands 1-3) will be permanently impacted totaling (10,959 SF). A fourth forested and scrub-shrub wetland (wetland 4), is located on the western side of the site and is moderately valuable and moderately functioning. No permanent imapcts are proposed but temporary impacts (15,868 SF) will be required for tree clearing. A fifth forested and scrub-shrub wetland (wetland 5) is also moderately valuable and moderately functioning with permanent impacts limited to (9,447 SF) along the northern most tip of the wetlands with additional temporary impacts of (3,096 SF) for tree clearing. In total, site construction will required (20,406 SF) of permanently and (18,964 SF) of temporary wetland across the five wetlands.

SECTION 3 - PROJECT LOCATION

Separate wetland permit applications must be submitted for each municipality within which wetland impacts occur.

ADDRESS: 14 & 24 Towle Road

TOWN/CITY: Kingston

TAX MAP/BLOCK/LOT/UNIT: Tax Map R12, Lot 25 & 26

US GEOLOGICAL SURVEY (USGS) TOPO MAP WATERBODY NAME:
☒ N/A

(Optional) LATITUDE/LONGITUDE in decimal degrees (to five decimal places): 42.89410° North
-71.08820° West

SECTION 4 - APPLICANT (DESIRED PERMIT HOLDER) INFORMATION (Env-Wt 311.04(a)) If the applicant is a trust or a company, then complete with the trust or company information.		
NAME: Unitil Energy Systems, Inc. (Unitil)		
MAILING ADDRESS: 30 Energy Way		
TOWN/CITY: Exeter	STATE: NH	ZIP CODE: 03833
EMAIL ADDRESS: dusling@unitil.com		
FAX: N/A	PHONE: 603-773-6529	
ELECTRONIC COMMUNICATION: By initialing here: JD, I hereby authorize NHDES to communicate all matters relative to this application electronically.		
SECTION 5 - AUTHORIZED AGENT INFORMATION (Env-Wt 311.04(c)) ☐ N/A		
LAST NAME, FIRST NAME, M.I.: Golon, Nicholas		
COMPANY NAME: TFMoran, Inc.		
MAILING ADDRESS: 48 Consitution Drive		
TOWN/CITY: Bedford	STATE: NH	ZIP CODE: 03110
EMAIL ADDRESS: ngolon@tfmoran.com		
FAX: 603-472-9747	PHONE: 603-472-448	
ELECTRONIC COMMUNICATION: By initialing here NG, I hereby authorize NHDES to communicate all matters relative to this application electronically.		
SECTION 6 - PROPERTY OWNER INFORMATION (IF DIFFERENT THAN APPLICANT) (Env-Wt 311.04(b)) If the owner is a trust or a company, then complete with the trust or company information. ☐ Same as applicant		
NAME: 24 Towle Road Realty Trust		
MAILING ADDRESS: 86 Rockingham Road		
TOWN/CITY: Kingston	STATE: NH	ZIP CODE: 03848
EMAIL ADDRESS:		
FAX:	PHONE: 603-617-0333	
ELECTRONIC COMMUNICATION: By initialing here TRRT, I hereby authorize NHDES to communicate all matters relative to this application electronically.		

SECTION 7 - RESOURCE-SPECIFIC CRITERIA ESTABLISHED IN Env-Wt 400, Env-Wt 500, Env-Wt 600, Env-Wt 700, OR Env-Wt 900 HAVE BEEN MET (Env-Wt 313.01(a)(3))

Describe how the resource-specific criteria have been met for each chapter listed above (please attach information about stream crossings, coastal resources, prime wetlands, or non-tidal wetlands and surface waters):
Please see that attached document entitled, "Section-7 Resource Specific Criteria."

SECTION 8 - AVOIDANCE AND MINIMIZATION

Impacts within wetland jurisdiction must be avoided to the maximum extent practicable (Env-Wt 313.03(a)).* Any project with unavoidable jurisdictional impacts must then be minimized as described in the Wetlands Best Management Practice Techniques For Avoidance and Minimization and the Wetlands Permitting: Avoidance, Minimization and Mitigation Fact Sheet. For minor or major projects, a functional assessment of all wetlands on the project site is required (Env-Wt 311.03(b)(10)).*

Please refer to the application checklist to ensure you have attached all documents related to avoidance and minimization, as well as functional assessment (where applicable). Use the Avoidance and Minimization Checklist, the Avoidance and Minimization Narrative, or your own avoidance and minimization narrative.

**See Env-Wt 311.03(b)(6) and Env-Wt 311.03(b)(10) for shoreline structure exemptions.*

SECTION 9 - MITIGATION REQUIREMENT (Env-Wt 311.02)

If unavoidable jurisdictional impacts require mitigation, a mitigation pre-application meeting must occur at least 30 days but not more than 90 days prior to submitting this Standard Dredge and Fill Permit Application.

Mitigation Pre-Application Meeting Date: Month: 06 Day: 20 Year: 2023

(☐ N/A - Mitigation is not required)

SECTION 10 - THE PROJECT MEETS COMPENSATORY MITIGATION REQUIREMENTS (Env-Wt 313.01(a)(1)c)

Confirm that you have submitted a compensatory mitigation proposal that meets the requirements of Env-Wt 800 for all permanent unavoidable impacts that will remain after avoidance and minimization techniques have been exercised to the maximum extent practicable: ☒ I confirm submittal.

(☐ N/A – Compensatory mitigation is not required)

SECTION 11 - IMPACT AREA (Env-Wt 311.04(g))

For each jurisdictional area that will be/has been impacted, provide square feet (SF) and, if applicable, linear feet (LF) of impact, and note whether the impact is after-the-fact (ATF; i.e., work was started or completed without a permit).

For intermittent and ephemeral streams, the linear footage of impact is measured along the thread of the channel. *Please note, installation of a stream crossing in an ephemeral stream may be undertaken without a permit per Rule Env-Wt 309.02(d), however other dredge or fill impacts should be included below.*

For perennial streams/rivers, the linear footage of impact is calculated by summing the lengths of disturbances to the channel and banks.

Permanent impacts are impacts that will remain after the project is complete (e.g., changes in grade or surface materials).

Temporary impacts are impacts not intended to remain (and will be restored to pre-construction conditions) after the project is completed.

JURISDICTIONAL AREA		PERMANENT			TEMPORARY		
		SF	LF	ATF	SF	LF	ATF
Wetlands	Forested Wetland	20,406		☐	18,964		☐
	Scrub-shrub Wetland			☐			☐
	Emergent Wetland			☐			☐
	Wet Meadow			☐			☐
	Vernal Pool			☐			☐
	Designated Prime Wetland			☐			☐
	Duly-established 100-foot Prime Wetland Buffer			☐			☐
Surface Water	Intermittent / Ephemeral Stream			☐			☐
	Perennial Stream or River			☐			☐
	Lake / Pond			☐			☐
	Docking - Lake / Pond			☐			☐
	Docking - River			☐			☐
Banks	Bank - Intermittent Stream			☐			☐
	Bank - Perennial Stream / River			☐			☐
	Bank / Shoreline - Lake / Pond			☐			☐
Tidal	Tidal Waters			☐			☐
	Tidal Marsh			☐			☐
	Sand Dune			☐			☐
	Undeveloped Tidal Buffer Zone (TBZ)			☐			☐
	Previously-developed TBZ			☐			☐
	Docking - Tidal Water			☐			☐
TOTAL		20,012			**18,964**		

SECTION 12 - APPLICATION FEE (RSA 482-A:3, I)

☐ **MINIMUM IMPACT FEE**: Flat fee of $400.

☐ **NON-ENFORCEMENT RELATED, PUBLICLY-FUNDED AND SUPERVISED RESTORATION PROJECTS, REGARDLESS OF IMPACT CLASSIFICATION:** Flat fee of $400 (refer to RSA 482-A:3, 1(c) for restrictions).

☒ **MINOR OR MAJOR IMPACT FEE:** Calculate using the table below:

Permanent and temporary (non-docking):	39,370 SF	× $0.40 =	$ 15,748
Seasonal docking structure:	0 SF	× $2.00 =	$ 0
Permanent docking structure:	0 SF	× $4.00 =	$ 0
Projects proposing shoreline structures (including docks) add $400 =			$ 0
		Total =	$ 15,748
The application fee for minor or major impact is the above calculated total or $400, whichever is greater =			$ 15,748

SECTION 13 - PROJECT CLASSIFICATION (Env-Wt 306.05) Indicate the project classification.		
☐ Minimum Impact Project	☐ Minor Project	☒ Major Project

SECTION 14 - REQUIRED CERTIFICATIONS (Env-Wt 311.11)	
Initial each box below to certify:	
Initials: TRRT JD NG	To the best of the signer's knowledge and belief, all required notifications have been provided.
Initials: TRRT JD NG	The information submitted on or with the application is true, complete, and not misleading to the best of the signer's knowledge and belief.
Initials: TRRT JD NG	The signer understands that: • The submission of false, incomplete, or misleading information constitutes grounds for NHDES to: 1. Deny the application. 2. Revoke any approval that is granted based on the information. 3. If the signer is a certified wetland scientist, licensed surveyor, or professional engineer licensed to practice in New Hampshire, refer the matter to the joint board of licensure and certification established by RSA 310-A:1. • The signer is subject to the penalties specified in New Hampshire law for falsification in official matters, currently RSA 641. • The signature shall constitute authorization for the municipal conservation commission and the Department to inspect the site of the proposed project, except for minimum impact forestry SPN projects and minimum impact trail projects, where the signature shall authorize only the Department to inspect the site pursuant to RSA 482-A:6, II.
Initials: TR/RH JD NG	If the applicant is not the owner of the property, each property owner signature shall constitute certification by the signer that he or she is aware of the application being filed and does not object to the filing.

SECTION 15 - REQUIRED SIGNATURES (Env-Wt 311.04(d); Env-Wt 311.11)		
SIGNATURE (OWNER):	PRINT NAME LEGIBLY: 24 Towle Road Realty Trust, Lynda Devast	DATE: 7/5/23
SIGNATURE (APPLICANT, IF DIFFERENT FROM OWNER):	PRINT NAME LEGIBLY: Jacob Dusling, P.E.	DATE: 7/5/23
SIGNATURE (AGENT, IF APPLICABLE):	PRINT NAME LEGIBLY: Nicholas Golon, P.E.	DATE: 7/5/23

SECTION 16 - TOWN / CITY CLERK SIGNATURE (Env-Wt 311.04(f))	
As required by RSA 482-A:3, I(a)(1), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.	
TOWN/CITY CLERK SIGNATURE:	PRINT NAME LEGIBLY:
TOWN/CITY:	DATE:

DIRECTIONS FOR TOWN/CITY CLERK:
Per RSA 482-A:3, I(a)(1)

1. IMMEDIATELY sign the original application form and four copies in the signature space provided above.
2. Return the signed original application form and attachments to the applicant so that the applicant may submit the application form and attachments to NHDES by mail or hand delivery.
3. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board.
4. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

DIRECTIONS FOR APPLICANT:
Submit the original permit application form bearing the signature of the Town/City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery at the address at the bottom of this page. Make check or money order payable to "Treasurer – State of NH".

Keep this checklist for your reference; do not submit with your application.

APPLICATION CHECKLIST

Unless specified, all items below are required. Failure to provide the required items will delay a decision on your project and may result in denial of your application. Please reference statute RSA 482-A, Fill and Dredge in Wetlands, and the Wetland Rules Env-Wt 100-900.

- ☐ The completed, dated, signed, and certified application (Env-Wt 311.03(b)(1)).
- ☐ Correct fee as determined in RSA 482-A:3, I(b) or (c), subject to any cap established by RSA 482-A:3, X (Env-Wt 311.03(b)(2)). Make check or money order payable to "Treasurer – State of NH".
- ☐ The Required Planning actions required by Env-Wt 311.01(a)-(c) and Env-Wt 311.03(b)(3).
- ☐ US Army Corps of Engineers (ACE) "Appendix B, New Hampshire General Permits (GPs), Required Information and Corps Secondary Impacts Checklist" and its required attachments (Env-Wt 307.02). This includes the US Fish and Wildlife Service IPAC review and Section 106 Historic/Archaeological Resource review.
- ☐ Project plans described in Env-Wt 311.05 (Env-Wt 311.03(b)(4)).
- ☐ Maps, or electronic shape files and meta data, and other attachments specified in Env-Wt 311.06 (Env-Wt 311.03(b)(5)).
- ☐ Explanation of the methods, timing, and manner as to how the project will meet standard permit conditions required in Env-Wt 307 (Env-Wt 311.03(b)(7)).
- ☐ If applicable, the information regarding proposed compensatory mitigation specified in Env-Wt 311.08 and Chapter Env-Wt 800 - Permittee Responsible Mitigation Project Worksheet, unless not required under Env-Wt 313.04 (Env-Wt 311.03(b)(8); Env-Wt 311.08; Env-Wt 313.04).
- ☐ Any additional information specific to the **type of resource** as specified in Env-Wt 311.09 (Env-Wt 311.03(b)(9); Env-Wt 311.04(j)).
- ☐ Project specific information required by Env-Wt 500, Env-Wt 600, and Env-Wt 900 (Env-Wt 311.03(b)(11)).
- ☐ A list containing the name, mailing address and tax map/lot number of each abutter to the subject property (Env-Wt 311.03(b)(12)).
- ☐ Copies of certified postal receipts or other proof of receipt of the notices that are required by RSA 482-A:3, I(d) (Env-Wt 311.03(b)(13)).
- ☐ Project design considerations required by Env-Wt 313 (Env-Wt 311.04(j)).
- ☐ Town tax map showing the subject property, the location of the project on the property, and the location of properties of abutters with each lot labeled with the name and mailing address of the abutter (Env-Wt 311.06(a)).
- ☐ Dated and labeled color photographs that:
  - (1) Clearly depict:
    - a. All jurisdictional areas, including but not limited to portions of wetland, shoreline, or surface water where impacts have or are proposed to occur.
    - b. All existing shoreline structures.
  - (2) Are mounted or printed no more than 2 per sheet on 8.5 x 11 inch sheets (Env-Wt 311.06(b)).
- ☐ A copy of the appropriate US Geological Survey map or updated data based on LiDAR at a scale of one inch equals 2,000 feet showing the location of the subject property and proposed project (Env-Wt 311.06(c)).
- ☐ A narrative that describes the work sequence, including pre-construction through post-construction, and the relative timing and progression of all work (Env-Wt 311.06(d)).

- ☐ For all projects in the protected tidal zone, a copy of the recorded deed with book and page numbers for the property (Env-Wt 311.06(e)).
- ☐ If the applicant is not the owner in fee of the subject property, documentation of the applicant's legal interest in the subject property, provided that for utility projects in a utility corridor, such documentation may comprise a list that:
  - (1) Identifies the county registry of deeds and book and page numbers of all of the easements or other recorded instruments that provide the necessary legal interest; and
  - (2) Has been certified as complete and accurate by a knowledgeable representative of the applicant (Env-Wt 311.06(f)).
- ☐ The NHB memo containing the NHB identification number and results as well as any written follow-up communications such as additional memos or email communications with either NHB or NHF&G (Env-Wt 311.06(g)). See Wetlands Permitting: Protected Species and Habitat Fact Sheet.
- ☐ A statement of whether the applicant has received comments from the local conservation commission and, if so, how the applicant has addressed the comments (Env-Wt 311.06(h)).
- ☐ For projects in LAC jurisdiction, a statement of whether the applicant has received comments from the LAC and, if so, how the applicant has addressed the comments (Env-Wt 311.06(i)).
- ☐ If the applicant is also seeking to be covered by the state general permits, a statement of whether comments have been received from any federal agency and, if so, how the applicant has addressed the comments (Env-Wt 311.06(j)).
- ☐ Avoidance and Minimization Written Narrative or the Avoidance and Minimization Checklist, or your own avoidance and minimization narrative (Env-Wt 311.07).
- ☐ For after-the-fact applications: information required by Env-Wt 311.12.
- ☐ Coastal Resource Worksheet for coastal projects as required under Env-Wt 600.
- ☐ Prime Wetlands information required under Env-Wt 700. See WPPT for prime wetland mapping.

Required Attachments for Minor and Major Projects

- ☐ Attachment A: Minor and Major Projects (Env-Wt 313.03).
- ☐ Functional Assessment Worksheet or others means of documenting the results of actions required by Env-Wt 311.10 as part of an application preparation for a standard permit (Env-Wt 311.03(b)(3); Env-Wt 311.03(b)(10)). See Functional Assessments for Wetlands and Other Aquatic Resources Fact Sheet. For shoreline structures, see shoreline structures exemption in Env-Wt 311.03(b)(10)).

Optional Materials

- ☐ Stream Crossing Worksheet which summarizes the requirements for stream crossings under Env-Wt 900.
- ☐ Request for concurrent processing of related shoreland / wetlands permit applications (Env-Wt 313.05).

SECTION 7 – Resource Specific Criteria

Env-Wt 313.01(a)(3)

Env-Wt 400 – Delineating, Classifying Jurisdictional Areas and Project Classification

The wetlands were delineated using the methods established within the Wetlands Delineation Manual, Technical Report Y-87-1, Corps of Engineers, January 1987, and the "Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Northcentral and Northeast Region", Version 2.0, U.S. Army Corps of Engineers, January 2012.

This project proposes to permanently impact approximately 20,406 sf. (0.46 acres) and temporarily impact 18,964 sf. of forested wetlands for the purpose of constructing a 5 MW solar array field and associated infrastructure. As a result of the project proposing greater than 10,000 square feet of wetland impact area, this project is classified as a "Major Project."

Env-Wt 500 – Project Specific Requirements

Env-Wt 524.02 (a) – This project does not propose greater than 1-acre of permanent impacts, and therefore, an alternative analysis is not required.

Env-Wt 524.02 (b) – As demonstrated within the attached *Avoidance and Minimization Written Narrative*, this project avoids and minimizes impacts to wetlands, watercourses, and sensitive and valuable wetlands to the greatest extent practicable.

Env-Wt 524.02 (c) – This project complies with the design criteria specified in Env-Wt 524.04 and the construction criteria specified in Env-Wt 524.05 below.

Env-Wt 524.02 (d) – This project does not propose impacts to a Priority Resource Area (PRA).

Env-Wt 524.03 (a)(1) – This project does not include components that are subject to multiple project-specific requirements, and therefore, an additional narrative is not necessary to describe project-specific components or how the project, as a whole, impacts jurisdictional areas.

Env-Wt 524.03 (a)(2) – This project does not require subdivision approval.

Env-Wt 524.03 (a)(3) – This project does not require subdivision approval.

Env-Wt 524.03 (a)(4) – This project is classified as a "Major" Impact project, and accordingly, using the method established within the "Classification of Wetlands and Deepwater Habitats of the United States", adapted from Cowardin, Carter, Golet and LaRoe (1979), August 2013, FGDC- STD-004-2013, the wetlands proposed to be impacted are classified as a *Palustrine Forested, Broad-Leaved, Deciduous*

(PFO1) and Palustrine Broad-Leaved Evergreen (PFO3). These wetlands are seasonally flooded/ saturated, acidic with organic soils. The wetlands are depicted on the Wetlands Classification Plan.

Env-Wt 524.03 (a)(5) – This project is not associated with one or more phases of a multi-phase subdivision, and therefore, a project impact plan depicting all remaining wetlands on the property is not required.

Env-Wt 524.03 (b) – This project does not propose a subdivision of 4 or more lots, and therefore, there is no requirement to record any approved permit with the appropriate registry of deeds.

Env-Wt 524.04 (a) – This project complies with all applicable requirements of Env-Wt 400, Env-Wt 700, Env-Wt 800, Env-Wt 900 and all other project-specific criteria.

Env-Wt 524.04 (b) – As demonstrated by the associated project plans, this project does not propose to use wetlands or surface waters to serve as stormwater or water quality treatment areas.

Env-Wt 524.04 (c) – This project will not impact wetlands in a way that private or public drinking water supplies, source water protection areas or fisheries are adversely impacted. This project will not diminish the wetland's ability to function as an area for groundwater recharge. This project proposes appropriate stormwater treatment measures consistent with NHDES Alteration of Terrain guidance to recharge groundwater.

Env-Wt 524.04 (d) – This project does maintain hydrological connections to maintain flows necessary to preserve adjacent wetland and riparian functions where applicable. Impacts to wetland area 1 – 3 are isolated and not connected to adjacent wetlands. These isolated wetlands are small marginal areas with limited potential to pond water for a sufficient period to provide vernal pool habitat and have limited functions and value. Wetland areas 4 and 5 are long narrow wetlands which flow in a southeasterly direction. Impacts to wetland 4 are temporary for logging access only and will not limit the hydrological connection as it flows offsite. Permanent impacts to wetland 5 are located along the upper reaches of this narrow wetland. Although this wetland continues to the east to provide higher wetland functions and values, the onsite area of the wetland has limited hydrology and reduced limited functions. Impacts as proposed will not deter hydrological connections to maintain flows necessary to preserve adjacent wetland and riparian functions.

Env-Wt 524.04 (e) – This project is not associated with a waterway, and therefore, this provision relative to fisheries is not applicable.

Env-Wt 524.04 (f) – The NH Wildlife Action Plan, 2020 NH Wildlife Habitat Land Cover Map describes the site as Appalachian oak-pine forest. The NH Wildlife Action Plan, 2020 Highest Ranked Wildlife Habitat by Ecological Condition, describes the south side of the lot as providing Supporting Habitat. The north side of the lots provides limited habitat values according to the maps. As supported by the Wetlands Functional Assessment, Wildlife Habitat is not a principal function of wetland areas 1-3, and therefore, this provision is not applicable to those wetlands.

NHB DataCheck (NHB21-3416) reports Blanding's turtle (Emydoidea blandingii) - State endangered, Northern Black Racer (Coluber constrictor constrictor) – State threatened and Spotted turtle (Clemmys guttata) – State threatened, are believed to be present in the vicinity of the project area. The Wildlife Habitat Assessment report by Pond View Wetland Consultants indicates although the listed T&E species

in the NHB report were reported to occur in the vicinity of this project, that the subject site has limited findings in the way of specific wildlife species activity, which could be tied to endangered or threatened species. The heavily forested parcel has limited potential to provide habitat other than for interior woodland species or to provide access to more favorable habitats in areas adjacent to the property. The potential for the presence of the various species noted in the NH NHB Datacheck Report is assumed to be primarily associated with the sandy soils on-site as well as the extent of these soils in the general area. With the continued availability of these sandy soils post development at the border of the site and the continued availability of access to off-site habitats, the surrounding area should continue to provide habitat values based on these site conditions.

Env-Wt 524.05 (a) – Prior to construction, a formal, "*Initiation of Construction Notice*" will be filed with NHDES.

Env-Wt 524.05 (b) – All work will be conducted in accordance with the approved plans.

Env-Wt 524.06 – This project proposes a wetlands impact area exceeding 10,000 square feet, and therefore, this project is classified as a "*Major Impact Project*."

Env-Wt 600 – Coastal Lands and Tidal Waters/ Wetlands

This project proposes no impacts Coastal Lands and Tidal Waters/ Wetlands, and therefore, these administrative rules are not applicable to this project.

Env-Wt 700 – Prime Wetlands

This project proposes no impacts to Prime Wetlands or the duly-established 100-Foot Prime Wetland Buffer, and therefore, these administrative rules are not applicable to this project.

Env-Wt 800 – Compensatory Mitigation

Env-Wt 801.03 (a) – Mitigation is proposed in the form of aquatic resource buffer preservation on the adjacent downstream lot, lot R-11-9. Coordination with the Kingston Conservation Commission and the Friends of Kingston Open Spaces (FOKUS) is ongoing.

Env-Wt 801.03 (b) – Not applicable.

Env-Wt 801.03 (c) – Not applicable, this project proposes no impacts to streams.

Env-Wt 803.01 – A draft compensatory mitigation proposal reflective of the narrative in response to Env-Wt 801.03(a) has been included in this submittal in Section 3. Coordination with NH Fish & Game and the Kingston Conservation Commission is ongoing.

Env-Wt 900 – Stream Crossings

This project proposes no stream crossings, and therefore, these administrative rules are not applicable to this project.

STANDARD DREDGE AND FILL WETLANDS PERMIT APPLICATION ATTACHMENT A: MINOR AND MAJOR PROJECTS

Water Division/Land Resources Management
Wetlands Bureau
Check the Status of your Application

RSA/ Rule: RSA 482-A/ Env-Wt 311.10; Env-Wt 313.01(a)(1); Env-Wt 313.03

APPLICANT'S NAME: **Unitil Energy Systems Inc.** **TOWN NAME:** Kingston

Attachment A is required for *all minor and major projects*, and must be completed *in addition* to the Avoidance and Minimization Narrative or Checklist that is required by Env-Wt 307.11.

For projects involving construction or modification of non-tidal shoreline structures over areas of surface waters having an absence of wetland vegetation, only Sections I.X through I.XV are required to be completed.

PART I: AVOIDANCE AND MINIMIZATION

In accordance with Env-Wt 313.03(a), the Department shall not approve any alteration of any jurisdictional area unless the applicant demonstrates that the potential impacts to jurisdictional areas have been avoided to the maximum extent practicable and that any unavoidable impacts have been minimized, as described in the Wetlands Best Management Practice Techniques For Avoidance and Minimization.

SECTION I.I - ALTERNATIVES (Env-Wt 313.03(b)(1))

Describe how there is no practicable alternative that would have a less adverse impact on the area and environments under the Department's jurisdiction.

There is no practical alternative that would have a less adverse impact on the environment. The property is uniquely positioned adjacent to the Eversource Peaslee Transmission Substation, Eversource Kingston Distribution Substation and the Unitil Kingston Distribution Substation as well as the electrical transmission and distribution lines that feed them. This is a vital component in terms of interconnection of the solar field to the electrical grid and limits the need for substantial offsite electrical improvements which could generate greater impacts.

The Project Team consisting of Unitil, TFM, ReVision Energy and TerraSmart evaluated multiple solar array arrangements to achieve a layout that limits impacts to environmental resources while also meeting the minimum output requirements to demonstrate to the New Hampshire Public Utilities Commission (NHPUC) that the Kingston Solar Project is a meaningful long-term commitment to addressing New Hampshire's climate objectives in a manner that provides tangible benefits to the Company's customers, is cost-effective, and enables economic growth in the state. As testified by Unitil to the NHPUC, the Kingston Solar Project is good for customers and good for the state of New Hampshire. Accordingly, the Commission ruled on 5/1/2023 that the Kingston Solar Project is in the public interest.

Iterations of the solar array arrangements are included in this submittal and express locating the solar array on portions of lot R-12-25, lot R-12-26 and lot R-11-9. As shown on the plans, the project team has been able to effectively halve the permanent wetland impacts originally anticipated through a combination of array relocation and securing an additional 3+/- acres through a lot line adjustment with lot R-12-26. Design iteration has also limited areas of impact to the lower valued, lower functioning wetlands as described in both the Wetlands Functions and Values

SECTION I.II - MARSHES (Env-Wt 313.03(b)(2))

Describe how the project avoids and minimizes impacts to tidal marshes and non-tidal marshes where documented to provide sources of nutrients for finfish, crustacean, shellfish, and wildlife of significant value.

N/A There are no tidal marshes in this area.

SECTION I.III - HYDROLOGIC CONNECTION (Env-Wt 313.03(b)(3))

Describe how the project maintains hydrologic connections between adjacent wetland or stream systems.

This project has been designed to maintain the hydrologic connections of the wetlands.

Impacts to wetland area 1 – 3 are isolated and not connected to adjacent wetlands. These isolated wetlands are small marginal areas with limited potential to pond water for a sufficient period to provide vernal pool habitat and have limited functions and value. Wetland areas 4 and 5 are long narrow wetlands which flow in a southeasterly direction. Impacts to wetland 4 are temporary for logging access only and will not limit the hydrological connection as it flows offsite. Permanent impacts to wetland 5 are located along the upper reaches of this narrow wetland. Although this wetland continues to the east to provide higher wetland functions and values, the onsite area of the wetland has limited hydrology and reduced limited functions. Impacts as proposed will not deter hydrological between adjacent wetland or stream systems.

To maintain hydraulic connections and to maintain flows necessary to preserve adjacent wetlands and riparian functions, this project proposes appropriate stormwater treatment measures consistent with NHDES Alteration of Terrain guidance to recharge groundwater. The bio-retention area with sediment forebay will allow for the removal of pollutants before entering the unaltered wetlands. The vegetated buffer zones will ensure runoff enters the unchanged wetlands as sheet flow. The proposed systems have been designed to collect, treat, and recharge stormwater runoff from the developed portions of the project. There is no proposed increase in discharge from the site up to and including the 50-year storm event and the existing drainage flow paths have been maintained.

SECTION I.IV - JURISDICTIONAL IMPACTS (Env-Wt 313.03(b)(4))

Describe how the project avoids and minimizes impacts to wetlands and other areas of jurisdiction under RSA 482-A, especially those in which there are exemplary natural communities, vernal pools, protected species and habitat, documented fisheries, and habitat and reproduction areas for species of concern, or any combination thereof.

Through the selection of this site, this project avoids and minimizes impacts to areas of NH that have higher functioning, higher value wetlands as described in Env-Wt 313.03(b)(4).

The NH Wildlife Action Plan, 2020 NH Wildlife Habitat Land Cover Map describes the site as Appalachian oak-pine forest. The NH Wildlife Action Plan, 2020 Highest Ranked Wildlife Habitat by Ecological Condition, describes the south side of the lot as providing Supporting Habitat. The north side of the lots provides limited habitat values according to the maps. As supported by the Wetlands Functional Assessment, Wildlife Habitat is not a principal function of wetland areas 1-3, and therefore, this provision is not applicable to those wetlands.

NHB DataCheck (NHB21-3416) reports Blanding's turtle (Emydoidea blandingii) - State endangered, Northern Black Racer (Coluber constrictor constrictor) – State threatened and Spotted turtle (Clemmys guttata) – State threatened, are believed to be present in the vicinity of the project area. The Wildlife Habitat Assessment report by Pond View Wetland Consultants indicates although the listed T&E species in the NHB report were reported to occur in the vicinity of this project, that the subject site has limited findings in the way of specific wildlife species activity, which could be tied to endangered or threatened species. The heavily forested parcel has limited potential to provide habitat other than for interior woodland species or to provide access to more favorable habitats in areas adjacent to the property. The potential for the presence of the various species noted in the NH NHB Datacheck Report is assumed to be primarily associated with the sandy soils on-site as well as the extent of these soils in the general area. With the continued availability of these sandy soils post development at the border of the site and the continued availability of access to off-site habitats, the surrounding area should continue to provide habitat values based on these site conditions.

SECTION I.V - PUBLIC COMMERCE, NAVIGATION, OR RECREATION (Env-Wt 313.03(b)(5))

Describe how the project avoids and minimizes impacts that eliminate, depreciate or obstruct public commerce, navigation, or recreation.

N/A - This project will have no impact on public commerce, navigation or recreation.

SECTION I.VI - FLOODPLAIN WETLANDS (Env-Wt 313.03(b)(6))

Describe how the project avoids and minimizes impacts to floodplain wetlands that provide flood storage.

N/A - There are no floodplain wetlands associated with this site.

SECTION I.VII - RIVERINE FORESTED WETLAND SYSTEMS AND SCRUB-SHRUB – MARSH COMPLEXES (Env-Wt 313.03(b)(7))

Describe how the project avoids and minimizes impacts to natural riverine forested wetland systems and scrub-shrub – marsh complexes of high ecological integrity.

This project proposes no impacts to natural riverine forested wetlands systems or scrub-shrub marsh complexes. Please see the attached Functional Assessment.

SECTION I.VIII - DRINKING WATER SUPPLY AND GROUNDWATER AQUIFER LEVELS (Env-Wt 313.03(b)(8))

Describe how the project avoids and minimizes impacts to wetlands that would be detrimental to adjacent drinking water supply and groundwater aquifer levels.

The proposed impacts will not have an adverse impact on the site's ability to function as a groundwater recharge area. The proposed stormwater treatment measures designed in accordance with the standards of RSA 485-A:17 through the NHDES Alteration of Terrain (AoT) permitting process, will utilize the site's well-drained sandy soils to maintain the property's capacity to act as a groundwater recharge area.

To th point of drinking water supply there are no public drinking water supply wells within the immediate vicinity of the site.

SECTION I.IX - STREAM CHANNELS (Env-Wt 313.03(b)(9))

Describe how the project avoids and minimizes adverse impacts to stream channels and the ability of such channels to handle runoff of waters.

N/A - This project proposes no impacts to stream channels.

SECTION I.X - SHORELINE STRUCTURES - CONSTRUCTION SURFACE AREA (Env-Wt 313.03(c)(1))

Describe how the project has been designed to use the minimum construction surface area over surface waters necessary to meet the stated purpose of the structures.

N/A - This project proposes no impacts to the shoreline of a public waterbody.

SECTION I.XI - SHORELINE STRUCTURES - LEAST INTRUSIVE UPON PUBLIC TRUST (Env-Wt 313.03(c)(2))

Describe how the type of construction proposed is the least intrusive upon the public trust that will ensure safe docking on the frontage.

N/A - This project proposes no impacts to the shoreline of a public waterbody.

SECTION I.XII - SHORELINE STRUCTURES – ABUTTING PROPERTIES (Env-Wt 313.03(c)(3)) Describe how the structures have been designed to avoid and minimize impacts on ability of abutting owners to use and enjoy their properties.
N/A - This project proposes no impacts to the shoreline of a public waterbody.

SECTION I.XIII - SHORELINE STRUCTURES – COMMERCE AND RECREATION (Env-Wt 313.03(c)(4)) Describe how the structures have been designed to avoid and minimize impacts to the public's right to navigation, passage, and use of the resource for commerce and recreation.
N/A - This project proposes no impacts to the shoreline of a public waterbody.

SECTION I.XIV - SHORELINE STRUCTURES – WATER QUALITY, AQUATIC VEGETATION, WILDLIFE AND FINFISH HABITAT (Env-Wt 313.03(c)(5))

Describe how the structures have been designed, located, and configured to avoid impacts to water quality, aquatic vegetation, and wildlife and finfish habitat.

N/A - This project proposes no impacts to the shoreline of a public watebody.

SECTION I.XV - SHORELINE STRUCTURES – VEGETATION REMOVAL, ACCESS POINTS, AND SHORELINE STABILITY (Env-Wt 313.03(c)(6))

Describe how the structures have been designed to avoid and minimize the removal of vegetation, the number of access points through wetlands or over the bank, and activities that may have an adverse effect on shoreline stability.

N/A - This project proposes no impacts to the shoreline of a public waterbody.

PART II: FUNCTIONAL ASSESSMENT
REQUIREMENTS Ensure that project meets the requirements of Env-Wt 311.10 regarding functional assessment (Env-Wt 311.04(j); Env-Wt 311.10).
FUNCTIONAL ASSESSMENT METHOD USED: The Functional Assessment was performed by performing field visits in September/Ocober 2022 & January, March and April 2023. The wetlands were assessed using the Army Corps of Engineers Highway Methodology (September 1999, NAEEP-360-1-30a) and Ecological Integrity was determined using the Method for Inventorying and Evaluating Freshwater Wetlands in New Hampshire, December 2015.
NAME OF CERTIFIED WETLAND SCIENTIST (FOR NON-TIDAL PROJECTS) OR QUALIFIED COASTAL PROFESSIONAL (FOR TIDAL PROJECTS) WHO COMPLETED THE ASSESSMENT: JASON R. AUBE
DATE OF ASSESSMENT: SEP/OCT22, JAN/MARCH23
Check this box to confirm that the application includes a NARRATIVE ON FUNCTIONAL ASSESSMENT: ☒
For minor or major projects requiring a standard permit without mitigation, the applicant shall submit a wetland evaluation report that includes completed checklists and information demonstrating the RELATIVE FUNCTIONS AND VALUES OF EACH WETLAND EVALUATED. Check this box to confirm that the application includes this information, if applicable: ☒ Note: The Wetlands Functional Assessment worksheet can be used to compile the information needed to meet functional assessment requirements.

RESIDENTIAL, COMMERCIAL, AND INDUSTRIAL DEVELOPMENT PROJECT-SPECIFIC WORKSHEET FOR STANDARD APPLICATION

Water Division/Land Resources Management
Wetlands Bureau

Check the Status of your Application

RSA/Rule: RSA 482/ Env-Wt 524

APPLICANT LAST NAME, FIRST NAME, M.I.: Unitil Energy Systems, Inc.

This worksheet summarizes the criteria and requirements for a Standard Permit for "Residential, Commercial, and Industrial Development", one of the 18 specific project types in Chapter Env-Wt 500. In addition to the project-specific criteria and requirements on this worksheet, all Standard Dredge and Fill Applications must meet the criteria and requirements listed in the Standard Dredge and Fill Application form (NHDES-W-06-012).

SECTION 1 - APPLICABILITY (Env-Wt 509.02(b); Env-Wt 524.01)

The information in this worksheet applies to residential, commercial, and industrial development projects, including associated roadways, in non-tidal wetlands.

Do **not** use this worksheet if the project is located in a coastal (tidal) area.

SECTION 2 - APPROVAL CRITERIA FOR RESIDENTIAL, COMMERCIAL, AND INDUSTRIAL DEVELOPMENT PROJECTS (Env-Wt 524.02)

An application for a residential, commercial or industrial development project must meet the following criteria:

- ☒ The project must meet the applicable criteria established in Env-Wt 300;
- ☒ An off-site alternatives analysis is conducted for any project that will result in more than one acre of permanent wetland impacts;
- ☒ The project avoids and minimizes impacts to wetlands, watercourses, and sensitive and valuable wetlands in accordance with Env-Wt 313.03;
- ☒ The project complies with the design criteria specified in Env-Wt 524.04 and the construction criteria specified in Env-Wt 524.05; and
- ☐ Compensatory mitigation is provided for any new residential, commercial, or industrial development in a Priority Resource Area.

SECTION 3 - APPLICATION REQUIREMENTS FOR RESIDENTIAL, COMMERCIAL, AND INDUSTRIAL DEVELOPMENT PROJECTS (Env-Wt 524.03)

- ☐ For all projects requiring subdivision approval, a plan prepared and stamped by a land surveyor licensed in the State of New Hampshire pursuant to RSA 310-A showing existing and proposed topography and the location of all proposed lot lines;
- ☐ For all projects requiring subdivision approval, the following clearly delineated on the plan required above: the boundaries of all wetlands and surface waters and the footprint of all proposed impacts;

☐ For minor and major projects requiring subdivision approval, wetlands classifications clearly indicated in accordance with Env-Wt 400 on the plan required above; and

☐ For a project that is associated with one or more phases of a multi-phase subdivision, a project impact plan that also shows all wetlands on remaining property proposed for future phases of development.

Please note that permits for subdivisions of 4 or more lots shall not be effective until the permittee records the permit with the appropriate registry of deeds and a copy of the registered permit has been received by the department.

An application for a residential, commercial or industrial development project must include the following information:

☐ If the project includes components that are subject to multiple project-specific requirements in Chapter Env-Wt 500, a narrative statement and plan that describes how each project-specific component meets the requirements of the applicable part in Chapter Env-Wt 500 and how the project as a whole impacts jurisdictional areas.

SECTION 4 - DESIGN REQUIREMENTS FOR RESIDENTIAL, COMMERCIAL, AND INDUSTRIAL DEVELOPMENT PROJECTS (Env-Wt 524.04)

In addition to meeting the applicable design requirements established in Env-Wt 300, a residential, commercial, or industrial development project must be designed to meet the following criteria:

☒ The project complies with all applicable requirements of Env-Wt 400, Env-Wt 700, Env-Wt 800, Env-Wt 900, and other applicable project-specific criteria in Chapter Env-Wt 500;

☒ The project does not use wetlands or surface waters to serve as stormwater or water quality treatment to mitigate impacts;

☒ The project provides setbacks and water quality protection measures sufficient to protect private and public drinking water supplies, source water protection areas, and fisheries;

☒ The project maintains or restores hydrologic connections to maintain flows necessary to preserve adjacent wetland and riparian functions;

☒ The project maintains existing fishery spawning, feeding, or cover habitat and fish passage necessary to maintain fishery or habitat or populations; and

☒ The project maintains existing wetland-dependent wildlife habitat and its associated migratory pathways, reproductive sites, and associated wetland complex or wetland community system.

SECTION 5 - CONSTRUCTION REQUIREMENTS FOR RESIDENTIAL, COMMERCIAL, AND INDUSTRIAL DEVELOPMENT PROJECTS (Env-Wt 525.05)

In addition to meeting all applicable construction standards specified in Env-Wt 307 and other applicable project-specific standards in Chapter Env-Wt 500, the following requirements apply to residential, commercial, or industrial development projects:

☒ A construction notice shall be filed with the department at least 48 hours prior to commencing work; and

☒ All work shall be conducted in accordance with the approved plan.

SECTION 6 - CLASSIFICATION OF RESIDENTIAL AND COMMERCIAL OR INDUSTRIAL DEVELOPMENT PROJECTS (Env-Wt 524.06)

Residential and commercial or industrial development projects shall be classified under Env-Wt 407 and as follows:

(a) A project shall be a minimum impact project only if:

(1) All stream-crossing components of the project meet the requirements for minimum impact classification specified in Env-Wt 903;

(2) All other components of the project meet the requirements for minimum impact classification specified in Env-Wt 407 and this chapter;

(3) The project is not part of a new subdivision of 4 or more lots; and

(4) The project does not meet the criteria listed in (d) below.

(b) A project shall be an expedited minimum impact project only if:

(1) It is a minimum impact project to construct a new subdivision of 3 lots or less;

(2) The applicant has attended a pre-design submission meeting with the department at least 7 days prior to application submission and included department feedback in the design plan; and

(3) The project does not meet the criteria listed in (d) below.

(c) A project shall be a minor impact project if the project does not meet the criteria listed in (d) below and if any of the following apply:

(1) Any single stream-crossing component of the project meets the requirements for minor impact classification specified in Env-Wt 903;

(2) The project is part of a new subdivision of 4 or more lots;

(3) Any single component of the project meets the requirements for minor impact classification specified in Env-Wt 407, Env-Wt 903, or Chapter Env-Wt 500; or

(4) No component of the project meets the requirements for major impact classification specified in Env-Wt 407, Env-Wt 903, or Chapter Env-Wt 500.

(d) A project shall be a major impact project if:

(1) The project exceeds the minor impact criteria;

(2) The project requires mitigation or meets the requirements for major impact classification specified in Env-Wt 407, Env-Wt 903, or any other associated project classification that is part of the overall project; or

(3) The project is elevated based on an aggregation undertaken by a developer or is part of a series of developments under Env-Wt 400.

AVOIDANCE AND MINIMIZATION WRITTEN NARRATIVE

Water Division/Land Resources Management Wetlands Bureau

Check the Status of your Application

RSA/ Rule: RSA 482-A/ Env-Wt 311.04(j); Env-Wt 311.07; Env-Wt 313.01(a)(1)b; Env-Wt 313.01(c)

APPLICANT'S NAME: Unitil Energy Systems Inc. **TOWN NAME: Kingston**

An applicant for a standard permit shall submit with the permit application a written narrative that explains how all impacts to functions and values of all jurisdictional areas have been avoided and minimized to the maximum extent practicable. This attachment can be used to guide the narrative (attach additional pages if needed). Alternatively, the applicant may attach a completed Avoidance and Minimization Checklist (NHDES-W-06-050) to the permit application.

SECTION 1 - WATER ACCESS STRUCTURES (Env-Wt 311.07(b)(1)) Is the primary purpose of the proposed project to construct a water access structure?
No, the purpose of this project is to construct a utility scale solar field.
SECTION 2 - BUILDABLE LOT (Env-Wt 311.07(b)(1)) Does the proposed project require access through wetlands to reach a buildable lot or portion thereof?
Not applicable. This project does not require access through a wetland to reach a buildable portion of the lot.
SECTION 3 - AVAILABLE PROPERTY (Env-Wt 311.07(b)(2))* For any project that proposes permanent impacts of more than one acre, or that proposes permanent impacts to a PRA, or both, are any other properties reasonably available to the applicant, whether already owned or controlled by the applicant or not, that could be used to achieve the project's purpose without altering the functions and values of any jurisdictional area, in particular wetlands, streams, and PRAs? **Except as provided in any project-specific criteria and except for NH Department of Transportation projects that qualify for a categorical exclusion under the National Environmental Policy Act.*
No, there is no practicable alternative that can be used to achieve the project's purpose without impacting wetlands. The proposed permanent wetlands impacts are less than one acre with no Priority Resource Areas located within the area of work.

SECTION 4 - ALTERNATIVES (Env-Wt 311.07(b)(3))

Could alternative designs or techniques, such as different layouts, different construction sequencing, or alternative technologies be used to avoid impacts to jurisdictional areas or their functions and values as described in the Wetlands Best Management Practice Techniques For Avoidance and Minimization?

Alternative designs, techniques, and layouts that would aid in minimizing impacts to jurisdictional areas have been incoporated to the project design as submitted.

Iterations of the solar array arrangements are included in this submittal and express locating the solar array on portions of lot R-12-25, lot R-12-26 and lot R-11-9. As shown on the plans, the project team has been able to effectively halve the permanent wetland impacts originally anticipated through a combination of array relocation and securing an additional 3+/- acres through a lot line adjustment with lot R-12-26. Design iteration has also limited areas of impact to the lower valued, lower functioning wetlands as described in both the Wetlands Functions and Values Assessment and Wildlife Habitat Assessment prepared for the project.

Principal functions identified for wetland impact areas 4 and 5 include groundwater recharge/discharge, floodflow alteration, sediment/toxicant removal and nutrient removal/retention/transformation. As these functions are both water quality based, these losses can be mitigated through the implementation of sound stormwater management practices. Through the NHDES Alteration of Terrain (AOT) permitting process, all stormwater will be treated in accordance with the standards of RSA 485-A:17 and this project will result in no net loss of function due to the proposed wetland impact.

As described in the Wetland Functions and Values Assessment and Wildlife Habitat Assessment, impacts may be mitigated by appropriate conservation measures, proper temporary and permanent erosion control measures, and stormwater management best management practices, coupled with an appropriate compensatory mitigation proposal to ensure no net loss of function due to the proposed wetland impact. The Project Team feels we have accomplished this with the proposal.

SECTION 5 - CONFORMANCE WITH Env-Wt 311.10(c) (Env-Wt 311.07(b)(4))**

How does the project conform to Env-Wt 311.10(c)?

***Except for projects solely limited to construction or modification of non-tidal shoreline structures only need to complete relevant sections of Attachment A.*

Env-Wt 311.10(c) addresses using the results of the Functional Assessment to locate the project in an area that avoids and minimizes impacts to the principal functions identified in the Functional Assessment, including on-site minimization measures and construction management practices to protect aquatic resource functions.

A Functional Assessment has been performed and it is provided with this permit application. The project is occurring in a manner that provides the least impact to the jurisdictional resource to the greatest extent practicable.

The site design utilizes alternative methods to recreate and enhance the principal functions of the wetland through the implementation of sound stormwater management practices, such that the project will result in no net loss of function due to the proposed wetland impact.

WORK SEQUENCE NARRATIVE

1.) At least 48-hours prior to commencing the construction activities, the property owner, or their agent, will notify NHDES via the *Initiation of Construction Notification Form.*
2.) Construction equipment will be inspected daily for leaking fuel, oil, and hydraulic fluid, and, if necessary, repairs will be made immediately.
3.) Contractors responsible for operating construction equipment will have adequate oil spill kits on site and readily accessible during construction and they will be trained in deploying this equipment should it be required.
4.) Prior to construction, sediment and erosion controls (stump grindings berm) will be installed at the limits of the approved impact area.
5.) Once installed, a *Certified Professional in Erosion and Sediment Controls* (CPESC), Certified Erosion, Sediment and Stormwater Inspector (CESSWI) or EPA Construction General Permit (CGP) Site Inspector will inspect the erosion and siltation control devices.
6.) The erosion and siltation control devices will be monitored, inspected, and adjusted throughout the duration of the project as required.
7.) Earthwork associated with stormwater management features shall be constructed and stabilized prior to proceeding with mass earthwork for the gravel access drive.
8.) Appropriate dust control/monitoring shall be provided to contain airborne particles during construction of the gravel access drive.
9.) Ledge removal and stockpiling of materials for reuse will be conducted in various areas of the site in accordance with local, state and federal code
10.) Rough grading of the site shall be performed with all disturbed areas to be stabilized within 72 hours after construction activity ceases.
11.) Stormwater management areas shall be installed and stabilized prior to directing flow to them.
12.) Site shall be graded to finish grade; the driveway shall be filled with gravel.
13.) Permanent seeding shall be completed.
14.) Remove temporary erosion control measures once all areas are stabilized with a suitable stand of grass, pavement or compacted gravel.
15.) Upon completing the project, the property owner, or their agent, will notify NHDES via the *Completion of Construction Notice and Certificate of Compliance Form*.

2022 VALUES

TOWN	LAND VALUE
Acworth	2015
Albany	1166
Alexandria	3283
Allenstown	11545
Alstead	3107
Alton	28465
Amherst	33150
Andover	5187
Antrim	5186
Ashland	17888
Atkinson	53267
Auburn	25811
Barnstead	10183
Barrington	14071
Bartlett	10785
Bath	2148
Bean's Grant	494
Bean's Purchase	494
Bedford	53267
Belmont	16815
Bennington	5777
Benton	494
Berlin	2091
Bethlehem	1170
Boscawen	8475
Bow	22793
Bradford	5543
Brentwood	25013
Bridgewater	21888
Bristol	19371
Brookfield	3208
Brookline	24118
Cambridge	494
Campton	6327
Canaan	5832
Candia	13335
Canterbury	4856
Carroll	4102
Center Harbor	43396

NHDES AQUATIC RESOURCE MITIGA
WETLAND PAYMENT CALCULA
*****INSERT AMOUNTS IN YELLOW CEL**

1	**Convert square feet of impact to ac**	
INSERT SQ FT OF IMPACT	Square feet of impact	20406.00
		43560.00
	Acres of impact =	0.4685
2	**Determine acreage of wetland cons**	
	Forested wetlands:	0.7027
	Tidal wetlands:	1.4054
	All other areas:	0.7027
3	**Wetland construction cost:**	
	Forested wetlands:	$71,993.30
	Tidal Wetlands:	$143,986.59
	All other areas:	$71,993.30
4	**Land acquisition cost (See land valu**	
INSERT LAND VALUE FROM TABLE WHICH APPEARS TO THE LEFT. (Insert the amount do not copy and paste.)	Town land value:	23386
	Forested wetlands:	$16,433.01
	Tidal wetlands:	$32,866.03
	All other areas:	$16,433.01
5	**Construction + land costs:**	
	Forested wetland:	$88,426.31
	Tidal wetlands:	$176,852.62
	All other areas:	$88,426.31
6	**NHDES Administrative cost:**	
	Forested wetlands:	$17,685.26
	Tidal wetlands:	$35,370.52
	All other areas:	$17,685.26
*************	**TOTAL ARM PAYMENT**************	
	Forested wetlands:	$106,111.57

Tidal wetlands:	$212,223.14
All other areas:	$106,111.57

Chandler's Purchase	494
Charlestown	3287
Chatham	742
Chester	16676
Chesterfield	9817
Chichester	10581
Claremont	5788
Clarksville	681
Colebrook	1771
Columbia	684
Concord	37684
Conway	17622
Cornish	2954
Crawford's Purchase	494
Croydon	1878
Cutt's Grant	494
Dalton	1912
Danbury	2798
Danville	25564
Deerfield	9596
Deering	6106
Derry	53267
Dix's Grant	494
Dixville	494
Dorchester	869
Dover	53267
Dublin	6403
Dummer	494
Dunbarton	7038
Durham	35249
East Kingston	26497
Easton	1943
Eaton	3515
Effingham	4109
Ellsworth	655
Enfield	12084
Epping	22559
Epsom	10218
Errol	1110
Erving's Location	494
Exeter	53267

SECTION 2

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

June 8, 2023

Re: Wetlands Functions and Values Assessments and Application of Buffers in Accordance with Article 202 the Kingston Wetlands Conservation District – 24 Towle Road, Tax Map: R-12, Lot: 26

Town of Kingston
Conservation Commission & Planning Board
163 Main Street
Kingston, NH 03848

To Whom It May Concern:

The information included within this letter is intended to fulfill the requirements of Article 202 of the Town of Kingston Wetlands Conservation District. More specifically, the property owner is seeking to develop this property, and accordingly, based on *Functions and Values Assessments* of the relevant wetlands, we have determined the widths of the buffers for these wetlands. More details with respect to how the wetlands were assessed are included herewith.

Respectfully,
TFMoran, Inc.

Jay Aube
Certified Wetland Scientist #313

Report and Analysis

Introduction

This report was completed to accompany local approval requirements necessary to impact approximately 20,406 +/- square feet of wetlands for the purpose of constructing a new solar array field and associated infrastructure.

In accordance with Article 202 of the Town of Kingston Wetlands Conservation District regulations, the *Functions and Values* of the relevant wetlands were assessed so that specific buffers widths can be applied.

Methods

The property, more specifically referenced on the Town of Kingston Assessor Map as Tax Map: R-12, Lot 26, was assessed for the presence of wetlands by Certified Wetlands Scientist (CWS), Jason R. Aube #313, in October, 2022, using the Corps of Engineers Wetlands Delineation Manual (January 1987) and the Regional Supplement to the U.S. Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0 (January 2012). Vegetation was assessed using the Northcentral and Northeast 2016 Regional Wetland Plant List, Version 3.3, 2016, published by the US Army Corps of Engineers.

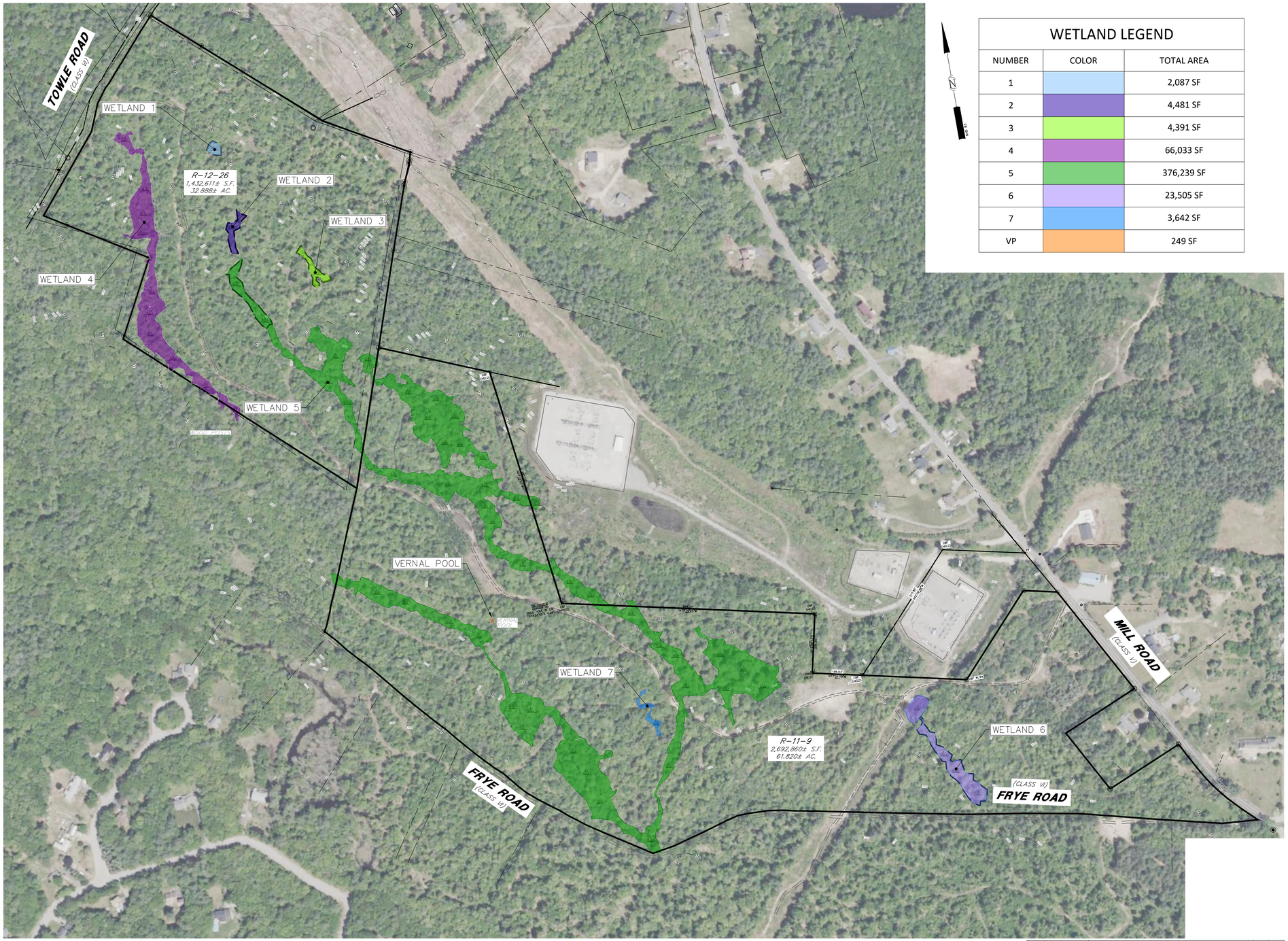
Each wetland was classification using the Wetlands and Deepwater Habitats of United States, adapted from the Cowardin, Carter, Gotlet and LaRoe (1979), August 2013, FGDC-STD-004-2013

The *Functions and Values* of each wetland were assessed using the US ACE Highway Methodology Workbook, dated 1993, together with the US ACE New England District Highway Method Workbook Supplement, dated 1999.

The NH Fish and Game Wildlife Action Plan (WAP) was used to assess the habitat types and the ranking of habitats within the project area.

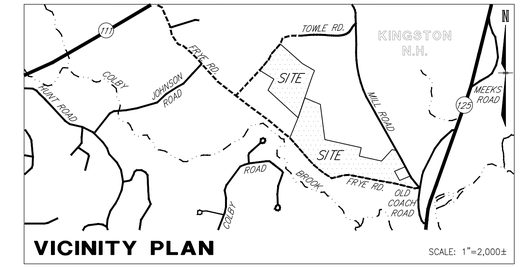
Wetland Buffer Application

All wetlands were assessed for the purpose of determining the appropriate buffers widths. While two of these wetland are proposed to be filled completely, we performed an assessment of their Functions and Values for the purpose of demonstrating overall Avoidance and Minimization to the highest value, highest functioning wetland resources on the properties. Each wetland has been given a unique number and they are depicted on the *Functions and Values Assessment Plan*.



WETLAND LEGEND

NUMBER	COLOR	TOTAL AREA
1		2,087 SF
2		4,481 SF
3		4,391 SF
4		66,033 SF
5		376,239 SF
6		23,505 SF
7		3,642 SF
VP		249 SF



VICINITY PLAN

SCALE: 1"=2,000±

NOTES

1. OWNER OF RECORD OF MAP R-11 LOT 9:
   RICHARD W. SENTER (TRUSTEE)
   TWO MILL ROAD REALTY TRUST
   86 ROCKRIMMON ROAD
   KINGSTON, NH 03848
   DEED REFERENCE TO PARCEL IS BK. 2893 PG. 2178

   AREA OF PARCEL = 2,692,860 S.F.± OR 61.820 ACRES±

   OWNER OF RECORD OF MAP R-12 LOT 26:
   RICHARD W. SENTER (TRUSTEE)
   24 TOWLE ROAD REALTY TRUST
   86 ROCKRIMMON ROAD
   KINGSTON, NH 03848
   DEED REFERENCE TO PARCEL IS BK. 2893 PG. 2190

   AREA OF PARCEL = 1,432,611 S.F.± OR 32.888 ACRES±

2. R-11-9 INDICATES TAX MAP AND LOT NUMBER.

3. THE PURPOSE OF THIS PLAN IS TO SHOW A CONCEPTUAL SOLAR ARRAY LAYOUT.

4. CURRENT ZONING DISTRICT: RURAL RESIDENTIAL (RR)
   MINIMUM LOT FRONTAGE: 200 FEET ON CLASS V HIGHWAY OR BETTER.
   MINIMUM BUILDING SETBACKS:
   FRONT: 30 FEET
   SIDE: 20 FEET
   REAR: 20 FEET
   *COMMERCIAL USE WITHIN RURAL RESIDENTIAL ZONING DISTRICT REQUIRES A 50 FOOT VEGETATIVE BUFFER.

5. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR ROCKINGHAM COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33015C0390E, EFFECTIVE DATE MAY 17, 2005, INDICATES THAT THE SUBJECT PARCELS ARE NOT LOCATED WITHIN A FLOOD HAZARD AREA.

6. HORIZONTAL DATUM: NAD83(2011)
   VERTICAL DATUM: NAVD88
   BENCHMARKS SET: AS NOTED

7. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL(S) MAY DETERMINE.

8. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG-SAFE AT 811.

9. CONCEPTUAL LAYOUT OF SOLAR ARRAY BASED UPON INFORMATION PROVIDED BY ARRAY MANUFACTURER. FINAL LAYOUT AND ARRAY LOCATIONS TO BE FINALIZED BY UNITIL IN COORDINATION WITH MANUFACTURER.

Unitil

CONCEPTUAL SITE PLANS

TAX MAP R12 LOTS 25 & 26

FUNCTIONS AND VALUES ASSESSMENT

UNITIL KINGSTON SOLAR PROJECT

24 TOWLE ROAD
KINGSTON, NH 03848

PREPARED FOR

UNITIL ENERGY SYSTEMS
30 ENERGY WAY
EXETER, NH 03833

SCALE: 1"=200' **DECEMBER 8, 2022**

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48 Constitution Drive, Bedford, N.H. 03110

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

HORIZONTAL SCALE 1"=200'
200 100 0 200

REV	DATE	DESCRIPTION	DR	CK
1	02/21/2023	REV FOR CONSULTANT	ML	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	DR	JC	FB		
20025-00	CK	NG	CADFILE	20025-00 FUNCTIONS AND VALUES	EX-01

Town of Kingston Buffer Width Determination Table

Principal Functions/ Values	Wetland 1	Wetland 2	Wetland 3	Wetland 4	Wetland 5
(FA) Floodflow Alteration	X	X	X	1	1
(GW) Groundwater Recharge/ Discharge	X	X	X	2	2
(NR) Nutrient Removal	X	X	X	2	2
(PE) Product Export	X	X	X	2	2
(SR) Sediment/ Toxicant Reduction	X	X	X	X	2
(SS) Shoreline/ Sediment Stabilization	X	X	X	X	X
(WH) Wildlife Habitat	X	X	X	3	X
(FH) Fish/ Shellfish Habitat	X	X	X	X	X
(ESH) Endangered Species Habitat	X	X	X	X	X
TOTAL SCORE	0	0	0	10	9
BUFFER WIDTH	**No Buffer**	**No Buffer**	**No Buffer**	**75-feet**	**75-feet**

X = not a *Principal Function*

Narrative on Functional Assessment

Env-Wt 311.10

Introduction

This *Wetland Functional Assessment* was performed to support a NHDES Wetlands Permit Application to impact 20,012 +/- square feet of wetlands for the purpose of constructing a new solar array adjacent to an existing electric utility corridor. This *Wetland Functional Assessment* assesses the wetlands on the Towle Road property, more specifically, Tax Map: R-12, Lot: 26 and demonstrates how the designers of this project have avoided and minimized impacts to the highest functioning, highest value resources.

Methods

The wetland boundaries were delineated using the Federal Delineation Manual, more particularly, the United State Army Corps of Engineers (ACOE) "Wetlands Delineation Manual", Technical Report Y-87-1, US ACE, January 1987, and the "Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Northcentral and Northeast Region", Version 2.0, US ACE, January 2012.

The presence of dominant hydrophytic vegetation was determined using the North central and Northeast 2016 Regional Wetland Plant List, Version 3.3, 2016, published by the Army Corps of Engineers.

Hydric soils were determined using the NH Hydric Soils Technical Committee's, "Field Indicators for Identifying Hydric Soils in New England", Version 4, 2017, Published by the New England Interstate Water Pollution Control Commission.

The wetlands were classified based on the Classification of Wetlands and Deepwater Habitats of the United States, adapted from Cowardin, Carter, Golet and LaRoe (1979), August 2013, FGDC-STD-004-2013.)

This Functional Assessment was performed when conducting the wetlands delineations in October of 2022 and a subsequent field visit on January 11, 2023. The wetlands were assessed using the *Army Corps of Engineers Highway Methodology* (September 1999, NAEEP-360-1-30a). Ecological Integrity was determined using the Method for Inventorying and Evaluating Freshwater Wetlands in New Hampshire – the NH Method, December 2015.

This Wetlands Functional Assessment assesses five (5) distinct wetlands on the properties. A colored coded Wetlands Functional Assessment Plan has been prepared so that each of these wetlands can be better differentiated.

Interpreting the Results of the U.S. Army Corps of Engineers Wetland Function-Value Evaluation Form

GROUNDWATER RECHARGE/DISCHARGE— This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area. It refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

CONSIDERATIONS/QUALIFIERS

1. Public or private wells occur downstream of the wetland.
2. Potential exists for public or private wells downstream of the wetland.
3. Wetland is underlain by stratified drift.
4. Gravel or sandy soils present in or adjacent to the wetland.
5. Fragipan does not occur in the wetland.
6. Fragipan, impervious soils, or bedrock does occur in the wetland.
7. Wetland is associated with a perennial or intermittent watercourse.
8. Signs of groundwater recharge are present or piezometer data demonstrates recharge.
9. Wetland is associated with a watercourse but lacks a defined outlet or contains a constricted outlet.
10. Wetland contains only an outlet, no inlet.
11. Groundwater quality of stratified drift aquifer within or downstream of wetland meets drinking water standards.
12. Quality of water associated with the wetland is high.
13. Signs of groundwater discharge are present (e.g., springs).
14. Water temperature suggests it is a discharge site.
15. Wetland shows signs of variable water levels.
16. Piezometer data demonstrates discharge.
17. Other

FLOODFLOW ALTERATION (Storage & Desynchronization) — This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas.

CONSIDERATIONS/QUALIFIERS

1. Area of this wetland is large relative to its watershed.
2. Wetland occurs in the upper portions of its watershed.
3. Effective flood storage is small or non-existent upslope of or above the wetland.
4. Wetland watershed contains a high percent of impervious surfaces.
5. Wetland contains hydric soils which are able to absorb and detain water.
6. Wetland exists in a relatively flat area that has flood storage potential.
7. Wetland has an intermittent outlet, ponded water, or signs are present of variable water level.
8. During flood events, this wetland can retain higher volumes of water than under normal or average rainfall conditions.
9. Wetland receives and retains overland or sheet flow runoff from surrounding uplands.
10. In the event of a large storm, this wetland may receive and detain excessive flood water from a nearby watercourse.
11. Valuable properties, structures, or resources are located in or near the floodplain downstream from the wetland.
12. The watershed has a history of economic loss due to flooding.
13. This wetland is associated with one or more watercourses.
14. This wetland watercourse is sinuous or diffuse.
15. This wetland outlet is constricted.
16. Channel flow velocity is affected by this wetland.
17. Land uses downstream are protected by this wetland.
18. This wetland contains a high density of vegetation.
19. Other

FISH AND SHELLFISH HABITAT (FRESHWATER) — This function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.

CONSIDERATIONS/QUALIFIERS

1. Forest land dominant in the watershed above this wetland.
2. Abundance of cover objects present.

STOP HERE IF THIS WETLAND IS NOT ASSOCIATED WITH A WATERCOURSE

3. Size of this wetland is able to support large fish/shellfish populations.
4. Wetland is part of a larger, contiguous watercourse.
5. Wetland has sufficient size and depth in open water areas so as not to freeze solid and retain some open water during winter.
6. Stream width (bank to bank) is more than 50 feet.
7. Quality of the watercourse associated with this wetland is able to support healthy fish/shellfish populations.
8. Streamside vegetation provides shade for the watercourse.
9. Spawning areas are present (submerged vegetation or gravel beds).
10. Food is available to fish/shellfish populations within this wetland.
11. Barrier(s) to anadromous fish (such as dams, including beaver dams, waterfalls, road crossing) are absent from the stream reach associated with this wetland.
12. Evidence of fish is present.
13. Wetland is stocked with fish.
14. The watercourse is persistent.
15. Man-made streams are absent.
16. Water velocities are not too excessive for fish usage.
17. Defined stream channel is present.
18. Other

Although the above example refers to freshwater wetlands, it can also be adapted for marine ecosystems. The following is an example provided by the National Marine Fisheries Service (NMFS) of an adaptation for the fish and shellfish function.

FISH AND SHELLFISH HABITAT (MARINE) — This function considers the effectiveness of wetlands, embayments, tidal flats, vegetated shallows, and other environments in supporting marine resources such as fish, shellfish, marine mammals, and sea turtles.

CONSIDERATIONS/QUALIFIERS

1. Special aquatic sites (tidal marsh, mud flats, eelgrass beds) are present.
2. Suitable spawning habitat is present at the site or in the area.
3. Commercially or recreationally important species are present or suitable habitat exists.
4. The wetland/waterway supports prey for higher trophic level marine organisms.
5. The waterway provides migratory habitat for anadromous fish.
6. Essential fish habitat, as defined by the 1996 amendments to the Magnuson-Stevens Fishery & Conservation Act, is present (consultation with NMFS may be necessary).
7. Other

SEDIMENT/TOXICANT/PATHOGEN RETENTION — This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

CONSIDERATIONS/QUALIFIERS

1. Potential sources of excess sediment are in the watershed above the wetland.
2. Potential or known sources of toxicants are in the watershed above the wetland.
3. Opportunity for sediment trapping by slow moving water or deepwater habitat are present in this wetland.
4. Fine grained mineral or organic soils are present.
5. Long duration water retention time is present in this wetland.
6. Public or private water sources occur downstream.
7. The wetland edge is broad and intermittently aerobic.
8. The wetland is known to have existed for more than 50 years.
9. Drainage ditches have not been constructed in the wetland.

STOP HERE IF WETLAND IS NOT ASSOCIATED WITH A WATERCOURSE.

10. Wetland is associated with an intermittent or perennial stream or a lake.
11. Channelized flows have visible velocity decreases in the wetland.
12. Effective floodwater storage in wetland is occurring. Areas of impounded open water are present.
13. No indicators of erosive forces are present. No high water velocities are present.
14. Diffuse water flows are present in the wetland.
15. Wetland has a high degree of water and vegetation interspersion.
16. Dense vegetation provides opportunity for sediment trapping and/or signs of sediment accumulation by dense vegetation is present.
17. Other

NUTRIENT REMOVAL/RETENTION/TRANSFORMATION — This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers, or estuaries.

CONSIDERATIONS/QUALIFIERS

1. Wetland is large relative to the size of its watershed.
2. Deep water or open water habitat exists.
3. Overall potential for sediment trapping exists in the wetland.

4. Potential sources of excess nutrients are present in the watershed above the wetland.
5. Wetland saturated for most of the season. Ponded water is present in the wetland.
6. Deep organic/sediment deposits are present.
7. Slowly drained fine grained mineral or organic soils are present.
8. Dense vegetation is present.
9. Emergent vegetation and/or dense woody stems are dominant.
10. Opportunity for nutrient attenuation exists.
11. Vegetation diversity/abundance sufficient to utilize nutrients.

STOP HERE IF WETLAND IS NOT ASSOCIATED WITH A WATERCOURSE.

12. Waterflow through this wetland is diffuse.
13. Water retention/detention time in this wetland is increased by constricted outlet or thick vegetation.
14. Water moves slowly through this wetland.
15. Other

PRODUCTION EXPORT (Nutrient) — This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.

CONSIDERATIONS/QUALIFIERS

1. Wildlife food sources grow within this wetland.
2. Detritus development is present within this wetland
3. Economically or commercially used products found in this wetland.
4. Evidence of wildlife use found within this wetland.
5. Higher trophic level consumers are utilizing this wetland.
6. Fish or shellfish develop or occur in this wetland.
7. High vegetation density is present.
8. Wetland exhibits high degree of plant community structure/species diversity.
9. High aquatic vegetative diversity/abundance is present.
10. Nutrients exported in wetland watercourses (permanent outlet present).
11. “Flushing” of relatively large amounts of organic plant material occurs from this wetland.
12. Wetland contains flowering plants that are used by nectar-gathering insects.
13. Indications of export are present.
14. High production levels occurring, however, no visible signs of export (assumes export is attenuated).
15. Other

SEDIMENT/SHORELINE STABILIZATION — This function considers the effectiveness of a wetland to stabilize streambanks and shorelines against erosion.

CONSIDERATIONS/QUALIFIERS

1. Indications of erosion or siltation are present.
2. Topographical gradient is present in wetland.
3. Potential sediment sources are present up-slope.
4. Potential sediment sources are present upstream.
5. No distinct shoreline or bank is evident between the waterbody and the wetland or upland.
6. A distinct step between the open waterbody or stream and the adjacent land exists (i.e., sharp bank) with dense roots throughout.
7. Wide wetland (>10’) borders watercourse, lake, or pond.
8. High flow velocities in the wetland.
9. The watershed is of sufficient size to produce channelized flow.
10. Open water fetch is present.
11. Boating activity is present.
12. Dense vegetation is bordering watercourse, lake, or pond.
13. High percentage of energy-absorbing emergents and/or shrubs border a watercourse, lake, or pond.
14. Vegetation is comprised of large trees and shrubs that withstand major flood events or erosive incidents and stabilize the shoreline on a large scale (feet).
15. Vegetation is comprised of a dense resilient herbaceous layer that stabilizes sediments and the shoreline on a small scale (inches) during minor flood events or potentially erosive events.
16. Other

WILDLIFE HABITAT — This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered. Species lists of observed and potential animals should be included in the wetland assessment report.[1]

CONSIDERATIONS/QUALIFIERS

1. Wetland is not degraded by human activity.
2. Water quality of the watercourse, pond, or lake associated with this wetland meets or exceeds Class A or B standards.
3. Wetland is not fragmented by development.
4. Upland surrounding this wetland is undeveloped.
5. More than 40% of this wetland edge is bordered by upland wildlife habitat (e.g., brushland, woodland, active farmland, or idle land) at least 500 feet in width.
6. Wetland is contiguous with other wetland systems connected by a watercourse or lake.
7. Wildlife overland access to other wetlands is present.
8. Wildlife food sources are within this wetland or are nearby.
9. Wetland exhibits a high degree of interspersion of vegetation classes and/or open water.
10. Two or more islands or inclusions of upland within the wetland are present.
11. Dominant wetland class includes deep or shallow marsh or wooded swamp.
12. More than three acres of shallow permanent open water (less than 6.6 feet deep), including streams in or adjacent to wetland, are present.
13. Density of the wetland vegetation is high.
14. Wetland exhibits a high degree of plant species diversity.
15. Wetland exhibits a high degree of diversity in plant community structure (e.g., tree/shrub/vine/grasses/mosses)
16. Plant/animal indicator species are present. (List species for project)
17. Animal signs observed (tracks, scats, nesting areas, etc.)
18. Seasonal uses vary for wildlife and wetland appears to support varied population diversity/abundance during different seasons.
19. Wetland contains or has potential to contain a high population of insects.
20. Wetland contains or has potential to contain large amphibian populations.
21. Wetland has a high avian utilization or its potential.
22. Indications of less disturbance-tolerant species are present.
23. Signs of wildlife habitat enhancement are present (birdhouses, nesting boxes, food sources, etc.).
24. Other

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[1]In March 1995, a rapid wildlife habitat assessment method was completed by a University of Massachusetts research team with funding and oversight provided by the New England Transportation Consortium. The method is called WEThings (wetland habitat indicators for non-game species). It produces a list of potential wetland-dependent mammal, reptile, and amphibian species that may be present in the wetland. The output is based on observable habitat characteristics documented on the field data form. This method may be used to generate the wildlife species list recommended as backup information to the wetland evaluation form and to augment the considerations. Use of this method should first be coordinated with the Corps project manager. A computer program is also available to expedite this process.

RECREATION (Consumptive and Non-Consumptive) — This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting, and other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals, or other resources that are intrinsic to the wetland. Non-consumptive opportunities do not consume or diminish these resources of the wetland.

CONSIDERATIONS/QUALIFIERS

1. Wetland is part of a recreation area, park, forest, or refuge.
2. Fishing is available within or from the wetland.
3. Hunting is permitted in the wetland.
4. Hiking occurs or has potential to occur within the wetland.
5. Wetland is a valuable wildlife habitat.
6. The watercourse, pond, or lake associated with the wetland is unpolluted.
7. High visual/aesthetic quality of this potential recreation site.
8. Access to water is available at this potential recreation site for boating, canoeing, or fishing.
9. The watercourse associated with this wetland is wide and deep enough to accommodate canoeing and/or non-powered boating.
10. Off-road public parking available at the potential recreation site.
11. Accessibility and travel ease is present at this site.
12. The wetland is within a short drive or safe walk from highly populated public and private areas.
13. Other

EDUCATIONAL/SCIENTIFIC VALUE — This value considers the suitability of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research.

CONSIDERATIONS/QUALIFIERS

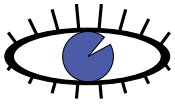
1. Wetland contains or is known to contain threatened, rare, or endangered species.
2. Little or no disturbance is occurring in this wetland.
3. Potential educational site contains a diversity of wetland classes which are accessible or potentially accessible.
4. Potential educational site is undisturbed and natural.
5. Wetland is considered to be a valuable wildlife habitat.
6. Wetland is located within a nature preserve or wildlife management area.
7. Signs of wildlife habitat enhancement present (bird houses, nesting boxes, food sources, etc.).
8. Off-road parking at potential educational site suitable for school bus access in or near wetland.
9. Potential educational site is within safe walking distance or a short drive to schools.
10. Potential educational site is within safe walking distance to other plant communities.
11. Direct access to perennial stream at potential educational site is available.
12. Direct access to pond or lake at potential educational site is available.
13. No known safety hazards exist within the potential educational site.
14. Public access to the potential educational site is controlled.
15. Handicap accessibility is available.
16. Site is currently used for educational or scientific purposes.
17. Other

UNIQUENESS/HERITAGE — This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation, and habitat diversity.

CONSIDERATIONS/QUALIFIERS

1. Upland surrounding wetland is primarily urban.
2. Upland surrounding wetland is developing rapidly.
3. More than 3 acres of shallow permanent open water (less than 6.6 feet deep), including streams, occur in wetlands.
4. Three or more wetland classes are present.
5. Deep and/or shallow marsh or wooded swamp dominate.
6. High degree of interspersion of vegetation and/or open water occur in this wetland.
7. Well-vegetated stream corridor (15 feet on each side of the stream) occurs in this wetland.
8. Potential educational site is within a short drive or a safe walk from schools.
9. Off-road parking at potential educational site is suitable for school buses.
10. No known safety hazards exist within this potential educational site.
11. Direct access to perennial stream or lake exists at potential educational site.
12. Two or more wetland classes are visible from primary viewing locations.
13. Low-growing wetlands (marshes, scrub-shrub, bogs, open water) are visible from primary viewing locations.
14. Half an acre of open water or 200 feet of stream is visible from the primary viewing locations.
15. Large area of wetland is dominated by flowering plants or plants that turn vibrant colors in different seasons.
16. General appearance of the wetland visible from primary viewing locations is unpolluted and/or undisturbed.
17. Overall view of the wetland is available from the surrounding upland.
18. Quality of the water associated with the wetland is high.
19. Opportunities for wildlife observations are available.
20. Historical buildings are found within the wetland.
21. Presence of pond or pond site and remains of a dam occur within the wetland.
22. Wetland is within 50 yards of the nearest perennial watercourse.
23. Visible stone or earthen foundations, berms, dams, standing structures, or associated features occur within the wetland.
24. Wetland contains critical habitat for a state- or federally-listed threatened or endangered species.
25. Wetland is known to be a study site for scientific research.
26. Wetland is a natural landmark or recognized by the state natural heritage inventory authority as an exemplary natural community.
27. Wetland has local significance because it serves several functional values.
28. Wetland has local significance because it has biological, geological, or other features that are locally rare or unique.
29. Wetland is known to contain an important archaeological site.
30. Wetland is hydrologically connected to a state or federally designated scenic river.
31. Wetland is located in an area experiencing a high wetland loss rate.
32. Other

VISUAL QUALITY/AESTHETICS — This value considers the visual and aesthetic quality or usefulness of the wetland.



CONSIDERATIONS/QUALIFIERS

1. Multiple wetland classes are visible from primary viewing locations.
2. Emergent marsh and/or open water are visible from primary viewing locations.
3. A diversity of vegetative species is visible from primary viewing locations.
4. Wetland is dominated by flowering plants or plants that turn vibrant colors in different seasons.
5. Land use surrounding the wetland is undeveloped as seen from primary viewing locations.
6. Visible surrounding land use form contrasts with wetland.
7. Wetland views absent of trash, debris, and signs of disturbance.
8. Wetland is considered to be a valuable wildlife habitat.
9. Wetland is easily accessed.
10. Low noise level at primary viewing locations.
11. Unpleasant odors absent at primary viewing locations.
12. Relatively unobstructed sight line exists through wetland.
13. Other

ENDANGERED SPECIES HABITAT — This value considers the suitability of the wetland to support threatened or endangered species.

ES

CONSIDERATIONS/QUALIFIERS

1. Wetland contains or is known to contain threatened or endangered species.
2. Wetland contains critical habitat for a state or federally listed threatened or endangered species.

Wetland Function-Value Evaluation Form

Total area of wetland 2,087 SF Human made? No Is wetland part of a wildlife corridor? no or a "habitat island"? no

Adjacent land use Undeveloped/ Forested/ ATV Use Distance to nearest roadway or other development 250-feet

Dominant wetland systems present PFO1/3 Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper/ mid reach

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland #1

Latitude 42.89418 Longitude -71.08829

Prepared by: Jay Aube Date 1/15/2023

Wetland Impact:
Type Fill Area 2,087 SF

Evaluation based on:
Office yes Field yes

Corps manual wetland delineation completed? Y X N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	1,2,5,8	N	Wetland is relatively small.
Floodflow Alteration	N	2,5	N	Wetland is relatively small, very little storage capacity.
Fish and Shellfish Habitat	N	1,2	N	Wetland not associated with a water course.
Sediment/Toxicant Retention	Y	4,6	N	Wetlands not associated with a water course.
Nutrient Removal	N	7	N	Wetland is small, vegetation not diverse, no deep water.
Production Export	Y	2,4	N	Wetland is small, sparse vegetation - not diverse.
Sediment/Shoreline Stabilization	N		N	No open water.
Wildlife Habitat	Y	1,3,4,5,7	N	Wetland is small, lacks diversity and hydrology.
Recreation	N		N	No trail network or public access.
Educational/Scientific Value	Y	2	N	Remote, no public access.
Uniqueness/Heritage	Y		N	Forested area, lacks uniqueness, not diverse, no public access.
Visual Quality/Aesthetics	Y		N	Only one wetland class, lacks diversity
ES Endangered Species Habitat	Y		N	Wetland small - not critical to T & E species.
Other Ecological Integrity	Y	NH Method	N	Wetland is small and not a representative exemplary wetland.

Notes: Ecological Integrity Score = 8.1

* Refer to backup list of numbered considerations.

NH METHOD FOR EVALUATING FRESHWATER WETLANDS

Wetland Name/ Code: Wetland #1 **Evaluation Date:** 1/10/2023 **Evaluator:** Jay Aube

ECOLOGICAL INTEGRITY

Evaluation Question	Observations & Notes	Answers	Score
Are there land uses in the wetland's watershed that could degrade water quality in the wetland?	Limited ATV trail network in this area.	a. Less than 5% of the watershed has land uses that could degrade water quality. b. 5-10% of the watershed has land uses that could degrade water quality. c. >10% of the watershed has land uses that could degrade water quality.	10 5 1
Is there evidence of fill in the wetland?	No Fill.	a. Less than 1% b. From 1-3% c. More than 3%	10 5 1
What percentage of the wetland has been altered by agricultural activities?	No agricultural activities, primarily wooded	a. Less than 5% b. From 5% to 25 % c. More than 25%	10 5 1
What percentage of the wetland has been adversely impacted by logging activities within the last 10 years?	The site has been logged extensively over the years. Some skidder rutting present.	a. Less than 1% b. From 1 to 10% c. More than 10%	10 5 1
How much human activity is taking place in the wetland (e.g. ATV use, trails, cars, dumping of brush and garbage, etc.	Some skidder rutting visible within wetland.	a. Low: Few trails in use, little or no traffic, and little or no litter. b. Moderate: Some used trails, roads, litter. c. High: Many trails, roads, and/ or litter	10 5 1
What percentage of the wetland is occupied by invasive plant species?	Very little evidence of invasive species.	a. None b. 1-5% of the wetland has invasive species. c. > 5% of the wetland has invasive species.	10 5 1
Are there roads, driveways and/ or railroads crossing or adjacent to the wetlands or come within 500-feet of the wetland?	Minimal ATV roads in this area.	a. No roads, driveways, or railroads within 500-feet of, or in the wetlands. b. Roads, driveways, railroads are within 500-feet of the wetland. c. Roads, driveways, railroads cross, or are adjacent to, the wetland.	10 5 1
How much human activity is taking place in the upland within 500-feet of the wetland?	Minimal.	a. Less than 5% or no activity. b. 3-10% impervious area within 500-feet of the wetland edge c. Greater than 10% impervious area within 500-feet of the wetland edge.	10 5 1
What is the percent of impervious surface within 500-feet of the wetland edge?		a. Less than 3% impervious area within 500-feet of the wetland edge. b. 3-10% impervious area within 500-feet of the wetland edge. c. Greater than 10% impervious area within 500-feet of the wetland edge.	10 5 1
Is there a human-made structure that regulates the flow of water through the wetland?		a. No human-made structures present **upstream of, or in** the wetland. b. One or more human made structures present **upstream of, or** in the wetland but hydrologic modification in sight. c. One or more human made structures present **upstream of, or** in the wetland that severely block or alter surface hydrology.	10 5 1

SCORE: 10+10+10+1+10+10+5+10+10+10 = **86** **86**/10 = **8.6**

Wetland Function-Value Evaluation Form

Total area of wetland 4,481 SF Human made? No Is wetland part of a wildlife corridor? no or a "habitat island"? no

Adjacent land use Undeveloped/ Forested/ ATV Use Distance to nearest roadway or other development 250-feet

Dominant wetland systems present PFO1/3 Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper/ mid reach

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland #2

Latitude 42.89411 Longitude -71.08821

Prepared by: Jay Aube Date 1/15/2023

Wetland Impact:
Type Fill Area 4,481 SF

Evaluation based on:
Office yes Field yes

Corps manual wetland delineation completed? Y X N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	1,2,5,8	N	Wetland is relatively small.
Floodflow Alteration	N	2,5	N	Wetland is relatively small, very little storage capacity.
Fish and Shellfish Habitat	N	1,2	N	Wetland not associated with a water course.
Sediment/Toxicant Retention	Y	4,6	N	Wetlands not associated with a water course.
Nutrient Removal	N	7	N	Wetland is small, vegetation not diverse, no deep water.
Production Export	Y	2,4	N	Wetland is small, sparse vegetation - not diverse.
Sediment/Shoreline Stabilization	N		N	No open water.
Wildlife Habitat	Y	1,3,4,5,7	N	Wetland is small, lacks diversity and hydrology.
Recreation	N		N	No trail network or public access.
Educational/Scientific Value	Y	2	N	Remote, no public access.
Uniqueness/Heritage	Y		N	Forested area, lacks uniqueness, not diverse, no public access.
Visual Quality/Aesthetics	Y		N	Only one wetland class, lacks diversity
ES Endangered Species Habitat	Y		N	Wetland small - not critical to T & E species.
Other Ecological Integrity	Y		N	Wetland is small and not a representative exemplary wetland.

Notes: Ecological Integrity Score = 8.1

* Refer to backup list of numbered considerations.

NH METHOD FOR EVALUATING FRESHWATER WETLANDS

Wetland Name/ Code: Wetland #2 **Evaluation Date:** 1/10/2023 **Evaluator:** Jay Aube

ECOLOGICAL INTEGRITY

Evaluation Question	Observations & Notes	Answers	Score
Are there land uses in the wetland's watershed that could degrade water quality in the wetland?	Limited ATV trail network in this area.	a. Less than 5% of the watershed has land uses that could degrade water quality. b. 5-10% of the watershed has land uses that could degrade water quality. c. >10% of the watershed has land uses that could degrade water quality.	10 5 1
Is there evidence of fill in the wetland?	Limited ATV trail network in this area.	a. Less than 1% b. From 1-3% c. More than 3%	10 5 1
What percentage of the wetland has been altered by agricultural activities?	No agricultural activities, primarily wooded	a. Less than 5% b. From 5% to 25 % c. More than 25%	10 5 1
What percentage of the wetland has been adversely impacted by logging activities within the last 10 years?	The site has been logged extensively over the years. Some skidder rutting present.	a. Less than 1% b. From 1 to 10% c. More than 10%	10 5 1
How much human activity is taking place in the wetland (e.g. ATV use, trails, cars, dumping of brush and garbage, etc.	Some skidder rutting visible within wetland.	a. Low: Few trails in use, little or no traffic, and little or no litter. b. Moderate: Some used trails, roads, litter. c. High: Many trails, roads, and/ or litter	10 5 1
What percentage of the wetland is occupied by invasive plant species?	Very little evidence of invasive species.	a. None b. 1-5% of the wetland has invasive species. c. > 5% of the wetland has invasive species.	10 5 1
Are there roads, driveways and/ or railroads crossing or adjacent to the wetlands or come within 500-feet of the wetland?	Minimal ATV roads in this area.	a. No roads, driveways, or railroads within 500-feet of, or in the wetlands. b. Roads, driveways, railroads are within 500-feet of the wetland. c. Roads, driveways, railroads cross, or are adjacent to, the wetland.	10 5 1
How much human activity is taking place in the upland within 500-feet of the wetland?	Minimal.	a. Less than 5% or no activity. b. 3-10% impervious area within 500-feet of the wetland edge c. Greater than 10% impervious area within 500-feet of the wetland edge.	10 5 1
What is the percent of impervious surface within 500-feet of the wetland edge?		a. Less than 3% impervious area within 500-feet of the wetland edge. b. 3-10% impervious area within 500-feet of the wetland edge. c. Greater than 10% impervious area within 500-feet of the wetland edge.	10 5 1
Is there a human-made structure that regulates the flow of water through the wetland?		a. No human-made structures present **upstream of, or in** the wetland. b. One or more human made structures present **upstream of, or** in the wetland but hydrologic modification in sight. c. One or more human made structures present **upstream of, or** in the wetland that severely block or alter surface hydrology.	10 5 1

SCORE: 10+10+10+1+5+10+5+10+10+10 = **81** **81**/10 = **8.1**

Wetland Function-Value Evaluation Form

Total area of wetland 4,391 SF Human made? No Is wetland part of a wildlife corridor? no or a "habitat island"? no

Adjacent land use Undeveloped/ Forested/ ATV Use Distance to nearest roadway or other development 10-feet

Dominant wetland systems present PFO1/3 Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper/ mid reach

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland #3

Latitude 42.89418 Longitude -71.08823

Prepared by: Jay Aube Date 1/15/2023

Wetland Impact:
Type Fill Area 4,391 SF

Evaluation based on:
Office yes Field yes

Corps manual wetland delineation completed? Y X N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	1,2,5,8	N	Wetland is relatively small.
Floodflow Alteration	N	2,5	N	Wetland is relatively small, very little storage capacity.
Fish and Shellfish Habitat	N	1,2	N	Wetland not associated with a water course.
Sediment/Toxicant Retention	Y	4,6	N	Wetlands not associated with a water course.
Nutrient Removal	N	7	N	Wetland is small, vegetation not diverse, no deep water.
Production Export	Y	2,4	N	Wetland is small, sparse vegetation - not diverse.
Sediment/Shoreline Stabilization	N		N	No open water.
Wildlife Habitat	Y	1,3,4,5,7	N	Wetland is small, lacks diversity and hydrology.
Recreation	N		N	No trail network or public access.
Educational/Scientific Value	Y	2	N	Remote, no public access.
Uniqueness/Heritage	Y		N	Forested area, lacks uniqueness, not diverse, no public access.
Visual Quality/Aesthetics	Y		N	Only one wetland class, lacks diversity
ES Endangered Species Habitat	Y		N	Wetland small - not critical to T & E species.
Other Ecological Integrity	Y		N	Wetland is small and not a representative exemplary wetland.

Notes: Ecological Integrity Score = 8.1

* Refer to backup list of numbered considerations.

NH METHOD FOR EVALUATING FRESHWATER WETLANDS

Wetland Name/ Code: Wetland #3 **Evaluation Date:** 1/10/2023 **Evaluator:** Jay Aube

ECOLOGICAL INTEGRITY

Evaluation Question	Observations & Notes	Answers	Score
Are there land uses in the wetland's watershed that could degrade water quality in the wetland?	Minimal ATV trails in this area.	a. Less than 5% of the watershed has land uses that could degrade water quality. b. 5-10% of the watershed has land uses that could degrade water quality. c. >10% of the watershed has land uses that could degrade water quality.	10 5 1
Is there evidence of fill in the wetland?	No Fill.	a. Less than 1% b. From 1-3% c. More than 3%	10 5 1
What percentage of the wetland has been altered by agricultural activities?	No agricultural activities, primarily wooded	a. Less than 5% b. From 5% to 25 % c. More than 25%	10 5 1
What percentage of the wetland has been adversely impacted by logging activities within the last 10 years?	The site has been logged extensively over the years. Some skidder rutting present.	a. Less than 1% b. From 1 to 10% c. More than 10%	10 5 1
How much human activity is taking place in the wetland (e.g. ATV use, trails, cars, dumping of brush and garbage, etc.	Some skidder rutting visible within wetland.	a. Low: Few trails in use, little or no traffic, and little or no litter. b. Moderate: Some used trails, roads, litter. c. High: Many trails, roads, and/ or litter	10 5 1
What percentage of the wetland is occupied by invasive plant species?	Very little evidence of invasive species.	a. None b. 1-5% of the wetland has invasive species. c. > 5% of the wetland has invasive species.	10 5 1
Are there roads, driveways and/ or railroads crossing or adjacent to the wetlands or come within 500-feet of the wetland?	Some ATV trails in this area.	a. No roads, driveways, or railroads within 500-feet of, or in the wetlands. b. Roads, driveways, railroads are within 500-feet of the wetland. c. Roads, driveways, railroads cross, or are adjacent to, the wetland.	10 5 1
How much human activity is taking place in the upland within 500-feet of the wetland?	Minimal.	a. Less than 5% or no activity. b. 3-10% impervious area within 500-feet of the wetland edge c. Greater than 10% impervious area within 500-feet of the wetland edge.	10 5 1
What is the percent of impervious surface within 500-feet of the wetland edge?		a. Less than 3% impervious area within 500-feet of the wetland edge. b. 3-10% impervious area within 500-feet of the wetland edge. c. Greater than 10% impervious area within 500-feet of the wetland edge.	10 5 1
Is there a human-made structure that regulates the flow of water through the wetland?		a. No human-made structures present **upstream of, or in** the wetland. b. One or more human made structures present **upstream of, or** in the wetland but hydrologic modification in sight. c. One or more human made structures present **upstream of, or** in the wetland that severely block or alter surface hydrology.	10 5 1

SCORE: 10+10+10+1+5+10+5+10+10+10 = **81** **81**/10 **= 8.1**

Wetlands 1, 2, and 3

These wetlands are predominantly Palustrine Forested, Broad-Leaved, Deciduous (PFO1) and Palustrine Broad-Leaved Evergreen (PFO3). These wetlands are seasonally flooded/ saturated, acidic with organic soils. The NH Fish and Game Wildlife Action Plan (WAP) identifies the habitat in this area to be *Appalachian oak-pine*. The WAP indicates these wetlands are on the fringe of habitat considered to be *Supporting Landscape* for wildlife habitat. The wetland is dominated with Red Maple (*Acer Rubrum*), American Wintergreen (*Pyrola americana*), Bristly Dewberry (Rubus hispidus) and wetland grasses (*Carex spp.*). The surrounding uplands are predominantly Eastern Hemlock (*Tsuga canadensis*) with American Witch Hazel (*Hamamelis virginiana*) dominating the upland fringes of the wetland. The soils within the vicinity of the wetlands are predominantly moderately well drained, *Scituate-Newfields Complex* (447B).

Function Assessment Results:

Groundwater Recharge/ Discharge

This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge site. More particularly, this function refers to the interaction between wetlands and aquifers. These wetlands are relatively small compared to the surrounding landscape and only allow minimal groundwater recharge, and therefore, Groundwater Recharge/ Discharge **is not** a principal function of these wetlands.

Floodflow Alteration

This function analyzes the effectiveness of the wetland in reducing flood damage by retaining flood waters for prolonged periods of time. These wetlands are relatively small compared to the surrounding landscape and only have minimal floodwater storage capacity, and therefore, Floodflow Alteration **is not** a principal function of these wetlands.

Fish and Shellfish Habitat

This function considers a wetland's ability to provide embayments, tidal flats, vegetated shallows, and other environments in support of fish, shellfish, marine mammals, and sea turtles. These wetland have no direct connection to a waterway or waterbody, and therefore, this is Fish and Shellfish Habitiat **is not** a principal function of these wetlands.

Sediment/ Toxicant Retention

This function considers the effectiveness of a wetland to act as a trap for sediments, toxicants, and pathogens within runoff. The surrounding landscape is heavily wooded. These wetlands lack dense, diverse vegetation, and therefore, Sediment/ Toxicant Retention **is not** a principal function of t these wetlands.

Nutrient Removal/ Retention/ Transformation

This function recognizes a wetland's ability to serve as a trap for nutrients in runoff from surrounding uplands or contiguous wetlands. The surrounding landscape is heavily wooded. These wetlands lack

dense, diverse vegetation, and therefore, *Nutrient removal/ Retention/ Transformation* **is not** a principal function of these wetlands.

Production Export

This function considers the wetland's ability to export resources to other areas. These wetlands lack dense, diverse vegetation. There is little evidence of nutrient export, and therefore, Production Export **is not** a principal function of these wetlands.

Sediment/ Shoreline Stabilization

This function relates to a wetland's effectiveness to stabilize shorelines and prevent erosion. These wetlands contain no open water areas, and therefore, sediment/ shoreline stabilization **is not** a principal function of these wetlands.

Wildlife Habitat

This function considers a wetland's ability to provide wildlife habitat. According to the NH Wildlife Action Plan (WAP), the habitat in this area is considered Appalachian oak-pine but, it is not considered critical wildlife habitat. While the WAP indicates this area of the property serves as Supporting Landscape for wildlife habitat but, the wetlands are small and lack an abundance of diverse vegetation, and therefore, Wildlife Habitat **is not** a principal function of these wetlands.

Recreation

This function considers the effectiveness of the wetland to provide recreational opportunities such as canoeing, boating, fishing, and other passive recreational activities. Considering these wetlands are on private property and they lack direct access, Recreation **is not** considered a primary principal function of these wetlands.

Education/ Scientific Value

This value considers the effectiveness of the wetland to serve as an "outdoor classroom." Considering these wetlands are on private property and they lack direct access, Education/ Scientific Value **is not** a principal function of these wetlands.

Uniqueness/ Heritage

This value relates to the effectiveness of a wetland to produce certain *special values* such as archeological sites, unusual aesthetic quality, historical events, and unique plants. These wetlands lack diversity and have been impacted by logging events. Uniqueness/ Heritage **is not** a principal function of these wetlands.

Visual Quality/ Aesthetics

This value considers the wetland's overall visual quality and aesthetics. The area surrounding these wetlands is on private property. Due to the lack of access, Visual Quality/ Aesthetics **is not** considered a Principal Function of these wetlands.

Endangered Species Habitat

Endangered species habitat relates to the effectiveness of the wetland to support endangered species habitat. While consultation with the NH Natural Heritage Bureau (NHB) produced positive hits for Threatened and Endangered species including the Blanding's Turtle (*Emydoidea blandingii*), Spotted Turtle (*Clemmys guttaua*) and Northern Black Racer (*Coluber constrictor constrictor*), these small wetlands have limited hydrology and lack an ability to provide wetland wildlife habitat functions critical to support threatened and endangered species, and therefore, Endangered Species Habitat **is not** considered a key function of these wetlands.

Ecological Integrity

Ecological integrity evaluates the overall health and stability of the wetland ecosystem. These wetlands have not experienced degradation by agricultural activities but, a great deal of timber harvesting has occurred in the past. There is very little evidence of invasive species. Within 500-feet of the wetlands there is evidence off-road and ATV vehicle trails. Some land uses within the wetland's watershed may contribute to water quality degradation within the wetland. Evidence of historic skidder rutting is present within the wetlands. Overall, these wetlands are relatively stable and moderately healthy and, according to the *Method for Inventorying and Evaluating Freshwater Wetlands in New Hampshire* – the NH Method, each wetland achieved an Ecological Integrity Score of 8.1. Due to their relatively small size and lack of functions and values, Ecological Integrity **is not** a principal function of these wetlands.

Summary

Collectively, these wetlands are relatively low-functioning and low value. Impacting these wetlands will not result in a significant loss of wetlands functions and values. Impacting these wetlands is a means of demonstrating this project has **avoided and minimized** impacts to the highest value resources on the neighboring property.

References

ACOE *Army Corps of Engineers Highway Methodology* (September 1999, NAEEP-360-1-30a).

Cowardin, L.M., V. carter, F.C Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deep-Water Habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Method for Inventorying and Evaluating Freshwater Wetlands in New Hampshire – The NH Method, December, 2015.

USDA (United States Department of Agriculture) NRCS (Natural Resources Conservation Services) *Web Soil Survey*. Accessed 3/25/2021.

WAP (Wildlife Action Plan). NH Fish and Game Department Wildlife Action Plan.

Wetland Function-Value Evaluation Form

Total area of wetland 66,033 SF Human made? No Is wetland part of a wildlife corridor? YES or a "habitat island"? NO

Adjacent land use Undeveloped/ Forested Distance to nearest roadway or other development 10-feet

Dominant wetland systems present PFO1, PSS1 Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper/ mid reach

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland #4

Latitude 42.89454 Longitude -71.08828

Prepared by: Jay Aube Date 1/15/2023

Wetland Impact:
Type No impact Area 0

Evaluation based on:
Office yes Field yes

Corps manual wetland delineation completed? Y X N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	1,2,5,8	Y	Larger wetland, able to detain water.
Floodflow Alteration	Y	2,5,6,8,9,15	Y	Larger wetland, can retain stormwater.
Fish and Shellfish Habitat	N	1,2	N	Wetland not associated with a water course.
Sediment/Toxicant Retention	Y	4,6	N	Wetlands not associated with a water course.
Nutrient Removal	Y	1,6,7,8,9,11,12	Y	Larger wetland, dense woody vegetation.
Production Export	Y	1,2,4,5,7,12	Y	Dense flowering vegetation but, not diverse.
Sediment/Shoreline Stabilization	N		N	No open water.
Wildlife Habitat	Y	1,3,4,5,8,13,17,19,21,	Y	Dense, flowering vegetation present - lacks diversity.
Recreation	N		N	No trail network or public access.
Educational/Scientific Value	N	2	N	Remote, no public access.
Uniqueness/Heritage	N		N	Forested area, lacks uniqueness, not diverse, no public access.
Visual Quality/Aesthetics	N		N	Only one wetland class, lacks diversity
ES Endangered Species Habitat	Y		N	Only one wetland class - not critical to T & E species.
Other Ecological Integrity	Y	NH Method	Y	Larger wetland, lacks diversity but, little human despoliation.

Notes: Ecological Integrity Score = 9.0

* Refer to backup list of numbered considerations.

NH METHOD FOR EVALUATING FRESHWATER WETLANDS

Wetland Name/ Code: Wetland #4 **Evaluation Date:** 1/10/2023 **Evaluator:** Jay Aube

ECOLOGICAL INTEGRITY

Evaluation Question	Observations & Notes	Answers	Score
Are there land uses in the wetland's watershed that could degrade water quality in the wetland?	ATV trails in this area.	a. Less than 5% of the watershed has land uses that could degrade water quality. b. 5-10% of the watershed has land uses that could degrade water quality. c. >10% of the watershed has land uses that could degrade water quality.	10 **5** 1
Is there evidence of fill in the wetland?	No fill.	a. Less than 1% b. From 1-3% c. More than 3%	10 **5** 1
What percentage of the wetland has been altered by agricultural activities?	No agricultural activities, primarily wooded	a. Less than 5% b. From 5% to 25 % c. More than 25%	10 5 1
What percentage of the wetland has been adversely impacted by logging activities within the last 10 years?	The site has been logged extensively over the years. Very little rutting within this wetland. Not a lot of available timber to harvest.	a. Less than 1% b. From 1 to 10% c. More than 10%	10 5 1
How much human activity is taking place in the wetland (e.g. ATV use, trails, cars, dumping of brush and garbage, etc.	Some trails.	a. Low: Few trails in use, little or no traffic, and little or no litter. b. Moderate: Some used trails, roads, litter. c. High: Many trails, roads, and/ or litter	10 5 1
What percentage of the wetland is occupied by invasive plant species?	Very little evidence of invasive species.	a. None b. 1-5% of the wetland has invasive species. c. > 5% of the wetland has invasive species.	10 5 1
Are there roads, driveways and/ or railroads crossing or adjacent to the wetlands or come within 500-feet of the wetland?	Some ATV trails in this area.	a. No roads, driveways, or railroads within 500-feet of, or in the wetlands. b. Roads, driveways, railroads are within 500-feet of the wetland. c. Roads, driveways, railroads cross, or are adjacent to, the wetland.	10 5 1
How much human activity is taking place in the upland within 500-feet of the wetland?	Some ATV trails in this area.	a. Less than 5% or no activity. b. 3-10% impervious area within 500-feet of the wetland edge c. Greater than 10% impervious area within 500-feet of the wetland edge.	10 5 1
What is the percent of impervious surface within 500-feet of the wetland edge?		a. Less than 3% impervious area within 500-feet of the wetland edge. b. 3-10% impervious area within 500-feet of the wetland edge. c. Greater than 10% impervious area within 500-feet of the wetland edge.	10 5 1
Is there a human-made structure that regulates the flow of water through the wetland?		a. No human-made structures present **upstream of, or in** the wetland. b. One or more human made structures present **upstream of, or** in the wetland but hydrologic modification in sight. c. One or more human made structures present **upstream of, or** in the wetland that severely block or alter surface hydrology.	10 5 1

SCORE: 10+10+10+10+5+10+5+5+10+10 = **85** **85**/10 = **8.5**

Wetland 4

This wetland is predominantly Palustrine Forested, Broad-Leaved, Deciduous (PFO1) and Palustrine Scrub-Shrub Broad-Leaved, Deciduous (PSS1). This wetland is seasonally flooded/ saturated, acidic with organic soils. The NH Fish and Game Wildlife Action Plan (WAP) identifies the habitat in this area to be predominantly *Appalachian oak-pine* with some Wet Meadow/ shrub wetland. The WAP indicates these wetlands are within *Supporting Landscape* for wildlife habitat. The wetland is dominated with Red Maple (*Acer Rubrum*), Bristly Dewberry (Rubus hispidus), wetland grasses (*Carex spp.*) and Sheep Laurel (*Kalmia angustifolia*). The surrounding uplands are predominantly Eastern White Pine (*Pinus strobus)* with American Witch Hazel (*Hamamelis virginiana*) dominating the upland fringes of the wetland. The soils within the vicinity of the wetland are predominantly poorly drained, *Walpole very fine sandy loam* 547B).

Function Assessment Results:

Groundwater Recharge/ Discharge

This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge site. More particularly, this function refers to the interaction between wetlands and aquifers. This wetland is relatively large compared to the surrounding landscape and allows for groundwater recharge, and therefore, Groundwater Recharge/ Discharge **is** a principal function of this wetland.

Floodflow Alteration

This function analyzes the effectiveness of the wetland in reducing flood damage by retaining flood waters for prolonged periods of time. This wetland is relatively large compared to the surrounding landscape and it has broad level areas with storage capacity, and therefore, Floodflow Alteration **is** a principal function of this wetland.

Fish and Shellfish Habitat

This function considers a wetland's ability to provide embayments, tidal flats, vegetated shallows, and other environments in support of fish, shellfish, marine mammals, and sea turtles. This wetland has no direct connection to a waterway or waterbody, and therefore, Fish and Shellfish Habitat **is not** a principal function of this wetland.

Sediment/ Toxicant Retention

This function considers the effectiveness of a wetland to act as a trap for sediments, toxicants, and pathogens within runoff. The surrounding landscape is heavily wooded. This wetland is not connected to a watercourse, and therefore, Sediment/ Toxicant Retention **is not** a principal function of this wetland.

Nutrient Removal/ Retention/ Transformation

This function recognizes a wetland's ability to serve as a trap for nutrients in runoff from surrounding uplands or contiguous wetlands. The surrounding landscape is heavily wooded. Although not diverse, this wetland contains dense vegetation, and therefore, *Nutrient removal/ Retention/ Transformation* **is** a principal function of these wetlands.

Production Export

This function considers the wetland's ability to export resources to other areas. This wetland has a dense shrub layer of the Coastal Sweet-Pepperbush and likely acts to assist avian populations and insects. Production Export **is** a principal function of this wetlands.

Sediment/ Shoreline Stabilization

This function relates to a wetland's effectiveness to stabilize shorelines and prevent erosion. This wetland contain no open water areas, and therefore, sediment/ shoreline stabilization **is not** a principal function of this wetland.

Wildlife Habitat

This function considers a wetland's ability to provide wildlife habitat. According to the NH Wildlife Action Plan (WAP), the habitat in this area is predominantly Appalachian oak-pine with some Wet Meadow/ shrub wetland. The WAP indicates this area of the property serves as Supporting Landscape for wildlife habitat and the wetland is relatively large with an abundance of dense vegetation, and therefore, Wildlife Habitat **is** a principal function of this wetland.

Recreation

This function considers the effectiveness of the wetland to provide recreational opportunities such as canoeing, boating, fishing, and other passive recreational activities. Considering the wetland is on private property and lacks direct access, Recreation **is not** considered a primary principal function of this wetland.

Education/ Scientific Value

This value considers the effectiveness of the wetland to serve as an "outdoor classroom." Considering the wetland is on private property and lacks direct access, Education/ Scientific Value is not **a principal function of this wetland.**

Uniqueness/ Heritage

This value relates to the effectiveness of a wetland to produce certain *special values* such as archeological sites, unusual aesthetic quality, historical events, and unique plants. These wetlands lack diversity and have been impacted by logging events. Uniqueness/ Heritage **is not** a principal function of these wetlands.

Visual Quality/ Aesthetics

This value considers the wetland's overall visual quality and aesthetics. The area surrounding these wetlands is on private property. Due to the lack of access, Visual Quality/ Aesthetics **is not** considered a Principal Function of this wetland.

Endangered Species Habitat

Endangered species habitat relates to the effectiveness of the wetland to support endangered species habitat. While consultation with the NH Natural Heritage Bureau (NHB) produced positive hits for Threatened and Endangered species including the Blanding's Turtle (*Emydoidea blandingii*), Spotted Turtle (*Clemmys guttaua*), and Northern Black Racer (*Coluber constrictor constrictor*), this wetland lacks the hydrology to provide critical habitat for these species, and therefore, Endangered Species Habitat **is not** considered a key function of these wetlands.

Ecological Integrity

Ecological integrity evaluates the overall health and stability of the wetland ecosystem. This wetland has not experienced degradation by agricultural activities but, a great deal of timber harvesting has occurred in the past. There is very little evidence of invasive species. Within 500-feet of the wetland there is evidence off-road and ATV vehicle trails. Some land uses within the wetland's watershed may contribute to water quality degradation within the wetland. Overall, these wetlands are relatively stable and moderately healthy and, according to the *Method for Inventorying and Evaluating Freshwater Wetlands in New Hampshire* – the NH Method, this wetland achieved an Ecological Integrity Score of 9.0. Due to its relatively large size compared to the neighboring uplands and the presence of multiple key functions and values, Ecological Integrity **is** a principal function of these wetlands.

Summary

This wetland serves several functions including groundwater recharge, floodflow alteration, sediment and toxicant reduction, nutrient removal, resource export and ecological integrity, and therefore, it is considered a moderately valuable, moderately functioning resource.

In recognition of this resource's relatively high functions and values, this project proposes to completely **avoid** these resources. In summary, this project may temporarily affect but, is not likely to adversely affect the functions and values of this wetland.

Wetland Function-Value Evaluation Form

Total area of wetland 376,239 SF Human made? No Is wetland part of a wildlife corridor? yes or a "habitat island"? no

Adjacent land use Utility ROW, off-road vehicle/ ATV trails Distance to nearest roadway or other development 10-feet

Dominant wetland systems present PFO1/PSS1 Contiguous undeveloped buffer zone present yes

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper/ mid reach

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland #5

Latitude 42.89428 Longitude -71.08837

Prepared by: Jay Aube Date 1/15/2023

Wetland Impact:
Type Fill Area

Evaluation based on:
Office yes Field yes

Corps manual wetland delineation completed? Y X N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	1,2,4,5,8,9,16	Y	Largest wetland, able to detain water, associated with watercourse, sandy soils.
Floodflow Alteration	Y	1,2,5,6,8,9,10,13,15,18	Y	Largest wetland, can retain stormwater, associated with watercourse
Fish and Shellfish Habitat	N	1,2,4,8,17	N	Headwaters of intermittent stream only.
Sediment/Toxicant Retention	Y	4,6,8,10,13,14,15,16	Y	Wetland associated with intermittent stream.
Nutrient Removal	Y	1,6,7,8,9,11,12	Y	Larger wetland, dense woody vegetation.
Production Export	Y	1,2,4,5,7,12	Y	Dense flowering vegetation but, not diverse.
Sediment/Shoreline Stabilization	N		N	No open water.
Wildlife Habitat	Y	1,3,4,5,6,7,8,13,15,17,18,19,20,	Y	Dense, flowering vegetation present, connected to stream, within wildlife corridor.
Recreation	N		N	No trail network or public access.
Educational/Scientific Value	N		N	Remote, no public access.
Uniqueness/Heritage	N		N	Forested area, lacks uniqueness, not diverse, no public access.
Visual Quality/Aesthetics	N		N	Only two wetland classes, lacks diversity.
ES Endangered Species Habitat	Y		N	No vernal pools within wetland 5 on this property.
Other Ecological Integrity	Y	NH Method	N	Fair amount of human alteration/ forestry crossings.

Notes: Ecological Integrity Score = 6.5

* Refer to backup list of numbered considerations.

NH METHOD FOR EVALUATING FRESHWATER WETLANDS

Wetland Name/ Code: Wetland #5 **Evaluation Date:** 1/10/2023 **Evaluator:** Jay Aube

ECOLOGICAL INTEGRITY

Evaluation Question	Observations & Notes	Answers	Score
Are there land uses in the wetland's watershed that could degrade water quality in the wetland?	Yes, an extensive network of off-road and ATV trails surround the wetland.	a. Less than 5% of the watershed has land uses that could degrade water quality. b. 5-10% of the watershed has land uses that could degrade water quality. c. >10% of the watershed has land uses that could degrade water quality.	10 5 1
Is there evidence of fill in the wetland?	Some fill on the fringes or the off-road vehicle and ATV trails.	a. Less than 1% b. From 1-3% c. More than 3%	10 5 1
What percentage of the wetland has been altered by agricultural activities?	No agricultural activities, primarily wooded	a. Less than 5% b. From 5% to 25 % c. More than 25%	10 5 1
What percentage of the wetland has been adversely impacted by logging activities within the last 10 years?	The site has been logged extensively over the years. Some rutting present and old wetland crossings present.	a. Less than 1% b. From 1 to 10% c. More than 10%	10 5 1
How much human activity is taking place in the wetland (e.g. ATV use, trails, cars, dumping of brush and garbage, etc.	Some old timber harvesting wetland crossings present.	a. Low: Few trails in use, little or no traffic, and little or no litter. b. Moderate: Some used trails, roads, litter. c. High: Many trails, roads, and/ or litter	10 5 1
What percentage of the wetland is occupied by invasive plant species?	Some Japanese Honeysuckle on the upland fringes of the wetland.	a. None b. 1-5% of the wetland has invasive species. c. > 5% of the wetland has invasive species.	10 5 1
Are there roads, driveways and/ or railroads crossing or adjacent to the wetlands or come within 500-feet of the wetland?	Off-road vehicle and ATV trails adjacent to wetlands.	a. No roads, driveways, or railroads within 500-feet of, or in the wetlands. b. Roads, driveways, railroads are within 500-feet of the wetland. c. Roads, driveways, railroads cross, or are adjacent to, the wetland.	10 5 1
How much human activity is taking place in the upland within 500-feet of the wetland?	Extensive network of off roading and ATV trails surround the wetland.	a. Less than 5% or no activity. b. 3-10% impervious area within 500-feet of the wetland edge c. Greater than 10% impervious area within 500-feet of the wetland edge.	10 5 1
What is the percent of impervious surface within 500-feet of the wetland edge?		a. Less than 3% impervious area within 500-feet of the wetland edge. b. 3-10% impervious area within 500-feet of the wetland edge. c. Greater than 10% impervious area within 500-feet of the wetland edge.	10 5 1
Is there a human-made structure that regulates the flow of water through the wetland?	A culvert regulates the flow of water exiting the wetland.	a. No human-made structures present **upstream of, or in** the wetland. b. One or more human made structures present **upstream of, or** in the wetland but hydrologic modification in sight. c. One or more human made structures present **upstream of, or** in the wetland that severely block or alter surface hydrology.	10 5 1

SCORE: 5+5+10+5+5+5+5+5+10+5 = **60** **60**/10 = **6.0**

Wetland 5

This wetland is predominantly Palustrine Forested, Broad-Leaved, Deciduous (PFO1) and Palustrine Scrub-Shrub Broad-Leaved, Deciduous (PSS1). This wetland is seasonally flooded/ saturated, acidic with organic soils. The NH Fish and Game Wildlife Action Plan (WAP) identifies the habitat in this area to be predominantly *Appalachian oak-pine*. The WAP indicates these wetlands are within *Supporting Landscape* for wildlife habitat. This wetland is also within an established Wildlife Corridor by the NH Nature Conservancy. The wetland is dominated with Red Maple (*Acer Rubrum*), Speckled Alder (*Alnus incana*), Gray Birch (*Betula populifolia*), Highbush Blue Berry (*Vaccinium Corymbosum*), Common Winterberry Holly (*Ilex verticillata*), Meadowsweet (*Spiraea latifolia*), Dewberry (Rubus hispidus), wetland grasses (*Carex spp.*), and Sheep Laurel (*Kalmia angustifolia*). The surrounding uplands are predominantly Eastern White Pine (*Pinus strobus),* Eastern Hemlock (*Tsuga canadensis*), Red Oak (*Quercus rubra*), with American Witch Hazel (*Hamamelis virginiana*) dominating the upland fringes of the wetland. The soils within the vicinity of the wetland are predominantly excessively drained, *Walpole very fine sandy loam (*12B) and *Pipestone Sand* (314A).

Function Assessment Results:

Groundwater Recharge/ Discharge

This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge site. More particularly, this function refers to the interaction between wetlands and aquifers. This wetland is relatively large compared to the surrounding landscape and allows for groundwater recharge, and therefore, Groundwater Recharge/ Discharge **is** a principal function of this wetland.

Floodflow Alteration

This function analyzes the effectiveness of the wetland in reducing flood damage by retaining flood waters for prolonged periods of time. This wetland is relatively large compared to the surrounding landscape and it has broad level areas with storage capacity, and therefore, Floodflow Alteration **is** a principal function of this wetland.

Fish and Shellfish Habitat

This function considers a wetland's ability to provide embayments, tidal flats, vegetated shallows, and other environments in support of fish, shellfish, marine mammals, and sea turtles. This wetland serves only as the headwaters of an intermittent stream waterway, and therefore, Fish and Shellfish Habitat **is not** a principal function of this wetland.

Sediment/ Toxicant Retention

This function considers the effectiveness of a wetland to act as a trap for sediments, toxicants, and pathogens within runoff. The surrounding landscape is heavily wooded. This wetland serves as the headwaters for an intermittent stream within the Powwow River watershed (**HUC 10**: 0107000614), and therefore, Sediment/ Toxicant Retention **is** a principal function of this wetland.

Nutrient Removal/ Retention/ Transformation

This function recognizes a wetland's ability to serve as a trap for nutrients in runoff from surrounding uplands or contiguous wetlands. The surrounding landscape is heavily wooded. This wetland has a dense, diverse wetland plant community, and therefore, *Nutrient removal/ Retention/ Transformation* **is** a principal function of these wetlands.

Production Export

This function considers the wetland's ability to export resources to other areas. This wetland has a multiple shrub species that produce berries. This wetland assists avian populations and insects. Production Export **is** a principal function of this wetlands.

Sediment/ Shoreline Stabilization

This function relates to a wetland's effectiveness to stabilize shorelines and prevent erosion. This wetland contains no open water areas, and therefore, sediment/ shoreline stabilization **is not** a principal function of this wetland.

Wildlife Habitat

This function considers a wetland's ability to provide wildlife habitat. According to the NH Wildlife Action Plan (WAP), the habitat in this area is predominantly Appalachian oak-pine. The WAP indicates this area of the property serves as Supporting Landscape for wildlife habitat and the wetland is relatively large with an abundance of dense vegetation The wetland is within a Wildlife Corridor established by the Nature Conservancy and it is connected to a waterway. This wetland likely provides habitat to Threatened and Endangered Species and likely contains Vernal Pool habitat, and therefore, Wildlife Habitat **is** a principal function of this wetland.

Recreation

This function considers the effectiveness of the wetland to provide recreational opportunities such as canoeing, boating, fishing, and other passive recreational activities. Considering the wetland is on private property and lacks direct access, Recreation **is not** considered a primary principal function of this wetland.

Education/ Scientific Value

This value considers the effectiveness of the wetland to serve as an "outdoor classroom." Considering the wetland is on private property and lacks direct access, Education/ Scientific Value is not a principal function of this wetland.

Uniqueness/ Heritage

This value relates to the effectiveness of a wetland to produce certain *special values* such as archeological sites, unusual aesthetic quality, historical events, and unique plants. These wetlands lack diversity and have been impacted by logging events. Uniqueness/ Heritage is not a principal function of these wetlands.

Visual Quality/ Aesthetics

This value considers the wetland's overall visual quality and aesthetics. The area surrounding these wetlands is on private property. Due to the lack of access, Visual Quality/ Aesthetics is not considered a Principal Function of this wetland.

Endangered Species Habitat

Endangered species habitat relates to the effectiveness of the wetland to support endangered species habitat. Consultation with the NH Natural Heritage Bureau (NHB) produced positive hits for Threatened and Endangered species including the Blanding's Turtle (*Emydoidea blandingii*), Spotted Turtle (*Clemmys guttaua*), and Northern Black Racer (*Coluber constrictor constrictor*). The WAP indicates this area of the property serves as Supporting Landscape for wildlife habitat and the wetland is relatively large with an abundance of dense vegetation. The wetland is within a Wildlife Corridor established by the Nature Conservancy and it is connected to a waterway. Wetland 5 is located further in the headwaters of this watershed and ***does not*** provide the key habitat to support the Threatened and Endangered Species identified on the NHB Report. Wetland 5 on this property ***does not*** contain vernal pool habitat, and therefore, Endangered Species Habitat ***is not*** a principal function of Wetland 5 on this property.

Ecological Integrity

Ecological integrity evaluates the overall health and stability of the wetland ecosystem. This wetland has not experienced degradation by agricultural activities but, a great deal of timber harvesting has occurred in the past. There is some evidence of invasive species Japanese Honeysuckle (*Lonicera japonica*) within the uplands adjacent to the wetland. Within 500-feet of the wetland there are Class-IV roads and ATV vehicle trails. Some land uses within the wetland's watershed may contribute to water quality degradation within the wetland. Overall, these wetlands are relatively stable and moderately healthy and, according to the *Method for Inventorying and Evaluating Freshwater Wetlands in New Hampshire* – the NH Method, this wetland achieved an Ecological Integrity Score of 6.5. Due to the level of human impacts on the fringes of this wetland, Ecological Integrity **is not** a principal function of these wetlands.

Summary

This wetland serves several functions on this property including groundwater recharge, floodflow alteration, sediment and toxicant reduction, nutrient removal, and resource export. Wetland 5 on this property lacks the higher value, higher functioning vernal pool habitat, and therefore, Wetland 5 on this property is considered a moderately valuable, moderately functioning resource.

In summary, this project avoids impacts to the highest functioning, highest value areas of Wetland 5 on the neighboring property, and as a result of this **avoidance** measure, this project poses no significant loss of wetland functions and values.

Memo

NH Natural Heritage Bureau
NHB DataCheck Results Letter

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

To: Jeremy Belanger
48 Consitution Dr
Bedford, NH 03110

From: NHB Review, NH Natural Heritage Bureau
Date: 9/23/2022 (valid until 09/23/2023)
Re: Review by NH Natural Heritage Bureau
Permits: MUNICIPAL POR - Kingston, NHDES - Alteration of Terrain Permit, NHDES - Wetland Standard Dredge & Fill - Major, USACE - General Permit, USEPA - Stormwater Pollution Prevention

NHB ID: **NHB22-3062** Town: Kingston Location: 2 Mill Road & 24 Towle Road
Description: Proposed Utility Scale Photovoltaic Generating (PV) Facility with associated access and stormwater management areas.
cc: NHFG Review

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

Comments **NHB: No comments at this time.**
F&G: Please refer to NHFG consultation requirements below.

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

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

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

Disclaimer: A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed

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

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

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

for certain species. An on-site survey would provide better information on what species and communities are indeed present.

IMPORTANT: NHFG Consultation

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

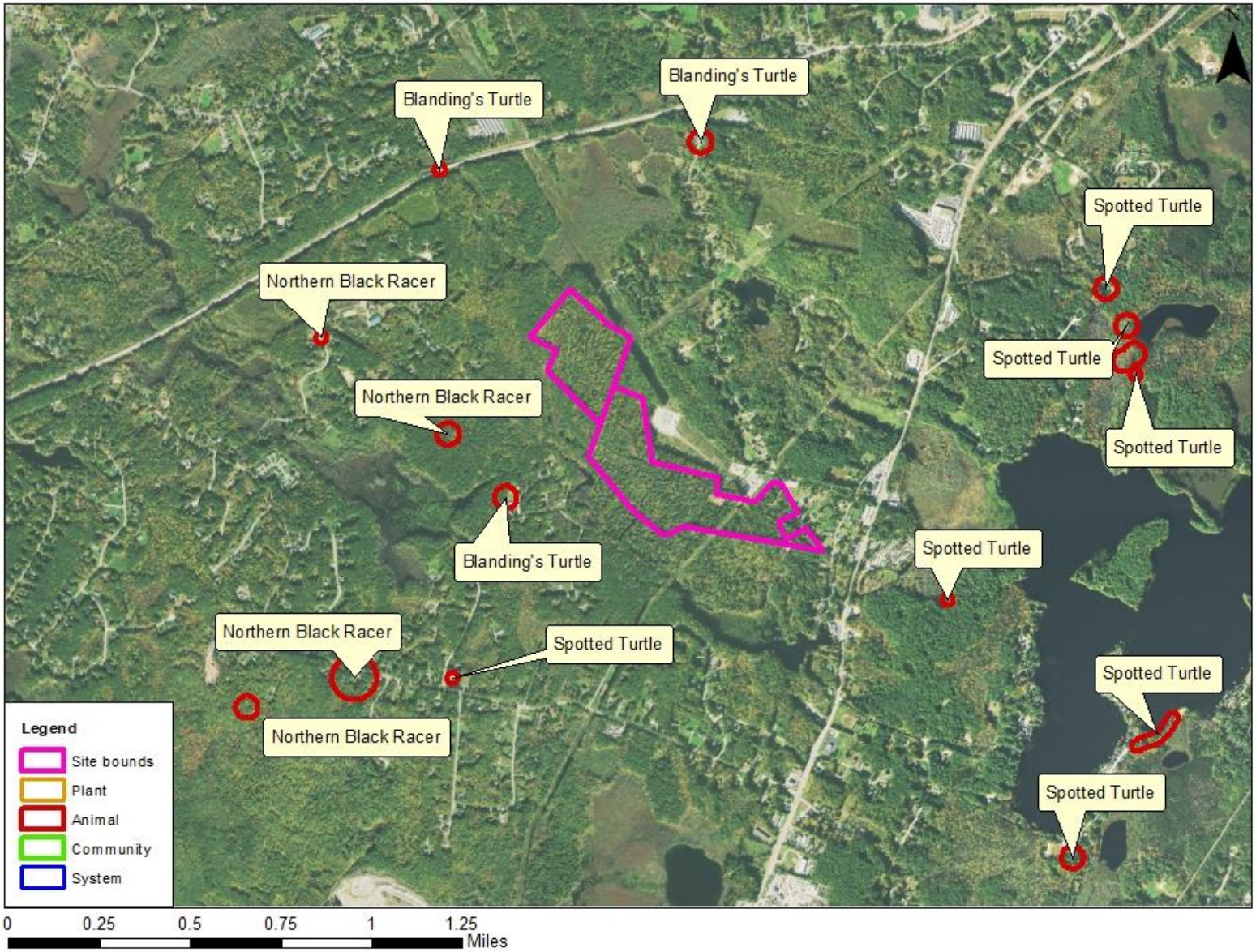
If this NHB Datacheck letter includes a record for a threatened (T) or endangered (E) wildlife species, consultation with the New Hampshire Fish and Game Department under Fis 1004 may be required. To review the Fis 1000 rules (effective February 3, 2022), please go to https://wildlife.state.nh.us/wildlife/environmental-review.html.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

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

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

CONFIDENTIAL – NH Dept. of Environmental Services review

NHB22-3062



New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status		**Conservation Status**	
Federal:	Not listed	Global:	Apparently secure but with cause for concern
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2014: Area 13928: 1 adult observed, sex unknown.
General Area: 2014: Area 13928: Roadside. Shrub wetland with sunny, sandy banks on either side of the road.
General Comments: --
Management Comments: --

Location

Survey Site Name: Colby Brook
Managed By:

County: Rockingham
Town(s): Danville
Size: .4 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2014: Area 13928: Route 111, about 1 mile east of junction with Route 111A , Danville (42.90604, -71.10044).

Dates documented

First reported: 2014-07-21 Last reported: 2014-07-21

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

CONFIDENTIAL – NH Dept. of Environmental Services review

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status

Federal: Not listed
State: Listed Endangered

Conservation Status

Global: Apparently secure but with cause for concern
State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2010: Area 12835: 1 juvenile female observed, dead on road.
General Area: 2010: Area 12835: Roadside in mixed forest.
General Comments: --
Management Comments: --

Location

Survey Site Name: Colby Brook
Managed By:

County: Rockingham
Town(s): Kingston
Size: 1.9 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2010: Area 12835: 60 Mill Road, Kingston.

Dates documented

First reported: 2010-07-23
Last reported: 2010-07-23

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status

Federal: Not listed
State: Listed Endangered

Conservation Status

Global: Apparently secure but with cause for concern
State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2021: Area 14857: 1 adult female observed, laying eggs in compost pile.
General Area: 2021: Area 14857: Compost pile in residential yard near Colby Brook. Houses surrounded by wetlands and woods.
General Comments: --
Management Comments: --

Location

Survey Site Name: Colby Brook
Managed By:

County: Rockingham
Town(s): Kingston
Size: 1.9 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2021: Area 14857: 2 Beaver Pond Road, Kingston.

Dates documented

First reported: 2021-06-05
Last reported: 2021-06-05

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Northern Black Racer (*Coluber constrictor constrictor*)

Legal Status		**Conservation Status**	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Threatened	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2020: Area 14796: 1 adult observed, sex unknown. 2015: Area 14022: 1 adult observed, sex unknown.
General Area: 2020: Area 14796: Town forest with hiking trails. 2015: Area 14022: Roadside in cul-de-sac. Snake went into the woods to north towards horse farm.
General Comments: --
Management Comments: --

Location

Survey Site Name: Colby Brook
Managed By:

County: Rockingham
Town(s): Kingston
Size: 2.4 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2020: Area 14796: Along the White Trail in Frye Town Forest, Kingston. 2015: Area 14022: 38 Creek Hill Drive, Danville.

Dates documented

First reported: 2015-06-08 Last reported: 2020-07-20

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Northern Black Racer (*Coluber constrictor constrictor*)

Legal Status

Federal: Not listed
State: Listed Threatened

Conservation Status

Global: Demonstrably widespread, abundant, and secure
State: Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2017: Area 14372: 1 adult observed, sex unknown. Area 14374M: 1 adult observed, sex unknown on 8/26. 1 adult observed, sex unknown on 8/31.
General Area: 2017: Area 14372: Residential yard. Area 14374: Forest.
General Comments: --
Management Comments: --

Location

Survey Site Name: Colby Brook, south of
Managed By:

County: Rockingham
Town(s): Kingston
Size: 9.6 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2017: Area 14372: 66 Hunt Road, Kingston. Area 14374M: Hunt Road Town Forest.

Dates documented

First reported: 2017-06-24
Last reported: 2017-08-31

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Spotted Turtle (*Clemmys guttata*)

Legal Status		**Conservation Status**	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Threatened	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Fair quality, condition and/or landscape context ('C' on a scale of A-D).
Comments on Rank: --

Detailed Description: 2015: Area 11751M: 1 adult female observed. Area 14090: 1 adult female observed. 2008: Area 11554: 1 adult female seen. Turtle was nesting. 2007: Area 11751M: 1 female seen. One hatchling emerged in fall from nest. Nest was partially dug up by observer later in fall when another hatchling was observed partially emerged from shell.

General Area: 2015: Area 11751M: Residential yard, in between driveway and pool fence. Area 14090: Residential yard, on the edge of the treeline. There is a small marshy area toward the back of the property, with cattails, sedges, and rushes. 2008: Area 11554: In yard at residence. 2007: Area 11751M: Yard at residence.

General Comments: --
Management Comments: --

Location

Survey Site Name: Colby Brook, south of
Managed By:

County: Rockingham
Town(s): Hampstead
Size: 8.6 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2015: Area 14090: 1 Colby Road, Kingston. 2008: Area 11554: 3 Sean Drive, Hampstead. 2007: Area 11751M: 3 Sean Drive, Hampstead.

Dates documented

First reported: 2007-06-20 Last reported: 2015-06-25

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

CONFIDENTIAL – NH Dept. of Environmental Services review

New Hampshire Natural Heritage Bureau - Animal Record

Spotted Turtle (*Clemmys guttata*)

Legal Status		**Conservation Status**	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Threatened	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Fair quality, condition and/or landscape context ('C' on a scale of A-D).
Comments on Rank: --

Detailed Description: 2019: 2019 Survey area: 1 female captured during trap survey. Area 14608: 1 adult observed, sex unknown. 2018: Area 14472: 2 individuals observed, sex unknown. 2017: Area 12739M: 1 adult observed, sex unknown. 2015: Area 14007: 1 adult observed, sex unknown. 2014: Area 13641M: 1 adult observed, sex unknown, on 6/7. 1 adult observed, sex unknown, on 8/24. Area 13680: 1 adult observed, sex unknown. 2012: Area 12739M: 1 adult and 2 juveniles observed. 2011: Area 12739M: 1 adult observed. Area 13103: 1 adult observed. 2010: Area 12739M: 1 adult observed. 1991: Area 6601: Seen.

General Area: 2019: Area 14608: Roadside. 2018: Area 14472: Basking on a log in small pond. 2014: Area 13641M: Forested wetland. Area 13680: Shrub wetland. 2011: Area 12739M: Cedar swamp and brushy marsh. Area 13103: Dirt road adjacent to stream. 1991: Area 6601: Pond.

General Comments: 1991: Area 6601: Student told James Taylor.

Management Comments: --

Location

Survey Site Name: Country Pond
Managed By: Webster Wildlife + Natural Area

County: Rockingham
Town(s): Kingston
Size: 13.4 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2019: Area 14608: Country Pond Road, Newton. 2018: Area 14472: Webster Wildlife and Natural Area. 2014: Area 13641M: Webster Wildlife and Natural Area. Area 13680: [Heath Street, Newton, near BandM railroad]. 2011: Area 13103: [Green Road north of Cedar Swamp Pond]. 2010: Area 12739M: Webster Wildlife and Natural Area. 1991: Area 6601: Ridge Road near Country Pond.

Dates documented

First reported: 1991 Last reported: 2019-06-04

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

CONFIDENTIAL – NH Dept. of Environmental Services review

Conservation Lands

Legend

conservation-lands

0 0.125 0.25 0.5 0.75 1 Miles

N

Connect the Coast Wildlife Corridors

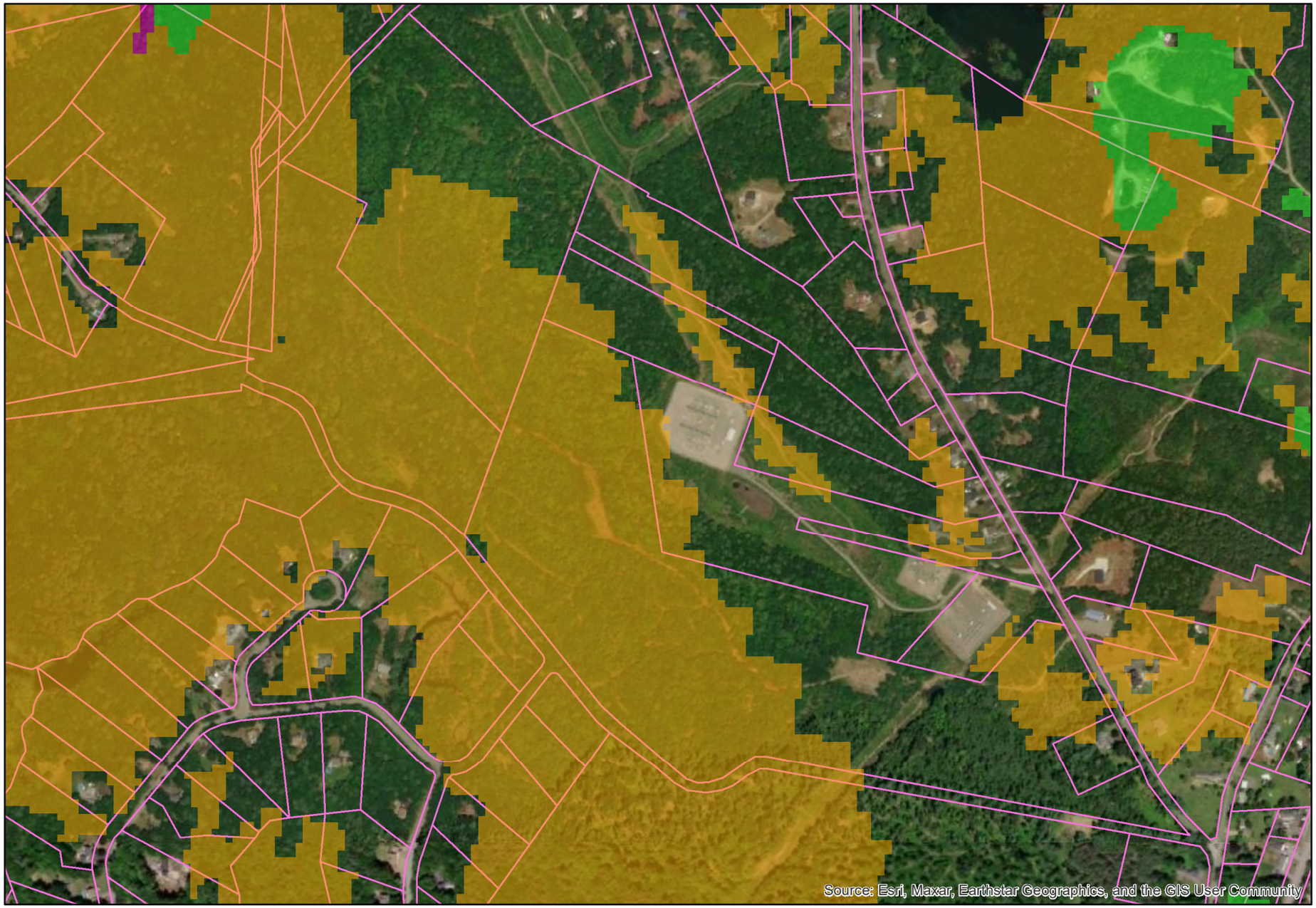
Legend

wildlife-corridors-CTC

0 0.125 0.25 0.5 0.75 1 Miles

N

NH Fish and Game Wildlife Action Plan (WAP) Habitat Tiers



2020-Wildlife-Action-Plan-WAP-Tiers

WAPTIER

- 1 Highest Ranked Habitat in New Hampshire
- 2 Highest Ranked Habitat in Biological Region
- 3 Supporting Landscapes

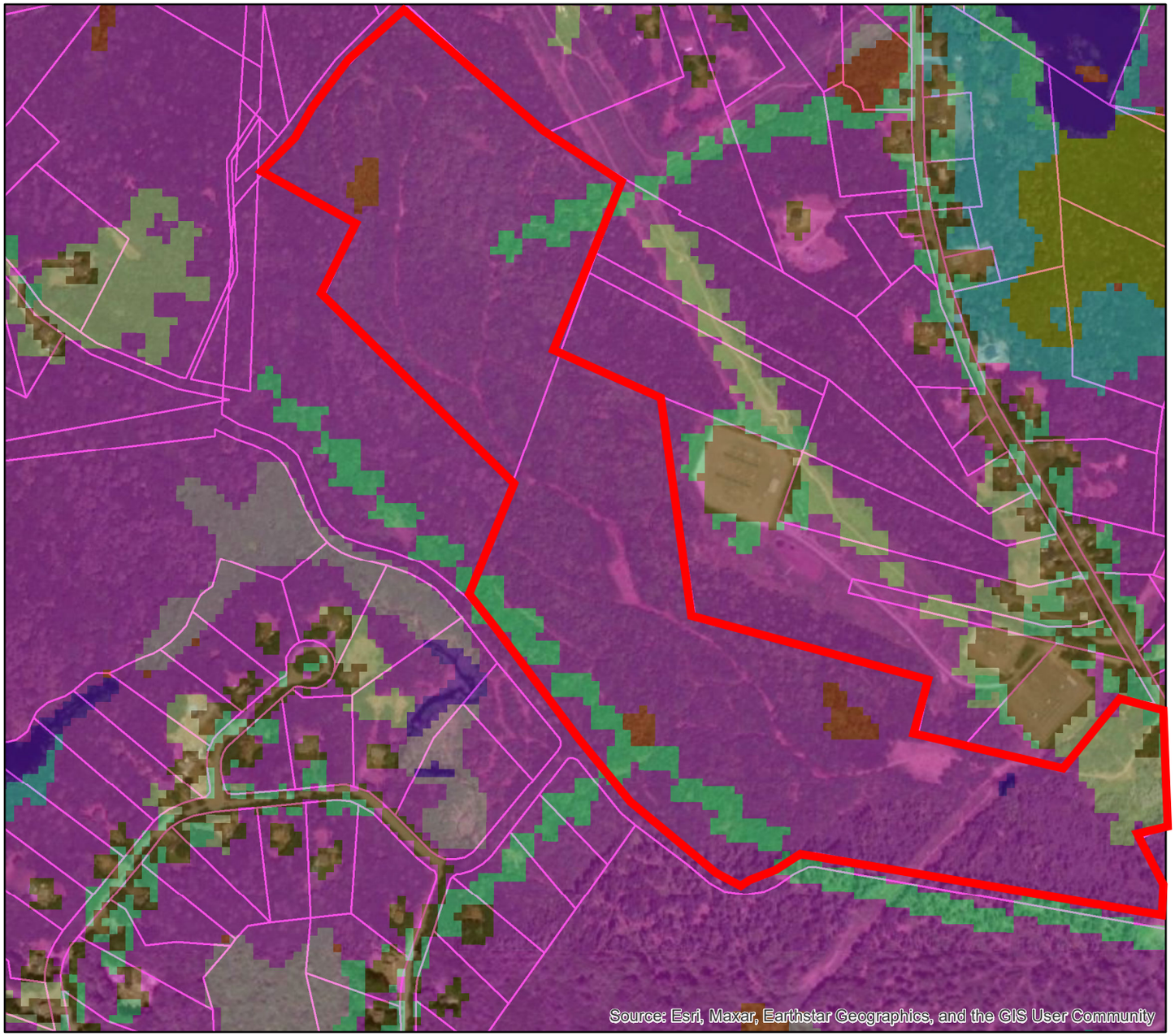
0 0.125 0.25 0.5 0.75 1 Miles

N

NH Fish and Game Wildlife Action Plan (WAP) Habitat Types

WAP HABITAT TYPES

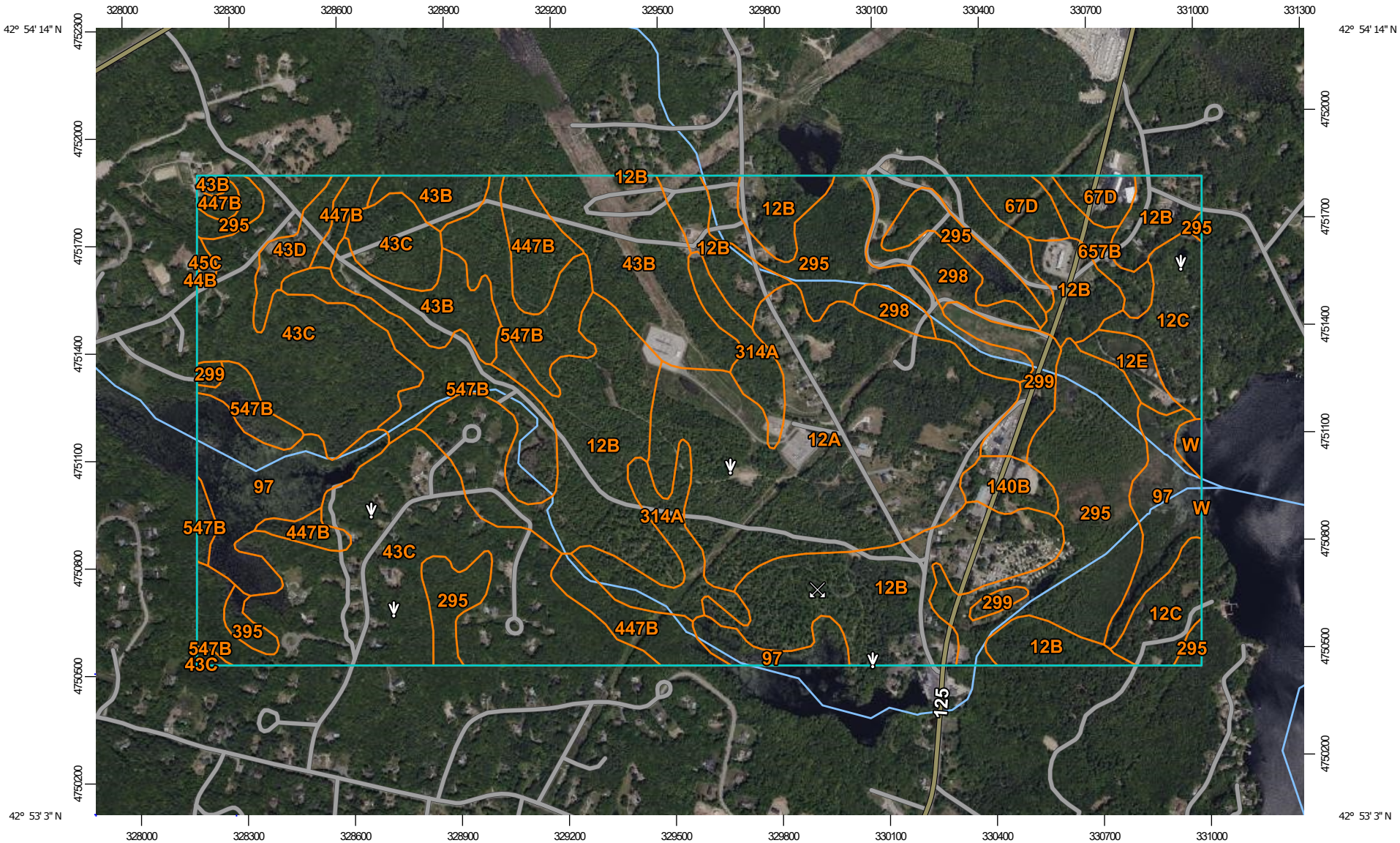
- High-elevation spruce-fir
- Northern hardwood-conifer
- Open water
- Wet meadow/shrub wetland
- Peatland
- Lowland spruce-fir
- Developed or Barren land
- Northern swamp
- Rocky ridge
- Cliff and Talus
- Developed Impervious
- Grassland
- Floodplain forest
- Temperate swamp
- Hemlock-hardwood-pine
- Sand/Gravel
- Alpine
- Appalachian oak-pine
- Pine barren
- Salt marsh
- Coastal island
- Dune



0 0.125 0.25 0.5 0.75 1 Miles

N

Soil Map—Rockingham County, New Hampshire
(Soils Map)



Map Scale: 1:15,500 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 200 400 800 1200

Feet: 0 500 1000 2000 3000

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: Rockingham County, New Hampshire
Survey Area Data: Version 25, Sep 12, 2022

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

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

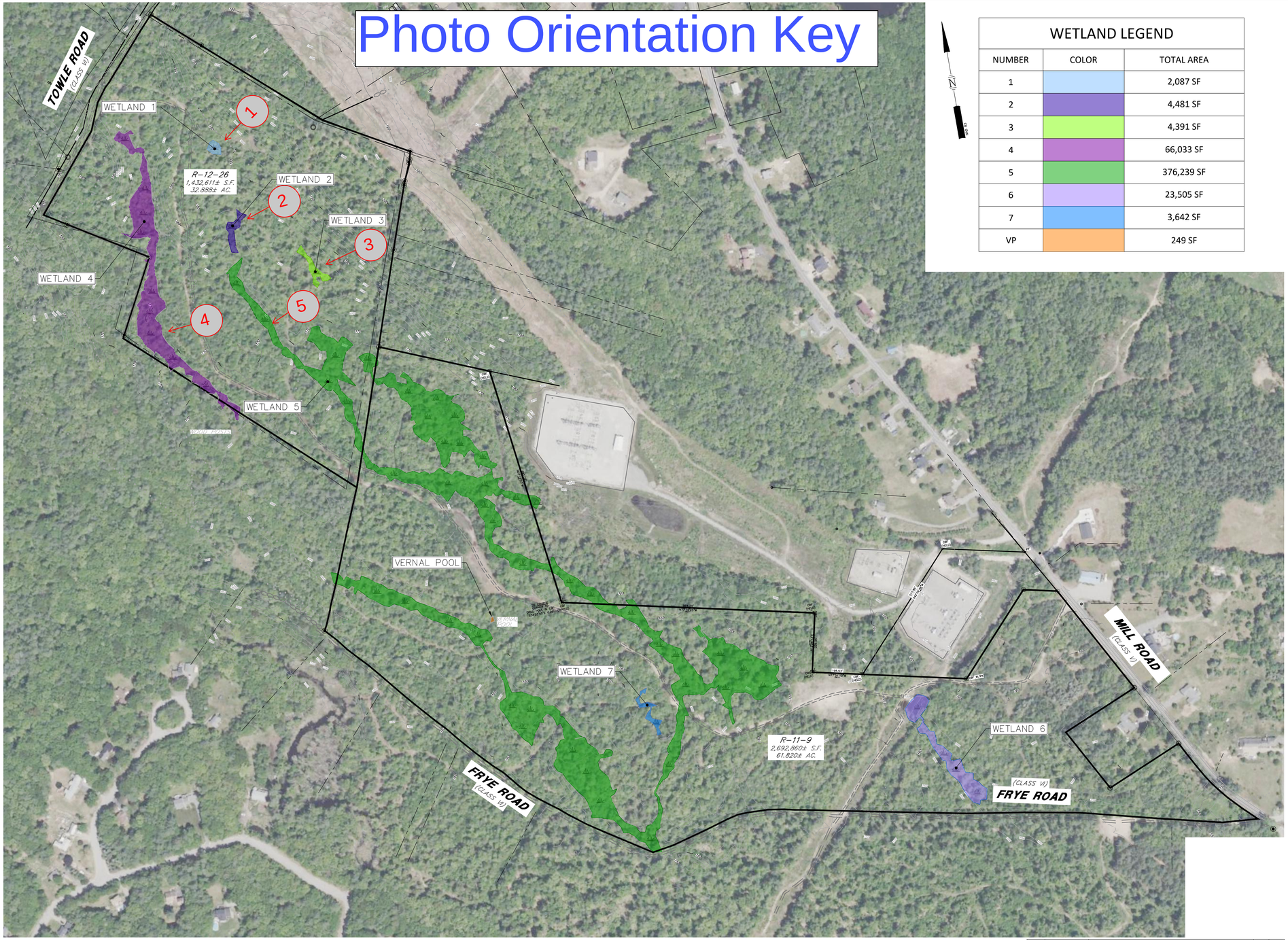
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

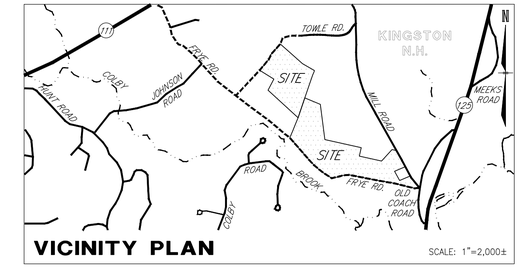
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
12A	Hinckley loamy sand, 0 to 3 percent slopes	128.4	13.4%
12B	Hinckley loamy sand, 3 to 8 percent slopes	175.1	18.3%
12C	Hinckley loamy sand, 8 to 15 percent slopes	29.8	3.1%
12E	Hinckley loamy sand, 15 to 60 percent slopes	6.8	0.7%
43B	Canton fine sandy loam, 0 to 8 percent slopes, very stony	64.2	6.7%
43C	Canton fine sandy loam, 8 to 15 percent slopes, very stony	170.0	17.8%
43D	Canton fine sandy loam, 15 to 25 percent slopes, very stony	8.7	0.9%
44B	Montauk fine sandy loam, 3 to 8 percent slopes	0.2	0.0%
45C	Montauk fine sandy loam, 8 to 15 percent slopes, very stony	1.1	0.1%
67D	Paxton fine sandy loam, 15 to 25 percent slopes, very stony	13.6	1.4%
97	Freetown and Natchaug mucky peats, ponded, 0 to 2 percent slopes	58.2	6.1%
140B	Chatfield-Hollis-Canton complex, 0 to 8 percent slopes, rocky	8.1	0.9%
295	Freetown mucky peat, 0 to 2 percent slopes	112.7	11.8%
298	Pits, sand and gravel	28.2	3.0%
299	Udorthents, smoothed	15.8	1.7%
314A	Pipestone sand, 0 to 5 percent slopes	28.5	3.0%
395	Swansea mucky peat, 0 to 2 percent slopes	3.3	0.3%
447B	Scituate-Newfields complex, 3 to 8 percent slopes, very stony	34.7	3.6%
547B	Walpole very fine sandy loam, 3 to 8 percent slopes, very stony	58.5	6.1%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
657B	Ridgebury fine sandy loam, 3 to 8 percent slopes, very stony	7.8	0.8%
W	Water	2.2	0.2%
Totals for Area of Interest		**955.9**	**100.0%**

Photo Orientation Key



WETLAND LEGEND		
NUMBER	COLOR	TOTAL AREA
1		2,087 SF
2		4,481 SF
3		4,391 SF
4		66,033 SF
5		376,239 SF
6		23,505 SF
7		3,642 SF
VP		249 SF



NOTES

1. OWNER OF RECORD OF MAP R-11 LOT 9:
   RICHARD W. SENTER (TRUSTEE)
   TWO MILL ROAD REALTY TRUST
   86 ROCKRIMMON ROAD
   KINGSTON, NH 03848
   DEED REFERENCE TO PARCEL IS BK. 2893 PG. 2178

   AREA OF PARCEL = 2,692,860 S.F.± OR 61.820 ACRES±

   OWNER OF RECORD OF MAP R-12 LOT 26:
   RICHARD W. SENTER (TRUSTEE)
   24 TOWLE ROAD REALTY TRUST
   86 ROCKRIMMON ROAD
   KINGSTON, NH 03848
   DEED REFERENCE TO PARCEL IS BK. 2893 PG. 2190

   AREA OF PARCEL = 1,432,611 S.F.± OR 32.888 ACRES±
2. R-11-9 INDICATES TAX MAP AND LOT NUMBER.
3. THE PURPOSE OF THIS PLAN IS TO SHOW A CONCEPTUAL SOLAR ARRAY LAYOUT.
4. CURRENT ZONING DISTRICT: RURAL RESIDENTIAL (RR)
   MINIMUM LOT FRONTAGE: 200 FEET ON CLASS V HIGHWAY OR BETTER.
   MINIMUM BUILDING SETBACKS:
   FRONT: 30 FEET
   SIDE: 20 FEET
   REAR: 20 FEET
   *COMMERCIAL USE WITHIN RURAL RESIDENTIAL ZONING DISTRICT REQUIRES A 50 FOOT VEGETATIVE BUFFER.
5. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR ROCKINGHAM COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33015C0390E, EFFECTIVE DATE MAY 17, 2005, INDICATES THAT THE SUBJECT PARCELS ARE NOT LOCATED WITHIN A FLOOD HAZARD AREA.
6. HORIZONTAL DATUM: NAD83(2011)
   VERTICAL DATUM: NAVD88
   BENCHMARKS SET: AS NOTED
7. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL(S) MAY DETERMINE.
8. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG-SAFE AT 811.
9. CONCEPTUAL LAYOUT OF SOLAR ARRAY BASED UPON INFORMATION PROVIDED BY ARRAY MANUFACTURER. FINAL LAYOUT AND ARRAY LOCATIONS TO BE FINALIZED BY UNITIL IN COORDINATION WITH MANUFACTURER.

Unitil

CONCEPTUAL SITE PLANS

TAX MAP R12 LOTS 25 & 26

FUNCTIONS AND VALUES ASSESSMENT

UNITIL KINGSTON SOLAR PROJECT

24 TOWLE ROAD
KINGSTON, NH 03848

PREPARED FOR

UNITIL ENERGY SYSTEMS
30 ENERGY WAY
EXETER, NH 03833

SCALE: 1"=200' **DECEMBER 8, 2022**

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48 Constitution Drive, Bedford, N.H. 03110

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

HORIZONTAL SCALE 1"=200'
200 100 0 200

REV	DATE	DESCRIPTION	DR	CK
1	02/21/2023	REV FOR CONSULTANT	ML	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	DR	JC	FB		
20025-00	CK	NG	CADFILE	20025-00 FUNCTIONS AND VALUES	EX-01

24 Towle Road
Kingston, NH

Photo: 1 – Low Functioning, Low Value **Wetland 1**.

Photo: 2 - Low Functioning, Low Value **Wetland 2**.

Photo: 3 – Low Functioning, Low Value **Wetland 3**.

Photo: 4 – Southerly portion of **Wetland 4**.

Photo: 5 - Low Functioning, Low Value area of **Wetland 5**.

PHASE I THREATENED AND ENDANGERED WILDLIFE AND HABITAT ASSESSMENT

PART 1: SUMMARY AND FINDINGS

Jim Fougere	**NH22-3062**
Pond View Wetland Consultants LLC	**Until PV Scale Solar**
237 Beauty Hill Rd, Center Barnstead NH	**2 Mill Road, Kingston NH**
jimfougere@gmail.com	**TF Moran**
603-520-6120	**NHDES Alteration of Terrain Permit**

PROPOSED PROJECT:

The Unitil Kingston Solar Project is a proposed Utility Scale Photovoltaic Generating (PV) Facility occupying Tax Map R-12, Lot 26 (32.9 acres), and a portion of Lot 25 (3.5 acres)on the northwest end of two large lots in the area west of Mill Road, north of Frye Road (Class VI) and southeast of Towle Road (Class VI) in Kingston, NH. Overall, the project parcel is forested, characterized as Appalachian oak-pine forest. The higher northern portion of the site is dominated by red oak (*Quercus rubra*), white pine (*Pinus strobus*), red maple (*Acer rubrum*) with other oak species such as chestnut oak (*Quercus montana*). The lower (south) side of the site includes more gray birch (*Betula papyrifera*), black birch (*Betula lenta*), with Eastern hemlock (*Tsuga canadensis*) and some scrub oak (*Quercus ilicifolia*).

The siting of this solar facility included evaluation of land located on the adjacent Lot R-11-9, immediately to the southeast. Enhanced wetland functions and values and the geometry of Lot R-11-9 made this portion of the project difficult to show compliance with Town and State avoidance requirements will still meeting the generating needs to be in the public's best interests. The central portion between these two lots has a series of interconnected streams and wetland communities that include a vernal pool habitat and other higher valued wetland communities. With Blanding's turtles described as occurring in adjacent areas, it is assumed these wetlands could provide corridors for travel as well as wetland habitats. These wetlands will be avoided by the proposed project to the west. The wetland figure and Summary Table of Wetland Functions are provided in Part 2 of this report.

Construction of the solar facility will require clearing approximately 33 acres of forest, which based on available Google imagery has been subject to past logging activities. Due to the scale and the nature of this Solar Project, a number of measures will also be incorporated in the design and operations of the project to minimize long-term impacts. These features include:

- Utilization of a wildlife friendly fence around the site. A 6-inch gap in the fabric mesh of the fence will allow smaller wildlife, such as the state endangered Blanding's turtle and other species to move across the site.
- The gravel roads entering the fenced parcel will be minimized to the extent practicable, providing a twenty-foot-wide access way. Interior routes have been specifically laid out to reduce impervious surfaces on the parcel by limiting access to the essential equipment pads.

- Bioretention will be utilized to address stormwater treatment and attenuation such that post-development peak rates of runoff will note exceed pre-develop peak rates. Vegetated filters will contribute to water quality and quantity on-site.
- Long-term management measures to address vegetation growth between the solar panels and within the project site are being considered but at a minimum will include a low-growing conservation seed mix to minimize growth. Integrative vegetative management in the form of grazing goats are also being considered.

The utilization of Towle Road as an access road to the site will also include relocation/realignment of the intersection of Towle Road and Mill Road. The new intersection will comply with town requirements as represented on the Intersection Plan in Part 2 of this report.

PHASE 1: Threatened and Endangered Wildlife Assessment Findings

Check One

No threatened and endangered wildlife and habitat present, no threatened or endangered wildlife, habitat, or wildlife corridors likely to be impacted by project activities.

X Threatened and endangered wildlife habitat present; HOWEVER, NO threatened or endangered wildlife, habitat, or wildlife corridors likely to be impacted by project activities. No conservation measures are proposed.

Threatened and endangered wildlife and habitat present or wildlife corridors present. Proposed actions have the potential for impacts. Conservation measures incorporated into the proposed project or project design.

THREATENED AND ENDANGERED WILDLIFE AND HABITAT

- **NHB21-3416**

  The NHB Datacheck report identified the following species as occurring in the vicinity of the project site:

  Blanding's turtle *(Emydoidea blandingii)* - State endangered
  Northern Black Racer (*Coluber constrictor constrictor*) – State threatened.
  Spotted turtle (*Clemmys guttata*) – State threatened

  Northern long-eared bat (*Myotis septentrionalis*) – State endangered, Federal threatened
  Not listed on NHB report but typically on the US Fish and Wildlife Service, IPac

  <u>On-site Habitats</u>
  The habitats associated with the Until PV Scale Solar Project include:

- The project parcel is a large, forested lot accessed from Towle Road. The portion fronting on the property is a Class VI Road in Kingston.

- This parcel is currently unoccupied with scattered residences located offsite on Towle Road, east of the power-line right-of-way. This power line right-of-way crosses the northeast corner of Lot R-12-26 and parallels the north side of Lot R-12-25 to Towle Road.
- Towle Road forms a portion of the western boundary of the site.
- The interior of the property also has a well-worn dirt access road. This road may be related to old logging activities since there also appears to be an open area of low shrubs that could have been utilized for a log landing. There are numerous other pathways and trails used by four-wheelers, dirt bikes and ATV's presumably for recreation purposes. Some trails are overgrown and may have been skidder trails.
- Tree cover is consistent across the site which the 2020 NH Wildlife Habitat Land Cover map describes as Appalachian oak-pine.
- Portions of the site include dense forested habitats but with small pockets of limited cover.
- The NH Wildlife Action Plan, 2020 Highest Ranked Wildlife Habitat by Ecological Condition ranks the project parcel as Supporting habitat on the west side only.
- The soils described in the Websoil Survey are dominated by Walpole very fine sandy loam and Scituate-Newfields complex, with lesser areas of Canton fine sandy loam.
- Wetlands on the property include two narrow wetlands, which flow in a southeasterly direction. Neither of these wetlands appeared to have extensive hydrology on the project parcel and none of the Lot R-12-26 wetlands were determined to provide vernal pool habitat.
- Wetland 4 on the southern border will be avoided by the project layout, although impacts to the wetland buffer do occur on the northern edge.
- Wetland 5 will be impacted for approximately 400 feet at the upper reaches of this narrow wetland. Although this wetland continues to the east to provide higher wetland functions and values, the onsite area of the wetland has limited hydrology and reduced limited functions.
- A series of three small, isolated wetlands also occur on the project site and will be filled to accommodate the project. These wetlands are considered to provide very limited functions and values and are not considered to be potential vernal pool habitat.
- Few snags were noted across the site or in the development areas, while snags were more commonly scattered in the woodlands outside the development area.
- The observed wildlife signs included numerous coyote tracks and deer tracks. During the second site visit in December, a dusting of snow showed these species traveled specific pathways within and around the forested communities.
- Construction of the solar parcels will require 33 +/- acres of clearing but grubbing will be limited to the area of the PV panels.
- This property has had limited disturbance in the last 24 months but historic aerial imagery show prior logging of the subject property.

<u>Potential Endangered and Threatened Species</u>

The Unitil PV Scale Solar site and surrounding habitats appear to be influenced by the limited diversity of the forest community, as well as the varied soils that dominate the area. Based on these site conditions, and the identification of threatened and endangered species in the surrounding area, this habitat could be considered to provide potential habitat values for the following threatened and endangered species:

Blanding's turtles were identified in areas outside the project boundaries to the north and south of the site. Blanding's turtles are described as preferring shallow ponded areas such as swamps, marshes, and ponds. Kenney and Burne (2001) report that "they will travel considerable distances to reach vernal pools where they feast on amphibian egg masses, larval amphibians, crustaceans, and other organisms and plants in the spring. Streams are considered an important travel corridor for Blanding's turtles which provide access to vernal pools and adjacent uplands and wetlands. None of the wetlands on Lot R-12-26 would meet these requirements and there are no wetlands in the area of development on lot R-12-25.

Northern black racers are primarily noted to occur west and southwest of the project site. Typically, black racers are associated with a variety of early successional habitats, including brushy areas, utility rights of way, grasslands, old fields, rocky ridges, and the edges of agricultural fields, as described in the NH Wildlife Action Plan. DeGraff (1986) also describes their varied habitat utilization. Described as preferring a xeric upland forested habitat (Mitchel et al, 2006), the Unitil site is generally densely vegetated with only small pockets of shrubby areas or less dense vegetation but does appear to have some of the specific habitat requirements described in the NH Wildlife Action Plan or DeGraff. The limited edge habitat or forest openings may limit their occurrence in the area, although the powerline in the northeast corner of the parcel and other diverse areas adjacent may provide potential habitat.

Spotted turtles are identified in the NHB Datacheck Report as primarily occurring east of NH Route 125, an area adjacent to a large pond. Spotted turtles are consistently reported to prefer large intact landscapes with a diversity of wetlands, but they only tolerate limited development. The on-site wetlands are primarily long and narrow or isolated pockets with limited hydrology reducing potential habitat values.

Northern long-eared bat and other bat species are critical species as well, but their habitat utilization would be more closely tied to the forested habitat communities and adjacent woodlands. The project site with its dense tree cover may provide an appropriate habitat for the various bat species.

PROPOSED CONSERVATION MEASURES

The proposed conservation measures for the Until PV Scale Solar project primarily focused on locating the PV solar site in areas of lesser wetland and habitat values, while at the same time minimizing disturbance to habitats outside the project footprint. Likewise, any tree clearing should be minimized to the extent practicable and take place outside the pup-rearing season for bats and nesting season for birds. The remaining habitat in the offsite parcel to the southeast of the site is expected to remain in a forested condition and continue to provide a variety of habitat values.

Other measures will focus on utilizing "biodegradable plastic" netting or other recommended erosion control fabrics and an open drainage systems with no sumps due to issues with wildlife entrapment, wildlife friendly fencing, limiting impervious surfaces to those required for safe access/egress from the site including emergency vehicles, and a detailed vegetation management plan that excluded the use of herbicides and incorporates a low growing wildlife mix.

PART 1: SUMMARY AND FINDINGS

Jim Fougere **6/23/23**

NAME DATE

SIGNATURE

<u>Check Applicable Requested Action</u>

Request for NHFG Concurrence with Findings in compliance with Env. Wq. 1503.19(h)(1)a

Request for NHFG Concurrence with Findings and Proposed Conservation Measures in compliance with Env. Wq. 1503.19(h)(1)b*

X **Requests further coordination with NHFG to discuss proposed conservation measures and/or, potential focused survey needs (Phase II)***

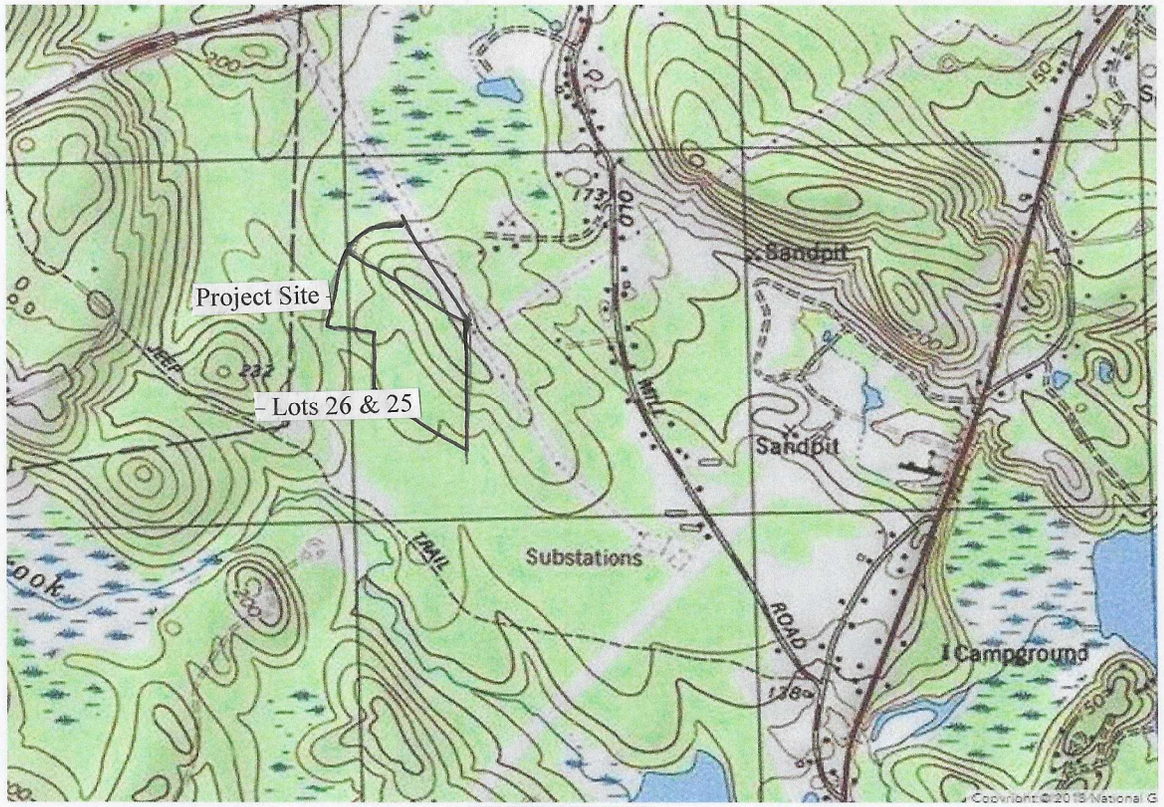
***New Hampshire Fish and Game's review and recommendations are based on the information provided in the assessment. Changes to project scope may affect NHFG and/or NHDES determination on potential impacts and whether conservation measures and project design modifications proposed are still applicable or sufficient.**

PART 2: NHB Datacheck Letter, Figures, Site Photographs

NHB Datacheck
Aerial Figure
Topographic Figure
Project Plans
Summary Table of Wetland functions and values
Color coded wetland figure
Towle Road/Mill Road Intersection Plan
Habitat Figures
NH Wildlife Action Plan Maps
NH Fish and Game Wildlife Corridor Map
Websoil Survey Info
Photo Log

Copyright:© 2013 National Geographic Society, i-cubed

Pond View Wetlands 237 Beauty Hill Rd. Center Barnstead, NH 03225 Cell *(603)-520-6120* Home/office *(603)-269-4264* *jimfougere@gmail.com*	SCALE Not to scale DATE 6/24/2023 DRWN by JRF JFougere	Unitil Kingston Solar Project 24 Towle Road Kingston, NH **AERIAL VIEW LOCATION MAP**



Pond View Wetlands 237 Beauty Hill Rd. Center Barnstead, NH 03225 Cell *(603)-520-6120* Home/office *(603)-269-4264* *jimfougere@gmail.com*	SCALE 1 inch = 1,050 feet DATE 6/24/2023 DRWN by JRF JFougere	Unitil Kingston Solar Project 24 Towle Road Kingston, NH **USGS LOCATION MAP**

REV.	DATE	DESCRIPTION	DR	CK

200' 100' 0 200'
Graphic Scale
1"=200'

VICINITY PLAN
SCALE: 1"=2,000±

TAX MAP R-11 LOT 9 & TAX MAP R-12 LOT 26

OVERVIEW PLAN

MILL ROAD

KINGSON, NEW HAMPSHIRE

OWNED BY:

TWO MILL ROAD REALTY TRUST
RICHARD W. SENTER (TRUSTEE) (TM R-11, LOT 9)
24 TOWLE ROAD REALTY TRUST
RICHARD W. SENTER (TRUSTEE)(TM R-12, LOT 26)

PREPARED FOR:

UNITIL ENERGY SYSTEMS

SCALE: 1"=200' **NOVEMBER 3, 2022**

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www.tfmoran.com

FILE	20025-00	DR	TNB	FB	2095	SHEET 1 OF 4
		CK	MRD	CADFILE	20025-00 Survey	

SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT THIS SURVEY AND PLAT WERE PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION, FURTHER, THIS PLAN IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND BY THIS OFFICE DURING APRIL OF 2022, SAID SURVEY HAS AN ERROR OF CLOSURE OF NOT LESS ACCURACY THAN ONE PART IN TEN THOUSAND (1:10,000).

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN. (RSA 676:18–III)

MICHAEL R. DAHLBERG, LLS DATE
NH LICENSE NO. 714
FOR TF MORAN, INC.

WETLAND SCIENTIST CERTIFICATION

WETLANDS DEPICTED ON THIS PLAN WERE DELINEATED ON OCTOBER 13, 2022 BY JASON R. AUBE, CWS NO. 313.
THE WETLANDS WERE DELINEATED ACCORDING TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (JANUARY 1987) AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0 (JANUARY 2012).

NOTES

1. OWNER OF RECORD OF MAP R–11 LOT 9:
   TWO MILL ROAD REALTY TRUST
   RICHARD W. SENTER (TRUSTEE)
   86 ROCKRIMMON ROAD
   KINGSTON, NH 03848
   DEED REFERENCE TO PARCEL IS BK. 2893 PG. 2178

   AREA OF PARCEL = 2,692,860 S.F.± OR 61.820 ACRES±

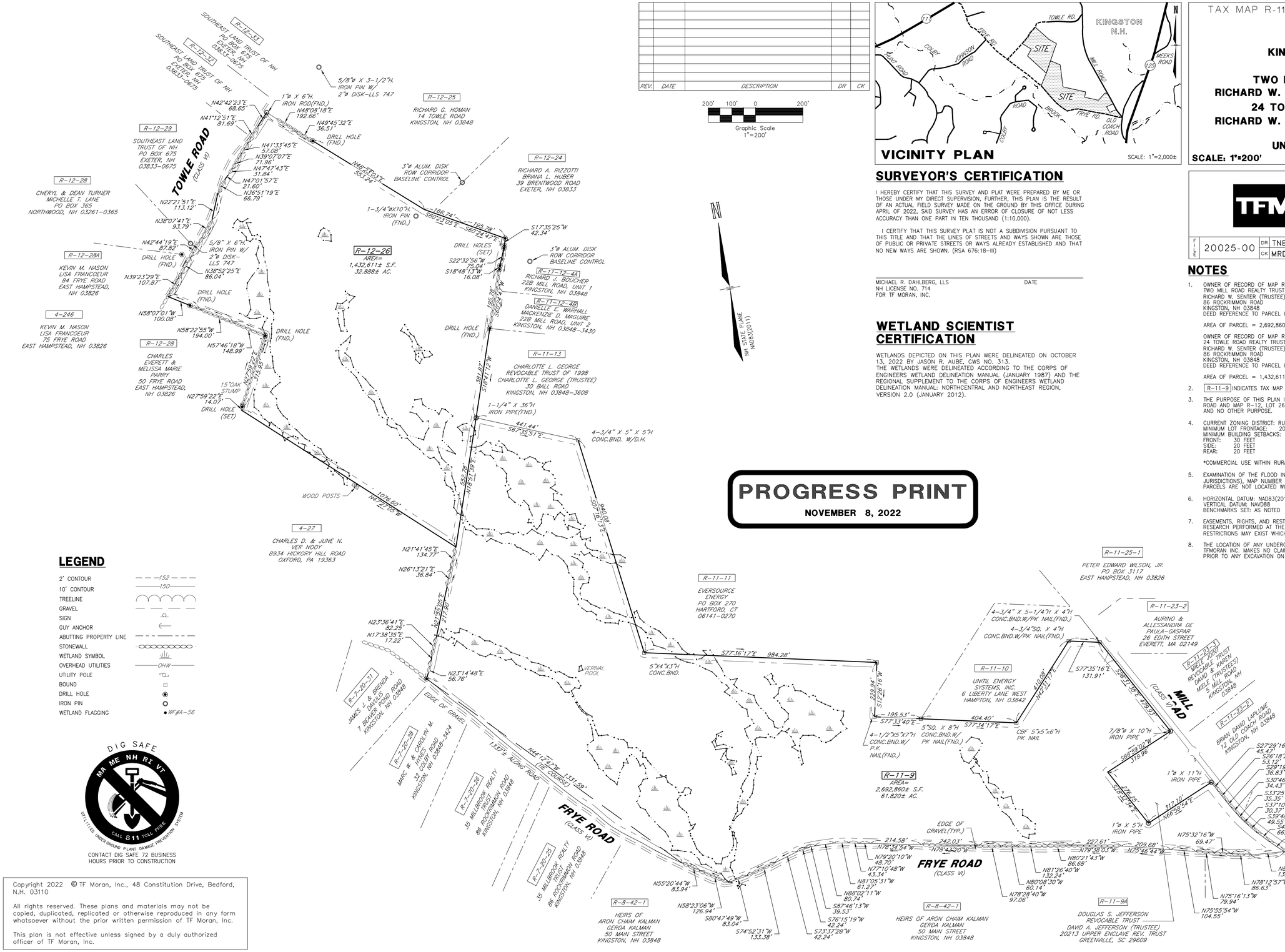
   OWNER OF RECORD OF MAP R–12 LOT 26:
   24 TOWLE ROAD REALTY TRUST
   RICHARD W. SENTER (TRUSTEE)
   86 ROCKRIMMON ROAD
   KINGSTON, NH 03848
   DEED REFERENCE TO PARCEL IS BK. 2893 PG. 2190

   AREA OF PARCEL = 1,432,611 S.F.± OR 32.888 ACRES±
2. R–11–9 INDICATES TAX MAP AND LOT NUMBER.
3. THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS MAP R–11, LOT 9 LOCATED ON MILL ROAD AND MAP R–12, LOT 26 LOCATED ON TOWLE ROAD IN KINGSTON, NEW HAMPSHIRE AS SHOWN HEREON AND NO OTHER PURPOSE.
4. CURRENT ZONING DISTRICT: RURAL RESIDENTIAL (RR)
   MINIMUM LOT FRONTAGE: 200 FEET ON CLASS V HIGHWAY OR BETTER.
   MINIMUM BUILDING SETBACKS:
   FRONT: 30 FEET
   SIDE: 20 FEET
   REAR: 20 FEET

   *COMMERCIAL USE WITHIN RURAL RESIDENTIAL ZONING DISTRICT REQUIRES A 50 FOOT VEGETATIVE BUFFER.
5. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR ROCKINGHAM COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33015C0390E, EFFECTIVE DATE MAY 17, 2005, INDICATES THAT THE SUBJECT PARCELS ARE NOT LOCATED WITHIN A FLOOD HAZARD AREA.
6. HORIZONTAL DATUM: NAD83(2011)
   VERTICAL DATUM: NAVD88
   BENCHMARKS SET: AS NOTED
7. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL(S) MAY DETERMINE.
8. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG–SAFE AT 811.

REFERENCE PLANS

1. R.C.R.D. PLAN NO. 4725
2. R.C.R.D. PLAN NO. 05797
3. R.C.R.D. PLAN NO. 14145
4. R.C.R.D. PLAN NO. 14837
5. R.C.R.D. PLAN NO. 18088
6. R.C.R.D. PLAN NO. 29956
7. R.C.R.D. PLAN NO. 32351
8. R.C.R.D. PLAN NO. 35376
9. R.C.R.D. PLAN NO. 35390
10. R.C.R.D. PLAN NO. 38833



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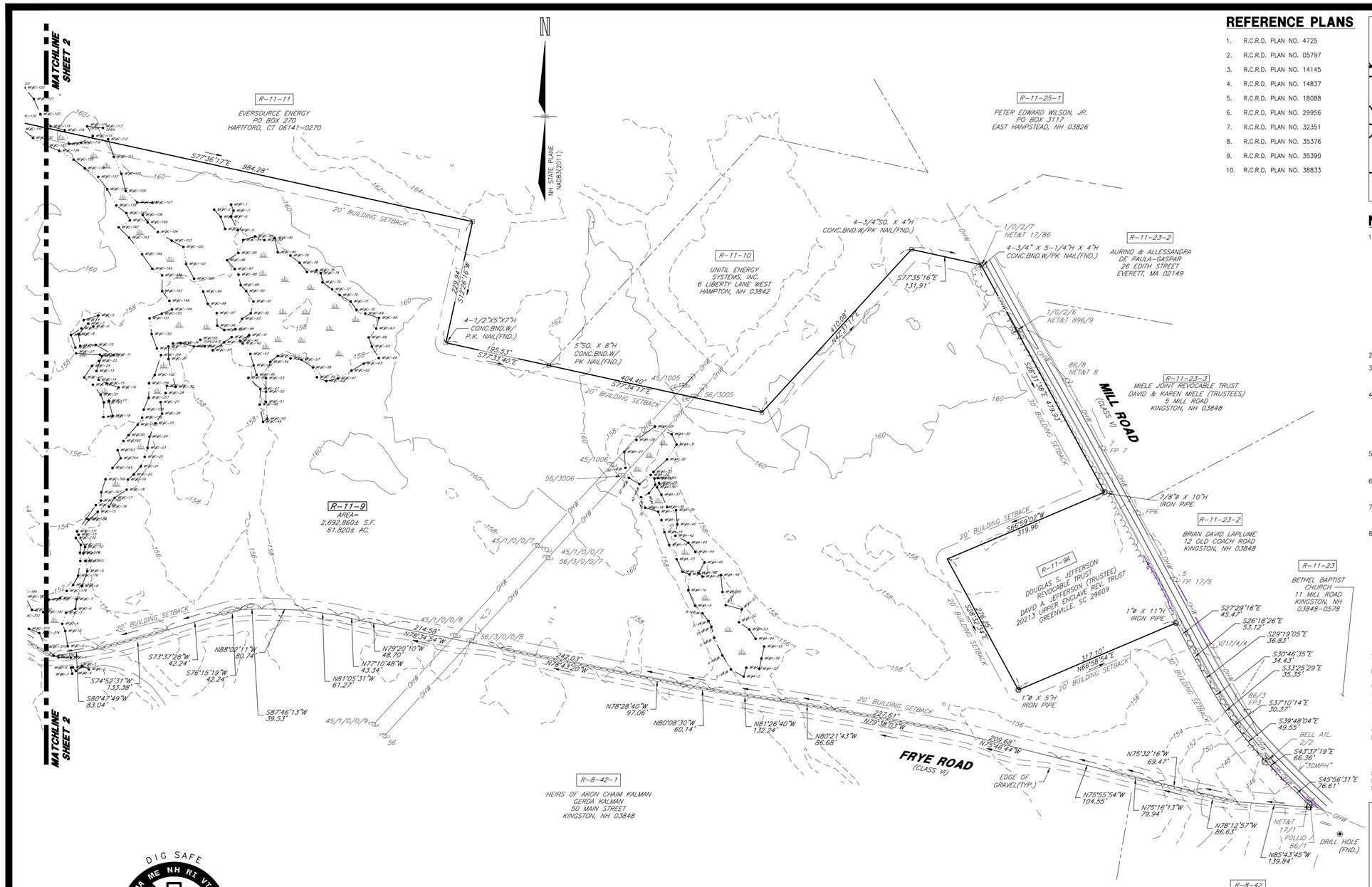
LEGEND

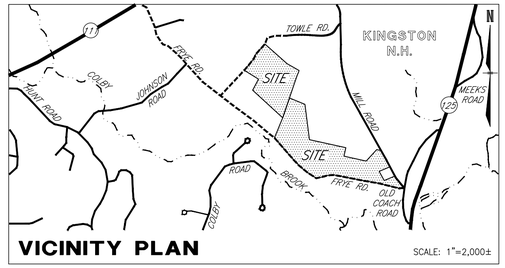
- 2' CONTOUR — 152
- 10' CONTOUR — 150
- TREELINE
- GRAVEL
- SIGN
- GUY ANCHOR
- ABUTTING PROPERTY LINE
- STONEWALL
- WETLAND SYMBOL
- OVERHEAD UTILITIES — OHW
- UTILITY POLE
- BOUND
- DRILL HOLE
- IRON PIN
- WETLAND FLAGGING — WF#A–56

DIG SAFE
MA ME NH RI VT
UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM
CALL 811 TOLL FREE

CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

F:\TFM Projects\20025\Unitil Utility Scale PV- Various locations\Carlson Survey\Dwgs\20025-00 Survey.dwg, Overall, 11/8/2022 11:02:49 AM, AutoCAD PDF (High Quality Print).pc3, Previous paper size: (34.00 x 22.00 inches), 1:1





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6. R.C.R.D. PLAN NO. 29956
7. R.C.R.D. PLAN NO. 32351
8. R.C.R.D. PLAN NO. 35376
9. R.C.R.D. PLAN NO. 35390
10. R.C.R.D. PLAN NO. 38833

NOTES

1. OWNER OF RECORD OF MAP R-11 LOT 9:
   TWO MILL ROAD REALTY TRUST
   RICHARD W. SENTER (TRUSTEE)
   86 ROCKRIMMON ROAD
   KINGSTON, NH 03848
   DEED REFERENCE TO PARCEL IS BK. 2893 PG. 2178

   AREA OF PARCEL = XXXXX S.F.± OR 0.XXX ACRES±

   OWNER OF RECORD OF MAP R-12 LOT 26:
   24 TOWLE ROAD REALTY TRUST
   RICHARD W. SENTER (TRUSTEE)
   86 ROCKRIMMON ROAD
   KINGSTON, NH 03848
   DEED REFERENCE TO PARCEL IS BK. 2893 PG. 2190

   AREA OF PARCEL = XXXXX S.F.± OR 0.XXX ACRES±
2. R-11-9 INDICATES TAX MAP AND LOT NUMBER.
3. THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS MAP R-11, LOT 9 LOCATED ON MILL ROAD AND MAP R-12, LOT 26 LOCATED ON TOWLE ROAD IN KINGSTON, NEW HAMPSHIRE AS SHOWN HEREON AND NO OTHER PURPOSE.
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SURVEYOR'S CERTIFICATION

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MICHAEL R. DAHLBERG, LLS — DATE
NH LICENSE NO. 714
FOR TF MORAN, INC.

TAX MAP R-11 LOT 9 & TAX MAP R-12 LOT 26

EXISTING CONDITIONS PLAN

MILL ROAD

KINGSON, NEW HAMPSHIRE

OWNED BY:

TWO MILL ROAD REALTY TRUST
RICHARD W. SENTER (TRUSTEE) (TM R-11, LOT 9)
24 TOWLE ROAD REALTY TRUST
RICHARD W. SENTER (TRUSTEE) (TM R-12, LOT 26)

PREPARED FOR:

UNITIL ENERGY SYSTEMS

SCALE: 1"=100' **NOVEMBER 3, 2022**

DIG SAFE
MA ME NH RI VT
CALL 811 TOLL FREE
UTILITIES UNDER GROUND PLANT DAMAGE PREVENTION SYSTEM
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

LEGEND

- 2' CONTOUR
- 10' CONTOUR
- TREELINE
- GRAVEL
- SIGN
- GUY ANCHOR
- ABUTTING PROPERTY LINE
- STONEWALL
- WETLAND SYMBOL
- OVERHEAD UTILITIES
- UTILITY POLE
- BOUND
- DRILL HOLE
- IRON PIN
- WETLAND FLAGGING

PROGRESS PRINT
NOVEMBER 8, 2022

WETLAND SCIENTIST CERTIFICATION

WETLANDS DEPICTED ON THIS PLAN WERE DELINEATED ON OCTOBER 13, 2022 BY JASON R. AUBE, CWS NO. 313.
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REV.	DATE	DESCRIPTION	DR	CK

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FILE	DR	FB	
20025-00	TNB	2095	SHEET 2 OF 4
	CK MRD	CADFILE 20025-00 Survey	

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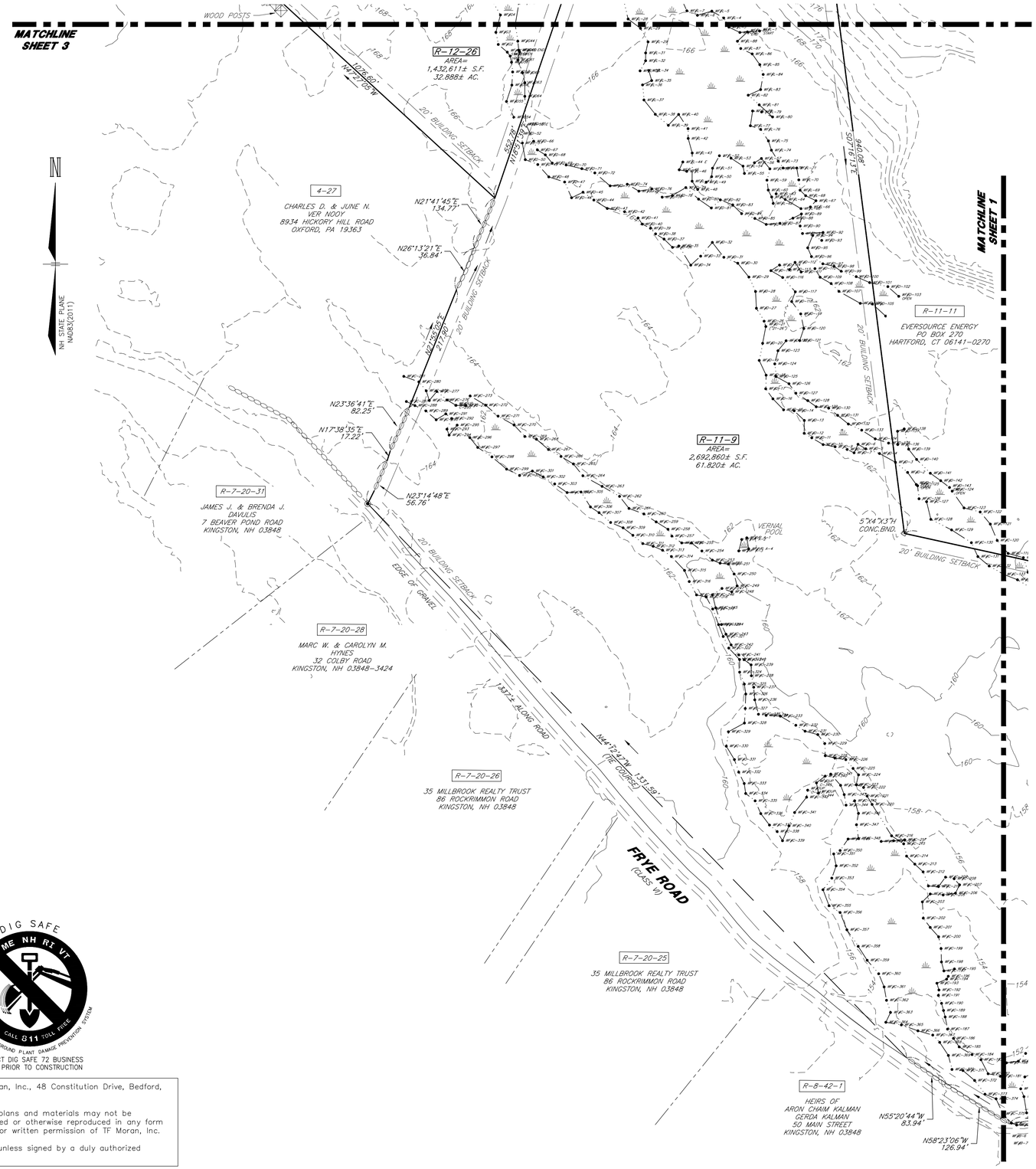

LEGEND

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- 10' CONTOUR
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- GRAVEL
- SIGN
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PROGRESS PRINT

NOVEMBER 8, 2022

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MICHAEL R. DAHLBERG, LLS — DATE
NH LICENSE NO. 714
FOR TF MORAN, INC.

TAX MAP R-11 LOT 9 & TAX MAP R-12 LOT 26

EXISTING CONDITIONS PLAN

MILL ROAD

KINGSON, NEW HAMPSHIRE

OWNED BY:

TWO MILL ROAD REALTY TRUST
RICHARD W. SENTER (TRUSTEE) (TM R-11, LOT 9)
24 TOWLE ROAD REALTY TRUST
RICHARD W. SENTER (TRUSTEE) (TM R-12, LOT 26)

PREPARED FOR:

UNITIL ENERGY SYSTEMS

SCALE: 1"=100' **NOVEMBER 3, 2022**

100' 50' 25' 0 50'
Graphic Scale
1"=100'

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CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

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20025.00	TNB	2095	SHEET 3 OF 4
	CK MRD	CADFILE 20025-00 Survey	

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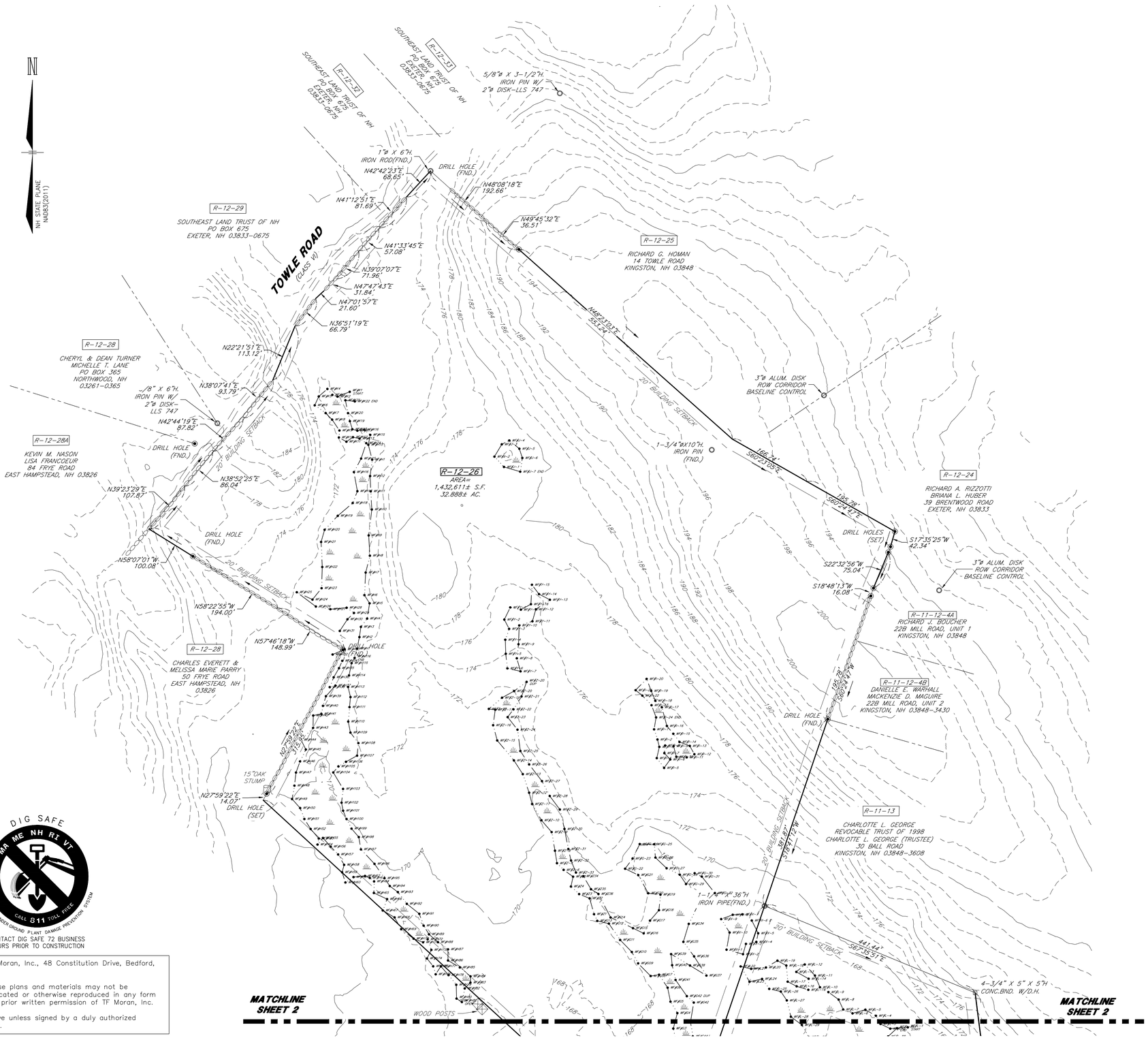

REV.	DATE	DESCRIPTION	DR.	CK.

LEGEND

2' CONTOUR	152
10' CONTOUR	150
TREELINE	
GRAVEL	
SIGN	
GUY ANCHOR	
ABUTTING PROPERTY LINE	
STONEWALL	
WETLAND SYMBOL	
OVERHEAD UTILITIES	OHW
UTILITY POLE	
BOUND	
DRILL HOLE	
IRON PIN	
WETLAND FLAGGING	WF#A-56

PROGRESS PRINT

NOVEMBER 8, 2022

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MICHAEL R. DAHLBERG, LLS — DATE
NH LICENSE NO. 714
FOR TF MORAN, INC.

100' 50' 25' 0 50'
Graphic Scale
1"=100'

TAX MAP R-11 LOT 9 & TAX MAP R-12 LOT 26

EXISTING CONDITIONS PLAN

MILL ROAD

KINGSON, NEW HAMPSHIRE

OWNED BY:

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RICHARD W. SENTER (TRUSTEE)(TM R-12, LOT 26)

PREPARED FOR:

UNITIL ENERGY SYSTEMS

SCALE: 1"=100' **NOVEMBER 3, 2022**

DIG SAFE
MA ME NH RI VT
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FILE	DR	FB		
20025.00	TNB	2095		SHEET 4 OF 4
	CK MRD	CADFILE	20025-00 Survey	

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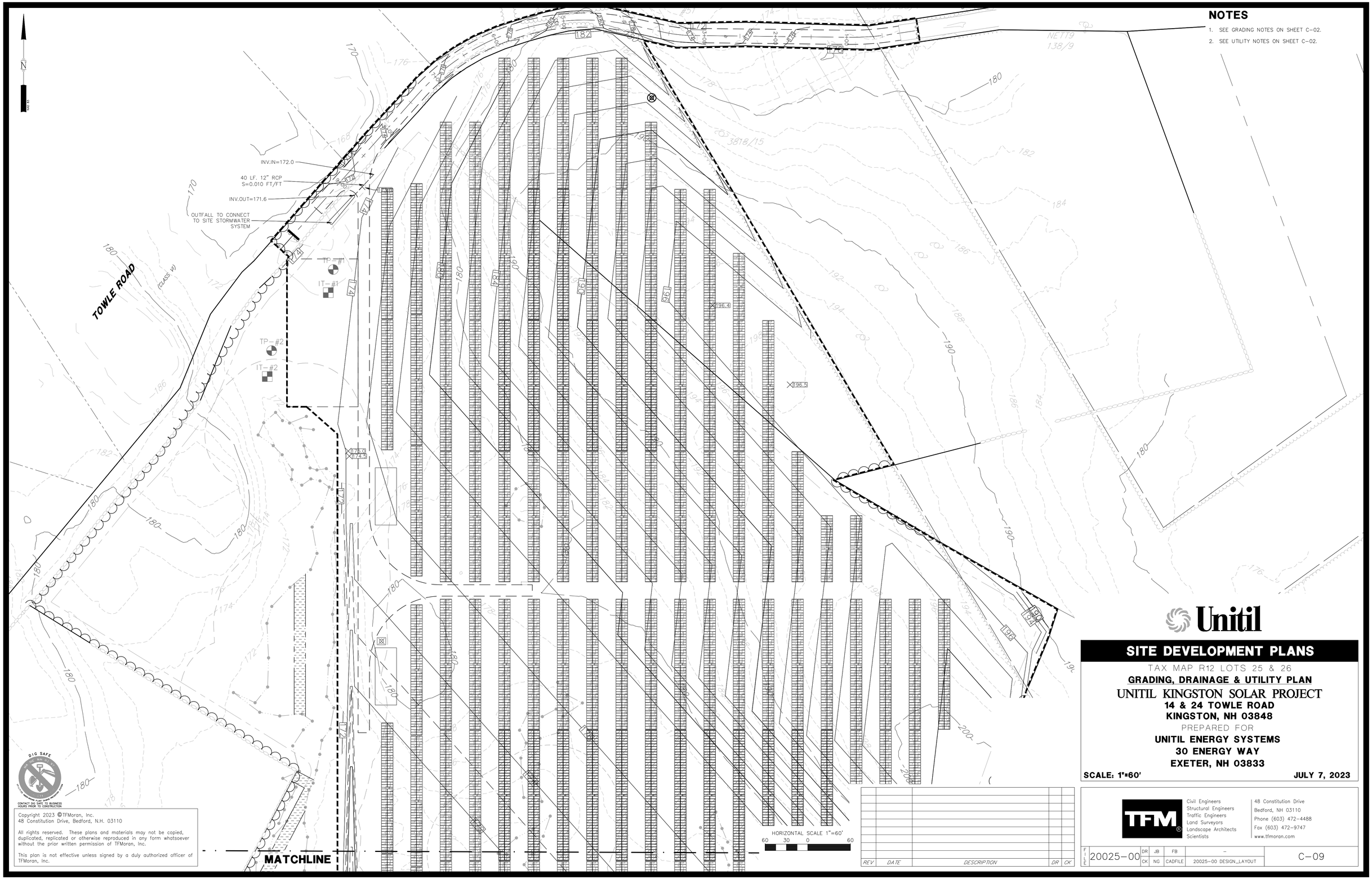
NOTES

1. SEE GRADING NOTES ON SHEET C-02.
2. SEE UTILITY NOTES ON SHEET C-02.



Unitil

SITE DEVELOPMENT PLANS

TAX MAP R12 LOTS 25 & 26

GRADING, DRAINAGE & UTILITY PLAN

UNITIL KINGSTON SOLAR PROJECT

14 & 24 TOWLE ROAD
KINGSTON, NH 03848

PREPARED FOR

UNITIL ENERGY SYSTEMS
30 ENERGY WAY
EXETER, NH 03833

SCALE: 1"=60' **JULY 7, 2023**

REV	DATE	DESCRIPTION	DR	CK

TFM®
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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Bedford, NH 03110
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Fax (603) 472-9747
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FILE — R	20025-00	DR JB	FB	–		C-09
		CK NG	CADFILE	20025-00 DESIGN_LAYOUT		

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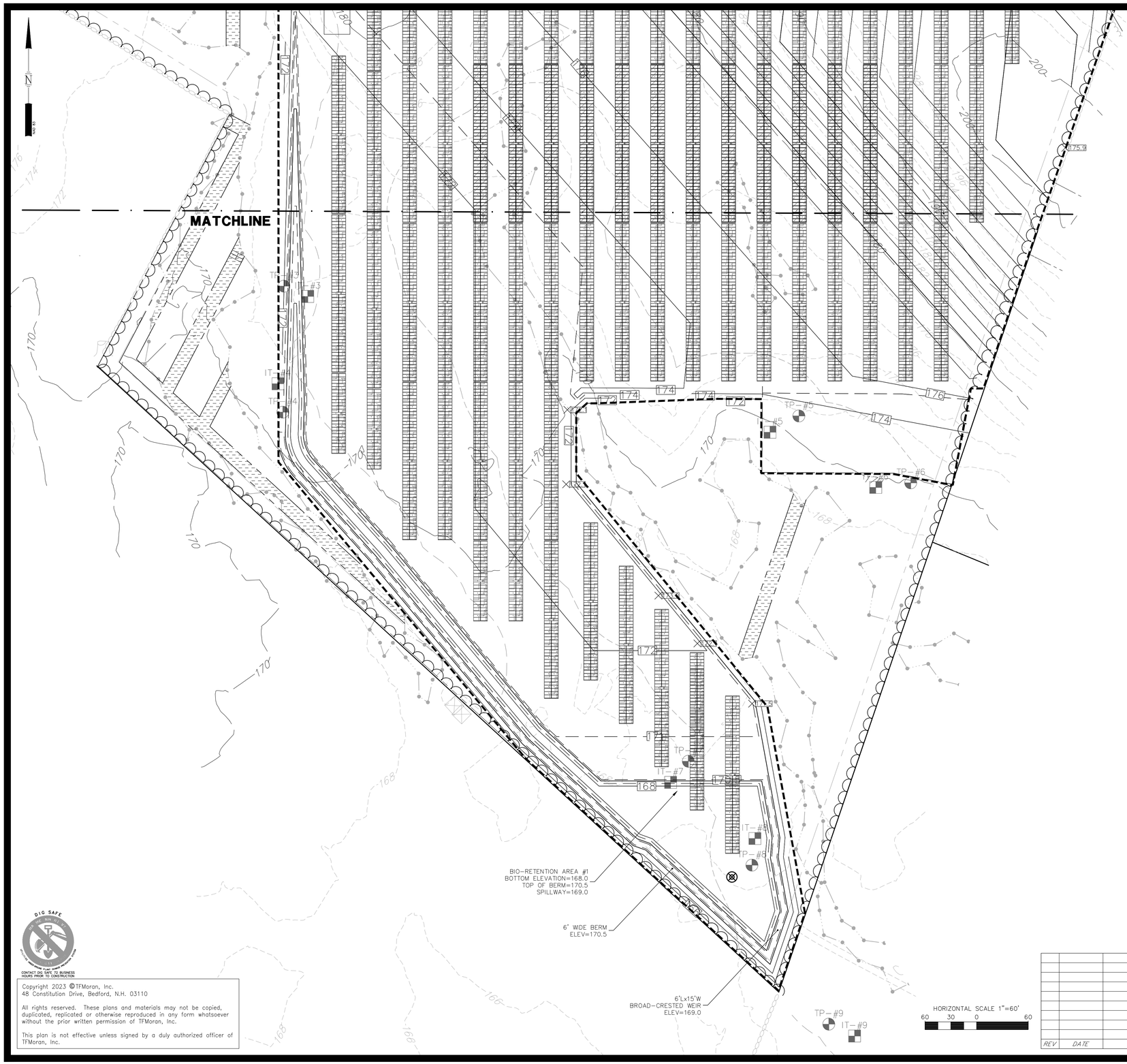

NOTES

1. SEE GRADING NOTES ON SHEET C-02.
2. SEE UTILITY NOTES ON SHEET C-02.

SOIL LEGEND (PER SITE SPECIFIC SOIL SURVEY)		
SYMBOL	DESCRIPTION	HYDROLOGIC SOIL GROUP
42	CANTON WELL DRAINED	B
448	SCITUATE MODERATELY WELL DRAINED	C
921	NEWFIELDS SOMEWHAT POORLY DRAINED	B
546B/P	WALPPOLE POORLY DRAINED	C
115/VP	SCARBORO VERY POORLY DRAINED	D

Unitil

SITE DEVELOPMENT PLANS

TAX MAP R12 LOTS 25 & 26

GRADING, DRAINAGE & UTILITY PLAN

UNITIL KINGSTON SOLAR PROJECT

14 & 24 TOWLE ROAD
KINGSTON, NH 03848

PREPARED FOR

UNITIL ENERGY SYSTEMS
30 ENERGY WAY
EXETER, NH 03833

SCALE: 1"=60' **JULY 7, 2023**

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

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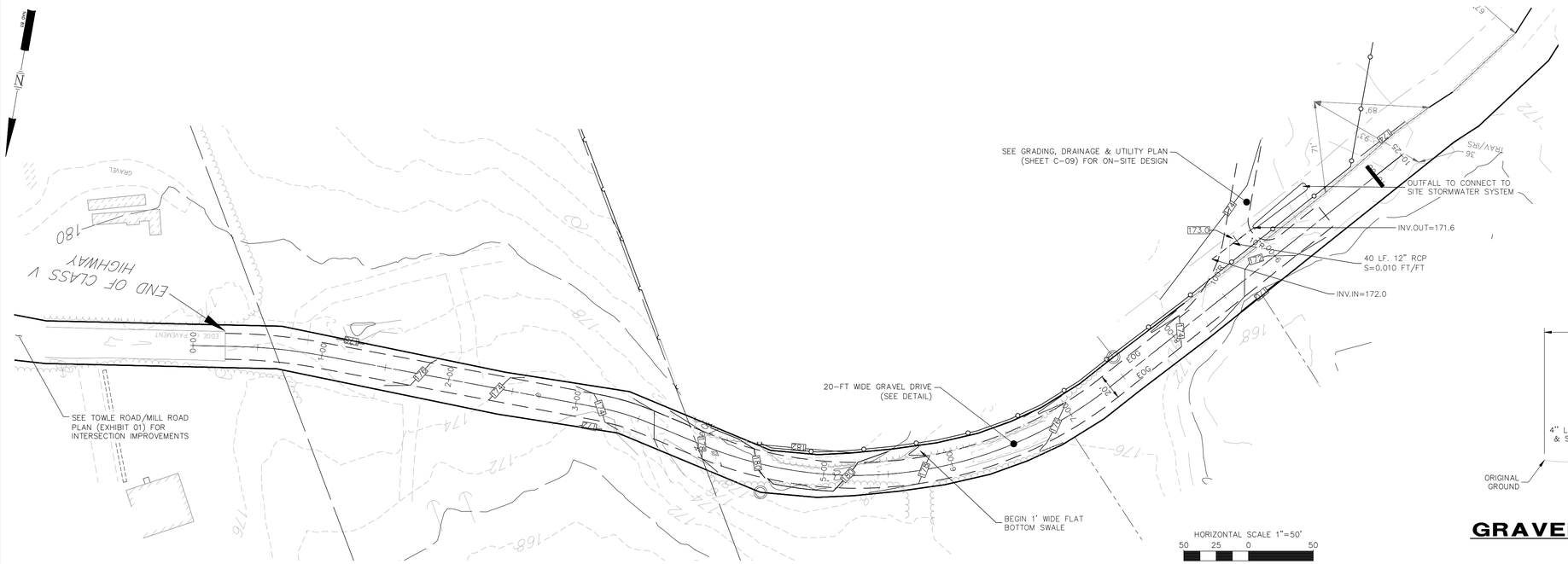
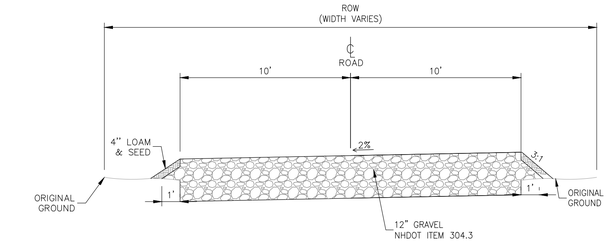
FILE	DR	JB	FB	–	
20025-00	CK	NG	CADFILE	20025-00 DESIGN_LAYOUT	C-10



TOWLE ROAD DRIVEWAY PLAN VIEW

NOTES

1. SEE GRADING NOTES ON SHEET C-02.

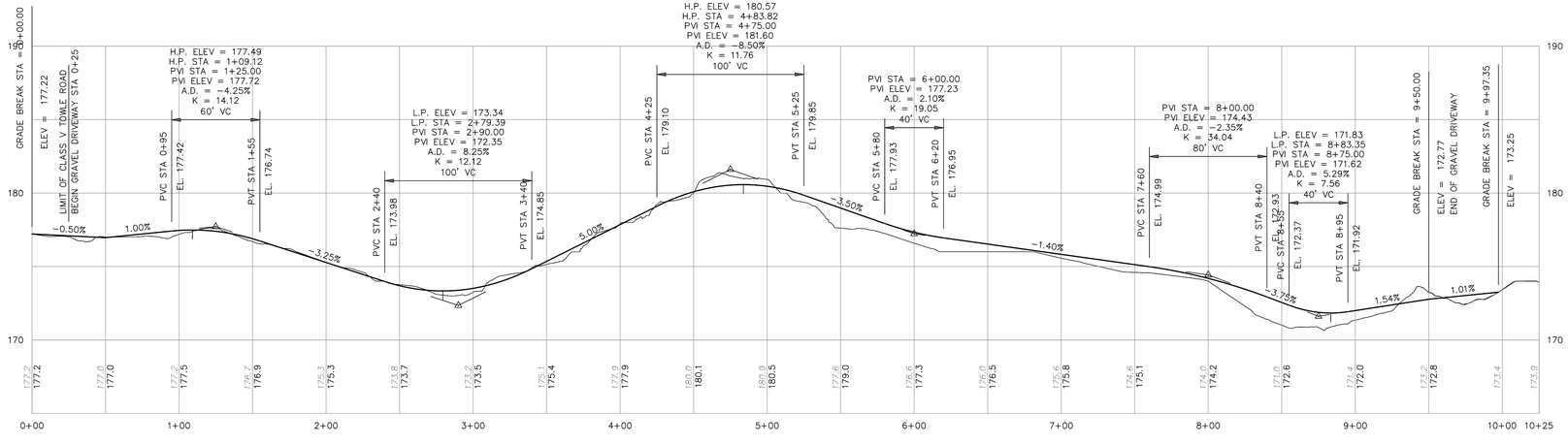


GRAVEL DRIVE CROSS-SECTION

NOT TO SCALE

NOTES

1. REMOVE ALL LOAM, CLAY, MUCK, STUMPS, AND OTHER IMPROPER PAVEMENT FOUNDATION MATERIAL WITHIN 2' OF SUBGRADE. REPLACE WITH COMPACTED GRANULAR FILL MATERIAL ACCEPTABLE TO APPROVING AGENCY. COMPACTION TO BE AT LEAST 95% OF STNDARD PROCTOR.



TOWLE ROAD DRIVEWAY PROFILE VIEW

HORIZONTAL SCALE 1"=50'
50 25 0 50
VERTICAL SCALE 1"=5'
5 0 5

Unitil

SITE DEVELOPMENT PLANS

TAX MAP R12 LOTS 25 & 26

TOWLE ROAD PLAN & PROFILE

UNITIL KINGSTON SOLAR PROJECT

14 & 24 TOWLE ROAD
KINGSTON, NH 03848

PREPARED FOR

UNITIL ENERGY SYSTEMS
30 ENERGY WAY
EXETER, NH 03833

SCALE: 1"=50' H/1"=5' V **JULY 7, 2023**

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

REV	DATE	DESCRIPTION	DR	CK

TFM®
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	DR	JB	FB	–	
20025-00	CK	NG	CADFILE	20025-00 DESIGN_LAYOUT	C-11

NOTES

1. THE PURPOSE OF THIS PLAN IS TO SHOW PROPOSED INTERSECTION IMPROVEMENTS AT THE INTERSECTION OF TOWLE ROAD AND MILL ROAD IN KINGSTON, NH.

2. ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE TOWN OF KINGSTON, AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. ALL WORK TO CONFORM TO THE TOWN OF KINGSTON DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS. ALL WORK WITHIN THE RIGHT-OF-WAY OF THE TOWN SHALL COMPLY WITH APPLICABLE STANDARDS. COORDINATE ALL WORK WITHIN THE RIGHT-OF-WAY WITH APPROPRIATE TOWN, COUNTY AND/OR STATE AGENCY.

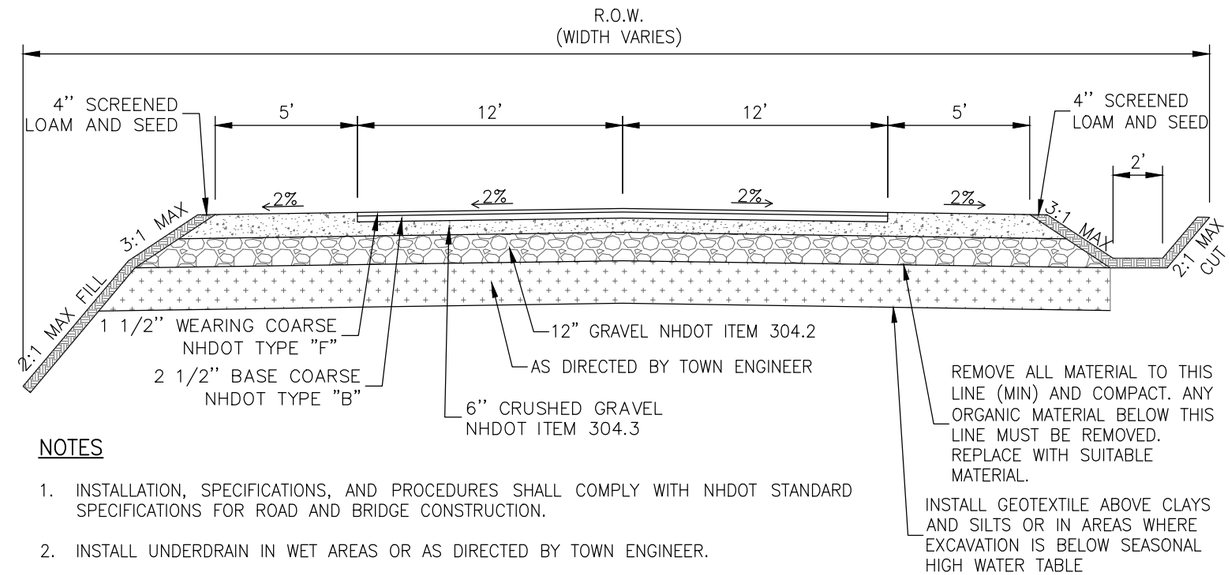
3. ALL WORK SHALL BE CONSTRUCTED FROM A COMPLETE SET OF PLANS, NOT ALL FEATURES ARE DETAILED ON EVERY PLAN. THE ENGINEER OF RECORD IS TO BE NOTIFIED OF ANY CONFLICT WITHIN THIS PLAN SET.

2. FOR ADDITIONAL INFORMATION, CONSTRUCTION NOTES, AND DETAILS, REFER TO SITE PLANS PREPARED BY TFMORAN, INC. TITLED "UNITIL KINGSTON SOLAR PROJECT", DATED JUNE 8, 2023.

INTERSECTION IMPROVEMENTS PLAN VIEW

HORIZONTAL SCALE 1"=50'

50 25 0 50



NOTES

1. INSTALLATION, SPECIFICATIONS, AND PROCEDURES SHALL COMPLY WITH NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

2. INSTALL UNDERDRAIN IN WET AREAS OR AS DIRECTED BY TOWN ENGINEER.

3. ALL MATERIAL MUST BE A MINIMUM OF 95% COMPACTION @ 8% MOISTURE CONTENT.

4. SIGNS, MAILBOXES, AND GUARDRAILS (WHEN REQUIRED) SHALL BE INSTALLED NO CLOSER THAN 5' FROM THE EDGE OF PAVEMENT.

TYP. ROADWAY CROSS-SECTION

NOT TO SCALE

Unitil

EXHIBIT

TOWLE & MILL ROAD RIGHT-OF-WAY (ROW)

TOWLE ROAD/MILL ROAD INTERSECTION PLAN

UNITIL KINGSTON SOLAR PROJECT

24 TOWLE RD, KINGSTON, NH 03848

PREPARED FOR

UNITIL ENERGY SYSTEMS, INC.

SCALE: 1"=50' **JUNE 8, 2023**

REV	DATE	DESCRIPTION	DR	CK

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Bedford, NH 03110
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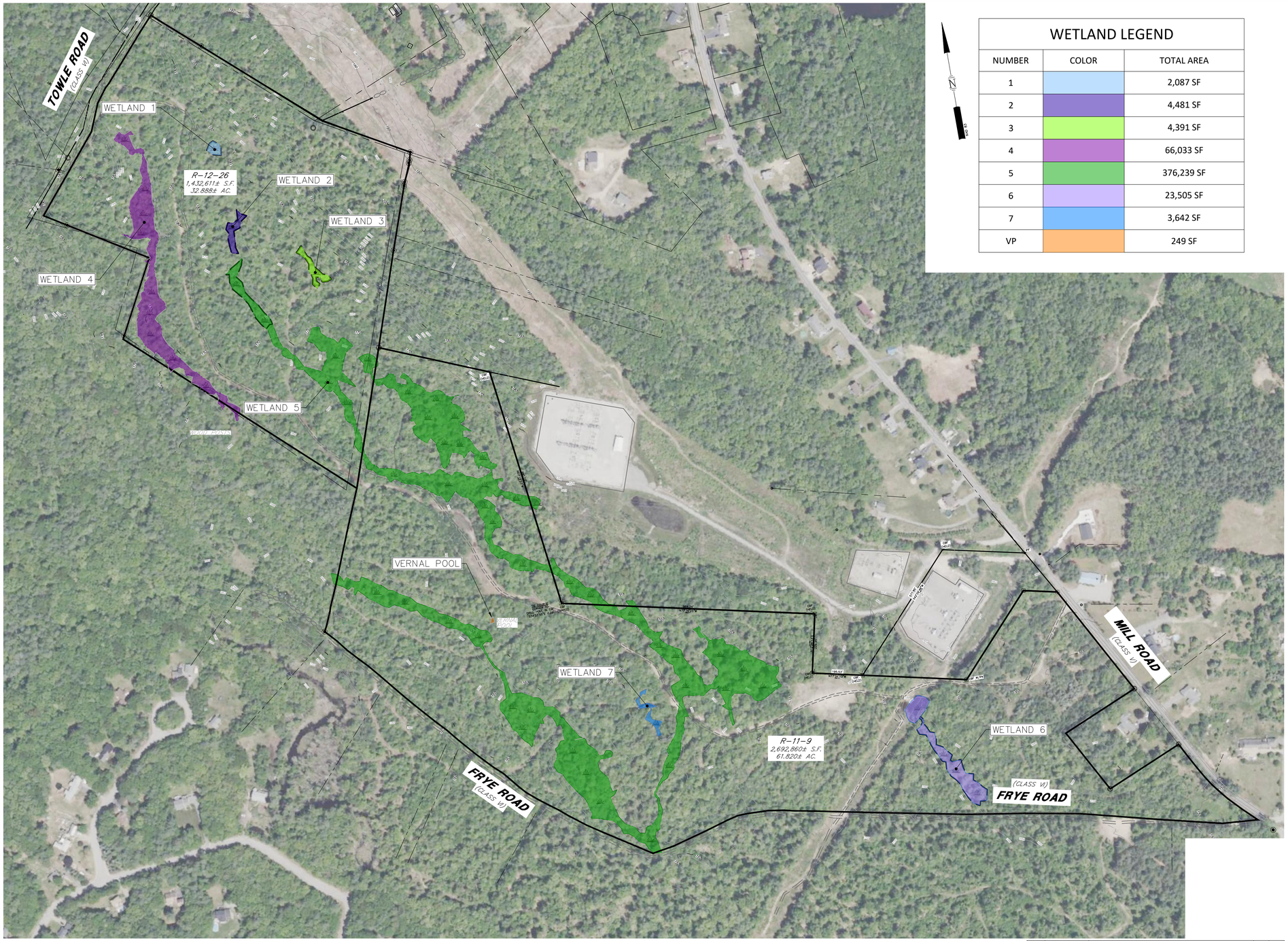
www.tfmoran.com

FILE	DR	FB		
20025-00	JB		–	EX-01
	CK	CADFILE	20025-00 DESIGN_LAYOUT.DWG	
	NG			

Town of Kingston Buffer Width Determination Table

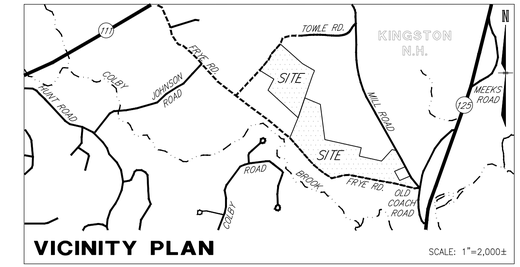
Principal Functions/ Values	Wetland 1	Wetland 2	Wetland 3	Wetland 4	Wetland 5
(FA) Floodflow Alteration	X	X	X	1	1
(GW) Groundwater Recharge/ Discharge	X	X	X	2	2
(NR) Nutrient Removal	X	X	X	2	2
(PE) Product Export	X	X	X	2	2
(SR) Sediment/ Toxicant Reduction	X	X	X	X	2
(SS) Shoreline/ Sediment Stabilization	X	X	X	X	X
(WH) Wildlife Habitat	X	X	X	3	X
(FH) Fish/ Shellfish Habitat	X	X	X	X	X
(ESH) Endangered Species Habitat	X	X	X	X	X
TOTAL SCORE	0	0	0	10	9
BUFFER WIDTH	**No Buffer**	**No Buffer**	**No Buffer**	**75-feet**	**75-feet**

X = not a *Principal Function*



WETLAND LEGEND

NUMBER	COLOR	TOTAL AREA
1		2,087 SF
2		4,481 SF
3		4,391 SF
4		66,033 SF
5		376,239 SF
6		23,505 SF
7		3,642 SF
VP		249 SF



VICINITY PLAN

SCALE: 1"=2,000±

NOTES

1. OWNER OF RECORD OF MAP R-11 LOT 9:
   RICHARD W. SENTER (TRUSTEE)
   TWO MILL ROAD REALTY TRUST
   86 ROCKRIMMON ROAD
   KINGSTON, NH 03848
   DEED REFERENCE TO PARCEL IS BK. 2893 PG. 2178

   AREA OF PARCEL = 2,692,860 S.F.± OR 61.820 ACRES±

   OWNER OF RECORD OF MAP R-12 LOT 26:
   RICHARD W. SENTER (TRUSTEE)
   24 TOWLE ROAD REALTY TRUST
   86 ROCKRIMMON ROAD
   KINGSTON, NH 03848
   DEED REFERENCE TO PARCEL IS BK. 2893 PG. 2190

   AREA OF PARCEL = 1,432,611 S.F.± OR 32.888 ACRES±

2. R-11-9 INDICATES TAX MAP AND LOT NUMBER.

3. THE PURPOSE OF THIS PLAN IS TO SHOW A CONCEPTUAL SOLAR ARRAY LAYOUT.

4. CURRENT ZONING DISTRICT: RURAL RESIDENTIAL (RR)
   MINIMUM LOT FRONTAGE: 200 FEET ON CLASS V HIGHWAY OR BETTER.
   MINIMUM BUILDING SETBACKS:
   FRONT: 30 FEET
   SIDE: 20 FEET
   REAR: 20 FEET
   *COMMERCIAL USE WITHIN RURAL RESIDENTIAL ZONING DISTRICT REQUIRES A 50 FOOT VEGETATIVE BUFFER.

5. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR ROCKINGHAM COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33015C0390E, EFFECTIVE DATE MAY 17, 2005, INDICATES THAT THE SUBJECT PARCELS ARE NOT LOCATED WITHIN A FLOOD HAZARD AREA.

6. HORIZONTAL DATUM: NAD83(2011)
   VERTICAL DATUM: NAVD88
   BENCHMARKS SET: AS NOTED

7. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL(S) MAY DETERMINE.

8. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG-SAFE AT 811.

9. CONCEPTUAL LAYOUT OF SOLAR ARRAY BASED UPON INFORMATION PROVIDED BY ARRAY MANUFACTURER. FINAL LAYOUT AND ARRAY LOCATIONS TO BE FINALIZED BY UNITIL IN COORDINATION WITH MANUFACTURER.

Unitil

CONCEPTUAL SITE PLANS

TAX MAP R12 LOTS 25 & 26

FUNCTIONS AND VALUES ASSESSMENT

UNITIL KINGSTON SOLAR PROJECT

24 TOWLE ROAD
KINGSTON, NH 03848

PREPARED FOR

UNITIL ENERGY SYSTEMS
30 ENERGY WAY
EXETER, NH 03833

SCALE: 1"=200' **DECEMBER 8, 2022**

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DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

HORIZONTAL SCALE 1"=200'
200 100 0 200

REV	DATE	DESCRIPTION	DR	CK
1	02/21/2023	REV FOR CONSULTANT	ML	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	DR	JC	FB		
20025-00	CK	NG	CADFILE	20025-00 FUNCTIONS AND VALUES	EX-01

2020 NH WILDLIFE HABITAT LAND COVER

- Coastal Island/Rocky coast
- Dune
- Salt marsh
- Peatland
- Marsh and Shrub wetland
- Northern or Temperate Swamp
- Floodplain Forest
- Grassland
- Pine barren
- Cliff or Talus slope
- Rocky ridge
- Alpine
- High-elevation Spruce-fir
- Low-elevation Spruce-fir
- Northern hardwood-conifer
- Appalachian oak-pine
- Hemlock-hardwood-pine
- Open Water
- Sand/Gravel
- Developed Impervious
- Developed or Barren
- Conservation or public land

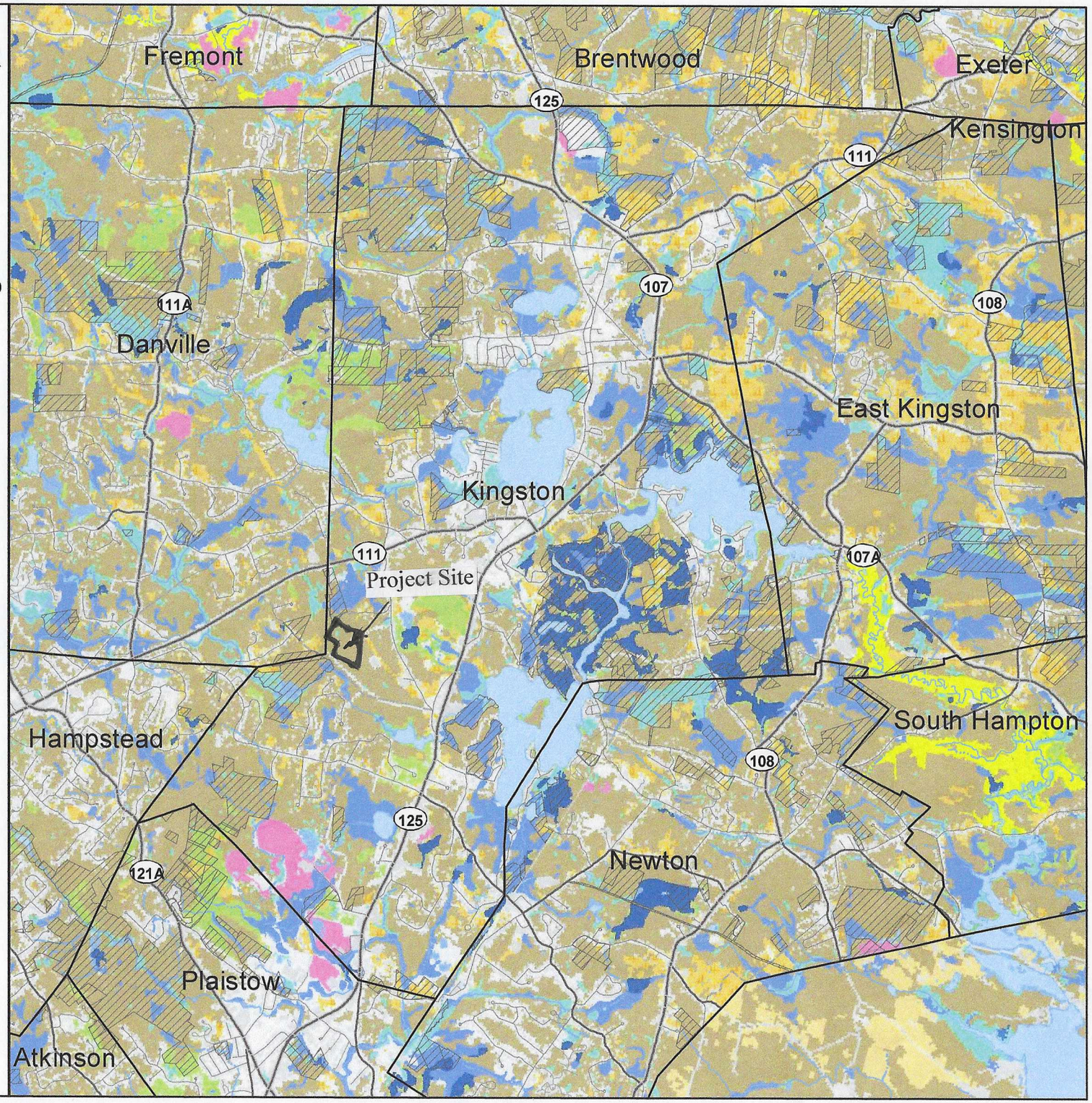
Base map data provided by NH GRANIT at UNH May 2020. Intended for planning use only.

NEW HAMPSHIRE Wildlife Action Plan

Sept. 2015, spatial data Apr. 2020

0 1.5 3 Kilometers

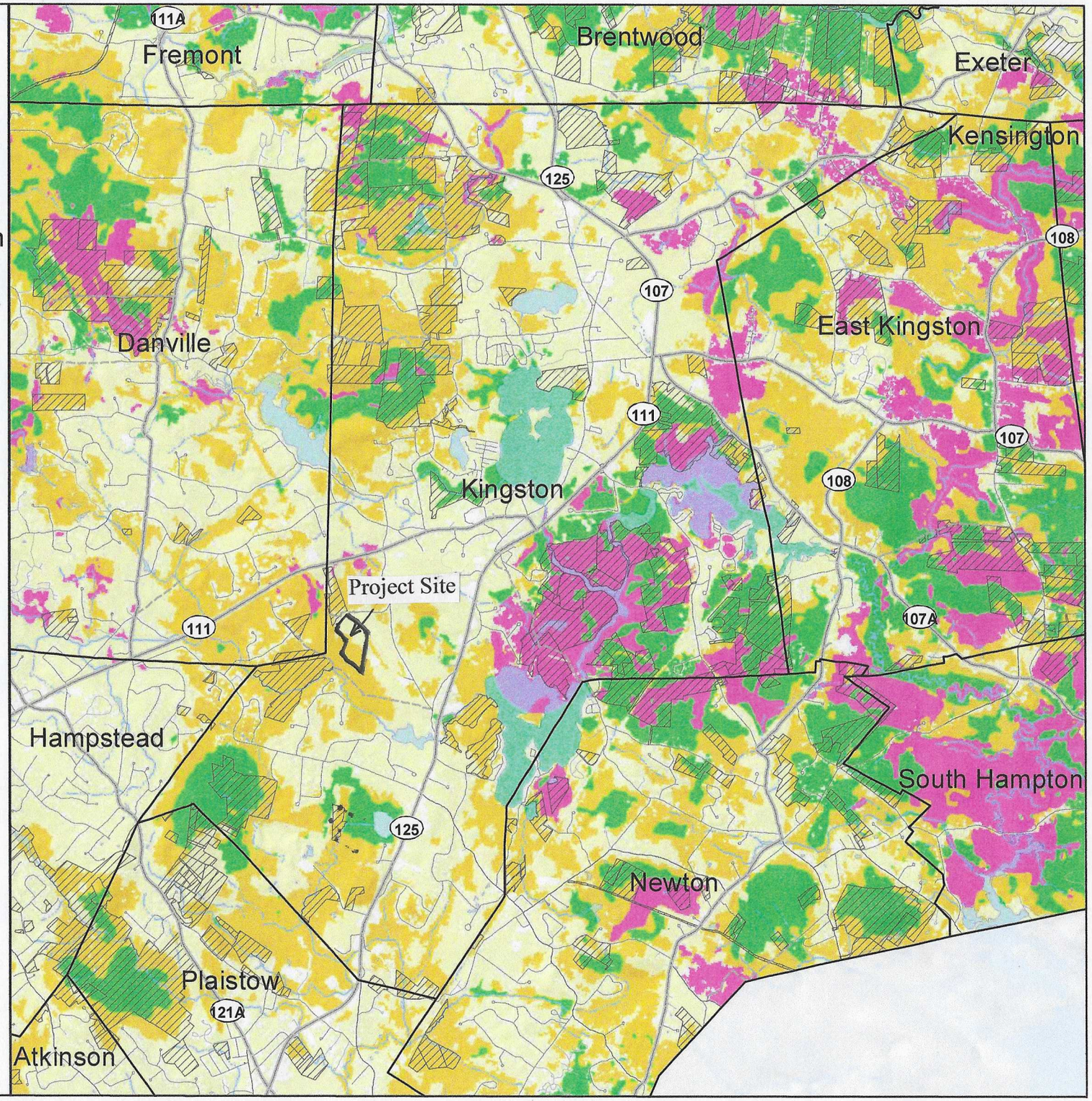
0 1 2 Miles



2020 HIGHEST RANKED WILDLIFE HABITAT BY ECOLOGICAL CONDITION

- Highest Ranked Habitat in New Hampshire
- Highest Ranked Habitat in the Biological Region

  Biological region = TNC ecoregional subsection for terrestrial habitats or Aquatic Resource Mitigation region for wetlands and floodplain forest.
- Supporting Landscapes
- Conservation or public



Base map data provided by NH GRANIT at UNH May 2020. Intended for planning use only.

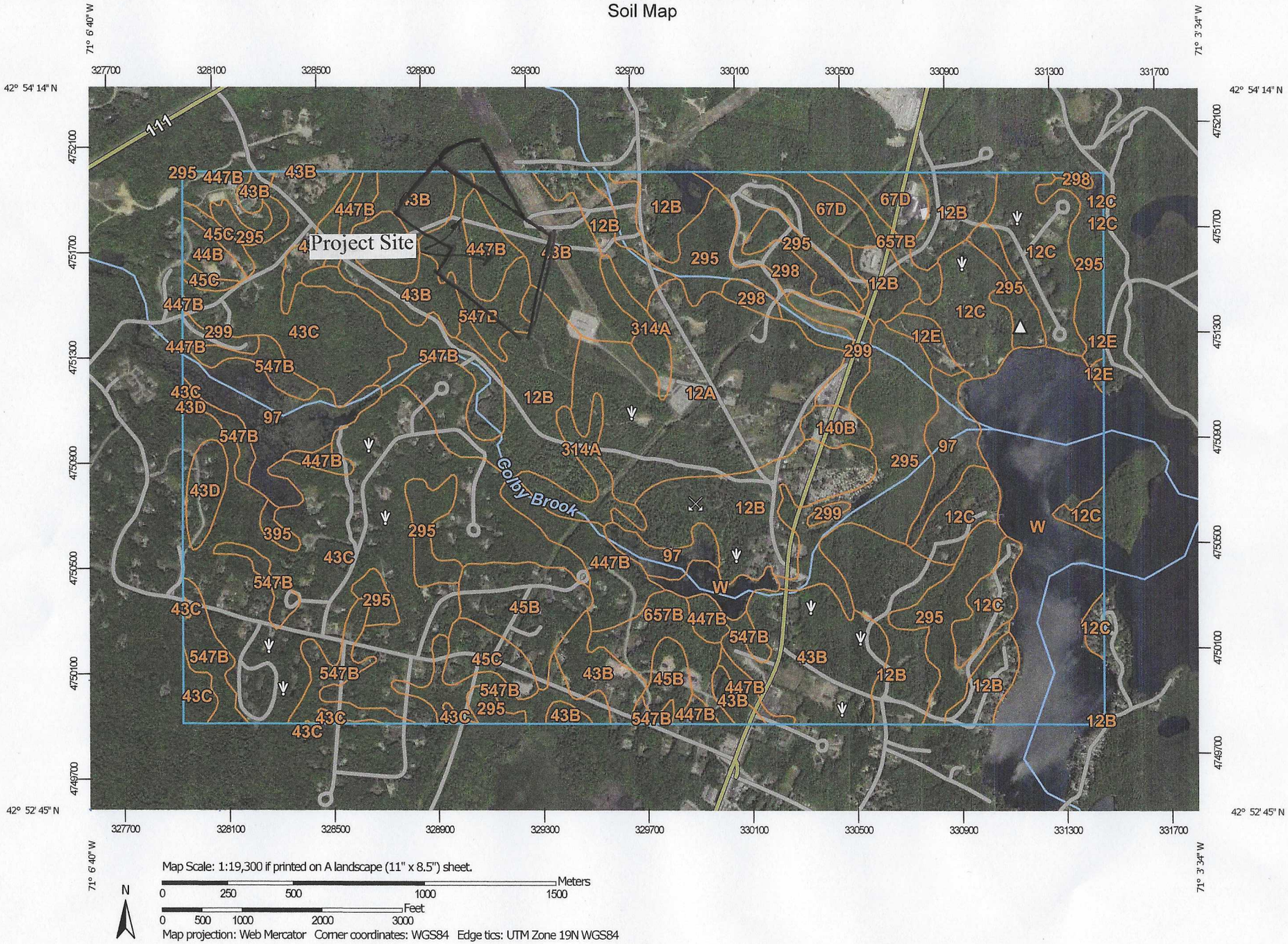
NEW HAMPSHIRE Wildlife Action Plan

Sept. 2015, spatial data Apr. 2020

0 1.5 3 Kilometers

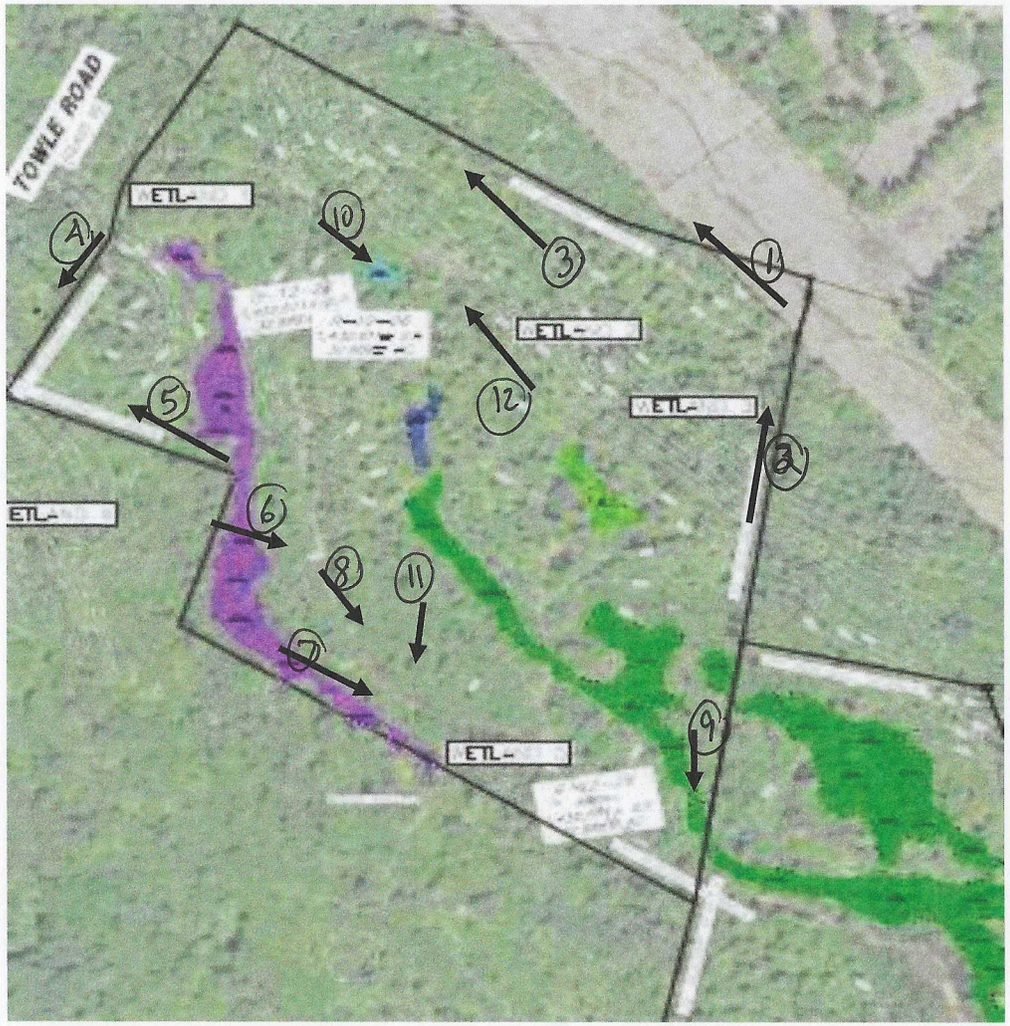
0 1 2 Miles

Custom Soil Resource Report
Soil Map



Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
12A	Hinckley loamy sand, 0 to 3 percent slopes	128.4	7.0%
12B	Hinckley loamy sand, 3 to 8 percent slopes	248.4	13.6%
12C	Hinckley loamy sand, 8 to 15 percent slopes	105.5	5.8%
12E	Hinckley loamy sand, 15 to 60 percent slopes	8.0	0.4%
43B	Canton fine sandy loam, 0 to 8 percent slopes, very stony	163.2	8.9%
43C	Canton fine sandy loam, 8 to 15 percent slopes, very stony	316.7	17.3%
43D	Canton fine sandy loam, 15 to 25 percent slopes, very stony	21.6	1.2%
44B	Montauk fine sandy loam, 3 to 8 percent slopes	8.0	0.4%
45B	Montauk fine sandy loam, 0 to 8 percent slopes, very stony	44.0	2.4%
45C	Montauk fine sandy loam, 8 to 15 percent slopes, very stony	22.7	1.2%
67D	Paxton fine sandy loam, 15 to 25 percent slopes, very stony	24.7	1.3%
97	Freetown and Natchaug mucky peats, ponded, 0 to 2 percent slopes	70.9	3.9%
140B	Chatfield-Hollis-Canton complex, 0 to 8 percent slopes, rocky	8.1	0.4%
295	Freetown mucky peat, 0 to 2 percent slopes	197.6	10.8%
298	Pits, sand and gravel	36.8	2.0%
299	Udorthents, smoothed	19.5	1.1%
314A	Pipestone sand, 0 to 5 percent slopes	28.5	1.6%
395	Swansea mucky peat, 0 to 2 percent slopes	3.3	0.2%
447B	Scituate-Newfields complex, 3 to 8 percent slopes, very stony	71.1	3.9%
547B	Walpole very fine sandy loam, 3 to 8 percent slopes, very stony	127.7	7.0%
657B	Ridgebury fine sandy loam, 3 to 8 percent slopes, very stony	33.9	1.9%
W	Water	142.2	7.8%



Pond View Wetlands 237 Beauty Hill Rd. Center Barnstead, NH 03225 Cell *(603)-520-6120* Home/office *(603)-269-4264* *jimfougere@gmail.com*	SCALE Not to scale	Unitil Kingston Project 45 Towle Road Kingston, NH
	DATE 6/24/2023	
	DRWN by JRF JFougere	**PHOTO LOG NUMBERS**

Until Kingston Solar Project
Towle Road, Kingston, New Hampshire
Threatened and Endangered Wildlife & Habitat Assessment
Photo Log

Photo 1: Corner of Lot 26 at crossing of powerline ROW
2nd Site visit: 9:00-12:30 Temp: 35 degrees
Photo taken: December 13, 2022

Photo 2. Northeast side property line approaching powerline ROW
2nd Site visit: 9:00-12:30 Temp: 35 degrees
Photo taken: December 13, 2022

Photo 3. Diverse more open woods adjacent to powerline ROW
2nd Site visit: 9:00-12:30 Temp: 35 degrees
Photo taken: December 13, 2022

Photo 4. Towle Road along northern boundary
2nd Site visit: 9:00-12:30 Temp: 35 degrees
Photo taken: December 13, 2022

Photo 5. West side of Lot 26 looking north along stone wall from coner
2nd Site visit: 9:00-12:30 Temp: 35 degrees
Photo taken: December 13, 2022

Photo 6. Wetland 4 from wall looking south.
2nd Site visit: 9:00-12:30 Temp: 35 degrees
Photo taken: December 13, 2022

Photo 7. Wetland 4 following old skidder trail on southern boundary.
Site visit: 10:00-1:00 Temp: 64-66 degrees
Photo taken: September 29, 2022

Photo 8. Heavily used dirt road crossing site near east boundary of Lot 26.
Site visit: 10:00-1:00 Temp: 64-66 degrees
Photo taken: September 29, 2022

Photo 9. Lower end of Wetland 5 (to be avoided)
3rd Site visit: 3:00-4:30 Temp: 78 degrees
Photo taken: June 3, 2023

Photo 10. Wetland 1 North central portion of site, looking southeast
3rd Site visit: 3:00-4:30 Temp: 78 degrees
Photo taken: June 3, 2023

Photo 11. Dense woods, typical of Lot 26
Site visit: 10:00-1:00 Temp: 64-66 degrees
Photo taken: September 29, 2022

Photo 12. Dense woodlands north of woods road.
Site visit: 10:00-1:00 Temp: 64-66 degrees
Photo taken: September 29, 2022

PART 3: DETAILED EVALUATIONS

PROPOSED PROJECT

The Until Kingston Solar Project is a proposed Utility Scale Photovoltaic Generating (PV) Facility occupying Lot R-12-26 (32.9 acres), and a portion of Lot R-12-25 (3.5 acres) in the general area west of Mill Road, north of Frye Road (Class VI) and southeast of Towle Road (Class VI) in Kingston, NH. This site is forested with distinct areas of disturbance, such as active four-wheel truck trails, old logging trails and a power line right-of-way crossing the northeastern-most tip of the lot.

The proposed project will construct a solar array and associated equipment on a large portion of these two lots, while avoiding impacts to higher valued wetlands, located offsite. A portion of a long narrow wetland (Wetland 5) that continues offsite to the east, will be impacted on the west side in an area of limited hydrology and lesser functions and values. Three isolated wetlands with limited functions and values will also be impacted by the project. Development of the site will require approximately 33 acres of vegetation clearing.

Accessing to the site from Towle Road will be provided via a new 20-foot-wide driveway from where Towle Road transitions from Class V to a Class VI road, and to improve sight lines and accessibility to Towle Road the intersection of Towle Road and Mill Road will be relocated approximately 170-feet south of the current intersection to provide a more suitable alignment constructed according to the standards of the Town of Kingston.

Construction on the site could begin in late 2023 pending permit approvals.

PROJECT SITE AND SURROUNDING LAND USE DESCRIPTION

The site of the proposed solar project is currently an undeveloped forested area with a power line right-of-way crossing the northeast tip of the parcel and a heavily used dirt road crossing the site on the south and west sides. There are also numerous ATV and dirt bike trails creating disturbed locations, while old logging trails have generally revegetated.

The surrounding area has scattered residences around the property but nothing in the immediate area of the project parcel. Three existing electrical substations occur to the southeast of this parcel along the power line that crosses to the north of the project parcel. The overall topography of the site is two-tiered with the south side generally flatter, while the northern half slopes down from the northeast to the southwest.

The NH Wildlife Action Plan, 2020 NH Wildlife Habitat Land Cover Map describes the site as Appalachian oak-pine forest. The NH Wildlife Action Plan, 2020 Highest Ranked Wildlife Habitat by Ecological Condition, describes the south side of the lot as providing Supporting Habitat. The north side of the lots provides limited habitat values according to the maps.

Soils

The Websoil survey information for the site illustrates that the site is dominated by Hinckley loamy sands sandy soils on Lot R-11-9, while Lot R-12-26 includes soils such as Walpole fine sandy

loam and Scituate-Newfields complex. These finer textured soils may help explain the more varied topography in the northern portion of the site.

Wetland Communities

Existing wetland communities on the development parcel include two narrow wetlands that flow from the north to south. Three small, isolated wetlands are also located to the north and east of the narrow wetland drainages. These three isolated wetlands were small marginal areas with limited potential to pond water for a sufficient period to provide vernal pool habitat or other principal functions or values.

To address the value of these wetlands, a functional assessment was prepared for wetlands across this site as well as in the adjacent southerly lot (R-11-9) which was also investigated for use in a solar project. The Town of Kingston bases the width of the various wetland buffers on functions and values. For instance, higher valued wetlands require a larger buffer width. The Town of Kingston Buffer Width Determination Table is provided in Part 2, along with the accompanying color-coded figure identifying these wetlands.

In an effort to reduce overall wetland impacts as well as minimizing impacts to wetland functions and value, an assessment of the wetland features was assessed during early project planning. As a result, the potential use of Lot R-11-9 located south and east of the subject parcels was diminished due to higher valued wetlands on the lot.

No wetland impacts are associated with the site driveway from Towle Road or reconstructing the Towle Road and Mill Road intersection.

II. THREATENED AND ENDANGERED WILDLIFE AND HABITAT EVALUATION

A New Hampshire Natural Heritage Bureau Datacheck results letter was obtained for the site and is included in the Part 2 attachments. The New Hampshire Wildlife Action Plan also includes community-scale lists of potential threatened and endangered species, as well as Species of Special Concern in NH, and Species of Greatest Conservation Need. This list does not include common wildlife species such as white-tailed deer (*Odocoileus virginianus*) or red fox (*Vulpes vulpes*).

The Kingston species list includes twenty-two bird species, nine mammals, and nine amphibians and reptiles. Fish, mussels, butterflies, and bumblebees are also included in the listing by town. Habitats for these various species are outlined indicating potential species that may utilize the site. Keying out what species would occur requires some sorting out of habitat preferences for the various species. For example, several of the listed bird species are strongly associated with grassland habitats or open fields, such as the Bobolink (*Dolichonyx oryzivou*s), and Eastern meadowlark (*Sturnella magna*). This forested site would not be expected to provide the appropriate habitat for these or other grassland species. Other species, such as the Bald Eagle (*Haliaeetus leucocephalus*) are unlikely to be found on the site but could possibly pass through the area.

Other Birds

Bird species that were determined to be potential occupants of this area are limited to those species that may occur in the mature hardwood forest areas such as the pileated woodpecker (*Dryocopus pileatus*) observed on the parcel. Other less common species could include ruffed grouse (*Bonsai*

umbrellus) and scarlet tanager (*Piranger olivaceous*), as well as wood thrush (Hylocichlia Mustela).

Development of the solar site will result in numerous forest dwelling birds shifting their habitat use to offsite areas including Lot R-11-9 to the east.

Mammal Species

Similarly, the list includes several bat species which could be found in the local area. Most of these species are generally associated with forested areas or in some cases developed regions including barns and attics of houses. Potential impacts to bat species, but especially the federally endangered, **Northern long-eared bat** (*Myotis septentrionalis*) would be expected to be limited to tree clearing. Potential impacts to these bat species will be limited to the extent practicable, by restricting tree clearing during the pup-rearing season, May 15th to August 15th. Preferably, tree clearing would be conducted in the late fall-winter months (November 30 to March 30) when all direct impacts would be minimized.

Amphibians and Reptiles

The remaining relevant species category is the amphibians and reptiles.

Blanding's turtles are noted on the NH NHB Datacheck Report as occurring in the region; however, the identified locations appear to be primarily at the edges of large wetlands in the region. These occurrences are outside the project area. The interconnected wetlands located on Lot R-11-9 have been determined to provide a variety of habitat values including a vernal pool habitat. These wetlands have been left undisturbed in an effort to provide this potential habitat for Blanding's turtles and other species. The lack of observed vernal pool habitats on the solar parcel may also limit their utilization of that site.

The **Northern black racer** is also identified in the NHB Datacheck report as occurring west of the project parcel. These snakes are more typically associated with a variety of early successional habitats, including brushy areas, utility rights of way, grasslands, old fields, rocky ridges, and the edges of agricultural fields, as described in the NH Wildlife Action Plan. DeGraff (1986) also describes their varied habitat utilization. It should be noted that the identified locations appear to be primarily at the edge of residential or developed areas. The dense forested areas of the project site would not appear to be ideal habitat for the black racer except at the boundary area along the powerline right-of-way on the northeast corner of the parcel which will remain undeveloped open habitat.

The **Spotted turtle** is a State-threatened and SGCN species that was identified in the vicinity of large ponds on the east side of NH Route 125. Spotted turtles are consistently reported to prefer large intact landscapes with a diversity of wetlands, but they only tolerate limited development. In addition, DeGraaf (1986) describes their preferred habitat as including areas of aquatic vegetation with special habitat requirements of unpolluted shallow water.

The wetlands within the project parcel would not be expected to provide habitat given the limited hydrology of the on-site wetlands. The wetland communities southeast of the project parcel have

higher habitat values including potential vernal pools. These wetland features do not extend onto the project parcel.

Federally protected species

The federally listed wildlife species that are potentially found in the project area include the Northern long-eared bat (*Myotis septentrionalis*). At a minimum, tree clearing and logging for the project will address impacts to this and other bat species by avoiding tree clearing during pup-rearing season to the extent practicable. If possible, tree clearing will be conducted during the winter months (November 1 to the end of March) when these species are not likely to be found onsite. At a minimum, tree clearing should be avoided May 15th through August 15th during the bats pup-rearing season but also bird nesting seasons.

III. ASSESSMENT METHODOLOGY

Prior to the site visits for the assessment, the NH Wildlife Action Plan was reviewed including the 2020 NH Wildlife Action Plan, Wildlife Habitat Land Cover Map and the 2020 Highest Ranked Wildlife Habitat by Ecological Condition as well as the Species Lists in the Plan for Kingston. This information in combination with the NH Natural Heritage Bureau Datacheck Report allowed a comprehensive view of what species might utilize the habitat communities available on-site.

The Until PV Scale Solar Project location is described in the NH Wildlife Action Plan, 2020 Land Cover Map as Appalachian oak-pine forest. The site is described in the 2020 Highest Ranked Wildlife Habitat by Ecological Condition, as providing Supporting Habitat on the south side of the lots and no identified habitat values on the north side.

The assessment of the study area was conducted during two site walks, with a walk along portions of the site perimeter, as well as a series of random transects in areas of wetlands, woodlands, and existing disturbance including existing trails, old skidder trails and across the site. Specific steps were taken to review wetlands areas which could provide the appropriate conditions for vernal pool habitat.

Eastern coyote tracks and numerous deer trails were noted across the site. Snags were another habitat feature investigated as part of the site review, with a limited number scattered across the adjacent woodland.

IV. FINDINGS

The site review of the Until PV Scale Solar site had identified limited findings in the way of specific wildlife species activity which could be tied to endangered or threatened species. The heavily forested parcel has limited potential to provide habitat other than for interior woodland species or to provide access to more favorable habitats in areas adjacent to the property.

No special concern species were observed in the field or evidence of their use of the site was noted. These findings were obviously related to a specific point in time which limits opportunities for identifying the extent of wildlife utilization or the lack of the same.

Specific observations were limited to animal tracks of coyote and deer and several common bird species like the pileated woodpecker, common yellowthroat, and blue jays.

ADDITIONAL HABITAT IN THE VICINITY

Based on the NH Wildlife Action Plan maps, the presence of Conservation or public lands in the vicinity of the project includes three small parcels to the north and west of the project site. A small parcel of conservation land is located immediately to the northwest of Lot R-12-26, across Towle Road (Lot R-12-29). This parcel is owned by Southeast Land Trust of New Hampshire.

More numerous public lands are scattered across Kingston with significant areas to the north, adjacent to the Danville town line. A significant area of public lands also occurs east of NH Route 125 in the vicinity of the two large ponds in that area.

POTENTIAL IMPACTS AND PROPOSED CONSERVATION MEASURES

Initial project planning efforts addressing impacts to the habitat values of the site included maintaining required setbacks to minimize any offsite impacts. As illustrated on the project plans, development of the northern portion of the parcel is not expected to threaten the existence of threatened or endangered species in the vicinity due to the availability of undisturbed habitats around the parcel. The limited quality and availability of on-site habitat values, combined with the continued availability of offsite habitats including extensive sandy soils would be a plus for the habitat requirements of species that occur in this region. Also, the continued availability of edge habitats after construction could contribute to the long-term availability of on-site habitat.

To further reduce the overall impact of the site development, the following conservation measures will be incorporated in the design.

- Avoid the use of welded plastic or "biodegradable plastic" netting or thread in erosion control matting, due to issues with snakes and wildlife being trapped and killed.
- The use of erosion control berm, white Filtrexx Degradable Woven Silt Sock, or several "wildlife friendly" options such as woven organic material (e.g., coco or jute matting such as North American green SC150BN or equivalent) are considered suitable alternatives.
- Open drainage systems should be utilized to the extent practical and should catch basins be required they shall not contain sumps.
- Minimize disturbance to wetland boundary areas, in order to maintain adjacent habitats and wildlife access along wetland edge.
- The timing of any tree clearing projects will be based on the least impacting alternative and should be conducted during the fall and winter months or November 1st till March 30th. At a minimum, tree clearing will be avoided to the extent practicable, May15th through August 15^{th,} during the bat's pup-rearing season as well as that of any nesting birds.
- Clearing of these woodlands will create new edge habitats that would benefit different species. Exposed soils at the edge of the woods could attract turtles and snakes. All turtle nests and observed Northern black racers should be report to NH Fish and Game.
- Limit the area/width of impervious surfaces for site access to the minimum required by the authority having jurisdiction.
- A wildlife friendly fence should be considered. We understand that the National Electric Safety Code that governs the project does not allow for raising the fence to provide clear passage for wildlife, but larger fabric openings could accomplish the same intent.

- Limit the areas of grubbing to the area of the PV facility only to maintain the existing duff layer outside the fence line (tree cut only).
- A low growing wildflower mix that can enhance the ecology of the area should be planted within the area of the PV facility.
- A vegetation management plan should be prepared that includes the use of no herbicides. Limiting the frequency of mowing within the PV facility area or the use of goats should be evaluated.
- In addition, statements will be added to the project plans to help prevent mortality to the Blanding's turtle, Northern black racer, and Spotted turtles since they are described in the surrounding area or could potentially occur at this site. Photos should also be added of these species to the project plans.
- Construction personnel will be informed of these species and instructed to contact supervisory personnel if any of the species are observed on the project site.
- Specific instructions for contacting NH Fish and Game, if these species are observed, will be incorporated on the plans.

Project plans shall also include the following wildlife protection notes:

- All observations of threatened and endangered species shall be reported to the NH Fish and Game non-game and endangered wildlife environmental review program by phone at 603-271-2461 and by email at NHFGreview@wildlife.nh.gov with the email subject line containing the subject line containing the NHB Datacheck Tool results letter assigned number, the project name, and the term Wildlife Species Observation.
- Photographs of the observed species and nearby elements of habitat or areas of land disturbance shall be provided to NHF&G in digital format at the above email address for verification, as feasible.
- In the event a threatened or endangered species is observed on the project site during the term of the permit, the species shall not be disturbed, handled, or harmed in any way prior to consultation with NHF&G and implementation of corrective actions recommended by NHF&G, if any, to assure the project does not appreciably jeopardize the continued existence of threatened and endangered species as defined in Fis 1002.04; and
- NHF&G, including its employees and authorized agents, shall have access to the property during the term of the permit.

SUMMARY OF FINDINGS

The potential for the presence of the various species noted in the NH NHB Datacheck Report is assumed to be primarily associated with the sandy soils on-site as well as the extent of these soils in the general area. With the continued availability of these sandy soils post development at the border of the site and the continued availability of access to off-site habitats, the surrounding area should continue to provide habitat values based on these site conditions.

There was no evidence observed of habitat use by any Threatened, Endangered, or other Special Concern Species. Observations during the site visit were limited to deer and coyote signs.

TECHNICAL REFERENCES

DeGraff, R.M., Rudis, D. *New England Wildlife: habitat, natural history, and distribution*. Gen Tech. Rep. NE-108. Bromhall, PA: U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station; 1986. 491 pp.

DeGraff, Richard M.; Yamasaki, Mariko; Leak, William B.; Lanier, John W. 1992. *New England wildlife: management of forested habitats.* Gen. Tech. Rep. NE-144, Radnor, PA; U.S. Department of Agriculture, Forest service, Northeastern Forest Experiment Station. 271 pp.

Elbroch, Mark. *Mammal Tracks and Sign: A guide to North American Species.* Stackpole Books. 2003.

Mitchell, J.C., A.R. Breisch, and K.A. Buhlman. 2006. *Habitat Management Guidelines for Amphibians and Reptiles of the Northeastern United States.* Partners in Amphibian and Reptile Conservation, Technical Publication HMG-3, Montgomery, Alabama.

New Hampshire Fish and Game Department. *NH Wildlife Action Plan, 2015 Revised Edition.* Glenn Normandeau, Director. 2020.

New Hampshire Fish and Game Department. *NH Wildlife Action Plan, 2015 Revised Edition.* Glenn Normandeau, Director. 2020.

JAMES R. FOUGERE

237 Beauty Hill Road, Center Barnstead, New Hampshire 03225
Phone: 603-269-4264 (Home) email: jimfougere@gmail.com

Wetland Scientist/ Wildlife Biologist

SUMMARY OF QUALIFICATIONS

- Over thirty years experience of direct experience in natural resource management and assessment, including wetland assessment. Projects included F O'Connor Superfund Site in Augusta, Maine; re-development of Manchester Airport; Route 3 in Massachusetts re-construction; Amtrak Electrification project from Boston to New Haven
- Prepared and contributed on a number of Environmental Impact documents and associated applications.
- Conducted field investigations relative to protected species, vernal pool habitats and habitat issues.

EDUCATION AND TRAINING

Education: University of Massachusetts, Amherst
Wildlife Biology, 1979

Registrations: New Hampshire Certified Wetland Scientist, Certificate No. 161
Certified in Habitat Evaluation Procedures, US Fish and Wildlife Service

PROFESSIONAL EXPERIENCE

Resource assessment throughout New England as well as North and South Dakota. This experience has included field investigations, environmental permitting for public and private sector development including transportation, commercial, and residential projects. Responsibilities have included wetland and wildlife habitat assessments and other site investigations as required for local, state, and federal regulatory requirements. Interaction with State and federal agencies including state agencies throughout New England as well as the US EPA and US Army Corps of Engineers has been an integral part of project management experience in the last twenty years.

Owner: Pond View Wetland Consultants, LLC
Center Barnstead, NH 03225
Date established: November 2011

Previous employers:

The Smart Associates, Environmental Consultants, Inc.
72 North Main Street, Concord, NH 03301
Dates of Employment: March 2016 to July 2018. Business closed.

Stoney Ridge Environmental Consultants LLC. Alton NH
Dates of Employment: Sept. 2009 to December 2009
Phone number: 603-776-5825

Schauer Environmental Consultants, LLC. Loudon, NH
Dates of Employment: May 2004 until July 2009.

The Smart Associates, Environmental Consultants, Inc. Concord, NH
Dates of Employment: July 1990 through May 2004.

B & C Associates, Inc. Hudson, MA.
Dates of employment: May 1988 through July 1990.

Wildlife Biologist:
Cheyenne River Sioux Tribe in South Dakota
(August 1983 through August 1987)

U.S. Fish and Wildlife Service in North and South Dakota
(July 1979 through August 1983) – Temporary appointments.

Representative Wildlife Issues addressed:

Many of the wildlife issues addressed during my time at The Smart Associates was addressed as part of the NEPA process such as the EIS/EA documentation, focusing of landscape scale habitat issues and minimizing impacts. Examples include Hillsborough Bypass, Manchester Airport Redevelopment, Bath-Lisbon Bypass,

Smaller development projects tend to focus more on local regulations or protected species.

The following provide more specific instances of addressing habitat issues.

- Biological Assessment for Short-nosed sturgeon at Connecticut River crossing for submerged power line associated with Amtrak redevelopment.
- Coordination with Vermont Fish and Game at Franklin County State Airport for runway extension. Issues included vernal pool assessment, and Grasshopper sparrow (*Ammodramus savannarum*) habitat impacts associated with runway extension.
- NE Cottontail coordination at Manchester Airport for tree clearing project.
- ID and locate Lupine at Concord Airport for taxiway upgrades. Hognose snake coordination as well.
- Keene Airport runway reconstruction: Design drainage structure upgrades to address issues with protected species.
- Most recent wildlife tasks included report mitigating potential impacts to Blandings turtles (*Emydoidea blandingii*) associated with snowmobile bridge upgrade in Bow.
- Numerous studies for vernal pool assessment, and the Northern Long-eared Bat (*Myotis septentrionalis*).

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

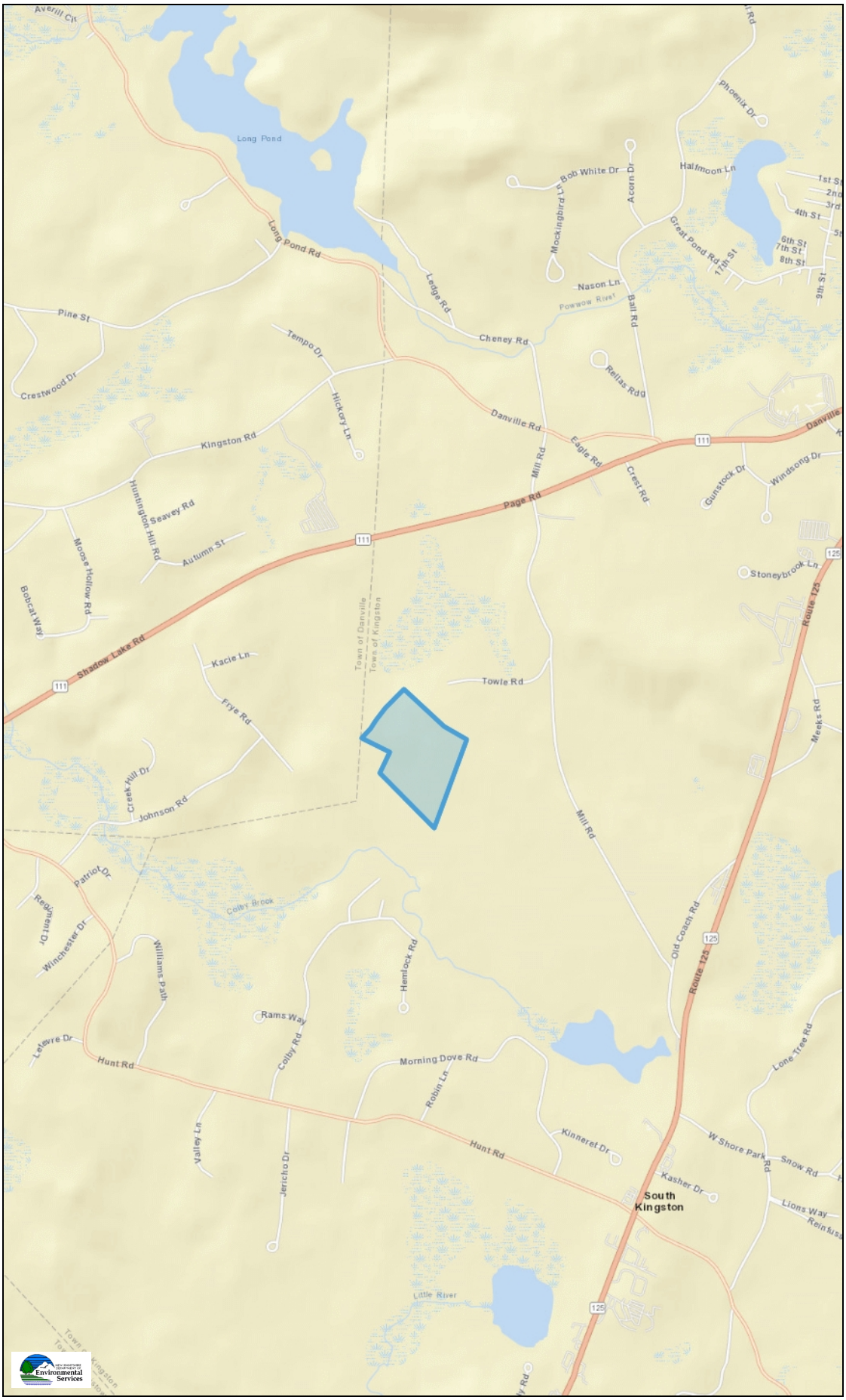
GIS Data Screening

Env-Wt 603.03

TFMoran, Inc.
48 Constitution Drive, Bedford, NH 03110
T(603) 472-4488 www.tfmoran.com

TFMoran, Inc. Seacoast Division
170 Commerce Way–Suite 102, Portsmouth, NH 03801
T(603) 431-2222

NHDES 100-yr Flood Plain



Legend

Map Scale

1: 24,000

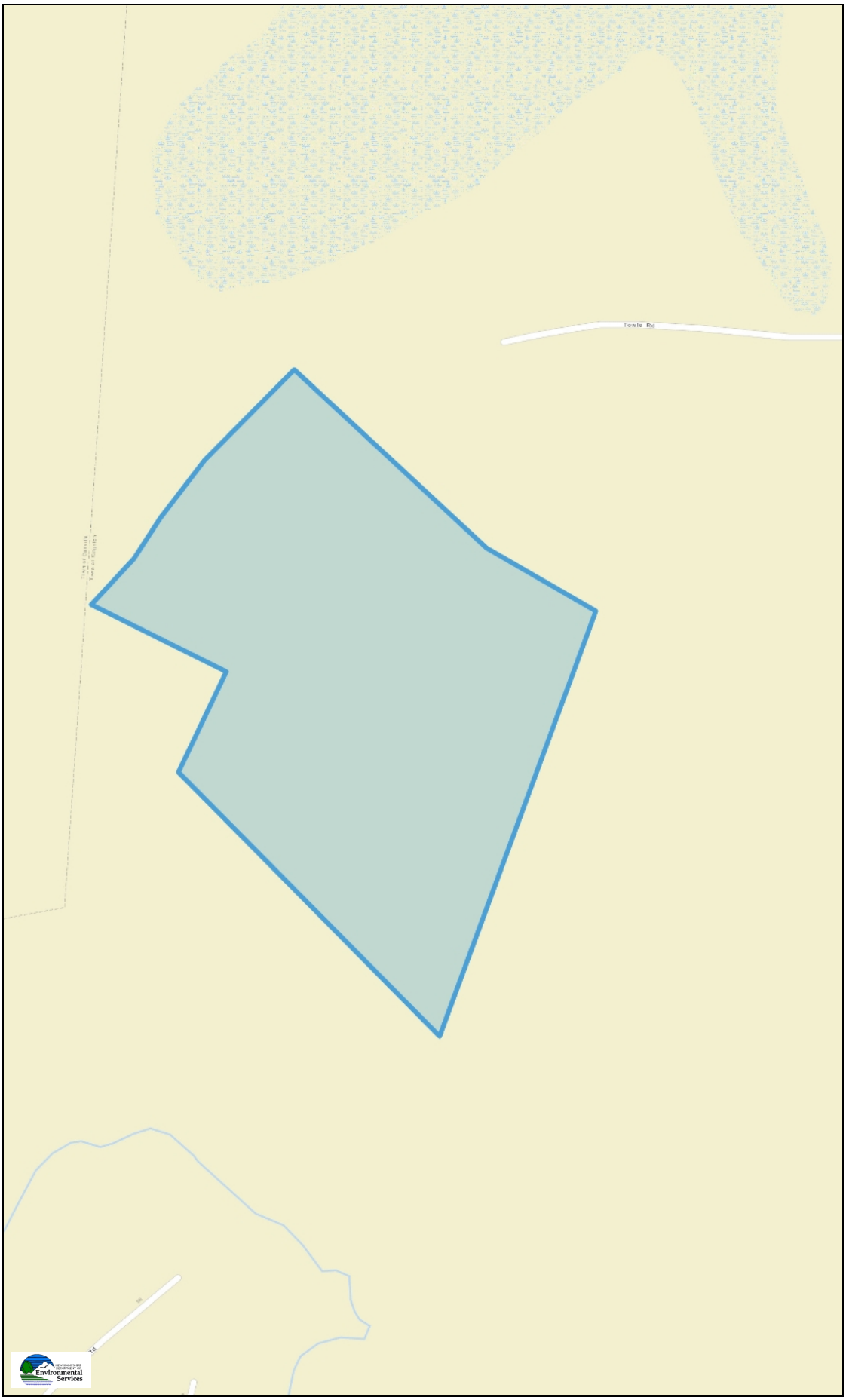
© NH DES, http://des.nh.gov

Map Generated: 6/16/2023

Notes

NHDES 100-yr Flood Plain
TFM Project No. 20025-00

NHDES Designated Rivers Check



Legend

Designated Rivers Quarterm
Buffer

Map Scale

1: 5,000

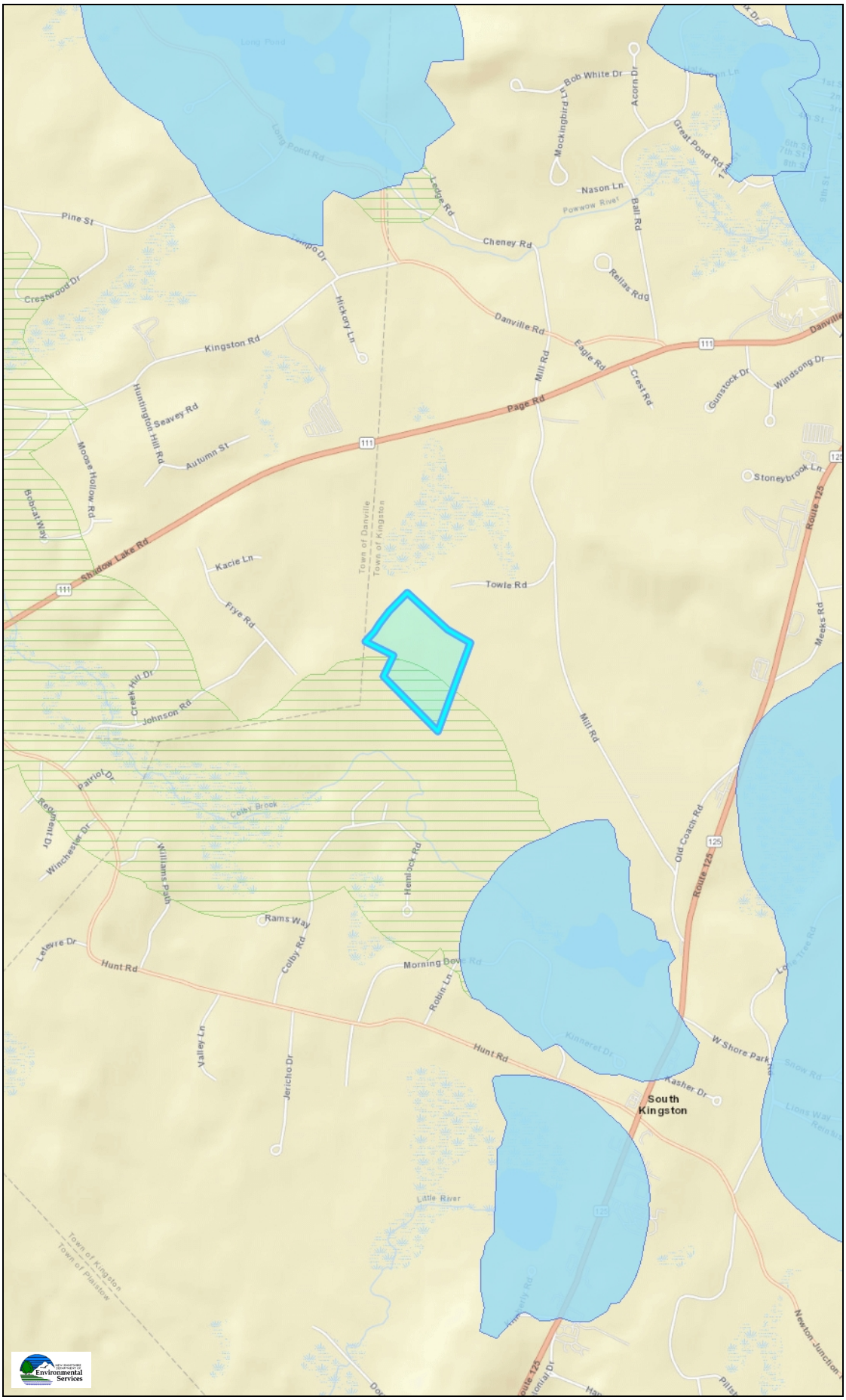
© NH DES, http://des.nh.gov

Map Generated: 6/16/2023

Notes

NHDES Designated Rivers Check
TFM Project No. 20025-00

NHDES Surface Water Impairments



Legend

- Class A Lakes with a Quarte Buffer
- Class A - All Features
- All Lakes, with a Quarter Mil Buffer
- Outstanding Resource Wate Watersheds
- Surface Waters with Impairn with Quarter Mile Buffer
- Watersheds with Chloride Impairments

Map Scale

1: 24,000

© NH DES, http://des.nh.gov

Map Generated: 6/19/2023

Notes

NHDES Surface Water Impairments
TFM Project No. 20025-00

Priority Resource Areas (PRA)

Legend

- Additional Lines
- City/Town
- Prime Wetlands
- Prime Wetlands with 100
- Peatland
- Tidal Wetland
  - Brackish Marsh
  - High Marsh Mix
  - High Marsh, J. gerardii
  - High Marsh, S.patens / D.spi
  - Low Marsh
  - Mudflat
  - Open Water
  - Panne
  - Phragmites australis
  - Pool
  - Recently Flooded Forest
  - Short form S. alterniflora
  - Terrestrial border
  - Wrack
- Flood Plain Wetlands Adj

Map Scale

1: 6,494

© NH GRANIT, www.granit.unh.edu

Map Generated: 6/16/2023

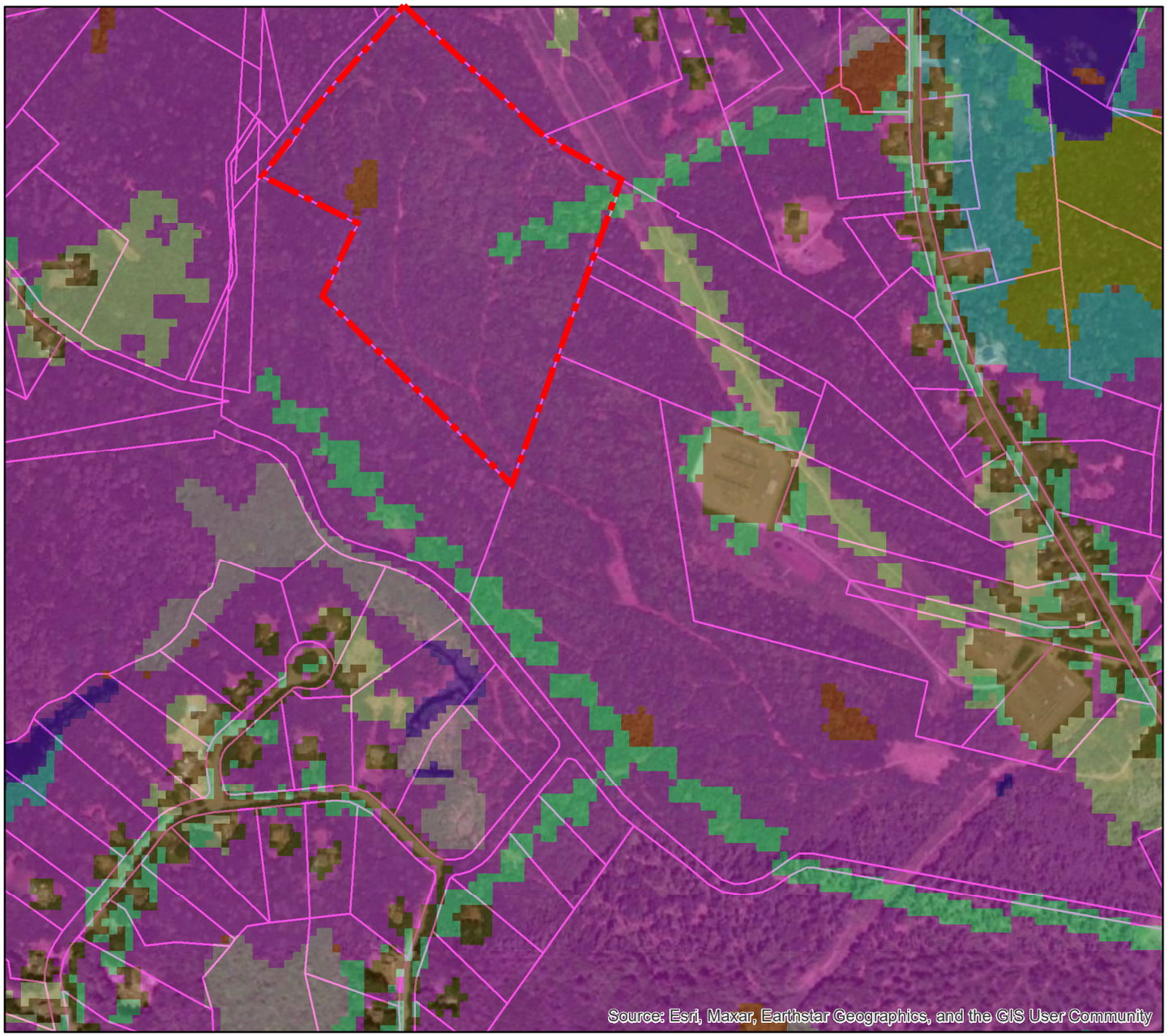
Notes

NHDES PRA
TFM Projects No. 20025-00

NH Fish and Game Wildlife Action Plan (WAP) Habitat Types

WAP HABITAT TYPES

- High-elevation spruce-fir
- Northern hardwood-conifer
- Open water
- Wet meadow/shrub wetland
- Peatland
- Lowland spruce-fir
- Developed or Barren land
- Northern swamp
- Rocky ridge
- Cliff and Talus
- Developed Impervious
- Grassland
- Floodplain forest
- Temperate swamp
- Hemlock-hardwood-pine
- Sand/Gravel
- Alpine
- Appalachian oak-pine
- Pine barren
- Salt marsh
- Coastal island
- Dune



0 0.125 0.25 0.5 0.75 1 Miles

N

SECTION 3

US Army Corps of Engineers ®
New England District

Appendix B
New Hampshire General Permits
Required Information and USACE Section 404Checklist

USACE Section 404 Checklist

1. Attach any explanations to this checklist. Lack of information could delay a USACE permit determination.
2. All references to "work" include all work associated with the project construction and operation. Work includes filling, clearing, flooding, draining, excavation, dozing, stumping, etc.
3. See GC 3 for information on single and complete projects.
4. Contact USACE at (978) 318-8832 with any questions.
5. The information requested below is generally required in the NHDES Wetland Application. See page 61 for NHDES references and Admin Rules as they relate to the information below.

1. Impaired Waters	Yes	No
1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See the following to determine if there is an impaired water in the vicinity of your work area. * https://nhdes-surface-water-quality-assessment-site-nhdes.hub.arcgis.com/ https://www.des.nh.gov/water/rivers-and-lakes/water-quality-assessment https://www4.des.state.nh.us/onestopdatamapper/onestopmapper.aspx	X	
2. Wetlands	Yes	No
2.1 Are there are streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work?		X
2.2 Are there proposed impacts to tidal SAS, prime wetlands, or priority resource areas? Applicants may obtain information from the NH Department of Resources and Economic Development Natural Heritage Bureau (NHB) DataCheck Tool for information about resources located on the property at https://www4.des.state.nh.us/NHB-DataCheck/.		X
2.3 If wetland crossings are proposed, are they adequately designed to maintain hydrology, sediment transport & wildlife passage?	N/A	
2.4 Would the project remove part or all of a riparian buffer? (Riparian buffers are lands adjacent to streams where vegetation is strongly influenced by the presence of water. They are often thin lines of vegetation containing native grasses, flowers, shrubs and/or trees that line the stream banks. They are also called vegetated buffer zones.)		X
2.5 The overall project site is more than 40 acres?		X
2.6 What is the area of the previously filled wetlands?	N/A	
2.7 What is the area of the proposed fill in wetlands?	20,406 SF	
2.8 What % of the overall project sire will be previously and proposed filled wetlands?	N/A	
3. Wildlife	Yes	No
3.1 Has the NHB & USFWS determined that there are known occurrences of rare species, exemplary natural communities, Federal and State threatened and endangered species and habitat, in the vicinity of the proposed project? (All projects require an NHB ID number & a USFWS IPAC determination.) NHB DataCheck Tool: https://www4.des.state.nh.us/NHB-DataCheck/. USFWS IPAC website: https://ipac.ecosphere.fws.gov/	X	

3.2 Would work occur in any area identified as either "Highest Ranked Habitat in N.H." or "Highest Ranked Habitat in Ecological Region"? (These areas are colored magenta and green, respectively, on NH Fish and Game's map, "2010 Highest Ranked Wildlife Habitat by Ecological Condition.") Map information can be found at: • PDF: https://wildlife.state.nh.us/wildlife/wap-high-rank.html. • Data Mapper: www.granit.unh.edu. • GIS: www.granit.unh.edu/data/downloadfreedata/category/databycategory.html.		X
3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, wetland/waterway) on the entire project site and/or on an adjoining property(s)?	X	
3.4 Does the project propose more than a 10-lot residential subdivision, or a commercial or industrial development?		N/A
3.5 Are stream crossings designed in accordance with the GC 31?		N/A
4. Flooding/Floodplain Values	Yes	No
4.1 Is the proposed project within the 100-year floodplain of an adjacent river or stream?		X
4.2 If 4.1 is yes, will compensatory flood storage be provided if the project results in a loss of flood storage?		N/A
5. Historic/Archaeological Resources		
For a minimum, minor or major impact project - a copy of the RPR Form (www.nh.gov/nhdhr/review) with your DES file number shall be sent to the NH Division of Historical Resources as required on Page 37 GC 14(d) of the GP document**	X	
6. Minimal Impact Determination (for projects that exceed 1 acre of permanent impact)	Yes	No
Projects with greater than 1 acre of permanent impact must include the following: • Functional assessment for aquatic resources in the project area. • On and off-site alternative analysis. • Provide additional information and description for how the below criteria are met.	N/A	
6.1 Will there be complete loss of aquatic resources on site?		
6.2 Have the impacts to the aquatic resources been avoided and minimized to the greatest extent practicable?		
6.3 Will all aquatic resource function be lost?		
6.4 Does the aquatic resource (s) have regional significance (watershed or ecoregion)?		
6.5 Is there an on-site alternative with less impact?		
6.6 Is there an off-site alternative with less impact?		
6.7 Will there be a loss to a resource dependent species?		
6.8 Are indirect impacts greater than 1 acre within and adjacent to the project area?		
6.9 Does the proposed mitigation replace aquatic resource function for direct, indirect, and cumulative impacts?		

*Although this checklist utilizes state information, its submittal to USACE is a federal requirement.

** If your project is not within Federal jurisdiction, coordination with NH DHR is not required under Federal law.

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

In Reply Refer To: June 28, 2023
Project code: 2023-0098646
Project Name: Unitil PV Kingston

Subject: Consistency letter for the 'Unitil PV Kingston' project under the amended February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion (dated March 23, 2023) for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat (NLEB).

To whom it may concern:

The U.S. Fish and Wildlife Service (Service) has received your request dated June 28, 2023 to verify that the **Unitil PV Kingston** (Proposed Action) may rely on the amended February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion Opinion (dated March 23, 2023) for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat (PBO) to satisfy requirements under section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 *et seq.*).

Based on the information you provided (Project Description shown below), you have determined that the Proposed Action will have <u>no effect</u> on the endangered Indiana bat (*Myotis sodalis*) or the endangered northern long-eared bat (*Myotis septentrionalis*). If the Proposed Action is not modified, **no consultation is required for these two species.** If the Proposed Action is modified, or new information reveals that it may affect the Indiana bat and/or northern long-eared bat in a manner or to an extent not considered in the PBO, further review to conclude the requirements of ESA section 7(a)(2) may be required.

For Proposed Actions that include bridge/culvert or structure removal, replacement, and/or maintenance activities: If your initial bridge/culvert or structure assessments failed to detect Indiana bats and/or NLEB use or occupancy, yet later detected prior to, or during construction, please submit the Post Assessment Discovery of Bats at Bridge/Culvert or Structure Form (User Guide Appendix E) to this Service Office within 2 working days of the incident. In these instances, potential incidental take of Indiana bats and/or NLEBs may be exempted provided that the take is reported to the Service.

If the Proposed Action may affect any other federally-listed or proposed species and/or designated critical habitat, additional consultation between the lead Federal action agency and this Service Office is required. If the proposed action has the potential to take bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act may also be required. In either of these circumstances, please advise the lead Federal action agency accordingly.

The following species may occur in your project area and **are not** covered by this determination:

- Monarch Butterfly *Danaus plexippus* Candidate
- Small Whorled Pogonia *Isotria medeoloides* Threatened

PROJECT DESCRIPTION

The following project name and description was collected in IPaC as part of the endangered species review process.

NAME

Unitil PV Kingston

DESCRIPTION

Install solar field

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.89755035,-71.09045084469739,14z

DETERMINATION KEY RESULT

Based on the information you provided, you have determined that the Proposed Action will have no effect on the endangered Indiana bat and/or the endangered northern long-eared bat. Therefore, no consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required for these two species.

QUALIFICATION INTERVIEW

1. Is the project within the range of the Indiana bat[1]?

   [1] See Indiana bat species profile

   Automatically answered
   No

2. Is the project within the range of the northern long-eared bat[1]?

   [1] See northern long-eared bat species profile

   Automatically answered
   Yes

3. [Semantic] Does your proposed action intersect an area where Indiana bats and northern long-eared bats are not likely to occur?

   Automatically answered
   Yes

DETERMINATION KEY DESCRIPTION: FHWA, FRA, FTA PROGRAMMATIC CONSULTATION FOR TRANSPORTATION PROJECTS AFFECTING NLEB OR INDIANA BAT

This key was last updated in IPaC on June 14, 2023. Keys are subject to periodic revision.

This decision key is intended for projects/activities funded or authorized by the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and/or Federal Transit Administration (FTA), which may require consultation with the U.S. Fish and Wildlife Service (Service) under Section 7 of the Endangered Species Act (ESA) for the endangered **Indiana bat** (*Myotis sodalis*) and the endangered **northern long-eared bat** (NLEB) (*Myotis septentrionalis*).

This decision key should only be used to verify project applicability with the Service's amended February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion (dated March 23, 2023) for Transportation Projects. The programmatic biological opinion covers limited transportation activities that may affect either bat species, and addresses situations that are both likely and not likely to adversely affect either bat species. This decision key will assist in identifying the effect of a specific project/activity and applicability of the programmatic consultation. The programmatic biological opinion is not intended to cover all types of transportation actions. Activities outside the scope of the programmatic biological opinion, or that may affect ESA-listed species other than the Indiana bat or NLEB, or any designated critical habitat, may require additional ESA Section 7 consultation.

IPAC USER CONTACT INFORMATION

Agency: TFMoran
Name: Margaret Levell
Address: 48 Constitution Drive
City: Bedford
State: NH
Zip: 03110
Email mlevell@tfmoran.com
Phone: 6034724488

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Army Corps of Engineers

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

In Reply Refer To: June 28, 2023
Project Code: 2023-0098646
Project Name: Unitil PV Kingston

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

To Whom It May Concern:

Updated 4/12/2023 - Please review this letter each time you request an Official Species List, we will continue to update it with additional information and links to websites may change.

About Official Species Lists

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. Federal and non-Federal project proponents have responsibilities under the Act to consider effects on listed species.

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 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. 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 by returning to an existing project's page in IPaC.

Endangered Species Act Project Review

Please visit the "**New England Field Office Endangered Species Project Review and Consultation**" website for step-by-step instructions on how to consider effects on listed

species and prepare and submit a project review package if necessary:

https://www.fws.gov/office/new-england-ecological-services/endangered-species-project-review

NOTE Please do not use the **Consultation Package Builder** tool in IPaC except in specific situations following coordination with our office. Please follow the project review guidance on our website instead and reference your **Project Code** in all correspondence.

Northern Long-eared Bat - (**Updated 4/12/2023**) The Service published a final rule to reclassify the northern long-eared bat (NLEB) as endangered on November 30, 2022. The final rule went into effect on March 31, 2023. You may utilize the **Northern Long-eared Bat Rangewide Determination Key** available in IPaC. More information about this Determination Key and the Interim Consultation Framework are available on the northern long-eared bat species page:

https://www.fws.gov/species/northern-long-eared-bat-myotis-septentrionalis

For projects that previously utilized the 4(d) Determination Key, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective. If your project was not completed by March 31, 2023, and may result in incidental take of NLEB, please reach out to our office at newengland@fws.gov to see if reinitiation is necessary.

Additional Info About Section 7 of the Act
Under section 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to determine whether projects may affect threatened and endangered species and/or designated critical habitat. If a Federal agency, or its non-Federal representative, determines 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 Federal agency also may need to consider proposed species and proposed critical habitat in the consultation. 50 CFR 402.14(c)(1) specifies the information required for consultation under the Act regardless of the format of the evaluation. 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:

https://www.fws.gov/service/section-7-consultations

In addition to consultation requirements under Section 7(a)(2) of the ESA, please note that under sections 7(a)(1) 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. Please contact NEFO if you would like more information.

Candidate species that appear on the enclosed species list have no current protections under the ESA. The species' occurrence on an official species list does not convey a requirement to

consider impacts to this species as you would a proposed, threatened, or endangered species. The ESA does not provide for interagency consultations on candidate species under section 7, however, the Service recommends that all project proponents incorporate measures into projects to benefit candidate species and their habitats wherever possible.

Migratory Birds

In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see:

https://www.fws.gov/program/migratory-bird-permit

https://www.fws.gov/library/collections/bald-and-golden-eagle-management

Please feel free to contact us at **newengland@fws.gov** with your **Project Code** in the subject line if you need more information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat.

Attachment(s): Official Species List

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".

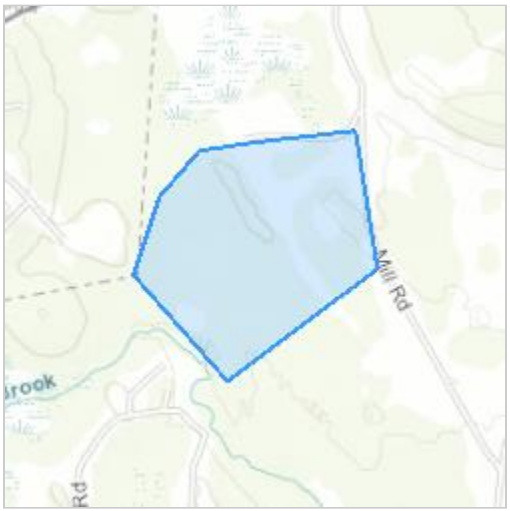
This species list is provided by:

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

PROJECT SUMMARY

Project Code: 2023-0098646
Project Name: Unitil PV Kingston
Project Type: Power Gen - Solar
Project Description: Install solar field
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.89755035,-71.09045084469739,14z



Counties: Rockingham County, New Hampshire

ENDANGERED SPECIES ACT SPECIES

There is a total of 3 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 Fisheries[1], 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.

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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
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

FLOWERING PLANTS

NAME	STATUS
Small Whorled Pogonia *Isotria medeoloides* Population: No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1890	Threatened

CRITICAL HABITATS

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

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: TFMoran
Name: Margaret Levell
Address: 48 Constitution Drive
City: Bedford
State: NH
Zip: 03110
Email mlevell@tfmoran.com
Phone: 6034724488

Memo

NH Natural Heritage Bureau
NHB DataCheck Results Letter

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

To: Jeremy Belanger
48 Consitution Dr
Bedford, NH 03110

From: NHB Review, NH Natural Heritage Bureau
Date: 9/23/2022 (valid until 09/23/2023)
Re: Review by NH Natural Heritage Bureau
Permits: MUNICIPAL POR - Kingston, NHDES - Alteration of Terrain Permit, NHDES - Wetland Standard Dredge & Fill - Major, USACE - General Permit, USEPA - Stormwater Pollution Prevention

NHB ID: **NHB22-3062** Town: Kingston Location: 2 Mill Road & 24 Towle Road
Description: Proposed Utility Scale Photovoltaic Generating (PV) Facility with associated access and stormwater management areas.
cc: NHFG Review

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

Comments **NHB: No comments at this time.**
F&G: Please refer to NHFG consultation requirements below.

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

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

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

Disclaimer: A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed

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

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

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

for certain species. An on-site survey would provide better information on what species and communities are indeed present.

IMPORTANT: NHFG Consultation

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

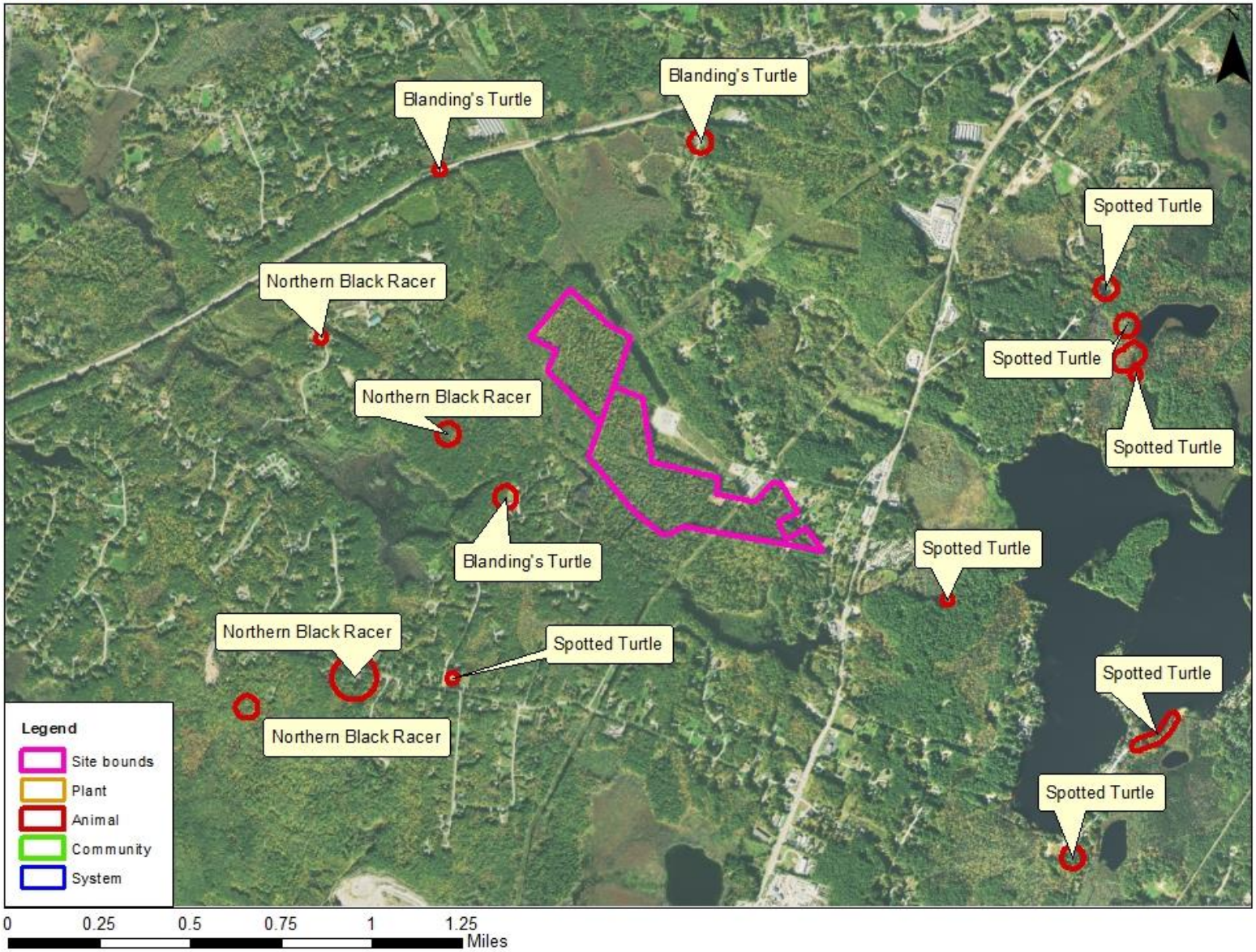
If this NHB Datacheck letter includes a record for a threatened (T) or endangered (E) wildlife species, consultation with the New Hampshire Fish and Game Department under Fis 1004 may be required. To review the Fis 1000 rules (effective February 3, 2022), please go to https://wildlife.state.nh.us/wildlife/environmental-review.html.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

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

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

CONFIDENTIAL – NH Dept. of Environmental Services review

NHB22-3062



New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status		**Conservation Status**	
Federal:	Not listed	Global:	Apparently secure but with cause for concern
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2014: Area 13928: 1 adult observed, sex unknown.
General Area: 2014: Area 13928: Roadside. Shrub wetland with sunny, sandy banks on either side of the road.
General Comments: --
Management Comments: --

Location

Survey Site Name: Colby Brook
Managed By:

County: Rockingham
Town(s): Danville
Size: .4 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2014: Area 13928: Route 111, about 1 mile east of junction with Route 111A , Danville (42.90604, -71.10044).

Dates documented

First reported: 2014-07-21 Last reported: 2014-07-21

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

CONFIDENTIAL – NH Dept. of Environmental Services review

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status

Federal: Not listed
State: Listed Endangered

Conservation Status

Global: Apparently secure but with cause for concern
State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2010: Area 12835: 1 juvenile female observed, dead on road.
General Area: 2010: Area 12835: Roadside in mixed forest.
General Comments: --
Management Comments: --

Location

Survey Site Name: Colby Brook
Managed By:

County: Rockingham
Town(s): Kingston
Size: 1.9 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2010: Area 12835: 60 Mill Road, Kingston.

Dates documented

First reported: 2010-07-23
Last reported: 2010-07-23

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status

Federal: Not listed
State: Listed Endangered

Conservation Status

Global: Apparently secure but with cause for concern
State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2021: Area 14857: 1 adult female observed, laying eggs in compost pile.
General Area: 2021: Area 14857: Compost pile in residential yard near Colby Brook. Houses surrounded by wetlands and woods.
General Comments: --
Management Comments: --

Location

Survey Site Name: Colby Brook
Managed By:

County: Rockingham
Town(s): Kingston
Size: 1.9 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2021: Area 14857: 2 Beaver Pond Road, Kingston.

Dates documented

First reported: 2021-06-05
Last reported: 2021-06-05

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Northern Black Racer (*Coluber constrictor constrictor*)

Legal Status		**Conservation Status**	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Threatened	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2020: Area 14796: 1 adult observed, sex unknown. 2015: Area 14022: 1 adult observed, sex unknown.
General Area: 2020: Area 14796: Town forest with hiking trails. 2015: Area 14022: Roadside in cul-de-sac. Snake went into the woods to north towards horse farm.
General Comments: --
Management Comments: --

Location

Survey Site Name: Colby Brook
Managed By:

County: Rockingham
Town(s): Kingston
Size: 2.4 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2020: Area 14796: Along the White Trail in Frye Town Forest, Kingston. 2015: Area 14022: 38 Creek Hill Drive, Danville.

Dates documented

First reported: 2015-06-08 Last reported: 2020-07-20

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Northern Black Racer (*Coluber constrictor constrictor*)

Legal Status

Federal: Not listed
State: Listed Threatened

Conservation Status

Global: Demonstrably widespread, abundant, and secure
State: Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2017: Area 14372: 1 adult observed, sex unknown. Area 14374M: 1 adult observed, sex unknown on 8/26. 1 adult observed, sex unknown on 8/31.
General Area: 2017: Area 14372: Residential yard. Area 14374: Forest.
General Comments: --
Management Comments: --

Location

Survey Site Name: Colby Brook, south of
Managed By:

County: Rockingham
Town(s): Kingston
Size: 9.6 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2017: Area 14372: 66 Hunt Road, Kingston. Area 14374M: Hunt Road Town Forest.

Dates documented

First reported: 2017-06-24
Last reported: 2017-08-31

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Spotted Turtle (*Clemmys guttata*)

Legal Status		**Conservation Status**	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Threatened	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Fair quality, condition and/or landscape context ('C' on a scale of A-D).
Comments on Rank: --

Detailed Description: 2015: Area 11751M: 1 adult female observed. Area 14090: 1 adult female observed. 2008: Area 11554: 1 adult female seen. Turtle was nesting. 2007: Area 11751M: 1 female seen. One hatchling emerged in fall from nest. Nest was partially dug up by observer later in fall when another hatchling was observed partially emerged from shell.

General Area: 2015: Area 11751M: Residential yard, in between driveway and pool fence. Area 14090: Residential yard, on the edge of the treeline. There is a small marshy area toward the back of the property, with cattails, sedges, and rushes. 2008: Area 11554: In yard at residence. 2007: Area 11751M: Yard at residence.

General Comments: --
Management Comments: --

Location

Survey Site Name: Colby Brook, south of
Managed By:

County: Rockingham
Town(s): Hampstead
Size: 8.6 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2015: Area 14090: 1 Colby Road, Kingston. 2008: Area 11554: 3 Sean Drive, Hampstead. 2007: Area 11751M: 3 Sean Drive, Hampstead.

Dates documented

First reported: 2007-06-20 Last reported: 2015-06-25

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

CONFIDENTIAL – NH Dept. of Environmental Services review

New Hampshire Natural Heritage Bureau - Animal Record

Spotted Turtle (*Clemmys guttata*)

Legal Status		**Conservation Status**	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Threatened	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Fair quality, condition and/or landscape context ('C' on a scale of A-D).
Comments on Rank: --

Detailed Description: 2019: 2019 Survey area: 1 female captured during trap survey. Area 14608: 1 adult observed, sex unknown. 2018: Area 14472: 2 individuals observed, sex unknown. 2017: Area 12739M: 1 adult observed, sex unknown. 2015: Area 14007: 1 adult observed, sex unknown. 2014: Area 13641M: 1 adult observed, sex unknown, on 6/7. 1 adult observed, sex unknown, on 8/24. Area 13680: 1 adult observed, sex unknown. 2012: Area 12739M: 1 adult and 2 juveniles observed. 2011: Area 12739M: 1 adult observed. Area 13103: 1 adult observed. 2010: Area 12739M: 1 adult observed. 1991: Area 6601: Seen.

General Area: 2019: Area 14608: Roadside. 2018: Area 14472: Basking on a log in small pond. 2014: Area 13641M: Forested wetland. Area 13680: Shrub wetland. 2011: Area 12739M: Cedar swamp and brushy marsh. Area 13103: Dirt road adjacent to stream. 1991: Area 6601: Pond.

General Comments: 1991: Area 6601: Student told James Taylor.

Management Comments: --

Location

Survey Site Name: Country Pond
Managed By: Webster Wildlife + Natural Area

County: Rockingham
Town(s): Kingston
Size: 13.4 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2019: Area 14608: Country Pond Road, Newton. 2018: Area 14472: Webster Wildlife and Natural Area. 2014: Area 13641M: Webster Wildlife and Natural Area. Area 13680: [Heath Street, Newton, near BandM railroad]. 2011: Area 13103: [Green Road north of Cedar Swamp Pond]. 2010: Area 12739M: Webster Wildlife and Natural Area. 1991: Area 6601: Ridge Road near Country Pond.

Dates documented

First reported: 1991 Last reported: 2019-06-04

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

CONFIDENTIAL – NH Dept. of Environmental Services review

Please mail the completed form and required material to:

New Hampshire Division of Historical Resources
State Historic Preservation Office
Attention: Review & Compliance
19 Pillsbury Street, Concord, NH 03301-3570

RECEIVED JAN 18 2023

DHR Use Only	
R&C #	14607
Log In Date	1/18/23
Response Date	2/2/23
Sent Date	2/7/23

Request for Project Review by the New Hampshire Division of Historical Resources

☒ This is a new submittal
☐ This is additional information relating to DHR Review & Compliance (R&C) #:

GENERAL PROJECT INFORMATION

Project Title Unitil Scale PV Solar

Project Location 24 Towle Road

City/Town Kingston Tax Map R12 Lot # 26

NH State Plane - Feet Geographic Coordinates: Easting 1138290 Northing 145964
(See RPR Instructions and R&C FAQs for guidance.)

Lead Federal Agency and Contact *(if applicable)* USACE, EPA
(Agency providing funds, licenses, or permits)
Permit Type and Permit or Job Reference # NH GP, eNOI

State Agency and Contact *(if applicable)* NHDES

Permit Type and Permit or Job Reference # AoT, Wetlands

APPLICANT INFORMATION

Applicant Name Jacob Dusling, PE

Mailing Address 30 Energy Way Phone Number (603) 773-6529

City Exeter State NH Zip 03833 Email Dusling@unitil

CONTACT PERSON TO RECEIVE RESPONSE

Name/Company Nicholas Golon, PE/ TFMoran, Inc.

Mailing Address 48 Consitution Drive Phone Number (603) 472-4488

City Bedford State NH Zip 03110 Email ngolon@tfmoran.com

This form is updated periodically. Please download the current form at www.nh.gov/nhdhr/review. *Please refer to the Request for Project Review Instructions for direction on completing this form.* Submit one copy of this project review form for each project for which review is requested. Please include a self-addressed stamped envelope. Project submissions will not be accepted via facsimile or e-mail. This form is required. Review request form must be complete for review to begin. Incomplete forms will be sent back to the applicant without comment. Please be aware that this form may only initiate consultation. For some projects, additional information will be needed to complete the Section 106 review. All items and supporting documentation submitted with a review request, including photographs and publications, will be retained by the DHR as part of its review records. Items to be kept confidential should be clearly identified. For questions regarding the DHR review process and the DHR's role in it, please visit our website at: www.nh.gov/nhdhr/review or contact the R&C Specialist at marika.s.labash@dncr.nh.gov or 603.271.3558.

PROJECTS CANNOT BE PROCESSED WITHOUT THIS INFORMATION

Project Boundaries and Description

- ☒ Attach the Project Mapping ***using EMMIT or relevant portion of a 7.5' USGS Map.*** *(See RPR Instructions and R&C FAQs for guidance.)*
- ☒ Attach a detailed narrative description of the proposed project.
- ☒ Attach a site plan. The site plan should include the project boundaries and areas of proposed excavation.
- ☒ Attach photos of the project area (overview of project location and area adjacent to project location, and specific areas of proposed impacts and disturbances.) *(Informative photo captions are requested.)*
- ☒ A DHR records search must be conducted to identify properties within or adjacent to the project area. Provide records search results via EMMIT or in **Table 1**. *(Blank table forms are available on the DHR website.)* Please note, using EMMIT Guest View for an RPR records search does not provide the necessary information needed for DHR review.
  EMMIT or in-house records search conducted on 12/21/2022.

Architecture

Are there any buildings, structures (bridges, walls, culverts, etc.) objects, districts or landscapes within the project area? ☐ Yes ☒ No
If no, skip to Archaeology section. If yes, submit all of the following information:

Approximate age(s): N/A

- ☒ Photographs of ***each*** resource or streetscape located within the project area, with captions, along with a mapped photo key. (Digital photographs are accepted. All photographs must be clear, crisp and focused.)
- ☐ If the project involves rehabilitation, demolition, additions, or alterations to existing buildings or structures, provide additional photographs showing detailed project work locations. (i.e. Detail photo of windows if window replacement is proposed.)

Archaeology

Does the proposed undertaking involve ground-disturbing activity? ☒ Yes ☐ No
If yes, submit all of the following information:

- ☒ Description of current and previous land use and disturbances.
- ☒ Available information concerning known or suspected archaeological resources within the project area (such as cellar holes, wells, foundations, dams, etc.)

Please note that for many projects an architectural and/or archaeological survey or other additional information may be needed to complete the Section 106 process.

DHR Comment/Finding Recommendation *This Space for Division of Historical Resources Use Only*

☐ Insufficient information to initiate review. ☐ Additional information is needed in order to complete review.

☐ No Potential to cause Effects ☐ No Historic Properties Affected ☑ No Adverse Effect ☐ Adverse Effect

Comments: CONCUR WITH RESULTS OF PHASE 1-A SURVEY + RECOMMENDATION OF NO FURTHER STUDY.

Please contact the SHPO should public concerns be raised regarding impacts to historic properties.

If plans change or resources are discovered in the course of this project, you must contact the Division of Historical Resources as required by federal law and regulation.

Authorized Signature: Nancy Muller, DSHPO Date: 2/2/23

Unitil Scale PV Solar

January 3, 2023

- Individual Properties < 10 acres
- Individual Properties > 10 acres
- Historic Districts
- Project Areas
- Counties
- Towns

1:24,000

0 0.2 0.4 0.8 mi

0 0.325 0.65 1.3 km

Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

24 Towle Road, Kingston, NH 03848

Project Title: Unitil Scale PV Solar 24 Towle Road, Kingston, NH 03848 Tax Map R-12, Lot 26				DHR R&C #:
RPR Table 1: PREVIOUSLY SURVEYED OR LISTED PROPERTIES				
NH DHR Property Name / Historic District Name	NH DHR Inventory #	National Register-listed, Eligible, or Not Eligible	Date of Determination (mm/dd/yy)	National Register Criteria of Significance (if applicable)
Peaslee Tavern	KIN0030	NR Eligible	10/08/03	N/A

Required Information for Projects with Compensatory Mitigation – Env-Wt 311.08

Env-Wt 311.08 (a) - This project proposes to permanently impact approximately 20,406 sf. (0.46 acres) and temporarily impact 18,964 sf. of forested wetlands for the purpose of constructing a 5 MW solar array field and associated infrastructure. As a result of the project proposing greater than 10,000 square feet of wetland impact area, this project is classified as a "Major Project."

The applicant is working with the Town of Kingston Conservation Commission and the Friends of Kingston Open Spaces (FOKUS) to utilize approximately 8-acres of lot R-11-9 adjacent to the project site, as aquatic resource buffer preservation.

Env-Wt 312.04 (a) – In accordance with Env-Wt 801.02**,** we have provided a detailed explanation supporting the type of mitigation proposed below.

Env-Wt 801.03 – We have determined that practical permittee-responsible mitigation opportunities do not exist on-site but are available on the adjacent lot, also under control by the applicant. The applicant is working with the Town of Kingston Conservation Commission and the Friends of Kingston Open Spaces (FOKUS) to utilize a portion of lot R-11-9 adjacent to the project site, as aquatic resource buffer preservation. At a meeting with the Kingston Com-Com on July 13, 2023, the general location and size of the potential conservation easement was discussed and generally accepted subject to further review with the Commission and FOKUS. Through subsequent discussion with Rick Russman of FOKUS, a conservation easement area of 8+/- acres is proposed with the expectation that the Southeast Land Trust of NH (SELT) would be the steward of the easement as they are managing other easements in the immediate vicinity of the project.

Env-Wt 803.01 (a) – The project proposes to permanently impact approximately 20,406 sf. and temporarily impact 18,964 sf. of forested wetlands classified as a *Palustrine Forested, Broad-Leaved, Deciduous (PFO1) and Palustrine Broad-Leaved Evergreen (PFO3).*

Env-Wt 803.01 (b) – The project proposes to permanently impact approximately 20,406 sf. and temporarily impact 18,964 sf. of forested wetlands classified as a *Palustrine Forested, Broad-Leaved, Deciduous (PFO1) and Palustrine Broad-Leaved Evergreen (PFO3). These wetlands are seasonally flooded/ saturated, acidic with organic soils.* The wetlands are depicted on the Wetlands Classification Plan.

Env-Wt 803.01 (c) – Neither wetland restoration, wetland creation, or payment to the aquatic resource mitigation (ARM) fund are proposed. Based on coordination with Kingston Conservation Commission and the Friends of Kingston Open Spaces (FOKUS) aquatic resource buffer preservation was determined to be in the best interests of all parties involved.

Env-Wt 803.01 (d) – Mitigation plan is included in this submittal.

Env-Wt 803.01 (e) – See attached functional assessment associated with lot R-12-26, specifically wetlands 1, 2, 3, 4 & 5.

Env-Wt 803.01 (f) – See attached functional assessment associated with lot R-11-19, specifically wetland 5.

Env-Wt 803.01 (g) – This document serves as a draft of our complete mitigation proposal. Once approved by NHDES, it will serve as the Final Complete Mitigation Proposal.

Env-Wt 803.01 (h) – See attached functional assessment associated with lot R-11-19, specifically wetland 5.

Env-Wt 803.01 (i) – Wetland restoration or creation is not proposed.

Env-Wt 803.01 (j) – Stream restoration is not proposed.

Env-Wt 803.01 (k) – Email correspondence with the Kingston Conservation Commission and the Friends of Kingston Open Spaces (FOKUS) is included in this submittal.

Env-Wt 803.01 (l) – No impacts are proposed within a Designated River Corridor.

Env-Wt 803.01 (m) – Not applicable.

Env-Wt 803.05 – An In-Lieu Mitigation Payment is not proposed.

Env-Wt 803.06 – The mitigation site is located immediately adjacent and downstream of the impacted area and the Southeast Land Trust of NH manages conservation land in the immediate vicinity.

Env-Wt 803.08 – The applicant is proposing a 17:1 ratio where a 10:1 ratio of forested wetland impact is required for Aquatic Resource Buffer Preservation.

Env-Wt 804.01 (a) – The upland buffer preservation area proposed for compensatory mitigation is located adjacent of a jurisdictional area that meets or exceeds the functions and values of the jurisdictional areas to be impacted by the project, as determined through a functional assessment.

Env-Wt 804.01 (b) – As documented in the functional assessment the protecting this resource will benefit water quality, wildlife habitat and other functions and values of wetlands and surface waters.

Env-Wt 804.01 (c) – The upland buffer preservation area proposed is consistent with the local and regional land use conservation goals. Coordination with the Kingston Conservation Commission and the Friends of Kingston Open Spaces (FOKUS) has yielded a successful outcome as the land to be placed in conservation contingent on the Southeast Land Trust of NH (SELT) confirming their ability to provide stewardship.

Env-Wt 804.2 (a) – The upland buffer preservation area proposed is no less than 100 feet wide and is contiguous with the resource.

Env-Wt 807.02 (c) – Within 60-days after issuances of the permit, the permittee will submit verification that the compensatory mitigation area has been marked by permanent monuments and signs indicating the location of the area.

Report and Analysis

Introduction

This report was completed to accompany local approval requirements necessary to impact approximately 20,406 +/- square feet of wetlands on the more westerly property (Tax Map: R-12, Lot: 26) for the purpose of constructing a new solar array field and associated infrastructure.

In accordance with Article 202 of the Town of Kingston Wetlands Conservation District regulations, the *Functions and Values* of the relevant wetlands were assessed so that specific buffers widths can be applied.

Methods

The property, more specifically referenced on the Town of Kingston Assessor Map as Tax Map: R-11 Lot: 9 was assessed for the presence of wetlands by Certified Wetlands Scientist (CWS), Jason R. Aube #313, in October, 2022, using the Corps of Engineers Wetlands Delineation Manual (January 1987) and the Regional Supplement to the U.S. Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0 (January 2012). Vegetation was assessed using the Northcentral and Northeast 2016 Regional Wetland Plant List, Version 3.3, 2016, published by the US Army Corps of Engineers.

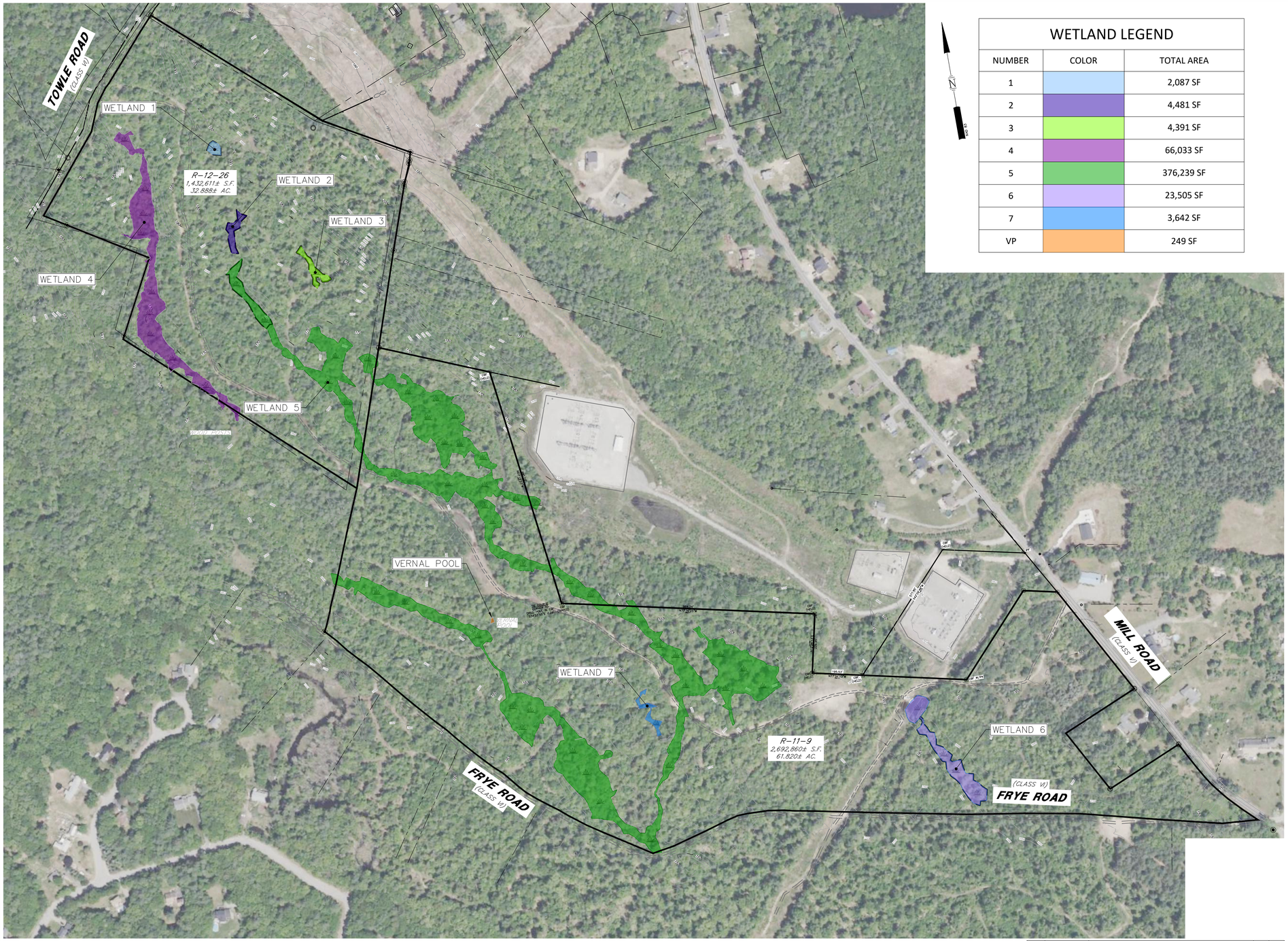
Each wetland was classification using the Wetlands and Deepwater Habitats of United States, adapted from the Cowardin, Carter, Gotlet and LaRoe (1979), August 2013, FGDC-STD-004-2013

The *Functions and Values* of each wetland were assessed using the US ACE Highway Methodology Workbook, dated 1993, together with the US ACE New England District Highway Method Workbook Supplement, dated 1999.

The NH Fish and Game Wildlife Action Plan (WAP) was used to assess the habitat types and the ranking of habitats within the project area.

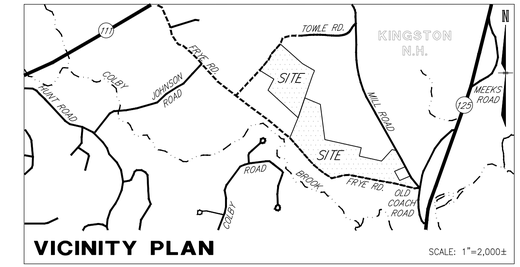
Wetland Buffer Application

All wetlands were assessed for the purpose of determining the appropriate buffers widths. While two of these wetland are proposed to be filled completely, we performed an assessment of their Functions and Values for the purpose of demonstrating overall Avoidance and Minimization to the highest value, highest functioning wetland resources on the properties. Each wetland has been given a unique number and they are depicted on the *Functions and Values Assessment Plan*.



WETLAND LEGEND

NUMBER	COLOR	TOTAL AREA
1		2,087 SF
2		4,481 SF
3		4,391 SF
4		66,033 SF
5		376,239 SF
6		23,505 SF
7		3,642 SF
VP		249 SF



VICINITY PLAN

SCALE: 1"=2,000±

NOTES

1. OWNER OF RECORD OF MAP R-11 LOT 9:
   RICHARD W. SENTER (TRUSTEE)
   TWO MILL ROAD REALTY TRUST
   86 ROCKRIMMON ROAD
   KINGSTON, NH 03848
   DEED REFERENCE TO PARCEL IS BK. 2893 PG. 2178

   AREA OF PARCEL = 2,692,860 S.F.± OR 61.820 ACRES±

   OWNER OF RECORD OF MAP R-12 LOT 26:
   RICHARD W. SENTER (TRUSTEE)
   24 TOWLE ROAD REALTY TRUST
   86 ROCKRIMMON ROAD
   KINGSTON, NH 03848
   DEED REFERENCE TO PARCEL IS BK. 2893 PG. 2190

   AREA OF PARCEL = 1,432,611 S.F.± OR 32.888 ACRES±

2. R-11-9 INDICATES TAX MAP AND LOT NUMBER.

3. THE PURPOSE OF THIS PLAN IS TO SHOW A CONCEPTUAL SOLAR ARRAY LAYOUT.

4. CURRENT ZONING DISTRICT: RURAL RESIDENTIAL (RR)
   MINIMUM LOT FRONTAGE: 200 FEET ON CLASS V HIGHWAY OR BETTER.
   MINIMUM BUILDING SETBACKS:
   FRONT: 30 FEET
   SIDE: 20 FEET
   REAR: 20 FEET
   *COMMERCIAL USE WITHIN RURAL RESIDENTIAL ZONING DISTRICT REQUIRES A 50 FOOT VEGETATIVE BUFFER.

5. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR ROCKINGHAM COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33015C0390E, EFFECTIVE DATE MAY 17, 2005, INDICATES THAT THE SUBJECT PARCELS ARE NOT LOCATED WITHIN A FLOOD HAZARD AREA.

6. HORIZONTAL DATUM: NAD83(2011)
   VERTICAL DATUM: NAVD88
   BENCHMARKS SET: AS NOTED

7. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL(S) MAY DETERMINE.

8. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG-SAFE AT 811.

9. CONCEPTUAL LAYOUT OF SOLAR ARRAY BASED UPON INFORMATION PROVIDED BY ARRAY MANUFACTURER. FINAL LAYOUT AND ARRAY LOCATIONS TO BE FINALIZED BY UNITIL IN COORDINATION WITH MANUFACTURER.

Unitil

CONCEPTUAL SITE PLANS

TAX MAP R12 LOTS 25 & 26

FUNCTIONS AND VALUES ASSESSMENT

UNITIL KINGSTON SOLAR PROJECT

24 TOWLE ROAD
KINGSTON, NH 03848

PREPARED FOR

UNITIL ENERGY SYSTEMS
30 ENERGY WAY
EXETER, NH 03833

SCALE: 1"=200' **DECEMBER 8, 2022**

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48 Constitution Drive, Bedford, N.H. 03110

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

HORIZONTAL SCALE 1"=200'
200 100 0 200

REV	DATE	DESCRIPTION	DR	CK
1	02/21/2023	REV FOR CONSULTANT	ML	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	DR	JC	FB		
20025-00	CK	NG	CADFILE	20025-00 FUNCTIONS AND VALUES	EX-01

Town of Kingston Buffer Width Determination Table
Mill Road, Tax Map: R-11, Lot: 9

Principal Functions/ Values	Wetland 5	Wetland 6	Wetland 7
(FA) Floodflow Alteration	1	X	X
(GW) Groundwater Recharge/ Discharge	2	2	X
(NR) Nutrient Removal	2	2	X
(PE) Product Export	2	2	X
(SR) Sediment/ Toxicant Reduction	2	X	X
(SS) Shoreline/ Sediment Stabilization	X	X	X
(WH) Wildlife Habitat	3	3	X
(FH) Fish/ Shellfish Habitat	X	X	X
(ESH) Endangered Species Habitat	YES	X	X
TOTAL SCORE	12	9	0
BUFFER WIDTH	**100-feet**	**70-feet**	**No Buffer**

X = not a *Principal Function*

*A 100-foot buffer has been applied to the Vernal Pool located on the property.

Narrative on Functional Assessment

Env-Wt 311.10

Introduction

This *Wetland Functional Assessment* was performed to support a NHDES Wetlands Permit Application to impact 20,012 +/- square feet of wetlands for the purpose of constructing a new solar array field adjacent to an existing electric utility corridor on the neighboring property. This *Wetland Functional Assessment* assesses the wetlands on the Mill Road property, more specifically, Tax Map: R-11, Lot: 9 and demonstrates how the designers of this project have avoided and minimized impacts to the highest functioning, highest value resources.

Methods

The wetland boundaries were delineated using the Federal Delineation Manual, more particularly, the United State Army Corps of Engineers (ACOE) "Wetlands Delineation Manual", Technical Report Y-87-1, US ACE, January 1987, and the "Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Northcentral and Northeast Region", Version 2.0, US ACE, January 2012.

The presence of dominant hydrophytic vegetation was determined using the North central and Northeast 2016 Regional Wetland Plant List, Version 3.3, 2016, published by the Army Corps of Engineers.

Hydric soils were determined using the NH Hydric Soils Technical Committee's, "Field Indicators for Identifying Hydric Soils in New England", Version 4, 2017, Published by the New England Interstate Water Pollution Control Commission.

The wetlands were classified based on the Classification of Wetlands and Deepwater Habitats of the United States, adapted from Cowardin, Carter, Golet and LaRoe (1979), August 2013, FGDC-STD-004-2013.)

This Functional Assessment was performed when conducting the wetlands delineations in October of 2022 and a subsequent field visit on January 11, 2023. The wetlands were assessed using the *Army Corps of Engineers Highway Methodology* (September 1999, NAEEP-360-1-30a). Ecological Integrity was determined using the Method for Inventorying and Evaluating Freshwater Wetlands in New Hampshire – the NH Method, December 2015.

This Wetlands Functional Assessment assesses three (3) distinct wetlands on the properties. A colored coded Wetlands Functional Assessment Plan has been prepared so that each of these wetlands can be better differentiated.

Wetland Function-Value Evaluation Form

Total area of wetland 2,087 SF Human made? No Is wetland part of a wildlife corridor? no or a "habitat island"? no

Adjacent land use Undeveloped/ Forested/ ATV Use Distance to nearest roadway or other development 250-feet

Dominant wetland systems present PFO1/3 Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper/ mid reach

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland #1

Latitude 42.89418 Longitude -71.08829

Prepared by: Jay Aube Date 1/15/2023

Wetland Impact:
Type Fill Area 2,087 SF

Evaluation based on:
Office yes Field yes

Corps manual wetland delineation completed? Y X N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	1,2,5,8	N	Wetland is relatively small.
Floodflow Alteration	N	2,5	N	Wetland is relatively small, very little storage capacity.
Fish and Shellfish Habitat	N	1,2	N	Wetland not associated with a water course.
Sediment/Toxicant Retention	Y	4,6	N	Wetlands not associated with a water course.
Nutrient Removal	N	7	N	Wetland is small, vegetation not diverse, no deep water.
Production Export	Y	2,4	N	Wetland is small, sparse vegetation - not diverse.
Sediment/Shoreline Stabilization	N		N	No open water.
Wildlife Habitat	Y	1,3,4,5,7	N	Wetland is small, lacks diversity and hydrology.
Recreation	N		N	No trail network or public access.
Educational/Scientific Value	Y	2	N	Remote, no public access.
Uniqueness/Heritage	Y		N	Forested area, lacks uniqueness, not diverse, no public access.
Visual Quality/Aesthetics	Y		N	Only one wetland class, lacks diversity
ES Endangered Species Habitat	Y		N	Wetland small - not critical to T & E species.
Other Ecological Integrity	Y	NH Method	N	Wetland is small and not a representative exemplary wetland.

Notes: Ecological Integrity Score = 6.5

* Refer to backup list of numbered considerations.

NH METHOD FOR EVALUATING FRESHWATER WETLANDS

Wetland Name/ Code: Wetland #5 **Evaluation Date:** 1/10/2023 **Evaluator:** Jay Aube

ECOLOGICAL INTEGRITY

Evaluation Question	Observations & Notes	Answers	Score
Are there land uses in the wetland's watershed that could degrade water quality in the wetland?	Yes, an extensive network of off-road and ATV trails surround the wetland.	a. Less than 5% of the watershed has land uses that could degrade water quality. b. 5-10% of the watershed has land uses that could degrade water quality. c. >10% of the watershed has land uses that could degrade water quality.	10 5 1
Is there evidence of fill in the wetland?	Some fill on the fringes or the off-road vehicle and ATV trails.	a. Less than 1% b. From 1-3% c. More than 3%	10 5 1
What percentage of the wetland has been altered by agricultural activities?	No agricultural activities, primarily wooded	a. Less than 5% b. From 5% to 25 % c. More than 25%	10 5 1
What percentage of the wetland has been adversely impacted by logging activities within the last 10 years?	The site has been logged extensively over the years. Some rutting present and old wetland crossings present.	a. Less than 1% b. From 1 to 10% c. More than 10%	10 5 1
How much human activity is taking place in the wetland (e.g. ATV use, trails, cars, dumping of brush and garbage, etc.	Some old timber harvesting wetland crossings present.	a. Low: Few trails in use, little or no traffic, and little or no litter. b. Moderate: Some used trails, roads, litter. c. High: Many trails, roads, and/ or litter	10 5 1
What percentage of the wetland is occupied by invasive plant species?	Some Japanese Honeysuckle on the upland fringes of the wetland.	a. None b. 1-5% of the wetland has invasive species. c. > 5% of the wetland has invasive species.	10 5 1
Are there roads, driveways and/ or railroads crossing or adjacent to the wetlands or come within 500-feet of the wetland?	Off-road vehicle and ATV trails adjacent to wetlands.	a. No roads, driveways, or railroads within 500-feet of, or in the wetlands. b. Roads, driveways, railroads are within 500-feet of the wetland. c. Roads, driveways, railroads cross, or are adjacent to, the wetland.	10 5 1
How much human activity is taking place in the upland within 500-feet of the wetland?	Extensive network of off roading and ATV trails surround the wetland.	a. Less than 5% or no activity. b. 3-10% impervious area within 500-feet of the wetland edge c. Greater than 10% impervious area within 500-feet of the wetland edge.	10 5 1
What is the percent of impervious surface within 500-feet of the wetland edge?		a. Less than 3% impervious area within 500-feet of the wetland edge. b. 3-10% impervious area within 500-feet of the wetland edge. c. Greater than 10% impervious area within 500-feet of the wetland edge.	10 5 1
Is there a human-made structure that regulates the flow of water through the wetland?	A culvert regulates the flow of water exiting the wetland.	a. No human-made structures present **upstream of, or in** the wetland. b. One or more human made structures present **upstream of, or** in the wetland but hydrologic modification in sight. c. One or more human made structures present **upstream of, or** in the wetland that severely block or alter surface hydrology.	10 5 1

SCORE: 5+5+10+5+5+5+5+5+10+5 = **65** **66**/10 = **6.0**

Wetland 5

This wetland is predominantly Palustrine Forested, Broad-Leaved, Deciduous (PFO1) and Palustrine Scrub-Shrub Broad-Leaved, Deciduous (PSS1). This wetland is seasonally flooded/ saturated, acidic with organic soils. The NH Fish and Game Wildlife Action Plan (WAP) identifies the habitat in this area to be predominantly *Appalachian oak-pine*. The WAP indicates these wetlands are within *Supporting Landscape* for wildlife habitat. This wetland is also within an established Wildlife Corridor by the NH Nature Conservancy. The wetland is dominated with Red Maple (*Acer Rubrum*), Speckled Alder (*Alnus incana*), Gray Birch (*Betula populifolia*), Highbush Blue Berry (*Vaccinium Corymbosum*), Common Winterberry Holly (*Ilex verticillata*), Meadowsweet (*Spiraea latifolia*), Dewberry (Rubus hispidus), wetland grasses (*Carex spp.*), and Sheep Laurel (*Kalmia angustifolia*). The surrounding uplands are predominantly Eastern White Pine (*Pinus strobus),* Eastern Hemlock (*Tsuga canadensis*), Red Oak (*Quercus rubra*), with American Witch Hazel (*Hamamelis virginiana*) dominating the upland fringes of the wetland. The soils within the vicinity of the wetland are predominantly excessively drained, *Walpole very fine sandy loam (*12B) and *Pipestone Sand* (314A).

Function Assessment Results:

Groundwater Recharge/ Discharge

This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge site. More particularly, this function refers to the interaction between wetlands and aquifers. This wetland is relatively large compared to the surrounding landscape and allows for groundwater recharge, and therefore, Groundwater Recharge/ Discharge **is** a principal function of this wetland.

Floodflow Alteration

This function analyzes the effectiveness of the wetland in reducing flood damage by retaining flood waters for prolonged periods of time. This wetland is relatively large compared to the surrounding landscape and it has broad level areas with storage capacity, and therefore, Floodflow Alteration **is** a principal function of this wetland.

Fish and Shellfish Habitat

This function considers a wetland's ability to provide embayments, tidal flats, vegetated shallows, and other environments in support of fish, shellfish, marine mammals, and sea turtles. This wetland serves only as the headwaters of an intermittent stream waterway, and therefore, Fish and Shellfish Habitat **is not** a principal function of this wetland.

Sediment/ Toxicant Retention

This function considers the effectiveness of a wetland to act as a trap for sediments, toxicants, and pathogens within runoff. The surrounding landscape is heavily wooded. This wetland serves as the headwaters for an intermittent stream within the Powwow River watershed (**HUC 10**: 0107000614), and therefore, Sediment/ Toxicant Retention **is** a principal function of this wetland.

Nutrient Removal/ Retention/ Transformation

This function recognizes a wetland's ability to serve as a trap for nutrients in runoff from surrounding uplands or contiguous wetlands. The surrounding landscape is heavily wooded. This wetland has a dense, diverse wetland plant community, and therefore, *Nutrient removal/ Retention/ Transformation* **is** a principal function of these wetlands.

Production Export

This function considers the wetland's ability to export resources to other areas. This wetland has multiple shrub species that produce berries. This wetland assists avian populations and insects. Production Export **is** a principal function of this wetlands.

Sediment/ Shoreline Stabilization

This function relates to a wetland's effectiveness to stabilize shorelines and prevent erosion. This wetland contains no open water areas, and therefore, sediment/ shoreline stabilization **is not** a principal function of this wetland.

Wildlife Habitat

This function considers a wetland's ability to provide wildlife habitat. According to the NH Wildlife Action Plan (WAP), the habitat in this area is predominantly Appalachian oak-pine. The WAP indicates this area of the property serves as Supporting Landscape for wildlife habitat and the wetland is relatively large with an abundance of dense vegetation The wetland is within a Wildlife Corridor established by the Nature Conservancy and it is connected to a waterway. This wetland likely provides habitat to Threatened and Endangered Species and likely contains Vernal Pool habitat, and therefore, Wildlife Habitat **is** a principal function of this wetland.

Recreation

This function considers the effectiveness of the wetland to provide recreational opportunities such as canoeing, boating, fishing, and other passive recreational activities. Considering the wetland is on private property and lacks direct access, Recreation **is not** considered a primary principal function of this wetland.

Education/ Scientific Value

This value considers the effectiveness of the wetland to serve as an "outdoor classroom." Considering the wetland is on private property and lacks direct access, Education/ Scientific Value **is not** a principal function of this wetland.

Uniqueness/ Heritage

This value relates to the effectiveness of a wetland to produce certain *special values* such as archeological sites, unusual aesthetic quality, historical events, and unique plants. These wetlands lack diversity and have been impacted by logging events. Uniqueness/ Heritage **is not** a principal function of these wetlands.

Visual Quality/ Aesthetics

This value considers the wetland's overall visual quality and aesthetics. The area surrounding this wetland is on private property. Due to the lack of access, Visual Quality/ Aesthetics **is not** considered a Principal Function of this wetland.

Endangered Species Habitat

Endangered species habitat relates to the effectiveness of the wetland to support endangered species habitat. Consultation with the NH Natural Heritage Bureau (NHB) produced positive hits for Threatened and Endangered species including the Blanding's Turtle (*Emydoidea blandingii*), Spotted Turtle (*Clemmys guttaua*), and Northern Black Racer (*Coluber constrictor constrictor*). The WAP indicates this area of the property serves as Supporting Landscape for wildlife habitat and the wetland is relatively large with an abundance of dense vegetation. The wetland is within a Wildlife Corridor established by the Nature Conservancy and it is connected to a waterway. This wetland likely provides habitat to Threatened and Endangered Species and likely contains Vernal Pool habitat, and therefore, Wildlife Habitat **is** a principal function of this wetland.

Ecological Integrity

Ecological integrity evaluates the overall health and stability of the wetland ecosystem. This wetland has not experienced degradation by agricultural activities but, a great deal of timber harvesting has occurred in the past. There is some evidence of invasive species Japanese Honeysuckle (*Lonicera japonica*) within the uplands adjacent to the wetland. Within 500-feet of the wetland there are Class-IV roads and ATV vehicle trails. Some land uses within the wetland's watershed may contribute to water quality degradation within the wetland. Overall, these wetlands are relatively stable and moderately healthy and, according to the *Method for Inventorying and Evaluating Freshwater Wetlands in New Hampshire* – the NH Method, this wetland achieved an Ecological Integrity Score of 6.5. Due to the level of human impacts on the fringes of this wetland, Ecological Integrity **is not** a principal function of this wetland.

Summary

This wetland serves several functions including groundwater recharge, floodflow alteration, sediment and toxicant reduction, nutrient removal, resource export and endangered species habitat, and therefore, this wetland, particularly those regions that have the potential to contain vernal pool habitat, are considered high value, high functioning resources.

This project only proposes to impact the lowest functioning, lowest value areas of this wetland – those portions of Wetland 5 that are on the abutting property. This project has intentionally shifted impacts away from the highest functioning, highest value areas of this wetland.

In summary, this project avoids impacts to the highest functioning, highest value areas of this wetland and as a result of **avoiding** these higher value, higher functioning areas, there will be no significant loss of wetland functions and values.

Wetland Function-Value Evaluation Form

Total area of wetland 2,087 SF Human made? No Is wetland part of a wildlife corridor? no or a "habitat island"? no

Adjacent land use Undeveloped/ Forested/ ATV Use Distance to nearest roadway or other development 250-feet

Dominant wetland systems present PFO1/3 Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper/ mid reach

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland #1

Latitude 42.89418 Longitude -71.08829

Prepared by: Jay Aube Date 1/15/2023

Wetland Impact:
Type Fill Area 2,087 SF

Evaluation based on:
Office yes Field yes

Corps manual wetland delineation completed? Y X N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	1,2,5,8	N	Wetland is relatively small.
Floodflow Alteration	N	2,5	N	Wetland is relatively small, very little storage capacity.
Fish and Shellfish Habitat	N	1,2	N	Wetland not associated with a water course.
Sediment/Toxicant Retention	Y	4,6	N	Wetlands not associated with a water course.
Nutrient Removal	N	7	N	Wetland is small, vegetation not diverse, no deep water.
Production Export	Y	2,4	N	Wetland is small, sparse vegetation - not diverse.
Sediment/Shoreline Stabilization	N		N	No open water.
Wildlife Habitat	Y	1,3,4,5,7	N	Wetland is small, lacks diversity and hydrology.
Recreation	N		N	No trail network or public access.
Educational/Scientific Value	Y	2	N	Remote, no public access.
Uniqueness/Heritage	Y		N	Forested area, lacks uniqueness, not diverse, no public access.
Visual Quality/Aesthetics	Y		N	Only one wetland class, lacks diversity
ES Endangered Species Habitat	Y		N	Wetland small - not critical to T & E species.
Other Ecological Integrity	Y	NH Method	N	Wetland is small and not a representative exemplary wetland.

Notes: Ecological Integrity Score = 7.0

* Refer to backup list of numbered considerations.

NH METHOD FOR EVALUATING FRESHWATER WETLANDS

Wetland Name/ Code: Wetland #6 **Evaluation Date:** 1/10/2023 **Evaluator:** Jay Aube

ECOLOGICAL INTEGRITY

Evaluation Question	Observations & Notes	Answers	Score
Are there land uses in the wetland's watershed that could degrade water quality in the wetland?	Off-road vehicle and ATV trails adjacent to wetlands.	a. Less than 5% of the watershed has land uses that could degrade water quality. b. 5-10% of the watershed has land uses that could degrade water quality. c. >10% of the watershed has land uses that could degrade water quality.	10 5 1
Is there evidence of fill in the wetland?	Some fill on the fringes or the off-road vehicle and ATV trails.	a. Less than 1% b. From 1-3% c. More than 3%	10 5 1
What percentage of the wetland has been altered by agricultural activities?	No agricultural activities, primarily wooded	a. Less than 5% b. From 5% to 25 % c. More than 25%	10 5 1
What percentage of the wetland has been adversely impacted by logging activities within the last 10 years?	The site has been logged extensively over the years. Some evidence of old excavation areas/ borrow pits within the wetland.	a. Less than 1% b. From 1 to 10% c. More than 10%	10 5 1
How much human activity is taking place in the wetland (e.g. ATV use, trails, cars, dumping of brush and garbage, etc.	Some old timber harvesting wetland crossings present.	a. Low: Few trails in use, little or no traffic, and little or no litter. b. Moderate: Some used trails, roads, litter. c. High: Many trails, roads, and/ or litter	10 5 1
What percentage of the wetland is occupied by invasive plant species?	Very little evidence of invasive species.	a. None b. 1-5% of the wetland has invasive species. c. > 5% of the wetland has invasive species.	10 5 1
Are there roads, driveways and/ or railroads crossing or adjacent to the wetlands or come within 500-feet of the wetland?	Off-road vehicle and ATV trails adjacent to wetlands.	a. No roads, driveways, or railroads within 500-feet of, or in the wetlands. b. Roads, driveways, railroads are within 500-feet of the wetland. c. Roads, driveways, railroads cross, or are adjacent to, the wetland.	10 5 1
How much human activity is taking place in the upland within 500-feet of the wetland?	Extensive off-road trail network and structures associated with a utility ROW.	a. Less than 5% or no activity. b. 3-10% impervious area within 500-feet of the wetland edge c. Greater than 10% impervious area within 500-feet of the wetland edge.	10 10 1
What is the percent of impervious surface within 500-feet of the wetland edge?		a. Less than 3% impervious area within 500-feet of the wetland edge. b. 3-10% impervious area within 500-feet of the wetland edge. c. Greater than 10% impervious area within 500-feet of the wetland edge.	10 5 1
Is there a human-made structure that regulates the flow of water through the wetland?	A culvert regulates the flow of water exiting the wetland.	a. No human-made structures present **upstream of, or in** the wetland. b. One or more human made structures present **upstream of, or** in the wetland but hydrologic modification in sight. c. One or more human made structures present **upstream of, or** in the wetland that severely block or alter surface hydrology.	10 5 1

SCORE: 5+5+10+5+5+10+1+10+10+5 = **70** **70**/10 **=** **7.0**

Wetland Function-Value Evaluation Form

Total area of wetland 2,087 SF Human made? No Is wetland part of a wildlife corridor? no or a "habitat island"? no

Adjacent land use Undeveloped/ Forested/ ATV Use Distance to nearest roadway or other development 250-feet

Dominant wetland systems present PFO1/3 Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper/ mid reach

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland #1

Latitude 42.89418 Longitude -71.08829

Prepared by: Jay Aube Date 1/15/2023

Wetland Impact:
Type Fill Area 2,087 SF

Evaluation based on:
Office yes Field yes

Corps manual wetland delineation completed? Y X N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	1,2,5,8	N	Wetland is relatively small.
Floodflow Alteration	N	2,5	N	Wetland is relatively small, very little storage capacity.
Fish and Shellfish Habitat	N	1,2	N	Wetland not associated with a water course.
Sediment/Toxicant Retention	Y	4,6	N	Wetlands not associated with a water course.
Nutrient Removal	N	7	N	Wetland is small, vegetation not diverse, no deep water.
Production Export	Y	2,4	N	Wetland is small, sparse vegetation - not diverse.
Sediment/Shoreline Stabilization	N		N	No open water.
Wildlife Habitat	Y	1,3,4,5,7	N	Wetland is small, lacks diversity and hydrology.
Recreation	N		N	No trail network or public access.
Educational/Scientific Value	Y	2	N	Remote, no public access.
Uniqueness/Heritage	Y		N	Forested area, lacks uniqueness, not diverse, no public access.
Visual Quality/Aesthetics	Y		N	Only one wetland class, lacks diversity
ES Endangered Species Habitat	Y		N	Wetland small - not critical to T & E species.
Other Ecological Integrity	Y	NH Method	N	Wetland is small and not a representative exemplary wetland.

Notes: Ecological Integrity Score = 8.1

* Refer to backup list of numbered considerations.

NH METHOD FOR EVALUATING FRESHWATER WETLANDS

Wetland Name/ Code: Wetland #7 **Evaluation Date:** 1/10/2023 **Evaluator:** Jay Aube

ECOLOGICAL INTEGRITY

Evaluation Question	Observations & Notes	Answers	Score
Are there land uses in the wetland's watershed that could degrade water quality in the wetland?	ATV trail network in the area.	a. Less than 5% of the watershed has land uses that could degrade water quality. b. 5-10% of the watershed has land uses that could degrade water quality. c. >10% of the watershed has land uses that could degrade water quality.	10 5 1
Is there evidence of fill in the wetland?	No Fill.	a. Less than 1% b. From 1-3% c. More than 3%	10 5 1
What percentage of the wetland has been altered by agricultural activities?	No agricultural activities, primarily wooded	a. Less than 5% b. From 5% to 25 % c. More than 25%	10 5 1
What percentage of the wetland has been adversely impacted by logging activities within the last 10 years?	The site has been logged extensively over the years. Some skidder rutting present.	a. Less than 1% b. From 1 to 10% c. More than 10%	10 5 1
How much human activity is taking place in the wetland (e.g. ATV use, trails, cars, dumping of brush and garbage, etc.	Some skidder rutting visible within wetland.	a. Low: Few trails in use, little or no traffic, and little or no litter. b. Moderate: Some used trails, roads, litter. c. High: Many trails, roads, and/ or litter	10 5 1
What percentage of the wetland is occupied by invasive plant species?	Very little evidence of invasive species.	a. None b. 1-5% of the wetland has invasive species. c. > 5% of the wetland has invasive species.	10 5 1
Are there roads, driveways and/ or railroads crossing or adjacent to the wetlands or come within 500-feet of the wetland?	ATV roads in this area.	a. No roads, driveways, or railroads within 500-feet of, or in the wetlands. b. Roads, driveways, railroads are within 500-feet of the wetland. c. Roads, driveways, railroads cross, or are adjacent to, the wetland.	10 5 1
How much human activity is taking place in the upland within 500-feet of the wetland?	Minimal.	a. Less than 5% or no activity. b. 3-10% impervious area within 500-feet of the wetland edge c. Greater than 10% impervious area within 500-feet of the wetland edge.	10 5 1
What is the percent of impervious surface within 500-feet of the wetland edge?		a. Less than 3% impervious area within 500-feet of the wetland edge. b. 3-10% impervious area within 500-feet of the wetland edge. c. Greater than 10% impervious area within 500-feet of the wetland edge.	10 5 1
Is there a human-made structure that regulates the flow of water through the wetland?		a. No human-made structures present **upstream of, or in** the wetland. b. One or more human made structures present **upstream of, or** in the wetland but hydrologic modification in sight. c. One or more human made structures present **upstream of, or** in the wetland that severely block or alter surface hydrology.	10 5 1

SCORE: 10+10+10+5+5+10+5+10+10+10 = **81** **85**/10 **= 8.5**

Wetland 7

This wetland is Palustrine Forested, Broad-Leaved, Deciduous (PFO1). This wetland is seasonally flooded/ saturated, acidic with sandy soils. The NH Fish and Game Wildlife Action Plan (WAP) identifies the habitat in this area to be *Appalachian oak-pine*. The WAP indicates these wetlands are on the fringe of habitat considered to be *Supporting Landscape* for wildlife habitat. The wetland is dominated with Red Maple (*Acer Rubrum*), American Wintergreen (*Pyrola americana*), Bristly Dewberry (Rubus hispidus) and wetland grasses (*Carex spp.*) The surrounding uplands are predominantly Eastern Hemlock (*Tsuga canadensis*) with American Witch Hazel (*Hamamelis virginiana*) dominating the upland fringes of the wetland. The soils within the vicinity of the wetland are predominantly excessively drained Hinkley fine sandy loam, *Scituate-Newfields Complex* (447B).

Function Assessment Results:

Groundwater Recharge/ Discharge

This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge site. More particularly, this function refers to the interaction between wetlands and aquifers. This wetland is relatively small compared to the surrounding landscape and only allow minimal groundwater recharge, and therefore, Groundwater Recharge/ Discharge **is not** a principal function of this wetland.

Floodflow Alteration

This function analyzes the effectiveness of the wetland in reducing flood damage by retaining flood waters for prolonged periods of time. This wetland is relatively small compared to the surrounding landscape and only have minimal floodwater storage capacity, and therefore, Floodflow Alteration **is not** a principal function of this wetland.

Fish and Shellfish Habitat

This function considers a wetland's ability to provide embayments, tidal flats, vegetated shallows, and other environments in support of fish, shellfish, marine mammals, and sea turtles. This wetland has no direct connection to a waterway or waterbody, and therefore, this is Fish and Shellfish Habitat **is not** a principal function of these wetlands.

Sediment/ Toxicant Retention

This function considers the effectiveness of a wetland to act as a trap for sediments, toxicants, and pathogens within runoff. The surrounding landscape is heavily wooded. These wetlands lack dense, diverse vegetation, and therefore, Sediment/ Toxicant Retention **is not** a principal function of this wetland.

Nutrient Removal/ Retention/ Transformation

This function recognizes a wetland's ability to serve as a trap for nutrients in runoff from surrounding uplands or contiguous wetlands. The surrounding landscape is heavily wooded. These wetlands lack dense, diverse vegetation, and therefore, *Nutrient removal/ Retention/ Transformation* **is not** a principal function of this wetland.

Production Export

This function considers the wetland's ability to export resources to other areas. These wetlands lack dense, diverse vegetation. There is little evidence of nutrient export, and therefore, Production Export **is not** a principal function of this wetland.

Sediment/ Shoreline Stabilization

This function relates to a wetland's effectiveness to stabilize shorelines and prevent erosion. These wetlands contain no open water areas, and therefore, sediment/ shoreline stabilization **is not** a principal function of this wetland.

Wildlife Habitat

This function considers a wetland's ability to provide wildlife habitat. According to the NH Wildlife Action Plan (WAP), the habitat in this area is considered Appalachian oak-pine but, it is not considered critical wildlife habitat. The WAP indicates this area of the property is not connected to any High Value or Supporting Landscape Wildlife Habitat. Wildlife Habitat **is not** a principal function of this wetland.

Recreation

This function considers the effectiveness of the wetland to provide recreational opportunities such as canoeing, boating, fishing, and other passive recreational activities. Considering these wetlands are on private property and they lack direct access, Recreation **is not** considered a primary principal function of this wetland.

Education/ Scientific Value

This value considers the effectiveness of the wetland to serve as an "outdoor classroom." Considering these wetlands are on private property and they lack direct access, Education/ Scientific Value **is not** a principal function of this wetland.

Uniqueness/ Heritage

This value relates to the effectiveness of a wetland to produce certain *special values* such as archeological sites, unusual aesthetic quality, historical events, and unique plants. This wetland lacks diversity and has been impacted by logging events. Uniqueness/ Heritage **is not** a principal function of this wetland.

Visual Quality/ Aesthetics

This value considers the wetland's overall visual quality and aesthetics. The area surrounding these wetlands is on private property. Due to the lack of access, Visual Quality/ Aesthetics **is not** considered a principal function of this wetland.

Endangered Species Habitat

Endangered species habitat relates to the effectiveness of the wetland to support endangered species habitat. While consultation with the NH Natural Heritage Bureau (NHB) produced positive hits for Threatened and Endangered species including the Blanding's Turtle (*Emydoidea blandingii*), Spotted Turtle (*Clemmys guttaua*) and Northern Black Racer (*Coluber constrictor constrictor*), this small wetland lacks the hydrology to support these threatened and endangered species, and therefore, Endangered Species Habitat **is not** considered a key function of this wetland.

Ecological Integrity

Ecological integrity evaluates the overall health and stability of the wetland ecosystem. This wetland has not experienced degradation by agricultural activities but, a great deal of timber harvesting has occurred in the past. There is very little evidence of invasive species. Within 500-feet of the wetlands there are off-road and ATV vehicle trails. Some land uses within the wetland's watershed may contribute to water quality degradation. Evidence of historic skidder rutting is present within the wetland. Overall, this small wetland is relatively stable and moderately healthy and, according to the *Method for Inventorying and Evaluating Freshwater Wetlands in New Hampshire* – the NH Method, the wetland achieved an Ecological Integrity Score of 8.1. Due to its relatively small size and lack of functions and values, Ecological Integrity **is not** a principal function of this wetland.

Summary

While this area has been deemed a wetland, it does not contain any critical Principal Wetland Functions and Values. In summary, this project proposes no impacts to this wetland.

References

ACOE *Army Corps of Engineers Highway Methodology* (September 1999, NAEEP-360-1-30a).

Cowardin, L.M., V. carter, F.C Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deep-Water Habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Method for Inventorying and Evaluating Freshwater Wetlands in New Hampshire – The NH Method, December, 2015.

USDA (United States Department of Agriculture) NRCS (Natural Resources Conservation Services) *Web Soil Survey*. Accessed 3/25/2021.

WAP (Wildlife Action Plan). NH Fish and Game Department Wildlife Action Plan.

Memo

NH Natural Heritage Bureau
NHB DataCheck Results Letter

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

To: Jeremy Belanger
48 Consitution Dr
Bedford, NH 03110

From: NHB Review, NH Natural Heritage Bureau
Date: 9/23/2022 (valid until 09/23/2023)
Re: Review by NH Natural Heritage Bureau
Permits: MUNICIPAL POR - Kingston, NHDES - Alteration of Terrain Permit, NHDES - Wetland Standard Dredge & Fill - Major, USACE - General Permit, USEPA - Stormwater Pollution Prevention

NHB ID: **NHB22-3062** Town: Kingston Location: 2 Mill Road & 24 Towle Road
Description: Proposed Utility Scale Photovoltaic Generating (PV) Facility with associated access and stormwater management areas.
cc: NHFG Review

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

Comments **NHB: No comments at this time.**
F&G: Please refer to NHFG consultation requirements below.

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

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

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

Disclaimer: A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed

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

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

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

for certain species. An on-site survey would provide better information on what species and communities are indeed present.

IMPORTANT: NHFG Consultation

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

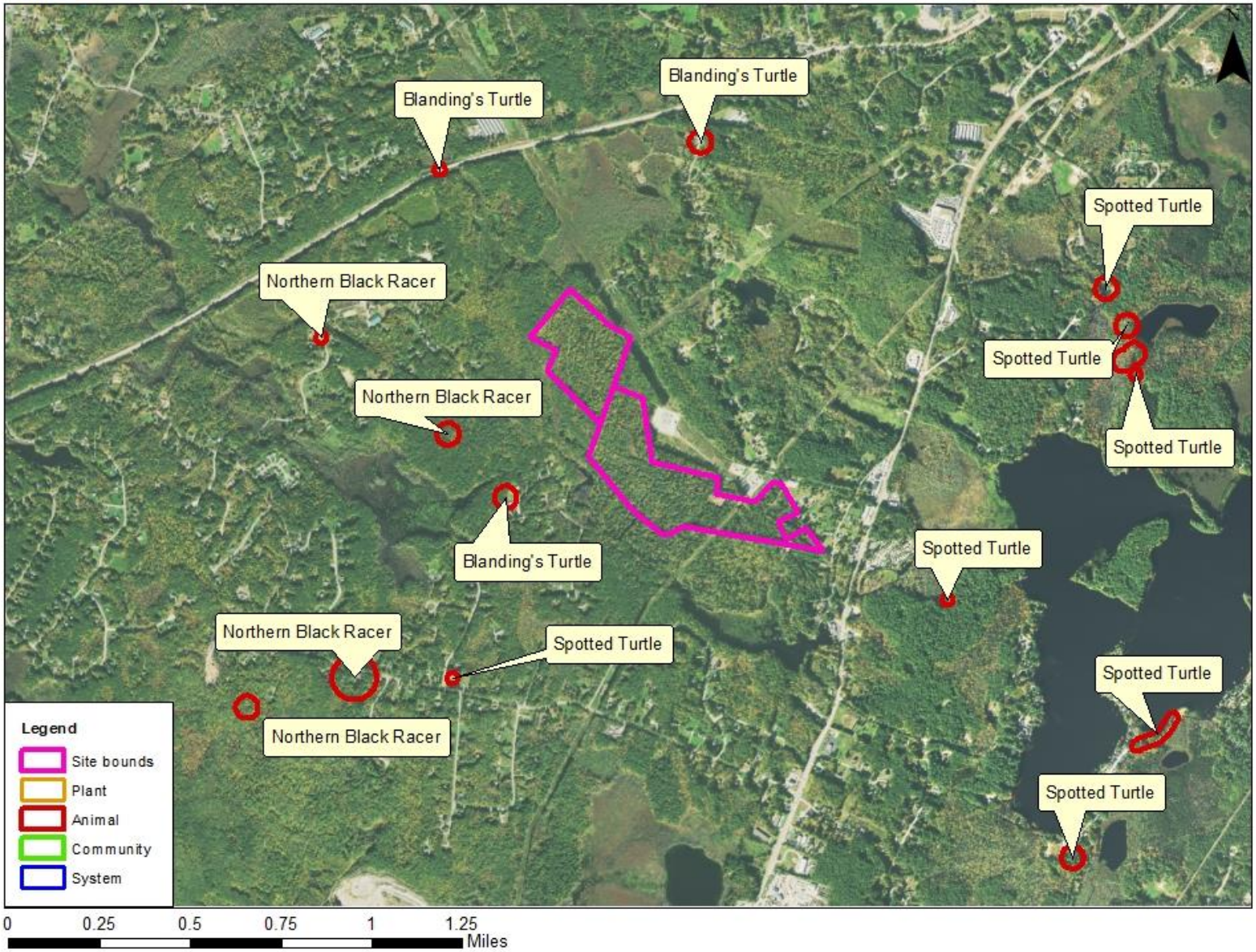
If this NHB Datacheck letter includes a record for a threatened (T) or endangered (E) wildlife species, consultation with the New Hampshire Fish and Game Department under Fis 1004 may be required. To review the Fis 1000 rules (effective February 3, 2022), please go to https://wildlife.state.nh.us/wildlife/environmental-review.html.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

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

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

CONFIDENTIAL – NH Dept. of Environmental Services review

NHB22-3062



New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status		**Conservation Status**	
Federal:	Not listed	Global:	Apparently secure but with cause for concern
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2014: Area 13928: 1 adult observed, sex unknown.
General Area: 2014: Area 13928: Roadside. Shrub wetland with sunny, sandy banks on either side of the road.
General Comments: --
Management Comments: --

Location

Survey Site Name: Colby Brook
Managed By:

County: Rockingham
Town(s): Danville
Size: .4 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2014: Area 13928: Route 111, about 1 mile east of junction with Route 111A , Danville (42.90604, -71.10044).

Dates documented

First reported: 2014-07-21 Last reported: 2014-07-21

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

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New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status

Federal: Not listed
State: Listed Endangered

Conservation Status

Global: Apparently secure but with cause for concern
State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2010: Area 12835: 1 juvenile female observed, dead on road.
General Area: 2010: Area 12835: Roadside in mixed forest.
General Comments: --
Management Comments: --

Location

Survey Site Name: Colby Brook
Managed By:

County: Rockingham
Town(s): Kingston
Size: 1.9 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2010: Area 12835: 60 Mill Road, Kingston.

Dates documented

First reported: 2010-07-23
Last reported: 2010-07-23

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status

Federal: Not listed
State: Listed Endangered

Conservation Status

Global: Apparently secure but with cause for concern
State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2021: Area 14857: 1 adult female observed, laying eggs in compost pile.
General Area: 2021: Area 14857: Compost pile in residential yard near Colby Brook. Houses surrounded by wetlands and woods.
General Comments: --
Management Comments: --

Location

Survey Site Name: Colby Brook
Managed By:

County: Rockingham
Town(s): Kingston
Size: 1.9 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2021: Area 14857: 2 Beaver Pond Road, Kingston.

Dates documented

First reported: 2021-06-05
Last reported: 2021-06-05

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Northern Black Racer (*Coluber constrictor constrictor*)

Legal Status		**Conservation Status**	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Threatened	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2020: Area 14796: 1 adult observed, sex unknown. 2015: Area 14022: 1 adult observed, sex unknown.
General Area: 2020: Area 14796: Town forest with hiking trails. 2015: Area 14022: Roadside in cul-de-sac. Snake went into the woods to north towards horse farm.
General Comments: --
Management Comments: --

Location

Survey Site Name: Colby Brook
Managed By:

County: Rockingham
Town(s): Kingston
Size: 2.4 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2020: Area 14796: Along the White Trail in Frye Town Forest, Kingston. 2015: Area 14022: 38 Creek Hill Drive, Danville.

Dates documented

First reported: 2015-06-08 Last reported: 2020-07-20

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Northern Black Racer (*Coluber constrictor constrictor*)

Legal Status

Federal: Not listed
State: Listed Threatened

Conservation Status

Global: Demonstrably widespread, abundant, and secure
State: Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2017: Area 14372: 1 adult observed, sex unknown. Area 14374M: 1 adult observed, sex unknown on 8/26. 1 adult observed, sex unknown on 8/31.
General Area: 2017: Area 14372: Residential yard. Area 14374: Forest.
General Comments: --
Management Comments: --

Location

Survey Site Name: Colby Brook, south of
Managed By:

County: Rockingham
Town(s): Kingston
Size: 9.6 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2017: Area 14372: 66 Hunt Road, Kingston. Area 14374M: Hunt Road Town Forest.

Dates documented

First reported: 2017-06-24
Last reported: 2017-08-31

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Spotted Turtle (*Clemmys guttata*)

Legal Status		**Conservation Status**	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Threatened	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Fair quality, condition and/or landscape context ('C' on a scale of A-D).
Comments on Rank: --

Detailed Description: 2015: Area 11751M: 1 adult female observed. Area 14090: 1 adult female observed. 2008: Area 11554: 1 adult female seen. Turtle was nesting. 2007: Area 11751M: 1 female seen. One hatchling emerged in fall from nest. Nest was partially dug up by observer later in fall when another hatchling was observed partially emerged from shell.

General Area: 2015: Area 11751M: Residential yard, in between driveway and pool fence. Area 14090: Residential yard, on the edge of the treeline. There is a small marshy area toward the back of the property, with cattails, sedges, and rushes. 2008: Area 11554: In yard at residence. 2007: Area 11751M: Yard at residence.

General Comments: --
Management Comments: --

Location

Survey Site Name: Colby Brook, south of
Managed By:

County: Rockingham
Town(s): Hampstead
Size: 8.6 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2015: Area 14090: 1 Colby Road, Kingston. 2008: Area 11554: 3 Sean Drive, Hampstead. 2007: Area 11751M: 3 Sean Drive, Hampstead.

Dates documented

First reported: 2007-06-20 Last reported: 2015-06-25

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

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New Hampshire Natural Heritage Bureau - Animal Record

Spotted Turtle (*Clemmys guttata*)

Legal Status		**Conservation Status**	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Threatened	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Fair quality, condition and/or landscape context ('C' on a scale of A-D).
Comments on Rank: --

Detailed Description: 2019: 2019 Survey area: 1 female captured during trap survey. Area 14608: 1 adult observed, sex unknown. 2018: Area 14472: 2 individuals observed, sex unknown. 2017: Area 12739M: 1 adult observed, sex unknown. 2015: Area 14007: 1 adult observed, sex unknown. 2014: Area 13641M: 1 adult observed, sex unknown, on 6/7. 1 adult observed, sex unknown, on 8/24. Area 13680: 1 adult observed, sex unknown. 2012: Area 12739M: 1 adult and 2 juveniles observed. 2011: Area 12739M: 1 adult observed. Area 13103: 1 adult observed. 2010: Area 12739M: 1 adult observed. 1991: Area 6601: Seen.

General Area: 2019: Area 14608: Roadside. 2018: Area 14472: Basking on a log in small pond. 2014: Area 13641M: Forested wetland. Area 13680: Shrub wetland. 2011: Area 12739M: Cedar swamp and brushy marsh. Area 13103: Dirt road adjacent to stream. 1991: Area 6601: Pond.

General Comments: 1991: Area 6601: Student told James Taylor.

Management Comments: --

Location

Survey Site Name: Country Pond
Managed By: Webster Wildlife + Natural Area

County: Rockingham
Town(s): Kingston
Size: 13.4 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2019: Area 14608: Country Pond Road, Newton. 2018: Area 14472: Webster Wildlife and Natural Area. 2014: Area 13641M: Webster Wildlife and Natural Area. Area 13680: [Heath Street, Newton, near BandM railroad]. 2011: Area 13103: [Green Road north of Cedar Swamp Pond]. 2010: Area 12739M: Webster Wildlife and Natural Area. 1991: Area 6601: Ridge Road near Country Pond.

Dates documented

First reported: 1991 Last reported: 2019-06-04

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

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Conservation Lands

Legend

conservation-lands

0 0.125 0.25 0.5 0.75 1 Miles

N

Connect the Coast Wildlife Corridors

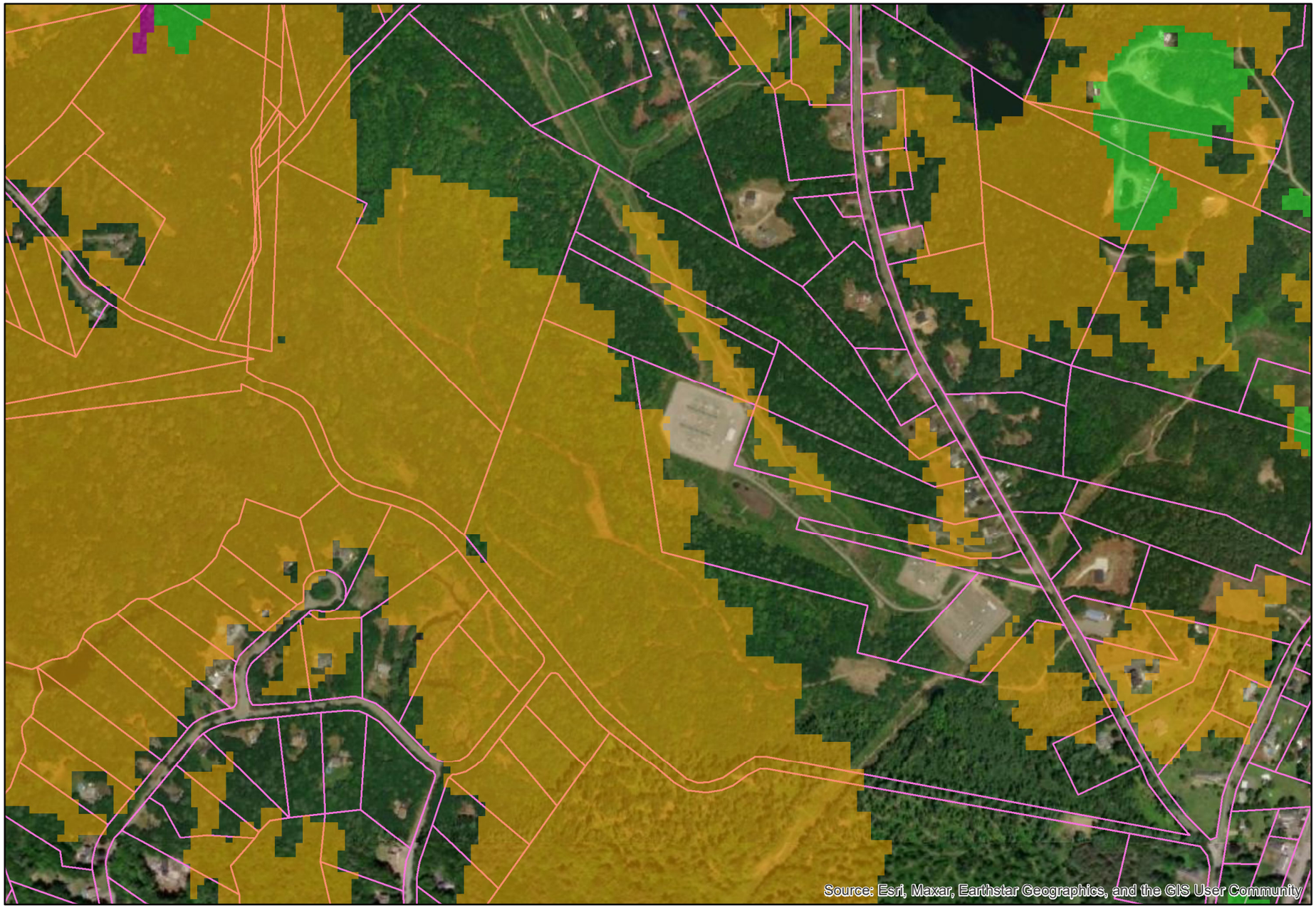
Legend

wildlife-corridors-CTC

0 0.125 0.25 0.5 0.75 1 Miles

N

NH Fish and Game Wildlife Action Plan (WAP) Habitat Tiers



2020-Wildlife-Action-Plan-WAP-Tiers

WAPTIER

- 1 Highest Ranked Habitat in New Hampshire
- 2 Highest Ranked Habitat in Biological Region
- 3 Supporting Landscapes

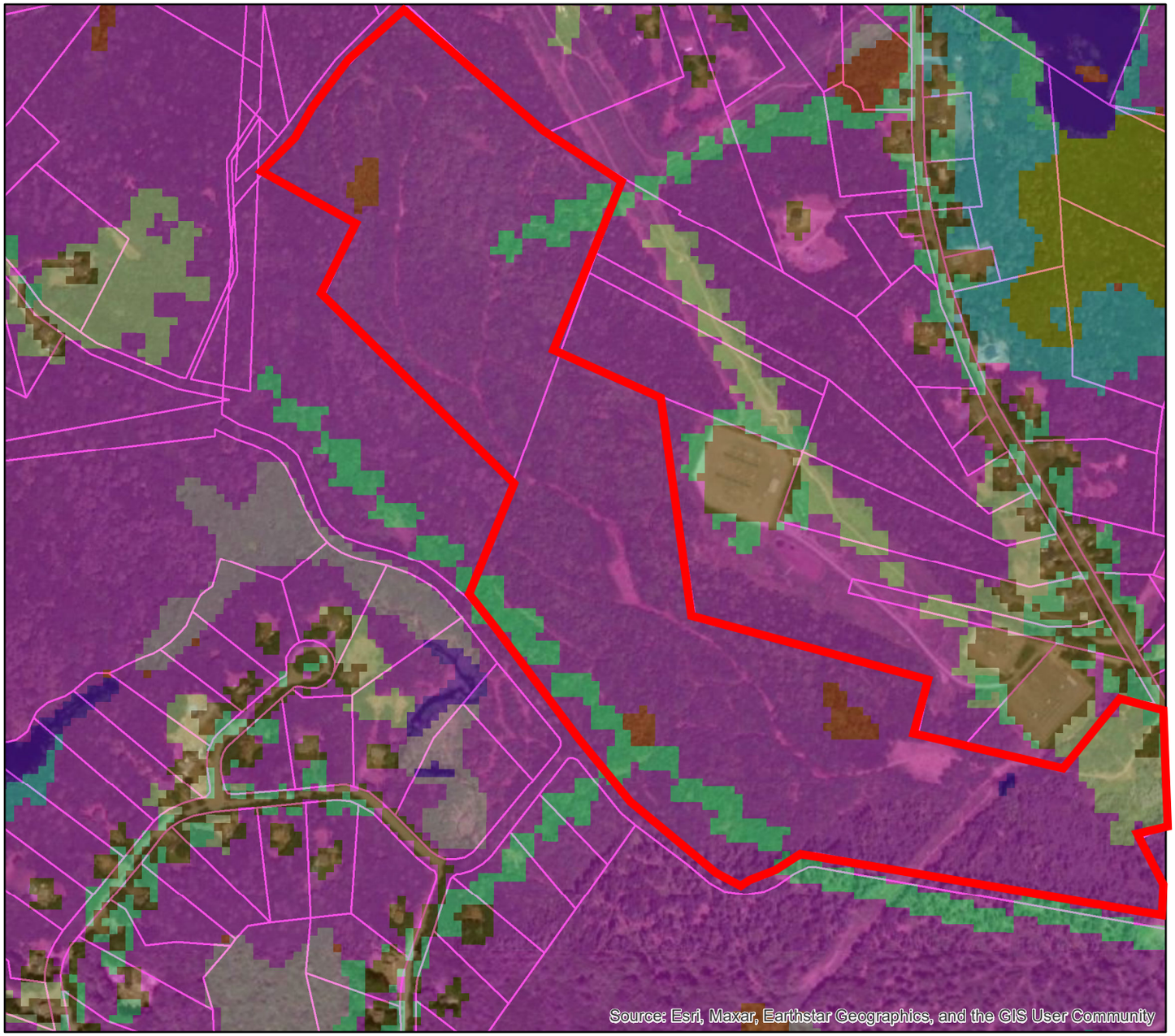
0 0.125 0.25 0.5 0.75 1 Miles

N

NH Fish and Game Wildlife Action Plan (WAP) Habitat Types

WAP HABITAT TYPES

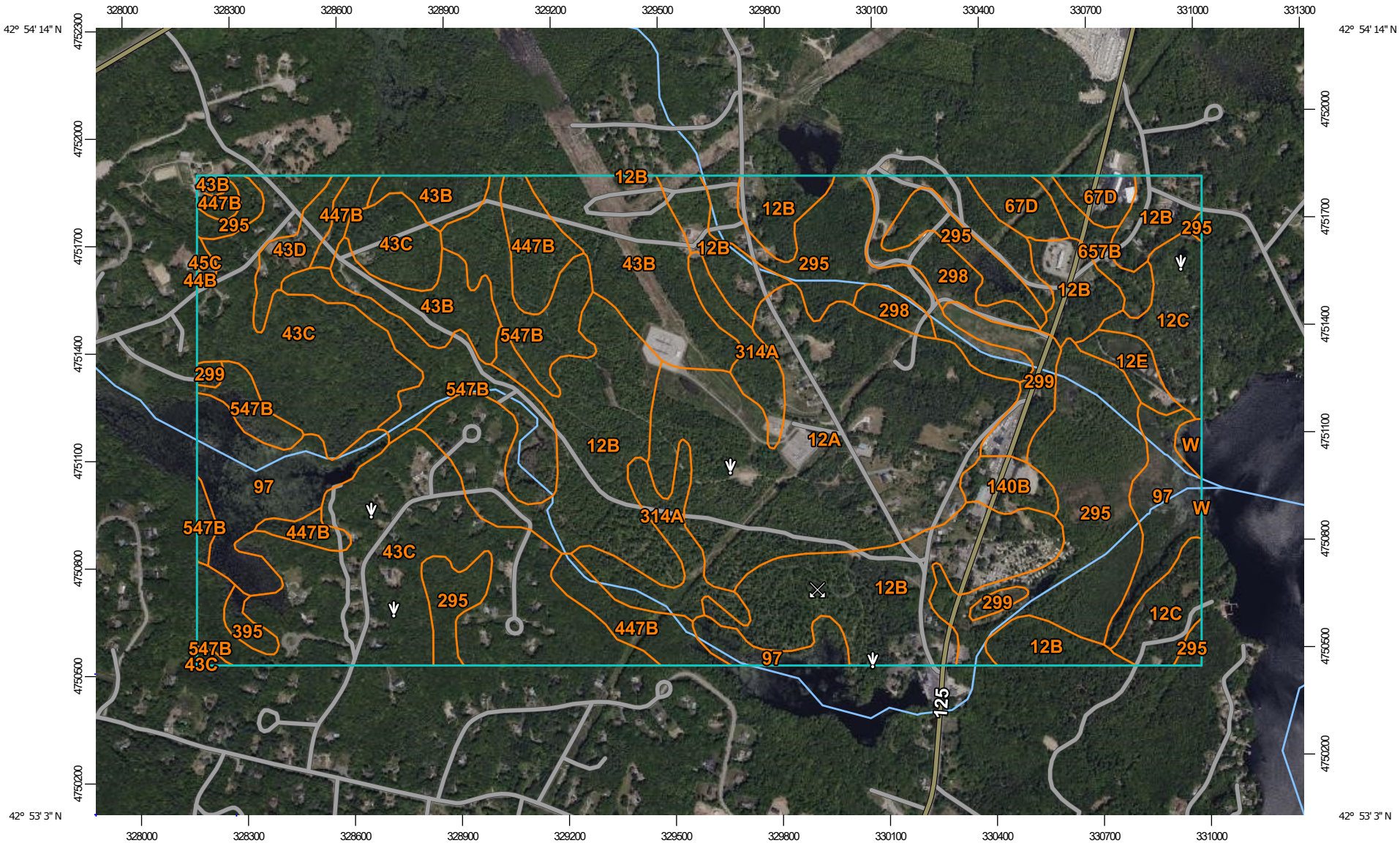
- High-elevation spruce-fir
- Northern hardwood-conifer
- Open water
- Wet meadow/shrub wetland
- Peatland
- Lowland spruce-fir
- Developed or Barren land
- Northern swamp
- Rocky ridge
- Cliff and Talus
- Developed Impervious
- Grassland
- Floodplain forest
- Temperate swamp
- Hemlock-hardwood-pine
- Sand/Gravel
- Alpine
- Appalachian oak-pine
- Pine barren
- Salt marsh
- Coastal island
- Dune



0 0.125 0.25 0.5 0.75 1 Miles

N

Soil Map—Rockingham County, New Hampshire
(Soils Map)



Map Scale: 1:15,500 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 200 400 800 1200

Feet: 0 500 1000 2000 3000

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: Rockingham County, New Hampshire
Survey Area Data: Version 25, Sep 12, 2022

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

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

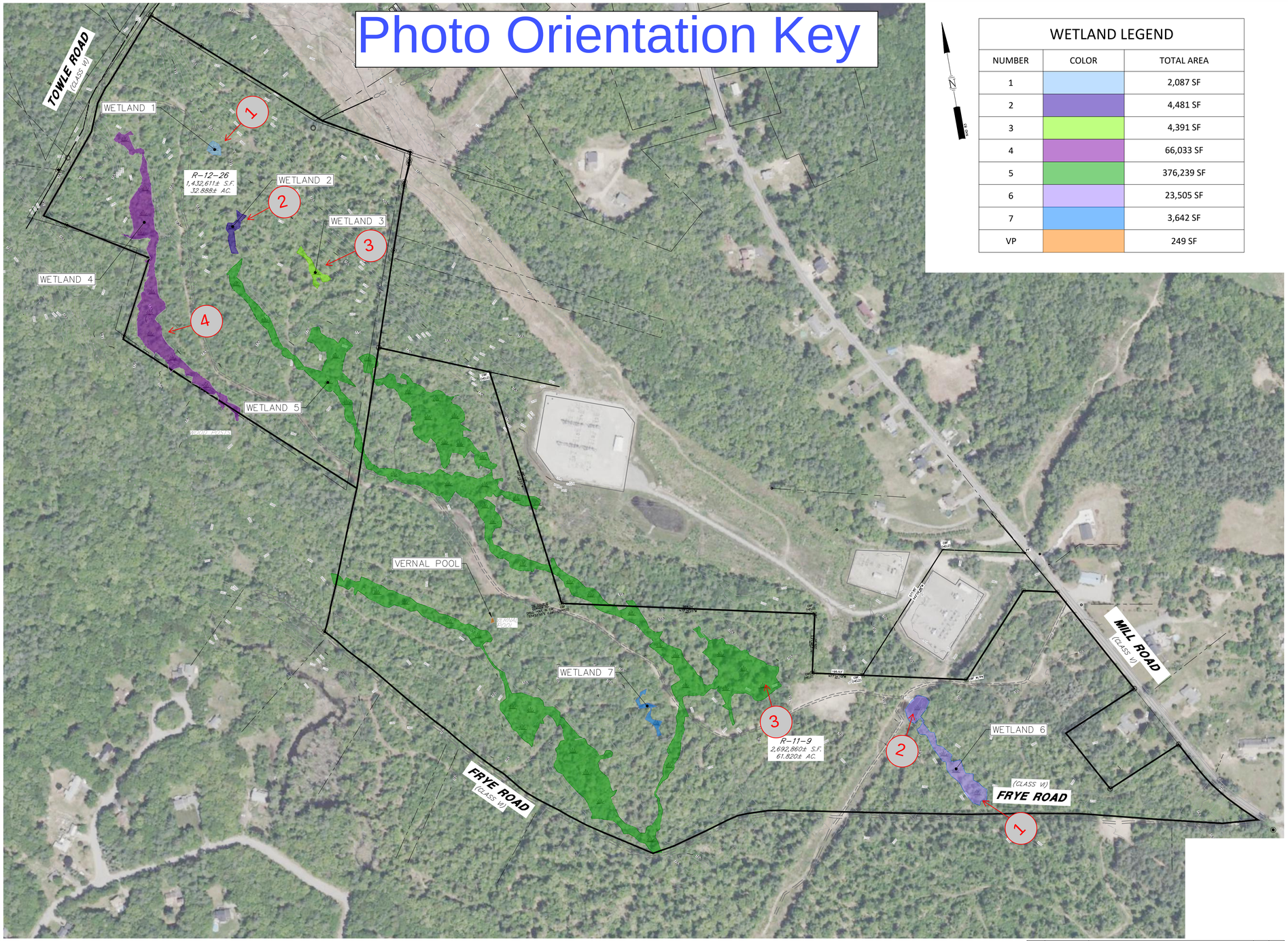
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

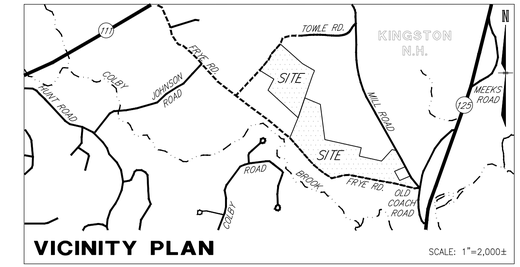
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
12A	Hinckley loamy sand, 0 to 3 percent slopes	128.4	13.4%
12B	Hinckley loamy sand, 3 to 8 percent slopes	175.1	18.3%
12C	Hinckley loamy sand, 8 to 15 percent slopes	29.8	3.1%
12E	Hinckley loamy sand, 15 to 60 percent slopes	6.8	0.7%
43B	Canton fine sandy loam, 0 to 8 percent slopes, very stony	64.2	6.7%
43C	Canton fine sandy loam, 8 to 15 percent slopes, very stony	170.0	17.8%
43D	Canton fine sandy loam, 15 to 25 percent slopes, very stony	8.7	0.9%
44B	Montauk fine sandy loam, 3 to 8 percent slopes	0.2	0.0%
45C	Montauk fine sandy loam, 8 to 15 percent slopes, very stony	1.1	0.1%
67D	Paxton fine sandy loam, 15 to 25 percent slopes, very stony	13.6	1.4%
97	Freetown and Natchaug mucky peats, ponded, 0 to 2 percent slopes	58.2	6.1%
140B	Chatfield-Hollis-Canton complex, 0 to 8 percent slopes, rocky	8.1	0.9%
295	Freetown mucky peat, 0 to 2 percent slopes	112.7	11.8%
298	Pits, sand and gravel	28.2	3.0%
299	Udorthents, smoothed	15.8	1.7%
314A	Pipestone sand, 0 to 5 percent slopes	28.5	3.0%
395	Swansea mucky peat, 0 to 2 percent slopes	3.3	0.3%
447B	Scituate-Newfields complex, 3 to 8 percent slopes, very stony	34.7	3.6%
547B	Walpole very fine sandy loam, 3 to 8 percent slopes, very stony	58.5	6.1%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
657B	Ridgebury fine sandy loam, 3 to 8 percent slopes, very stony	7.8	0.8%
W	Water	2.2	0.2%
Totals for Area of Interest		**955.9**	**100.0%**

Photo Orientation Key



WETLAND LEGEND		
NUMBER	COLOR	TOTAL AREA
1		2,087 SF
2		4,481 SF
3		4,391 SF
4		66,033 SF
5		376,239 SF
6		23,505 SF
7		3,642 SF
VP		249 SF



NOTES

1. OWNER OF RECORD OF MAP R-11 LOT 9:
   RICHARD W. SENTER (TRUSTEE)
   TWO MILL ROAD REALTY TRUST
   86 ROCKRIMMON ROAD
   KINGSTON, NH 03848
   DEED REFERENCE TO PARCEL IS BK. 2893 PG. 2178

   AREA OF PARCEL = 2,692,860 S.F.± OR 61.820 ACRES±

   OWNER OF RECORD OF MAP R-12 LOT 26:
   RICHARD W. SENTER (TRUSTEE)
   24 TOWLE ROAD REALTY TRUST
   86 ROCKRIMMON ROAD
   KINGSTON, NH 03848
   DEED REFERENCE TO PARCEL IS BK. 2893 PG. 2190

   AREA OF PARCEL = 1,432,611 S.F.± OR 32.888 ACRES±

2. R-11-9 INDICATES TAX MAP AND LOT NUMBER.

3. THE PURPOSE OF THIS PLAN IS TO SHOW A CONCEPTUAL SOLAR ARRAY LAYOUT.

4. CURRENT ZONING DISTRICT: RURAL RESIDENTIAL (RR)
   MINIMUM LOT FRONTAGE: 200 FEET ON CLASS V HIGHWAY OR BETTER.
   MINIMUM BUILDING SETBACKS:
   FRONT: 30 FEET
   SIDE: 20 FEET
   REAR: 20 FEET
   *COMMERCIAL USE WITHIN RURAL RESIDENTIAL ZONING DISTRICT REQUIRES A 50 FOOT VEGETATIVE BUFFER.

5. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR ROCKINGHAM COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33015C0390E, EFFECTIVE DATE MAY 17, 2005, INDICATES THAT THE SUBJECT PARCELS ARE NOT LOCATED WITHIN A FLOOD HAZARD AREA.

6. HORIZONTAL DATUM: NAD83(2011)
   VERTICAL DATUM: NAVD88
   BENCHMARKS SET: AS NOTED

7. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL(S) MAY DETERMINE.

8. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG-SAFE AT 811.

9. CONCEPTUAL LAYOUT OF SOLAR ARRAY BASED UPON INFORMATION PROVIDED BY ARRAY MANUFACTURER. FINAL LAYOUT AND ARRAY LOCATIONS TO BE FINALIZED BY UNITIL IN COORDINATION WITH MANUFACTURER.

Unitil

CONCEPTUAL SITE PLANS

TAX MAP R12 LOTS 25 & 26

FUNCTIONS AND VALUES ASSESSMENT

UNITIL KINGSTON SOLAR PROJECT

24 TOWLE ROAD
KINGSTON, NH 03848

PREPARED FOR

UNITIL ENERGY SYSTEMS
30 ENERGY WAY
EXETER, NH 03833

SCALE: 1"=200' **DECEMBER 8, 2022**

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

HORIZONTAL SCALE 1"=200'
200 100 0 200

REV	DATE	DESCRIPTION	DR	CK
1	02/21/2023	REV FOR CONSULTANT	ML	NG

TFM®
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	DR	JC	FB		
20025-00	CK	NG	CADFILE	20025-00 FUNCTIONS AND VALUES	EX-01

2 Mill Road Property
Kingston, NH

Photo: 1 – Southerly portion of ***Wetland 6***

Photo: 2 – Northerly portion of ***Wetland 6***

Photo: 3 – High Functioning, High Value portion of ***Wetland 5***. Most northeasterly area. This area contains Potential Vernal Pool (PVP) habitat.

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Conservation Commission Coordination

Env-Wt 311.06(h)

TFMoran, Inc.
48 Constitution Drive, Bedford, NH 03110
T(603) 472-4488 www.tfmoran.com

TFMoran, Inc. Seacoast Division
170 Commerce Way–Suite 102, Portsmouth, NH 03801
T(603) 431-2222

Nick Golon

From: Rick Russman <richardrussman@gmail.com>
Sent: Thursday, July 20, 2023 7:37 AM
To: Nick Golon
Cc: evelyn nathan; ernie landry
Subject: Kingston Mitigation Parcel

Hi Nick,

Thanks for getting back to me. While we would like to see a larger parcel closer to other conserved land, I think the 8 acre piece that fully conserves the forested wetland area rather than the 6.5 acre piece first suggested should work.

I would suggest you reach out to Duane Hyde [603.778.6088] at the Southeast Land Trust to discuss holding an CE on this piece. I am concerned that the small size may be give them pause but you'll see.

For FOKOS,
Rick

Sent from my iPad

Nick Golon

From: Nick Golon
Sent: Wednesday, July 19, 2023 5:00 PM
To: richardrussman@gmail.com
Subject: RE: Towle Road property info
Attachments: 20025-00 Mitigation Concept B-1_2023-07-18.pdf

Hello Richard,

We have further reviewed with Unitil and have increased the proposed conservation easement on lot R-11-9 to 8-acres as shown in the attached. The expanded configuration now fully conserves the forested wetland area that shares a property line with the adjacent Eversource Peaslee substation. Based on Env-Wt 803.08, table 800-1, the minimum compensatory mitigation for the unavoidable wetland impacts associated with the project would require approximately 4.7-acres at a ratio of 10:1 for aquatic resource buffer preservation. In that 8-acre parcel provides more than a 17:1 ratio we hope that the increased easement area meets expectations and look forward to working with you and FOKUS to secure this conservation easement. As mentioned in our call it sounded like partnering with the Southeast Land Trust of NH as steward for the easement was an appropriate fit. Do you have a contact at SELT you could reach out to regarding this opportunity such that we could progress to easement language, etc.?

Questions, comments, or additional information needed, please let me know!

Thank you,
Nick

Nicholas Golon, P.E.
Civil Department Manager, Principal
TFMoran, Inc.

From: Nick Golon
Sent: Thursday, July 13, 2023 11:52 AM
To: Gregory Senko <gsenko1@comcast.net>; richardrussman@gmail.com; evelyn nathan <evynathan@comcast.net>
Subject: RE: Towle Road property info

Hi All,

Draft wetland permit has been added to the file link. Will be sure to bring at least one hard copy to the meeting tonight.

Link; https://file.ac/6SCGx80SAFo/

Thank you,
Nick

Nicholas Golon, P.E.
Civil Department Manager, Principal
TFMoran, Inc.

From: Nick Golon
Sent: Tuesday, July 11, 2023 8:59 AM
To: Gregory Senko <gsenko1@comcast.net>; richardrussman@gmail.com; evelyn nathan <evynathan@comcast.net>
Subject: RE: Towle Road property info

Hello Greg, Richard & Evy,

Below please find a link to the functional assessment and .kmz files associated with the Unitil Solar Field project. A draft of the wetlands permit will be issued shortly in advance of our meeting with the Conservation Commission on Thursday.

Link; https://file.ac/6SCGx80SAFo/

Thank you!
Nick

Nicholas Golon, P.E.
Civil Department Manager, Principal
TFMoran, Inc.

From: Gregory Senko <gsenko1@comcast.net>
Sent: Friday, July 7, 2023 10:27 AM
To: Nick Golon <ngolon@tfmoran.com>
Subject: Towle Road property info

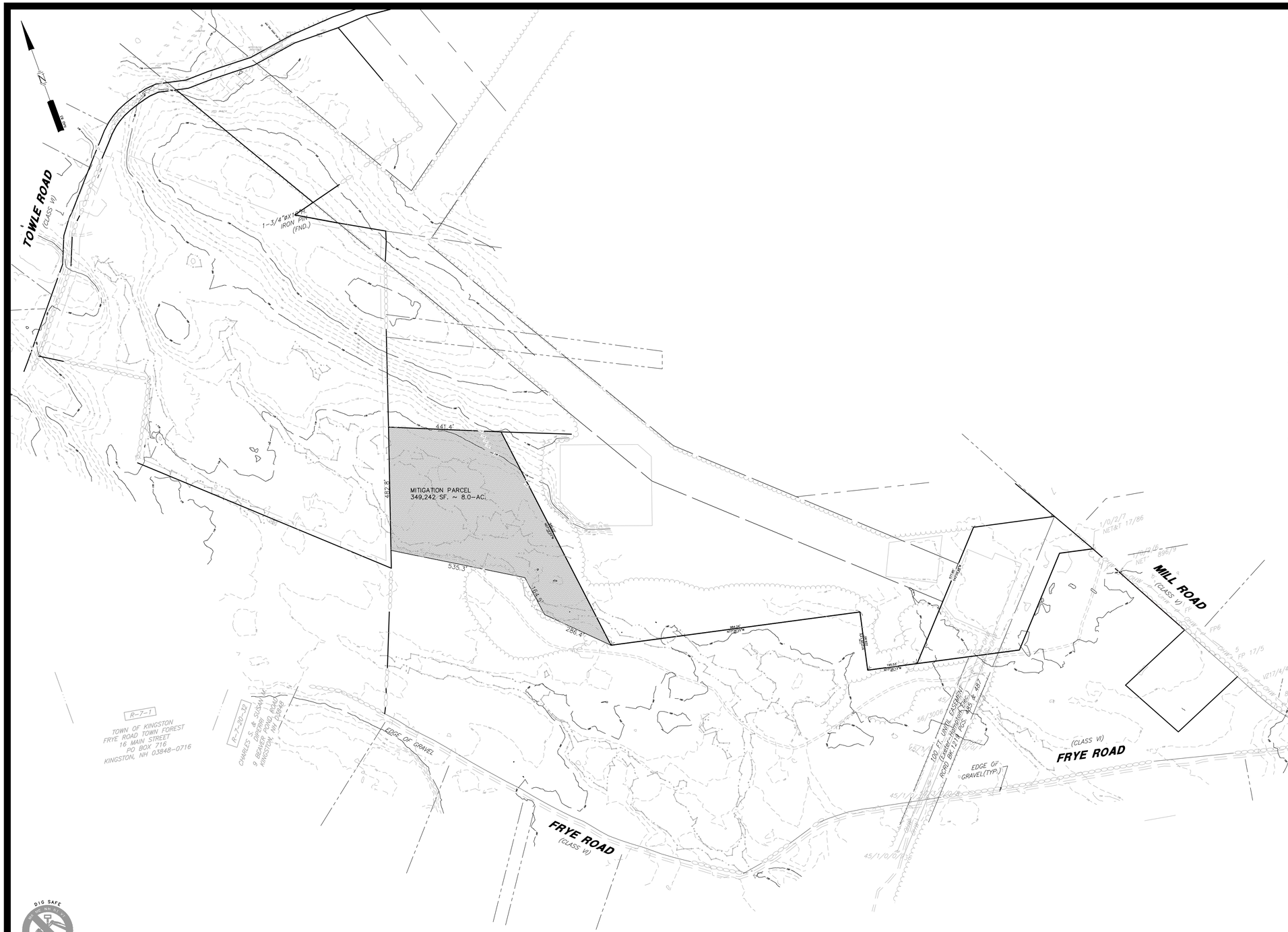
Hi Nick,

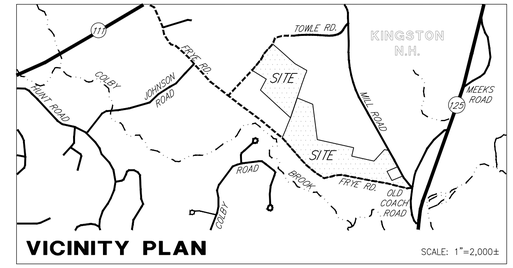
I am on the Kingston Conservation Commission and we met at the site walk a couple weeks ago. You did a great job, guiding us around the site and explaining the plans.

During the walk, you said that it would be possible to get your boundary and survey line info in a .kml or .gpx file. The CC has its monthly meeting next week and if there are any follow up questions about site, it would be great to have this info in case we have to go back out to the site.

Best regards,

Greg Senko
(978) 764-7358
gsenko1@comcast.net





VICINITY PLAN

SCALE: 1"=2,000±

NOTES

1. OWNER OF RECORD OF MAP R-11 LOT 9:
   RICHARD W. SENTER (TRUSTEE)
   TWO MILL ROAD REALTY TRUST
   86 ROCKRIMMON ROAD
   KINGSTON, NH 03848
   DEED REFERENCE TO PARCEL IS BK. 2893 PG. 2178

   AREA OF PARCEL = 2,692,860 S.F.± OR 61.820 ACRES±

2. R-11-9 INDICATES TAX MAP AND LOT NUMBER.

3. THE PURPOSE OF THIS PLAN IS TO SHOW A CONCEPTUAL MITIGATION PARCEL/EASEMENT.

4. CURRENT ZONING DISTRICT: RURAL RESIDENTIAL (RR) AND CONSERVATION OVERLAY DISTRICT.

	REQUIRED	PROVIDED
MINIMUM LOT FRONTAGE*:	200 FT	
MINIMUM BUILDING SETBACKS:		
FRONT:	30 FT	
SIDE:	20 FT	
REAR:	20 FT	

   *ON CLASS V HIGHWAY OR BETTER.
   *COMMERCIAL USE WITHIN RURAL RESIDENTIAL ZONING DISTRICT REQUIRES A 50 FOOT VEGETATIVE BUFFER.

5. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR ROCKINGHAM COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33015C0390E, EFFECTIVE DATE MAY 17, 2005, INDICATES THAT THE SUBJECT PARCELS ARE NOT LOCATED WITHIN A FLOOD HAZARD AREA.

6. HORIZONTAL DATUM: NAD83(2011)
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   BENCHMARKS SET: AS NOTED

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Unitil

SITE DEVELOPMENT PLANS

TAX MAP R-11-9

MITIGATION PARCEL

UNITIL KINGSTON SOLAR PROJECT

14 & 24 TOWLE ROAD
KINGSTON, NH 03848

PREPARED FOR

UNITIL ENERGY SYSTEMS
30 ENERGY WAY
EXETER, NH 03833

SCALE: 1"=200' **JUNE 22, 2023**

HORIZONTAL SCALE 1"=200'
200 100 0 200

REV	DATE	DESCRIPTION	DR	CK
1	7/18/2023	REVISED EASEMENT AREA	GS	NG

TFM®
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	DR	JB	FB	–	
20025-00	CK	NG	CADFILE	20025-00 DESIGN_LAYOUT	CONCEPT B-1

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

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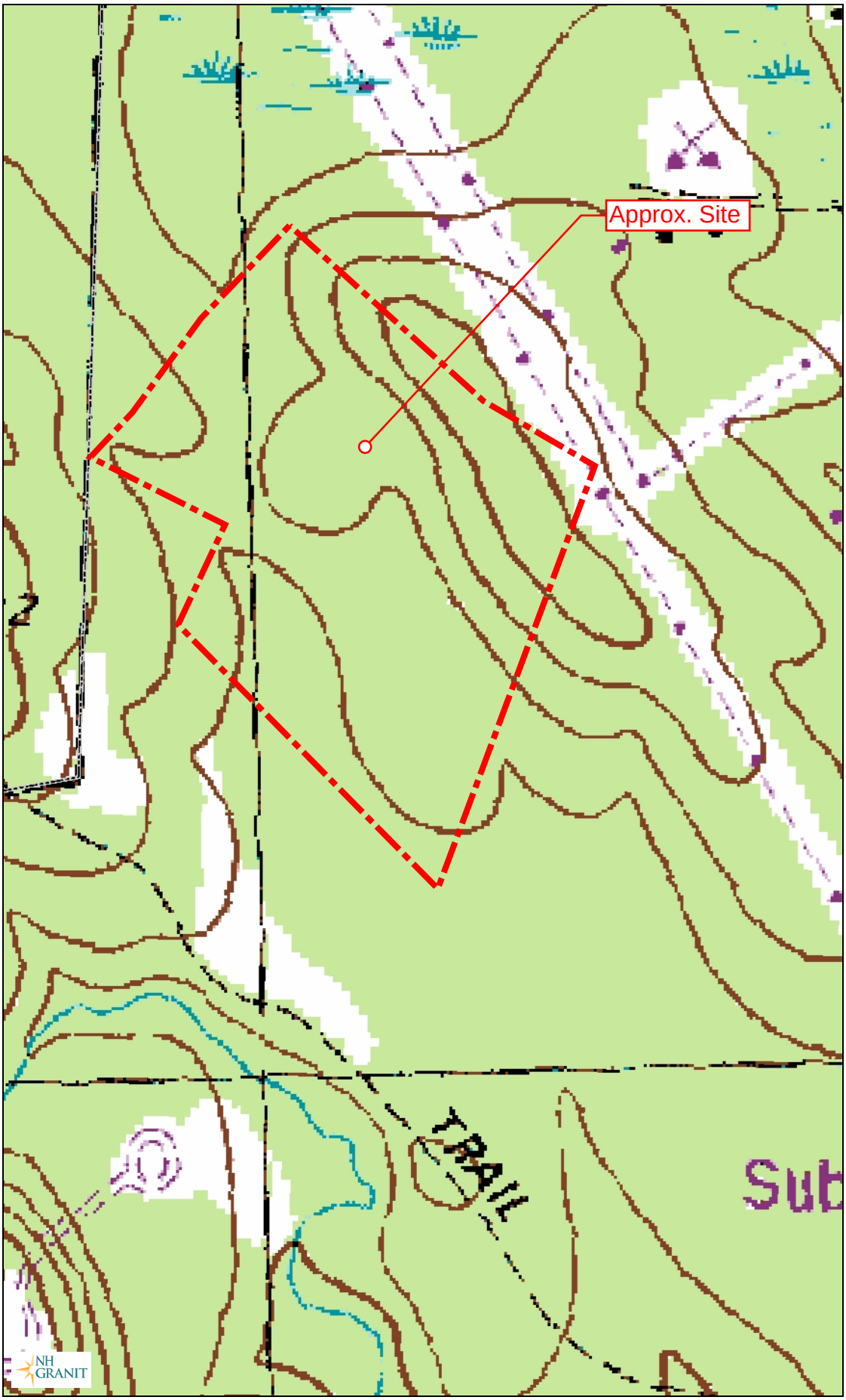
This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

SECTION 4

GRANIT 7.5' USGS Topographic Map



Legend

- State
- County
- City/Town

Map Scale

1: 5,000

© NH GRANIT, www.granit.unh.edu

Map Generated: 4/12/2023

Notes

GRANIT 7.5' USGS map of
24 Towle Road, Kingston, NH Tax
Map R-12 Lot 26

GRANIT Aerial Map

Legend

- State
- County
- City/Town

Map Scale

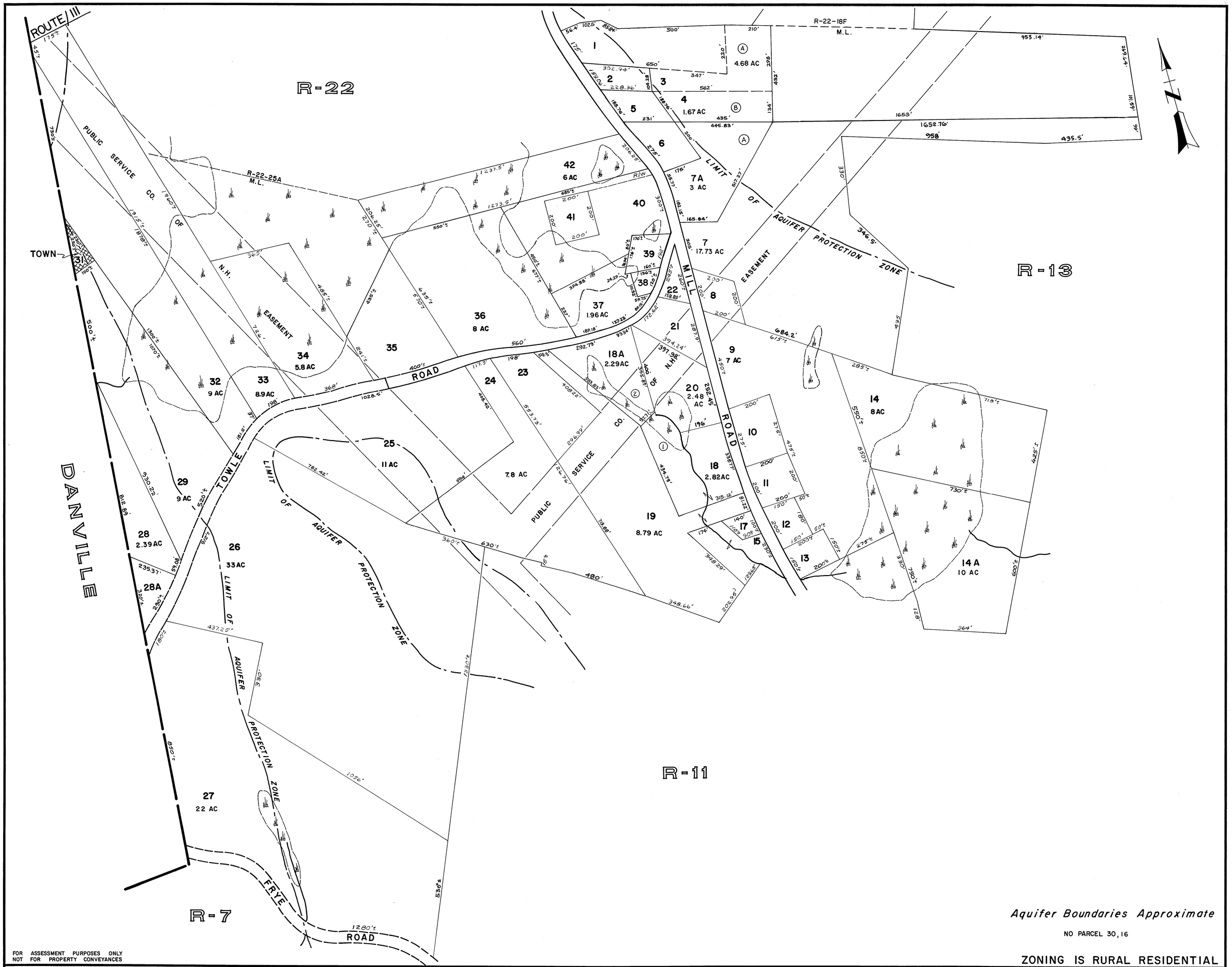
1: 5,000

© NH GRANIT, www.granit.unh.edu

Map Generated: 4/12/2023

Notes

GRANIT Aerial map of
24 Towle Road, Kingston, NH
Tax Map R-12 Lot 26



Aquifer Boundaries Approximate

NO PARCEL 30, 16

ZONING IS RURAL RESIDENTIAL

FOR ASSESSMENT PURPOSES ONLY
NOT FOR PROPERTY CONVEYANCES

PREPARED BY PHOTOGRAMMETRIC METHODS BY

JOHN E. O'DONNELL & ASSOCIATES
AUBURN, MAINE
1975

LEGEND

ADJACENT SHEET NO.	12
COMMON OWNERSHIP	OR ✓
DEVELOPMENT LOT NO.	②
SCALED DIMENSION	±

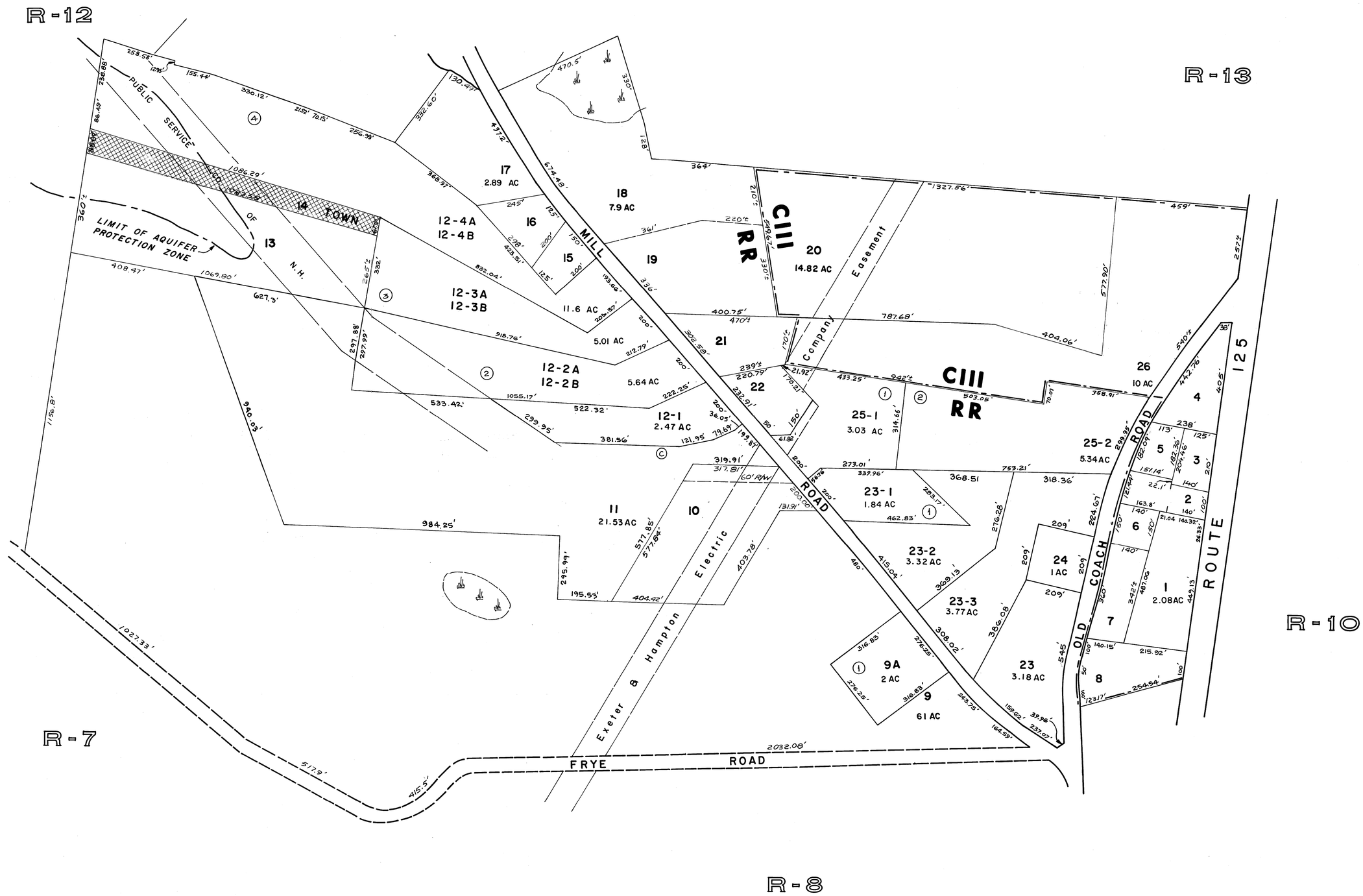
PROPERTY MAP

KINGSTON

NEW HAMPSHIRE

SCALE IN FEET
0 200 400

R-12



FOR ASSESSMENT PURPOSES ONLY
NOT FOR PROPERTY CONVEYANCES

Aquifer Boundaries Approximate

ZONING AS SHOWN

PREPARED BY PHOTOGRAMMETRIC METHODS BY

JOHN E. O'DONNELL & ASSOCIATES
AUBURN, MAINE
1975

LEGEND

ADJACENT SHEET NO.	12
COMMON OWNERSHIP	OR √
DEVELOPMENT LOT NO.	②
SCALED DIMENSION	±

PROPERTY MAP

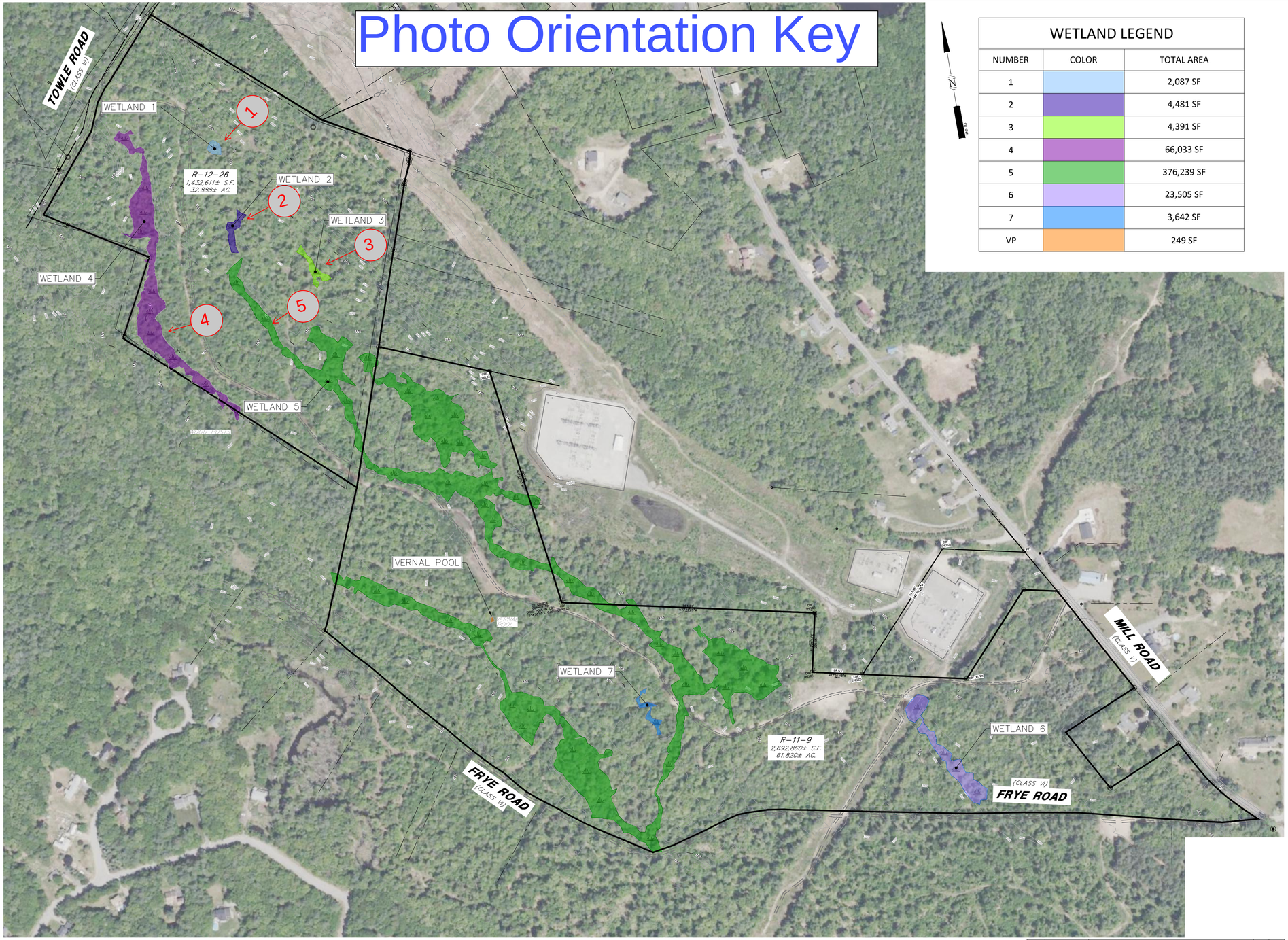
KINGSTON

NEW HAMPSHIRE

SCALE IN FEET
0 200 400

R-11

Photo Orientation Key



WETLAND LEGEND		
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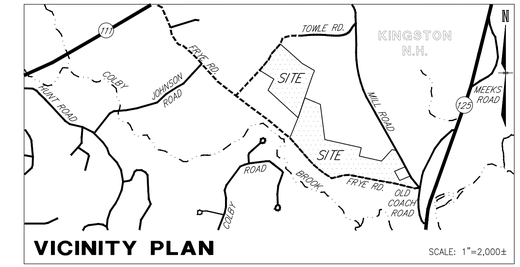

NOTES

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   RICHARD W. SENTER (TRUSTEE)
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   86 ROCKRIMMON ROAD
   KINGSTON, NH 03848
   DEED REFERENCE TO PARCEL IS BK. 2893 PG. 2178

   AREA OF PARCEL = 2,692,860 S.F.± OR 61.820 ACRES±

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   AREA OF PARCEL = 1,432,611 S.F.± OR 32.888 ACRES±
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   BENCHMARKS SET: AS NOTED
7. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL(S) MAY DETERMINE.
8. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG-SAFE AT 811.
9. CONCEPTUAL LAYOUT OF SOLAR ARRAY BASED UPON INFORMATION PROVIDED BY ARRAY MANUFACTURER. FINAL LAYOUT AND ARRAY LOCATIONS TO BE FINALIZED BY UNITIL IN COORDINATION WITH MANUFACTURER.

Unitil

CONCEPTUAL SITE PLANS

TAX MAP R12 LOTS 25 & 26

FUNCTIONS AND VALUES ASSESSMENT

UNITIL KINGSTON SOLAR PROJECT

24 TOWLE ROAD
KINGSTON, NH 03848

PREPARED FOR

UNITIL ENERGY SYSTEMS
30 ENERGY WAY
EXETER, NH 03833

SCALE: 1"=200' **DECEMBER 8, 2022**

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48 Constitution Drive, Bedford, N.H. 03110

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

HORIZONTAL SCALE 1"=200'
200 100 0 200

REV	DATE	DESCRIPTION	DR	CK
1	02/21/2023	REV FOR CONSULTANT	ML	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	DR	JC	FB		
20025-00	CK	NG	CADFILE	20025-00 FUNCTIONS AND VALUES	EX-01

24 Towle Road
Kingston, NH

Photo: 1 – Low Functioning, Low Value **Wetland 1**.

Photo: 2 - Low Functioning, Low Value **Wetland 2**.

Photo: 3 – Low Functioning, Low Value **Wetland 3**.

Photo: 4 – Southerly portion of **Wetland 4**.

Photo: 5 - Low Functioning, Low Value area of **Wetland 5**.

SECTION 5

QUITCLAIM DEED 02693 P2190

I, RICHARD W. SENTER of Kingston, County of Rockingham, State of New Hampshire, for nominal consideration, do hereby convey to RICHARD W. SENTER, Trustee of the 24 TOWLE ROAD REALTY TRUST (mailing address: 18 Old Mill Road, Kingston, NH 03848) under Declaration of Trust dated July 3, 1991, to be recorded contemporaneously herewith, with **QUITCLAIM COVENANTS**, the land in said Kingston, near the Towle Road, so called, in West Kingston, bounded and described as follows:

Beginning at the most westerly corner thereof on the "Back Road", so called, which road runs northeasterly from said Towle Road, thence running northeasterly by said Back Road to land now or formerly of James N. George; thence southeasterly by said land of George and land now or formerly of John P. Kimball to land now or formerly of John B. Sleeper; thence southwesterly by land last mentioned to land conveyed by Henry P. Tyler to Albion W. Nason; thence northwesterly by the land last mentioned as the fence stood at the time of said conveyance from Tyler to Nason about sixty-four (64) rods; thence northeasterly by said Nason land, by an old wall about twenty (20) rods; thence westerly by said Nason land, by an old wall, about twenty-six and one-half (26½) rods to the point begun at.

Being the same premises conveyed to me by deed dated August 6, 1975, and recorded in Rockingham Registry of Deeds, Book 2243, Page 1611.

EXECUTED as a sealed instrument this 3 day of August, 1991.

RICHARD W. SENTER

STATE OF NEW HAMPSHIRE

ROCKINGHAM, SS. AUGUST 3RD, 1991

Then personally appeared the above named RICHARD W. SENTER and acknowledged the foregoing instrument to be his voluntary act and deed, before me

Notary Public - Justice of the Peace

My Commission Expires: January 14, 1995

Oct 4 10 45 AM '91

ROCKINGHAM COUNTY REGISTRY OF DEEDS

STATE OF NEW HAMPSHIRE
DEPARTMENT OF REVENUE ADMINISTRATION
REAL ESTATE TRANSFER TAX
M D Y: 10 04 91
$ 42.00
XX THOUSAND XX HUNDRED AND 42 DOLLARS
CONTROL NUMBER 35040 | VOID IF ALTERED

QUITCLAIM DEED 02593 P2178

WE, RICHARD W. SENTER and SYLVIA M. SENTER of Kingston, County of Rockingham, State of New Hampshire, for nominal consideration, do hereby convey to RICHARD W. SENTER, Trustee of the TWO MILL ROAD REALTY TRUST (mailing address: 18 Old Mill Road, Kingston, NH 03848) under Declaration of Trust dated July 3, 1991, to be recorded contemporaneously herewith, with **QUITCLAIM COVENANTS** the following described premises:

A certain tract of land and buildings known as the Wadleigh Homestead situated in said Kingston and bounded as follows: Beginning at the junction of the roads leading from Exeter and West Kingston to Haverhill, Massachusetts; on the East by the aforesaid road leading from Exeter to Haverhill, on the North by the Mary Crosby property formerly owned by John Gardner; on the West and South by the road leading from West Kingston to Haverhill, Massachusetts, the whole containing about 12 acres.

Also a second tract of land bounded as follows: Beginning at the aforesaid junction of the roads; on the East by aforesaid road leading from West Kingston to Haverhill, Massachusetts; on the North by the Wilson property formerly owned by Leonard Legault, and a woodlot of the late Charles Hoyt; on the West by the aforesaid Hoyt woodlot and a piece of property owned by the Albion Nason heirs; on the South by the road leading from Danville to the junction of the aforesaid roads at Bartletts Corner, the same containing about 90 acres. The North line along the Wilson property runs from the West Kingston road about 91 rods in a direction about N. 70 W.; thence about 32 rods about N. 30 E. to a corner with walls in each direction; thence about N. 60 W. about 66 rods; thence about S. 35 W. about 70 rods to the Danville Road.

Excepting and reserving, however, from the above described tract of land the following tracts:

(A) A parcel of land situated in Kingston, in the County of Rockingham and the State of New Hampshire, on the West side of the road leading from South Kingston to Kingston Plains, bounded as follows: Beginning at a point on said highway two hundred nine (209) feet south of property now or formerly of O'Brien at an iron pipe and thence running Westerly two hundred nine (209) feet by land now or formerly of Harold P. Nason to an iron pipe; thence Southerly two hundred nine (209) feet by said Nason land to an iron pipe; thence Easterly two hundred nine (209) feet by said Nason land to an iron pipe; thence Northerly by said highway two hundred nine (209) feet to point of beginning, containing one acre.

Being the same premises conveyed to Grantors by deed dated August 5, 1953 and recorded in Rockingham Records, Book 1292, Page 041; and

(B) A small triangular parcel of land without buildings, situated in Kingston, County of Rockingham, State of New Hampshire, on the Easterly side of the West Kingston Road bounded and described as follows: Beginning at an old pipe on the Easterly side of said highway, at the Westerly terminus of an old stone wall, and at other land of Edward B. and Helen J. Holt and running South 63° 37' East along said stone wall or the remains thereof and along said Holt land 76.60 feet to an iron pipe; thence running South 75° 38' West along other land of Harold P. Nason 58.03 feet to an iron pipe at said West Kingston Road; thence running North 14° 22' West along or near said West Kingston Road 50.0 feet to the point of beginning.

Together with all right, title, and interest in and to that strip of land lying between the within-described premises and said West

Oct 4 10 45 AM '91
ROCKINGHAM COUNTY REGISTRY OF DEEDS

Kingston Road.

Being the same premises sold by Harold P. Nason to Edward B. Holt and Helen J. Holt by deed dated July 24, 1967 and recorded in Rockingham Records, Book 1869, Page 493.

Being the same premises conveyed to us by deed dated December 8, 1972 and recorded with Rockingham Records in Book 2196, Page 0571.

EXECUTED as a sealed instrument this 3 day of August, 1991.

Richard W. Senter
RICHARD W. SENTER

Sylvia M. Senter
SYLVIA M. SENTER

STATE OF NEW HAMPSHIRE

ROCKINGHAM, SS. AUGUST 3RD, 1991

Then personally appeared the above named RICHARD W. SENTER and SYLVIA M. SENTER and acknowledged the foregoing instrument to be their voluntary acts and deeds, before me

~~Notary Public~~ - Justice of the Peace

LAWRENCE D. SMITH, JUSTICE OF THE PEACE NEW HAMPSHIRE

My Commission Expires 10/14, 1995

STATE OF NEW HAMPSHIRE
DEPARTMENT OF REVENUE ADMINISTRATION
REAL ESTATE TRANSFER TAX

MO	DAY	YR
10	04	91

$42.00

XX THOUSAND XX HUNDRED AND 42 DOLLARS

CONTROL NUMBER 35039 | VOID IF ALTERED

QUITCLAIM DEED

ROCKINGHAM COUNTY
REGISTRY OF DEEDS

0025832

APR 28 11 37 AM '98

KNOW ALL MEN BY THESE PRESENTS: That ~~<SELLER 1 first> <seller 1 middle>~~ Citicorp Mortgage, Inc., of 15851 Clayton Road; M.S. 323, Ballwin, MO 63011, for consideration paid grant(s) all my/our right, title and interest, to Tina M. Homan and Richard G. Homan, Wife and Husband, of 8 Riverview Drive, Middleton, MA 01949, as joint tenants with rights of survivorship, with QUITCLAIM COVENANTS:

A certain tract or parcel of land, with the buildings thereon, situated in the Town of Kingston, County of Rockingham, State of New Hampshire, more particularly bounded and described as follows:

Beginning at an iron pin found in the northeast corner of the parcel herein described at the southerly side of Towle Road, so-called, at land of Dorothy E. Bartlett; thence running S 20° 22' 19" E, 272.61 feet to a drill hole set at the end of a stone wall; thence S 20° 05' 15" E, 235.81 feet along said stone wall to a corner of walls; thence S 75° 07' 42" W, 36.95 feet; S 75° 35' 17" W, 249.81 feet and S 73° 54' 21" W, 108.76 feet along a stone wall to the end of said stone wall; thence S 75° 40' 50" W, 211.01 feet to an iron bar at land now or formerly of Warren W. George, the last six courses being by land now or formerly of Dorothy E. Bartlett; thence N 48° 39' 08" W, 553.18 feet to a drill hole set in the end of a stone wall; thence N 50° 01' 28" W, 36.57 feet along said stone wall; thence N 48° 05' 12" W, 192.67 feet along said stone wall to an iron pin set in the southerly side of Towle Road, the last three courses being by land of said Warren W. George; thence easterly 1,028.5 feet, more or less, along the southerly side of the said Towle Road to the point of beginning.

Meaning and intending to describe and convey the same premises conveyed to Citicorp Mortgage, Inc. by foreclosure deed dated July 30, 1997 and recorded in the Rockingham County Registry of Deeds.

The property is not the residence of the grantor and is not subject to homestead rights.

Executed this 23RD day of April 1998.

CITICORP MORTGAGE, INC.

By: X
SCOTT A. FRENCH VICE PRES.
its:
Duly Authorized

CORPORATE SEAL DELAWARE

State of Missouri
County of St. Louis

April 23, 1998

Then personally appeared SCOTT A. FRENCH VICE PRES. (NAME), VICE PRESIDENT (OFFICE), duly authorized on behalf of Citicorp Mortgage, Inc., and acknowledged that he/she executed the same for the purposes contained therein.

Pat Willis
Notary Public/~~Justice of the Peace~~
Commission expiration:

PAT WILLIS
NOTARY PUBLIC
COUNTY OF JEFFERSON
STATE OF MISSOURI

STATE OF NEW HAMPSHIRE
DEPARTMENT OF REVENUE ADMINISTRATION
REAL ESTATE TRANSFER TAX
XX THOUSAND 8 HUNDRED AND 50 DOLLARS
MO. DAY YR. 042898 295154 AMOUNT $850.00

No. NHCR-35

New Hampshire Real Estate Appraiser Board

THIS HEREBY ACKNOWLEDGES

Mary M. Fleger

is duly recognized as a

Certified Residential Appraiser

In accordance with all of the provisions of Chapter 310B of the Revised Statutes Annotated and amendments thereto, and the rules and regulations of this Commission.

This license/certificate applies only to the person named herein and shall remain in effect unless sooner revoked or suspended in accordance with the law.

This license expires

12-31-99

Real Estate Appraiser Chairman

HOLLAND, DONOVAN, BECKETT & HERMANS
PROFESSIONAL ASSOCIATION
151 WATER STREET
P.O. BOX NO. 1090
EXETER, NEW HAMPSHIRE 03833-1090
TELEPHONE 603-772-5956
FAX # 1-603-778-1434

APR 12 1994

EVERETT P. HOLLAND
ROBERT B. DONOVAN
WILLIAM H. M. BECKETT
STEPHEN G. HERMANS
RONALD G. SUTHERLAND

JOHN W. PERKINS
(1902-1973)

April 11, 1994

Bettie C. Ouellette, Tax Collector
Town Office
Main Street
Kingston, New Hampshire 03848

Dear Bettie:

Enclosed are copies of Peter V. Doyle's April 6, 1994 letter to Lawrence P. Sumski and the document transmitted therewith.

I am sending copies of this letter and the enclosures to the Office of the Selectmen because the enclosed document purports to invalidate the foreclosure deed so that title to these premises remains in George N. Spates, III and Marilyn N. Wood-Spates and taxes should be assessed accordingly.

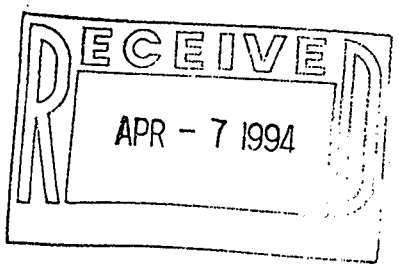
I will let you know as soon as I receive any additional information from Mr. Sumski or Mr. Doyle.

Very truly yours,

Stephen G. Hermans

SGH:gsh
enc.
cc: Board of Selectmen
S/K8

Shaines & McEachern
Professional Association, Attorneys



April 6, 1994

Lawrence P. Sumski, Trustee
12 Liberty Park
Amherst, NH 03031

RE: George Spates BK #93-11072
Marilyn Wood Spates BK #93-11769

Dear Mr. Sumski:

In response to your letter of March 21, 1994, which references Steve Herman's letter of March 17, 1994, it is fine to apply the money which you forwarded to the Town of Kingston, against real estate taxes. For your information, I enclose with this letter a copy of a document recorded in the Rockingham County Registry of Deeds on March 2, 1994 (Book 3040, Page 660) entitled Reinstatement of Original Mortgage and Acknowledgement of Wrongful Foreclosure. This document was executed both by Citicorp Mortgage, Inc. and the debtors and clarifies the state of title.

If you have any questions, do not hesitate to call.

Very truly yours,

Peter V. Doyle

PVD/kma

Enclosure

cc: Stephen Hermans, Esq.
Mr. and Mrs. George Spates
Citicorp Mortgage Inc. (#9218244-3)

#1380-24579

25 Maplewood Avenue, P.O. Box 360
Portsmouth, New Hampshire 03802-0360
Telephone 603/436-3110: FAX : 603/436-2993

012300

MAR 2 11 50 AM '94

ROCKINGHAM COUNTY
REGISTRY OF DEEDS

REINSTATEMENT OF ORIGINAL MORTGAGE AND
ACKNOWLEDGEMENT OF WRONGFUL FORECLOSURE

NOW COME Citicorp Mortgage, Inc. (hereinafter, "CMI") of 15851 Clayton Road, Ballwin, Missouri 63011 and George N. Spates, III and Marilyn N. Wood-Spates (hereinafter, "G. Spates and M. Spates") of 14 Towle Road, Kingston, New Hampshire 03848 and hereby state as follows:

1. On October 7, 1986, G. Spates and M. Spates granted to CMI a Mortgage, which was recorded at the Rockingham County Registry of Deeds at Book 2635, Page 1766 (hereinafter, "Mortgage").

2. Said Mortgage secured the payment of $126,000.00 advanced with interest and any other charges, all as provided in the Promissory Note of even date.

3. The security for said Mortgage was the property located at 14 Towle Road, Kingston, Rockingham County, New Hampshire (hereinafter, "the property").

4. On April 13, 1993, G. Spates filed a Petition for Relief Pursuant to Chapter 7 of Title 11 of the United States Code with the U.S. Bankruptcy Court for the District of New Hampshire (hereinafter, "U.S.B.C."), docket number 93-11072.

5. On May 12, 1993, CMI filed its Motion for Relief from Stay with the U.S.B.C.

6. By Order dated June 10, 1993, the U.S.B.C. granted CMI's Motion for Relief from Stay.

7. On June 16, 1993, M. Spates filed a Petition for Relief Pursuant to Chapter 13 of Title 11 of the United States Code with the U.S.B.C., docket number 93-11769, **without notice to CMI or its counsel.**

8. One day later, on June 17, 1993 at 9:30 a.m., CMI conducted a foreclosure sale at the property.

9. Still without notice of the bankruptcy filing by M. Spates, CMI caused a Foreclosure Deed Under Power of Sale and Affidavit Required by N.H. RSA §479:26 dated July 1, 1993 to be recorded at the Rockingham County Registry of Deeds at Book 2996, Page 2747 on July 27, 1993.

10. It is the express intent of the parties to give notice that the foreclosure sale of June 17, 1993 and the Foreclosure Deed Under Power of Sale and Affidavit Required by N.H. RSA §479:26 recorded at Book 2996, Page 2747 on July 27, 1993 are null, void and of no effect by virtue of federal bankruptcy rules and statutes. It is also the intent of the parties to reinstate and recognize the validity of said Mortgage of October 7, 1986, recorded at the Rockingham County Registry of Deeds at Book 2635, Page 1766 and the Promissory Note is secures.

DATED this 23 day of February, 1994.

CITICORP MORTGAGE, INC.
By its Attorneys,
SHAINES & McEACHERN, P.A.

Witness

By: Jonathan M. Flagg, Esquire

Witness

George N. Spates, III

Witness

Marilyn N. Wood-Spates

Cut here

~~Courtesy Copy~~ to Board of Selectmen

STATE OF NEW HAMPSHIRE

BOARD OF TAX AND LAND APPEALS

TO ALL TAX COLLECTORS:

In accordance with the provisions of RSA 76:13, it is required that the Tax Collector shall notify the Board of Tax and Land Appeals in writing of the date on which the last tax bill was sent.

You may use the spaces provided below to enter the date of mailing of the final bill covering taxes which were committed to you on the original property warrant for 1997.

FINAL TAX BILL MAILED ON October 30, 1997

~~TOWN~~/CITY OF Kingston

Betty C. Willette

Signature of TAX COLLECTOR

RECEIVED

NOV 10 1997

TOWN OF KINGSTON
SELECTMAN'S OFFICE

TDD Access: Relay NH 1-800-735-2964

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

July 6, 2023

Abutters List
For Unitil
Scale PV Solar Facility

Job #20025-00

Unitil Energy Systems, Inc.
c/o Jacob Dusling, PE
30 Energy Way
Exeter, NH 03833

Lot R12-26
Richard W Senter, Trustee
24 Towle Road Realty Trust
86 Rockrimmon Road
Kingston, NH 03848

Lot R12-025
Richard G Homan
14 Towle Road
Kingston, NH 03848

Lot R11-009
Richard W Senter, Trustee
Two Mill Road Realty Trust
86 Rockrimmon Road
Kingston, NH 03848

Lot R11-012-4A
Richard J. Boucher
22B Mill Road, Unit 1
Kingston, NH 03848

Lot R11-012-4B
Danielle E. Warhall & Mackenzie D. Maguire
22B Mill Road, Unit 2
Kingston, NH 03848-3430

Lot R11-013
Charlotte L. George, Trustee
Charlotte L. George Rev. Trust of 1998
30 Ball Road
Kingston, NH 03848-3608

Lot R11-014
Town of Kingston
163 Main Street
PO Box 716
Kingston, NH 03848-0716

Lot R12-024
Richard A Rizzotti & Briana L Huber
39 Brentwood Road
Exeter, NH 03833

Lot R12-027
Melissa Marie & Charles Everett Parry
50 Frye Road
East Hampstead, NH 03826

Lot R12-028
Cheryl & Dean Turner
Michelle T. Lane
P.O. Box 365
Northwood, NH 03261-0365

Lot R12-028A
Kevin M. Nason & Lisa Francoeur
84 Frye Road
East Hampstead, NH 03826

Lots R12-029, R12-032, & R12-033
Southeast Land Trust of NH
247 North River Road
Epping, NH 03042

Lot R12-034
Public Service Co. of New Hampshire
780 N Commercial Street
Manchester, NH 03101

Lot R12-035
Anselmo Aleman
11 Towle Road
Kingston, NH 03848

Lot R12-036
Roland Dube
9 Towle Road
Kingston, NH 03848

Public Service Co. of New Hampshire
DBA Eversource Energy
780 N Commercial Street
Manchester, NH 03101

Eversource Energy
PO Box 270
Hartford, CT 06141-0270

TFMoran, Inc.
Nick Golon, PE/Michael Dahlberg, LLS
Jason Aube, CWS
48 Constitution Drive
Bedford, NH 03110

BAG Land Consultants
Bruce A. Gilday, CSS
43 Rockingham Street
Concord, NH 03301

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

NEW HAMPSHIRE 200

ABUTTER NOTIFICATION FOR
NHDES WETLANDS PERMIT APPLICATION

VIA CERTIFIED MAIL

July 5, 2023

Project # 96094.00

RE: NHDES Wetlands Permit Application, 24 Towle Road, Kingston, NH Tax Map: 43Z, Lot: 36

Dear Abutter:

This letter is to inform you that a Wetlands Permit Application will be filed with the NH Department of Environmental Services (NHDES). Under NH Wetlands Law, RSA 482-A, impacts to wetlands require a NHDES Wetlands Permit and, under RSA 482-A:3, we are required to notify you about this application by certified mail.

Once the permit application is filed, a copy of the complete permit application, including the plans that depict the proposed impact area, will be available for viewing at the City of Concord, City Clerk's Office.

Sincerely,
TFMoran, Inc.

Jay Aube, CWS
Environmental Permitting Specialist

cc: NHDES Wetlands Bureau

JRA/sdr

7021 1970 0001 5678 4044

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Extra Services & Fees *(check box, add fee as appropriate)*
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- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage $ .63
Total Postage and Fees $ 7.53

Postmark Here
JUL 14 2023
MANCHESTER POST OFFICE
MANCHESTER, NH 03103

Sent To Lot R11-012-4B
Danielle E. Warhall
Mackenzie D. Maguire
Street and Apt. No., 22B Mill Road, Unit 2
City, State, ZIP+4® Kingston, NH 03848-3430

PS Form 3800, April 2015 PSN 7530-02-000-9047

7021 1970 0001 5678 4082

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- ☐ Adult Signature Restricted Delivery $

Postage $ .63
Total Postage and Fees $ 7.53

Postmark Here
JUL 14 2023
MANCHESTER POST OFFICE
MANCHESTER, NH 03103

Sent To Lot R12-26
Richard W Senter, Trustee
Street and Apt. No., 24 Towle Road Realty Trust
City, State, ZIP+4® 86 Rockrimmon Road
Kingston, NH 03848

PS Form 3800,

7021 1970 0001 5678 3917

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- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage $ .63
Total Postage and Fees $ 7.53

Postmark Here
JUL 14 2023
MANCHESTER POST OFFICE
MANCHESTER, NH 03103

Sent To Unitil Energy Systems, Inc.
c/o Jacob Dusling, PE
Street and Apt. No., 30 Energy Way
City, State, ZIP+4® Exeter, NH 03833

PS Form 3800

7021 1970 0001 5678 4051

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- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage $ .63
Total Postage and Fees $ 7.53

Postmark Here
JUL 14 2023
MANCHESTER POST OFFICE
MANCHESTER, NH 03103

Sent To Lot R11-012-4A
Richard J. Boucher
Street and Apt. No., 22B Mill Road, Unit 1
City, State, ZIP+4® Kingston, NH 03848

PS Form 3800,

7021 1970 0001 5678 4068

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Extra Services & Fees *(check box, add fee as appropriate)*
- ☐ Return Receipt (hardcopy) $ 3.35
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage $ .63
Total Postage and Fees $ 7.53

Postmark Here
JUL 14 2023
MANCHESTER POST OFFICE
MANCHESTER, NH 03103

Sent To Lot R11-009
Richard W. Senter, Trustee
Street and Apt. No., Two Mill Road Realty Trust
City, State, ZIP+4® 86 Rockrimmon Road
Kingston, NH 03848

PS Form 3800,

7021 1970 0001 5678 4075

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Extra Services & Fees *(check box, add fee as appropriate)*
- ☐ Return Receipt (hardcopy) $ 3.35
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage $ .63
Total Postage and Fees $ 7.53

Postmark Here
JUL 14 2023
MANCHESTER POST OFFICE
MANCHESTER, NH 03103

Sent To Lot R12-025
Richard G Homan
Street and Apt. No., 14 Towle Road
City, State, ZIP+4® Kingston, NH 03848

PS Form 3800,

7021 1970 0001 5678 4259

U.S. Postal Service™
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OFFICIAL USE

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Extra Services & Fees *(check box, add fee as appropriate)*
- ☐ Return Receipt (hardcopy) $ 3.35
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage $ .63
Total Postage an $ 7.53
Sent To Lot R12-024
Richard A. Rizzotti
Briana L. Huber
Street and Apt. N 39 Brentwood Road
City, State, ZIP+4 Exeter, NH 03833

Postmark Here
MANCHESTER POST OFFICE JUL 14 2023 MANCHESTER, NH 03103

PS Form 3800, April 2015 PSN 7530-02-000-9047

7021 1970 0001 5678 4266

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- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage $ .63
Total Postage a $ 7.53
Sent To Lot R11-014
Town of Kingston
Street and Apt. N 163 Main Street
PO Box 716
City, State, ZIP+ Kingston, NH 03848-0716

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- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage $ .63
Total Postage an $ 7.53
Sent To Lot R11-013
Charlotte L. George, Trustee
Charlotte L. George Rev. Trust of 1998
Street and Apt. N 30 Ball Road
City, State, ZIP+4 Kingston, NH 03848-3608

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7021 1970 0001 5678 4235

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- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage $ .63
Total Postage and Fees $ 7.53
Sent To Lot R12-028
David, Cheryl & Dean Turner,
Street and Apt. No Michelle T. Lane
P.O. Box 365
City, State, ZIP+4 Northwood, NH 03261-0365

Postmark Here

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7021 1970 0001 5678 4228

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- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage $ .63
Total Postage and $ 7.53
Sent To Lot R12-028A
Kevin M. Nason
Street and Apt. No. Lisa Francoeur
84 Frye Road
City, State, ZIP+4® East Hampstead, NH 03826

Postmark Here
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PS Form 3800, Ap

7021 1970 0001 5678 4242

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- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage $ .63
Total Postage and $ 7.53
Sent To Lot R12-027
Melissa Marie & Charles Everett Parry
Street and Apt. No. 50 Frye Road
City, State, ZIP+4® East Hampstead, NH 03826

Postmark Here
MANCHESTER POST OFFICE JUL 14 2023

PS Form 3800, A

7021 1970 0001 5678 4198

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- ☐ Return Receipt (hardcopy) $ 3.35
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage $ .63
Total Postage and $ 7.53

Postmark Here
JUL 14 2023 MANCHESTER POST OFFICE

Sent To Lot R12-035
Street and Apt. No., Anselmo O. & Juana A. Aleman
City, State, ZIP+4® 11 Towle Road
Kingston, NH 03848

PS Form 3800, April 2015 PSN 7530-02-000-9047

7021 1970 0001 5678 4204

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- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage $ .63
Total Postage an $ 7.53

Postmark Here
JUL 14 2023 MANCHESTER POST OFFICE

Sent To Lot R12-034
Street and Apt. N Public Service Co. of New Hampshire
City, State, ZIP+4 780 N Commercial Street
Manchester, NH 03101

PS Form 3800, April 2015 PSN 7530-02-000-9047

7021 1970 0001 5678 4211

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- ☐ Return Receipt (hardcopy) $ 3.35
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage $ .63
Total Postage and $ 7.53

Postmark Here
JUL 14 2023 MANCHESTER NH 03101

Sent To Lots R12-029, R12-032, & R12-033
Street and Apt. No., Southeast Land Trust of NH
City, State, ZIP+4® 247 North River Road
Epping, NH 03042

PS Form 3800, Ap

7021 1970 0001 5678 4129

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- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage $ .63
Total Postage an $ 7.53

Postmark Here
JUL 14 2023 MANCHESTER NH POST OFFICE

Sent To BAG Land Consultants
Street and Apt. No Bruce A. Gilday, CSS
City, State, ZIP+4 43 Rockingham Street
Concord, NH 03301

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7021 1970 0001 5678 4105

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- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage $ .63
Total Postage $ 7.53

Postmark Here
JUL 14 2023 MANCHESTER NH 03103

Sent To Public Service Co. of New Hampshire
Street and Apt. DBA Eversource Energy
City, State, ZIP 780 N Commercial Street
Manchester, NH 03101

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7021 1970 0001 5678 4112

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- ☐ Return Receipt (hardcopy) $ 3.35
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage $ .63
Total Postage $ 7.53

Postmark Here
JUL 14 2023 MANCHESTER NH 03103 POST OFFICE

Sent To Lot R12-036
Street and Apt. Ryan T. Martel
City, State, ZIP 9 Towle Road
Kingston, NH 03848

PS Form 3800, April 2015

7021 1970 0001 5678 4099

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- ☐ Return Receipt (hardcopy) $ 3.35
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- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage

Postmark Here
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7021 1970 0001 5678 4099

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Certified Mail Fee
$ 4.15

Extra Services & Fees *(check box, add fee as appropriate)*
- ☐ Return Receipt (hardcopy) $ 3.35
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$ .63

Total Postage and
$ 7.53

Postmark Here

JUL 14 2023
MANCHESTER POST OFFICE
MANCHESTER NH

Sent To

Street and Apt. No

City, State, ZIP+4

Eversource Energy
PO Box 270
Hartford, CT 06141-0270

PS Form 3800, A

SECTION 6

UNITIL KINGSTON SOLAR PROJECT

14 & 24 TOWLE ROAD
KINGSTON, NEW HAMPSHIRE

GENERAL INFORMATION

OWNER
MAP R-12 LOT 26
24 TOWLE ROAD REALTY TRUST
C/O LYNDA DEVAST
86 ROCKRIMMON ROAD
KINGSTON, NH 03848

MAP R-12 LOT 25
RICHARD HOMAN
14 TOWLE ROAD
KINGSTON, NH 03848

APPLICANT
UNITIL ENERGY SYSTEMS, INC
C/O JACOB DUSLING, PE
30 ENERGY WAY
EXETER, NH 03833
603-773-6529

RESOURCE LIST
PLANNING/ZONING DEPARTMENT
163 MAIN STREET
KINGSTON, NH 03484
603-642-3342
GLENN GREENWOOD, TOWN PLANNER

CONSERVATION COMMISSION
PO BOX 716
KINGSTON, NH 03848
603-642-5290
EVELYN NATHAN, CHAIR

BUILDING DEPARTMENT
TOWN HALL
163 MAIN STREET
PO BOX 716
KINGSTON, NH 03848
603-642-3342
JESS NISBET, BUILDING INSPECTOR

PUBLIC WORKS
12 MAIN STREET
KINGSTON, NH 03848
603-642-8042
PHILLIP COOMBS, DIRECTOR OF PUBLIC WORKS

POLICE DEPARTMENT
16 MAIN STREET
PO BOX 201
KINGSTON, NH 03848
603-642-5742
JOEL JOHNSON, CHIEF OF POLICE

FIRE DEPARTMENT
148 MAIN STREET
KINGSTON, NH 03848
603-642-3626
GRAHAM PELLERIN, FIRE CHIEF

NHDES AOT
29 HAZEN DRIVE
PO BOX 95
CONCORD, NH 03302-0095
603-271-3503
RIDGELY MAUCK, PE, AOT SUPERVISOR

ASSOCIATED PROFESSIONALS
SURVEY SERVICES
TFMORAN, INC.
48 CONSTITUTION DRIVE
BEDFORD, NH 03110
603-472-4488
MICHAEL DAHLBERG, LLS, RPLS, PLS
SURVEY DEPARTMENT MANAGER, ASSISTANT VP

ENVIRONMENTAL SERVICES
TFMORAN, INC.
170 COMMERCE WAY, SUITE 1012
PORTSMOUTH, NH 03801
603-472-4488
JASON AUBE, CWS #313

ENGINEERING SERVICES
TFMORAN, INC.
48 CONSTITUTION DRIVE
BEDFORD, NH 03110
603-472-4488
NICHOLAS GOLON, PE,
CIVIL DEPARTMENT MANAGER, PRINCIPAL

SOIL SCIENTIST
BAG LAND CONSULTANTS
43 ROCKINGHAM STREET
CONCORD, NH 03301
603-228-5775
BRUCE A. GILDAY, CSS #012

SOLAR ARRAY DESIGN
REVISION ENERGY
7 COMMERCIAL DRIVE
BRENTWOOD, NH 03833
603-679-1777
NATE NILES, DIRECTOR OF DEVELOPMENT

SOLAR ARRAY VENDOR
TERRASMART
1273 RIVER ROAD
SELKIRK, NY 12158

ABUTTERS
TAX MAP R11 LOT 9
RICHARD W. SENTER, TRUSTEE
TWO MILL ROAD REALTY TRUST
86 ROCKRIMMON ROAD
KINGSTON, NH 03848

TAX MAP R11 LOT 12-4A
RICHARD J. BOUCHER
22B MILL ROAD, UNIT 1
KINGSTON, NH 03848

TAX MAP R11 LOT 12-4B
DANIELLE E. WARHALL &
MACKENZIE D. MAGUIRE
22B MILL ROAD, UNIT 2
KINGSTON, NH 03848-3430

TAX MAP R11 LOT 13
CHARLOTTE L. GEORGE, TRUSTEE
CHARLOTTE L. GEORGE REV. TRUST OF 1998
30 BALL ROAD
KINGSTON, NH 03848-3608

TAX MAP R11 LOT 14
TOWN OF KINGSTON
163 MAIN STREET
PO BOX 716
KINGSTON, NH 03848-0716

TAX MAP R12 LOT 24
RICHARD A. RIZZOTTI & BRIANA L. HUBER
39 BRENTWOOD ROAD
EXETER, NH 03833

TAX MAP R12 LOT 25
RICHARD G. HOMAN
14 TOWLE ROAD
KINGSTON, NH 03848

TAX MAP R12 LOT 27
MELISSA MARIE & CHARLES EVERETT PARRY
50 FRYE ROAD
EAST HAMPSTEAD, NH 03826

TAX MAP R12 LOT 28
CHERYL & DEAN TURNER
MICHELLE T. LANE
P.O. BOX 365
NORTHWOOD, NH 03261-0365

TAX MAP R12 LOT 28A
KEVIN M. NASON & LISA FRANCOEUR
84 FRYE ROAD
EAST HAMPSTEAD, NH 03826

TAX MAP R12 LOTS 29, 32 & 33
SOUTHEAST LAND TRUST OF NH
247 NORTH RIVER ROAD
EPPING, NH 03042

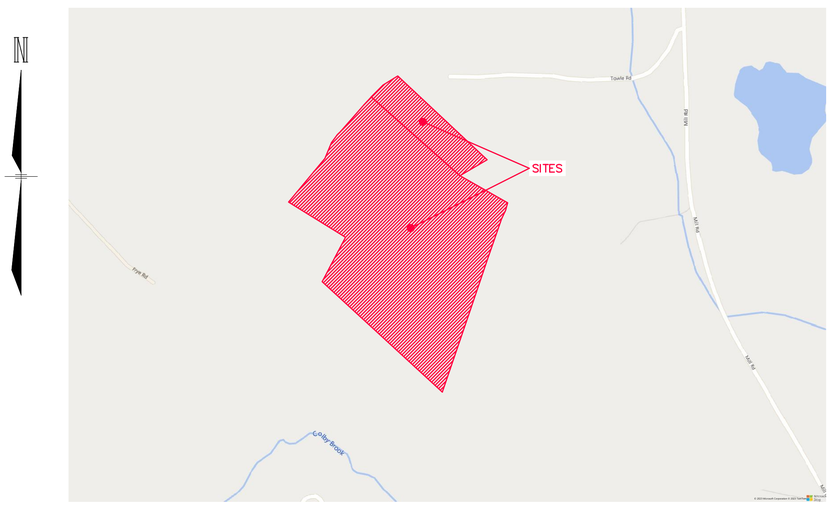
TAX MAP R12 LOT 34
PUBLIC SERVICE CO. OF NEW HAMPSHIRE
780 N COMMERCIAL STREET
MANCHESTER, NH 03101

TAX MAP R12 LOT 35
ANSELMO ALEMAN
11 TOWLE ROAD
KINGSTON, NH 03848

TAX MAP R12 LOT 36
ROLAND DUBE
9 TOWLE ROAD
KINGSTON, NH 03848

UTILITY EASEMENT
PUBLIC SERVICE CO. OF NEW HAMPSHIRE
DBA EVERSOURCE ENERGY
780 N COMMERCIAL STREET
MANCHESTER, NH 03101

VICINITY PLAN



HORIZONTAL SCALE 1"=500'
500 250 0 500

INDEX OF SHEETS

SHEET	SHEET TITLE
C-01	COVER SHEET
C-02	NOTES & LEGEND
C-03	NOTES
SHEET 1 OF 1	EXISTING CONDITIONS PLAN
C-04 TO C-05	SITE PREPARATION PLAN
C-06	OVERALL LAYOUT PLAN
C-07 TO C-08	SITE LAYOUT PLAN
C-09 TO C-10	GRADING, DRAINAGE & UTILITY PLAN
C-11	TOWLE ROAD PLAN & PROFILE
C-12	STORMWATER MANAGEMENT PLAN
D-01 TO D-05	DETAILS
OS-01	TOWLE ROAD-MILL ROAD INTERSECTION PLAN
PH-01	PHASING PLAN

PERMITS/APPROVALS

	NUMBER	APPROVED	EXPIRES
KINGSTON PLANNING BOARD SITE PLAN REVIEW			
KINGSTON PLANNING BOARD CUP - WETLAND BUFFER IMPACTS			
KINGSTON PLANNING BOARD LOT LINE ADJUSTMENT			
NHDES ALT. OF TERRAIN			
NHDES WETLANDS (DREDGE AND FILL)			
USACE NH GENERAL PERMIT			
USEPA CGP			

NHF&G AOT PERMIT CONDITIONS RELATED TO THREATENED & ENDANGERED SPECIES

1. ALL OBSERVATIONS OF THREATENED OR ENDANGERED SPECIES SHALL BE REPORTED IMMEDIATELY TO THE NEW HAMPSHIRE FISH AND GAME (NHF&G) DEPARTMENT NONGAME AND ENDANGERED WILDLIFE ENVIRONMENTAL REVIEW PROGRAM BY PHONE AT 603-271-2461 AND BY EMAIL AT NHFGREVIEW@WILDLIFE.NH.GOV. EMAIL SUBJECT LINE: NHB21-3128, EVERSOURCE GREGGS SUBSTATION REBUILD, WILDLIFE SPECIES OBSERVATION.
2. PHOTOGRAPHS OF THE OBSERVED SPECIES AND NEARBY ELEMENTS OF HABITAT OR AREAS OF LAND DISTURBANCE SHALL BE PROVIDED TO NHF&G IN DIGITAL FORMAT AT THE ABOVE EMAIL ADDRESS FOR VERIFICATION AS FEASIBLE.
3. IN THE EVENT A THREATENED OR ENDANGERED SPECIES IS OBSERVED ON THE PROJECT SITE DURING THE TERM OF THE PERMIT, THE SPECIES SHALL NOT BE DISTURBED, HANDLED, OR HARMED IN ANY WAY PRIOR TO CONSULTATION WITH NHF&G AND IMPLEMENTATION OF CORRECTIVE ACTIONS RECOMMENDED BY NHF&G, IF ANY, TO ASSURE THE PROJECT DOES NOT APPRECIABLY JEOPARDIZE THE CONTINUED EXISTENCE OF THREATENED AND ENDANGERED SPECIES AS DEFINED IN FIS 1002.04.
4. THE NHF&G, INCLUDING ITS EMPLOYEES AND AUTHORIZED AGENTS, SHALL HAVE ACCESS TO THE PROPERTY DURING THE TERM OF THE PERMIT.

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DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

Unitil

SITE DEVELOPMENT PLANS

TAX MAP R12 LOTS 25 & 26
COVER SHEET
UNITIL KINGSTON SOLAR PROJECT
14 & 24 TOWLE ROAD
KINGSTON, NH 03848
PREPARED FOR
UNITIL ENERGY SYSTEMS
30 ENERGY WAY
TER, NH 03833

SCALE: AS NOTED **JULY 6, 2023**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
7/6/23

APPROVED BY THE TOWN OF KINGSTON PLANNING BOARD

ON _____

BOARD MEMBER _____ *AND*

BOARD MEMBER _____

REV	DATE	DESCRIPTION	DR	CK

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	DR	JB	FB	–	
20025-00	CK	NG	CADFILE	20025-00 COVER & DETAILS	C-01

LEGEND

PROPOSED

- PROPERTY LINE
- ZONING LINE
- EASEMENT
- BASELINE
- FLOODPLAIN
- EDGE OF WATERBODY
- EDGE OF WETLAND
- SETBACK (WETLAND)
- SETBACK (STRUCTURE)
- SETBACK (PARKING)
- SETBACK (LANDSCAPE)
- GRAVEL ROAD
- EOP — EDGE OF PAVEMENT
- VGC — VERTICAL GRANITE CURB
- SGC — SLOPED GRANITE CURB
- CC — CONCRETE CURB
- ICC — INTEGRATED CONCRETE CURB
- BIT — BITUMINOUS ASPHALT CURB
- CCB — CAPE COD BERM
- SAWCUT
- BUILDING
- BUILDING ROOF OVERHANG
- BUILDING FOUNDATION
- BUILDING ENTRANCE
- OVERHEAD DOOR
- TREE LINE
- FENCE (CHAIN LINK)
- FENCE (WIRE)
- FENCE (STOCKADE)
- GUARDRAIL
- STONE WALL
- RETAINING WALL
- SILT FENCE
- SILT SOCK
- SOIL BOUNDARY
- LIMIT OF GRADING
- CONTOUR
- TC100.50 BC100.00 OR 100.00 — SPOT GRADE
- ## — PARKING COUNT
- DSLY — YELLOW DOUBLE SOLID LINE
- SSLY — YELLOW SINGLE SOLID LINE
- SSLW — WHITE SINGLE SOLID LINE
- SBLW — WHITE SINGLE BROKEN LINE
- STOP — STOP BAR
- CROSSWALK
- ACCESSIBLE PARKING SYMBOL
- PAVEMENT ARROW
- TRAFFIC FLOW ARROW (NOT PAINTED)
- SIGN (SINGLE POST)
- SIGN (DOUBLE POST)
- SIGN (PYLON)
- SIGN (MONUMENT)
- BOLLARD
- D — DUMPSTER PAD

PROPOSED

- CONCRETE
- GRAVEL
- HEAVY DUTY PAVEMENT
- CONSTRUCTION ENTRANCE
- SNOW STORAGE
- RIPRAP
- INLET PROTECTION
- FLOW ARROW
- DRAIN LINE
- DRAINAGE SWALE
- STORMWATER BMP
- S — SEWER LINE
- FM — SEWER FORCE MAIN LINE
- W — WATER LINE
- G — GAS LINE
- OHE — OVERHEAD UTILITY LINE
- UGE — UNDERGROUND UTILITY LINE
- CATCH BASIN
- DRAIN INLET
- OUTLET CONTROL STRUCTURE
- ROOF DRAIN
- DRAIN CLEANOUT
- DRAIN MANHOLE
- FARED END SECTION
- SEWER CLEAN OUT
- SEWER MANHOLE
- SEWER VENT
- DRAIN/SEWER/WATER PLUG OR CAP
- HYDRANT
- FIRE DEPARTMENT CONNECTION
- WATER GATE VALVE
- WATER SHUTOFF
- THRUST BLOCK
- WATER METER
- WATER MANHOLE
- WELL
- GAS GATE VALVE
- GAS SHUT OFF
- GAS METER
- TELEPHONE MANHOLE
- ELECTRIC MANHOLE
- TRAFFIC CONTROL CABINET
- ELECTRIC HANDHOLE
- ELECTRIC PULL BOX
- ELECTRIC METER
- FLOOD LIGHT
- LIGHT POLE
- UTILITY POLE
- GUY POLE
- T — TRANSFORMER PAD
- B-# — BORING LOCATION
- TP-# — TEST PIT LOCATION
- IT-# — INFILTRATION TEST LOCATION
- MW-# — MONITORING WELL

ABBREVIATIONS

GENERAL

ABAN	ABANDON	EP	EDGE OF PAVEMENT	OC	ON CENTER
AC	ACRES	EXIST	EXISTING	PAVE	PAVEMENT
ADJ	ADJUST	FFE	FINISHED FLOOR ELEVATION	PERF	PERFORATED
APPROX	APPROXIMATE	FND	FOUNDATION	PROP	PROPOSED
BC	BOTTOM OF CURB	HP	HIGH POINT	R	RADIUS
BIT	BITUMINOUS	INV	INVERT ELEVATION	R&D	REMOVE AND DISPOSE
BK/PG	BOOK & PAGE	IT	INFILTRATION TEST	R&R	REMOVE AND RESET
BLDG	BUILDING	L	LENGTH	REM	REMOVE
BMP	BEST MANAGEMENT PRACTICE	LF	LINEAR FEET	RET	RETAIN
BS	BOTTOM OF SLOPE	LSA	LANDSCAPE AREA	RIM	RIM ELEVATION
BW	BOTTOM OF WALL	MAX	MAXIMUM	ROW	RIGHT OF WAY
CONC	CONCRETE	MIN	MINIMUM	S	SLOPE
COORD	COORDINATE	N/F	NOW OR FORMERLY	SF	SQUARE FEET
DIA	DIAMETER	NHFG	NEW HAMPSHIRE FISH & GAME	SW	SIDEWALK
ELEV	ELEVATION	NTS	NOT TO SCALE	TBM	TEMPORARY BENCHMARK
				TC	TOP OF CURB
				TP	TEST PIT
				TW	TOP OF WALL
				TYP	TYPICAL
				UG	UNDERGROUND
				WCR	ACCESSIBLE WHEELCHAIR RAMP
				W/	WITH

UTILITIES

CB	CATCH BASIN
CIP	CAST IRON PIPE
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
COND	CONDUIT
DCB	DOUBLE CATCH BASIN
DIP	DUCTILE IRON PIPE
DMH	DRAIN MANHOLE
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FES	FLARED END SECTION
GT	GREASE TRAP
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HH	HANDHOLE
HW	HEADWALL
HYD	HYDRANT
LP	LIGHT POLE
OCS	OUTLET CONTROL STRUCTURE
PVC	POLYVINYL CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
SMH	SEWER MANHOLE
SOS	SEDIMENT OIL SEPARATOR
TSV	TAPPING SLEEVE, VALVE, AND BOX
UP	UTILITY POLE

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DIG SAFE — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

GENERAL NOTES

1. THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. TFMORAN, INC. ASSUMES NO LIABILITY AS A RESULT OF ANY CHANGES OR NON-CONFORMANCE WITH THESE PLANS EXCEPT UPON THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
2. ALL IMPROVEMENTS SHOWN ON THE SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE TOWN PLANNING BOARD.
3. ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE TOWN OF KINGSTON, AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. ALL WORK TO CONFORM TO TOWN OF KINGSTON DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS. ALL WORK WITHIN THE RIGHT-OF-WAY OF THE TOWN AND/OR STATE SHALL COMPLY WITH APPLICABLE STANDARDS. COORDINATE ALL WORK WITHIN THE RIGHT-OF-WAY WITH APPROPRIATE TOWN, COUNTY, AND/OR STATE AGENCY.
4. THE SITE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH APPLICABLE SECTIONS OF ENV-WQ 1500. THE SITE CONTRACTOR SHALL NOTIFY THE ENGINEER IN ADVANCE OF CONSTRUCTION OF EACH STORMWATER FACILITY TO COORDINATE REQUIRED INSPECTIONS. THE CONTRACTOR SHALL TAKE PROGRESS PHOTOS DURING CONSTRUCTION OF ALL STORMWATER DRAINAGE COMPONENTS AND SEND TO THE ENGINEER.
5. SEE EXISTING CONDITIONS PLAN FOR THE HORIZONTAL AND VERTICAL DATUM.
6. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION. VERIFY TBM ELEVATIONS PRIOR TO CONSTRUCTION.
7. CONTACT EASEMENT OWNERS PRIOR TO COMMENCING ANY WORK WITHIN THE EASEMENTS.
8. PRIOR TO COMMENCING ANY SITE WORK, ALL LIMITS OF WORK SHALL BE CLEARLY MARKED IN THE FIELD.
9. SITE WORK SHALL BE CONSTRUCTED FROM A COMPLETE SET OF PLANS, NOT ALL FEATURES ARE DETAILED ON EVERY PLAN. THE ENGINEER IS TO BE NOTIFIED OF ANY CONFLICT WITHIN THIS PLAN SET.
10. TFMORAN, INC. ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE ENGINEER OF RECORD.
11. TEMPORARY FENCING SHALL BE PROVIDED AND COVERED WITH A FABRIC MATERIAL TO CONTROL DUST MITIGATION AS NECESSARY.
12. ALL DEMOLITION SHALL INSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKWAYS, AND ANY OTHER ADJACENT OPERATING FACILITIES. PRIOR WRITTEN PERMISSION FROM THE OWNER/DEVELOPER AND LOCAL PERMITTING AUTHORITY IS REQUIRED IF CLOSURE/OBSTRUCTIONS TO ROADS, STREET, WALKWAYS, AND OTHERS IS DEEMED NECESSARY. CONTRACTOR TO PROVIDE ALTERNATE ROUTES AROUND CLOSURES/OBSTRUCTIONS PER LOCAL/STATE/FEDERAL REGULATIONS.
13. REFER TO SOLAR ARRAY PLANS FOR LAYOUT OF SOLAR ARRAY LOCATIONS AND CONCRETE ELEMENTS. DO NOT USE SITE PLANS FOR LAYOUT OF CONCRETE PADS.
14. IN THE EVENT OF A CONFLICT BETWEEN PLANS, SPECIFICATIONS, AND DETAILS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.
15. IF CONDITIONS AT THE SITE ARE DIFFERENT THAN SHOWN ON THE PLANS, THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH THE AFFECTED WORK.
16. CONTRACTOR'S GENERAL RESPONSIBILITIES:
    - A. BID AND PERFORM THE WORK IN ACCORDANCE WITH ALL LOCAL, STATE, AND NATIONAL CODES, SPECIFICATIONS, REGULATIONS, AND STANDARDS AND CONDITIONS OF ALL PROJECT-SPECIFIC PERMITS AND APPROVALS AS LISTED ON THE COVER SHEET TO THESE PLANS OR OTHERWISE REQUIRED.
    - B. NOTIFY ENGINEER IN WRITING OF ANY DISCREPANCIES OF PROPOSED LAYOUT AND/OR EXISTING FEATURES.
    - C. EMPLOY A LICENSED SURVEYOR TO DETERMINE ALL LINES AND GRADES AND LAYOUT OF SITE ELEMENTS AND ARRAYS.
    - D. THE CONTRACTOR SHALL BE RESPONSIBLE TO BECOME FAMILIAR WITH THE SITE AND ALL SURROUNDING CONDITIONS. THE CONTRACTOR SHALL ADVISE THE APPROPRIATE AUTHORITY OF INTENTIONS AT LEAST 48 HOURS IN ADVANCE.
    - E. TAKE APPROPRIATE MEASURES TO REDUCE, TO THE FULLEST EXTENT POSSIBLE, NOISE, DUST, AND UNSIGHTLY DEBRIS. CONSTRUCTION ACTIVITIES SHALL BE CARRIED OUT IN ACCORDANCE WITH THE APPLICABLE MUNICIPAL ORDINANCES AND REGULATIONS OF THE TOWN OF KINGSTON, NEW HAMPSHIRE.
    - F. MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY WORK AT ALL TIMES.
    - G. IN ACCORDANCE WITH RSA 430:53 AND AGR 3800, THE CONTRACTOR SHALL NOT TRANSPORT INVASIVE SPECIES OFF THE PROPERTY, AND SHALL DISPOSE OF INVASIVE SPECIES ON-SITE IN A LEGAL MANNER.
    - H. COORDINATE WITH ALL UTILITY COMPANIES AND CONTACT DIGSAFE (811 OR 888-344-7233) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION.
    - I. PROTECT NEW AND EXISTING BURIED UTILITIES DURING INSTALLATION OF ALL SITE ELEMENTS. DAMAGED UTILITIES SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
    - J. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS, PREPARED BY TFMORAN, INC., DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS, OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE SURVEYOR OR ENGINEER HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE US OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
    - K. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN CASE OF CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWING AND/OR SPECIFICATION, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATIONS.
    - L. VERIFY LAYOUT OF PROPOSED ARRAYS WITH VENDOR AND THAT PROPOSED LAYOUT MEETS PROPERTY LINE AND/OR WETLAND SETBACKS PRIOR TO COMMENCING ANY CONSTRUCTION.
    - M. IF ANY DEVIATIONS FROM THE APPROVED PLANS AND SPECIFICATIONS HAVE BEEN MADE, THE SITE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS STAMPED BY A LICENSED SURVEYOR OR QUALIFIED ENGINEER ALONG WITH A LETTER STAMPED BY A QUALIFIED ENGINEER DESCRIBING ALL SUCH DEVIATIONS, AND BEAR ALL COSTS FOR PREPARING AND FILING ANY NEW PERMITS OR PERMIT AMENDMENTS THAT MAY BE REQUIRED.
    - N. THIS PROJECT IS SUBJECT TO THE AOT PERMIT LISTED ON THE COVER SHEET. THE CONTRACTOR SHALL CONFORM TO ALL CONDITIONS OF THE PERMIT AND PROVIDE THE FOLLOWING DOCUMENTATION TO OWNER AND ENGINEER:
        1) ADVANCE WRITTEN NOTICE AT LEAST ONE WEEK PRIOR TO COMMENCING ANY WORK UNDER THE PERMIT AND NOTIFICATION TO AOT VIA THE START OF CONSTRUCTION FORM.
        2) UPON COMPLETION OF CONSTRUCTION, NOTIFICATION TO AOT VIA THE COMPLETION OF CONSTRUCTION FORM AND WRITTEN CERTIFICATION THAT:
            - A) ALL WORK UNDER THE PERMIT HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.
            - B) IF ANY DEVIATIONS FROM THE APPROVED PLANS WERE MADE, WRITTEN DESCRIPTIONS AND AS-BUILT DRAWINGS OF ALL SUCH DEVIATIONS, STAMPED BY A QUALIFIED ENGINEER, SHALL BE PROVIDED.

GRADING & DRAINAGE NOTES

1. THE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF NHDES ENV-WQ 1500 AS APPLICABLE.
2. THE CONTRACTOR SHALL PREPARE, MAINTAIN, AND EXECUTE A S.W.P.P.P. IN ACCORDANCE WITH EPA REGULATIONS AND THE CONSTRUCTION GENERAL PERMIT.
3. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO SUBMIT AN eNOI AT LEAST 14 DAYS IN ADVANCE OF ANY EARTHWORK ACTIVITIES AT THE SITE.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK THE ACCURACY OF THE TOPOGRAPHY AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO ANY EARTHWORK BEING PERFORMED ON THE SITE. NO CLAIM FOR EXTRA WORK WILL BE CONSIDERED FOR PAYMENT AFTER EARTHWORK HAS COMMENCED.
5. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR INFORMATION ABOUT SOIL AND GROUNDWATER CONDITIONS. THE CONTRACTOR SHALL FOLLOW THE GEOTECHNICAL ENGINEER'S RECOMMENDED METHODS TO ADDRESS ANY SOIL AND GROUNDWATER ISSUES THAT ARE FOUND ON SITE, INCLUDING AND NOT LIMITED TO DEWATERING METHODS, PERIMETER DRAINS AND TIE INTO STORMWATER MANAGEMENT SYSTEM, ETC.
6. COORDINATE WITH GEOTECHNICAL/SOLAR ARRAY PLANS FOR SITE PREPARATION AND OTHER PERTINENT INFORMATION.
7. COORDINATE WITH VENDOR PLANS FOR DETAILED GRADING AT ARRAYS, AND SIZE AND LOCATION OF ALL ELECTRICAL SERVICES.
8. LIMITS OF WORK ARE SHOWN AS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE SMOOTH TRANSITIONS. THIS INCLUDES GRADING, DRIVES, ROADS, AND ALIGNMENTS.
9. THE CONTRACTOR SHALL PROVIDE A FINISH GRAVEL SURFACE FREE OF LOW SPOTS AND PONDING AREAS.
10. THE SITE SHALL BE GRADED SO ALL FINISHED GRAVEL SURFACES HAS POSITIVE DRAINAGE AND SHALL NOT POND WATER DEEPER THAN 1/4" FOR A PERIOD OF MORE THAN 15 MINUTES AFTER FLOODING.
11. ADJUST ALL MANHOLES, ELECTRICAL BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE PRIOR TO INSTALLATION OF FINISHED PAVEMENT.
12. ROAD AND DRAINAGE CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS AND SHALL MEET LOCAL STANDARDS AND THE REQUIREMENTS OF THE LATEST NHDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGE CONSTRUCTION AND THE NHDOT STANDARD STRUCTURE DRAWINGS UNLESS OTHERWISE NOTED.
13. STORMWATER DRAINAGE SYSTEM SHALL BE CONSTRUCTED TO LINE AND GRADE AS SHOWN ON THE PLANS. CONSTRUCTION METHODS SHALL CONFORM TO NHDOT STANDARD SPECIFICATIONS, SECTION 603. CATCH BASINS AND DRAIN MANHOLES SHALL CONFORM TO SECTION 604. ALL CATCH BASIN GRATES SHALL BE TYPE B AND CONFORM TO NHDOT STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.
14. NO FILL SHALL BE PLACED IN ANY WETLAND AREA NOT INCLUDED IN THE NHDES MAJOR DREDGE & FILL WETLANDS PERMIT.
15. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
16. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER, AND MULCH.
17. DENSITY REQUIREMENTS:

MINIMUM DENSITY*	LOCATION
95%	BELOW PAVED OR CONCRETE AREAS
95%	TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL
90%	BELOW LOAM AND SEED AREAS

*ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557, METHOD C. FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM D-1556 OR ASTM D-6938.

UTILITY NOTES

1. LENGTH OF PIPE IS FOR CONVENIENCE ONLY. ACTUAL PIPE LENGTH SHALL BE DETERMINED IN THE FIELD.
2. ALL PROPOSED UTILITY WORK, INCLUDING MATERIAL, INSTALLATION, TERMINATION, EXCAVATION, BEDDING, BACKFILL, COMPACTION, TESTING, CONNECTIONS, AND CONSTRUCTION SHALL BE COORDINATED WITH AND COMPLETED IN ACCORDANCE WITH THE APPROPRIATE REQUIREMENTS, CODES, AND STANDARDS OF ALL CORRESPONDING UTILITY ENTITIES AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE, AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIGSAFE" (811) AT LEAST 72 HOURS BEFORE DIGGING.
4. COORDINATE ALL WORK ADJACENT TO PROPOSED ARRAYS AND CONCRETE PADS WITH VENDOR/ELECTRICAL DRAWINGS. CONFIRM UTILITY PENETRATIONS AND INVERT ELEVATIONS ARE COORDINATED PRIOR TO INSTALLATION.
5. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
6. THE EXACT LOCATION OF NEW UTILITY CONNECTIONS SHALL BE DETERMINED BY THE CONTRACTOR IN COORDINATION WITH UTILITY COMPANY, COUNTY AGENCY, AND/OR PRIVATE UTILITY COMPANY.
7. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER THE UTILITY INSTALLATION COMPLETE AND OPERATIONAL.
8. ALL UTILITY COMPANIES REQUIRE INDIVIDUAL CONDUITS. CONTRACTOR TO COORDINATE WITH TELEPHONE, CABLE, AND ELECTRIC COMPANIES REGARDING NUMBER, SIZE, AND TYPE OF CONDUITS REQUIRED PRIOR TO INSTALLATION OF ANY CONDUIT.
9. THE CONTRACTOR SHALL ARRANGE AND PAY FOR ALL INSPECTIONS, TESTING, AND RELATED SERVICES AND SUBMIT COPIES OF ACCEPTANCE TO THE OWNER, UNLESS OTHERWISE INDICATED.
10. UNLESS OTHERWISE SPECIFIED, ALL UNDERGROUND STRUCTURES, PIPES, CHAMBERS, ETC. SHALL BE COVERED WITH A MINIMUM OF 18" OF COMPACTED SOIL BEFORE EXPOSURE TO VEHICLE LOADS.
11. THE PROPERTY WILL BE SERVICED BY THE FOLLOWING:

DRAINAGE	PRIVATE
SEWER	N/A
WATER	N/A
GAS	N/A
ELECTRIC	UNITIL
TELEPHONE	CONSOLIDATED COMMUNICATIONS FKA FAIRPOINT COMMUNICATIONS
CABLE	COMCAST

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 7/6/23

Unitil

SITE DEVELOPMENT PLANS

TAX MAP R12 LOTS 25 & 26

NOTES & LEGEND

UNITIL KINGSTON SOLAR PROJECT
14 & 24 TOWLE ROAD
KINGSTON, NH 03848

PREPARED FOR

UNITIL ENERGY SYSTEMS
30 ENERGY WAY
TER, NH 03833

SCALE: NOT TO SCALE **JULY 6, 2023**

REV	DATE	DESCRIPTION	DR	CK

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

48 Constitution Drive
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FILE	DR	JB	FB	–	
20025-00	CK	NG	CADFILE	20025-00 COVER & DETAILS	C-02

CONSTRUCTION SEQUENCE NOTES

1. SEE CONSTRUCTION PHASING PLAN FOR PHASES.
2. INSTALL STABILIZED CONSTRUCTION ENTRANCE.
3. CUT AND CLEAR TREES WITHIN AREA OF DISTURBANCE UNLESS OTHERWISE NOTED.
4. CONSTRUCT TEMPORARY AND PERMANENT EROSION CONTROL FACILITIES, SWALES, AND BASINS PRIOR TO ANY ROUGH GRADING.
5. ROUGH GRADE SITE OR PHASED WORK AREA. ALL SLOPES SHALL BE STABILIZED IMMEDIATELY AFTER GRADING. ALL DISTURBED AREAS SHALL BE STABILIZED NO LATER THAN 72 HOURS AFTER CONSTRUCTION ACTIVITY CEASES. IF EARTHWORK TEMPORARILY CEASES ON A PORTION OF OR THE ENTIRE SITE, AND WILL NOT RESUME WITHIN 21 DAYS, THE AREA SHALL BE STABILIZED.
6. AN AREA SHALL BE CONSIDERED STABILIZED IF:
   A) BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
   B) A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
   C) A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH STONE OR RIPRAP HAS BEEN INSTALLED, OR
   D) EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
7. CONSTRUCT CULVERTS, BIORETENTION AREA AND SWALES. PLACE FLARED END SECTIONS, RIP-RAP AND OTHER DRAINAGE FACILITIES ACCORDING TO PLAN. THE CONTRACTOR SHALL STABILIZE ALL DITCHES, SWALES, AND BASINS PRIOR TO DIRECTING FLOW TO THEM.
8. INSTALL ALL UNDERGROUND UTILITIES.
9. CONSTRUCT PARKING AND FINISH GRADE SITE ACCORDING TO PLAN. ALL SLOPES SHALL BE STABILIZED IMMEDIATELY AFTER GRADING.
10. INSTALL SOLAR ARRAYS.
11. THE CONTRACTOR SHALL INSPECT ALL TEMPORARY EROSION CONTROL MEASURES AT LEAST ONCE A WEEK AND WITHIN TWENTY-FOUR (24) HOURS OF THE END OF A STORM WITH RAINFALL AMOUNT GREATER THAN 0.5 INCHES. THE INSPECTIONS SHALL VERIFY THAT THE STRUCTURAL BMPS SHOWN AND DESCRIBED ON THE PLANS ARE IN GOOD CONDITION AND ARE MINIMIZING EROSION. A MAINTENANCE AND INSPECTION REPORT SHALL BE MADE WITH EACH INSPECTION.
12. COMPLETE PERMANENT SEEDING AND LANDSCAPING.
13. REMOVE TEMPORARY EROSION CONTROL MEASURES ONCE ALL AREAS ARE STABILIZED WITH A SUITABLE STAND OF GRASS, PAVEMENT OR COMPACTED GRAVELS.
14. REFER TO THE STORMWATER MANAGEMENT PLAN FOR EROSION CONTROL MEASURES AND SPECIFIC INFORMATION.

GENERAL NOTES

1. WHERE DEPTH OF COVER IS LESS THAN 3 FEET CLASS V REINFORCED CONCRETE PIPE SHALL BE USED.
2. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY HIS WORK AT ALL TIMES.
4. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
5. EROSION CONTROL SYSTEMS SHALL BE INSTALLED AND MAINTAINED FOR THE DURATION OF THE PROJECT IN ACCORDANCE WITH APPLICABLE NHDES STANDARDS. THESE DETAILS SERVE AS A GUIDE ONLY.
6. REFER TO THE TOWN STANDARD DETAILS, LATEST REVISION, FOR ADDITIONAL INFORMATION AND CRITERIA.
7. THE CONTRACTOR SHALL STABILIZE ALL DITCHES, SWALES, AND BASINS PRIOR TO DIRECTING FLOW TO THEM.
8. 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. SEE PHASING PLAN FOR ADDITIONAL INFORMATION ON ALLOWABLE AREAS OF DISTURBANCE.

WINTER CONSTRUCTION

IN ADDITION TO THE OTHER NOTES CONTAINED ON THIS PLAN, THE FOLLOWING MUST BE IMPLEMENTED:

1. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED AS SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.
2. AN AREA WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIER.
3. TEMPORARY MULCH MUST BE APPLIED WITHIN 7 DAYS OF SOIL EXPOSURE OR PRIOR TO ANY STORM EVENT, BUT AFTER EVERY WORKDAY IN AREAS WITHIN 100 FEET FROM A PROTECTED NATURAL RESOURCE.
4. AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE MUST BE PERMANENTLY MULCHED THE SAME DAY.
5. IN THE EVENT OF A SNOWFALL GREATER THAN 1 INCH (FRESH OR CUMULATIVE), THE SNOW SHALL BE REMOVED FROM THE AREAS DUE TO BE SEEDED AND MULCHED.
6. LOAM SHALL BE FREE OF FROZEN CLUMPS BEFORE IT IS APPLIED.
7. A DITCH THAT WILL BE CONSTRUCTED DURING THE WINTER MUST BE STABILIZED WITH RIPRAP.
8. ALL PROPOSED VEGETATIVE AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85% 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.
9. 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.
10. 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 GRAVEL PER NHDOT ITEM 304.3.

EROSION CONTROL NOTES

DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED:

1. INSTALLATION OF SILTATION FENCES AND OTHER EROSION CONTROL MEASURES SHALL BE COMPLETED PRIOR TO THE START OF SITE WORK IN ANY GIVEN AREA. PREFABRICATED SILTATION FENCES SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
2. SILTATION FENCES AND OTHER EROSION CONTROL MEASURES SHALL BE KEPT CLEAN DURING CONSTRUCTION AND REMOVED WHEN ALL SLOPES HAVE A VEGETATIVE COVER OF GREATER THAN 85%. EROSION CONTROL MEASURES SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EVERY RAINFALL.
3. EXISTING VEGETATION IS TO REMAIN UNDISTURBED WHEREVER POSSIBLE.
4. THE AREA OF LAND EXPOSED AND THE TIME OF EXPOSURE SHALL BE MINIMIZED. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 72 HOURS AFTER FINAL GRADING.
5. ALL DISTURBED AREAS SHALL HAVE A MINIMUM OF 6" OF LOAM. ACCEPTABLE SEED MIXES ARE AS FOLLOWS:

   PARK SEED MIX (NHDOT TYPE 44) MIN. 135 LBS/ACRE:
   33% CREEPING RED FESCUE (MIN. 45 LBS/ACRE)
   42% PERENNIAL RYEGRASS (MIN. 55 LBS/ACRE)
   21% KENTUCKY BLUEGRASS (MIN. 30 LBS/ACRE)
   4% REDTOP (MIN. 5 LBS/ACRE)

   NEW ENGLAND CONSERVATION WILDLIFE MIX (MIN. 25 LBS/ACRE)
   CONTAINS: VIRGINIA WILD RYE (ELYMUS VIRGINICUS), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), BIG BLUESTEM (ANDROPOGON GERARDII), RED FESCUE (FESTUCA RUBRA), SWITCH GRASS (PANICUM VIRGATUM), PARTRIDGE PEA (CHAMACCRISTA FASCICULATA), PANICLEDLEAF TICK TREFOIL (DESMODIUM PANICULATUM), INDIAN GRASS (SORGHASTRUM NUTANS), BLUE VERVAIN (VERBENA HASTATA), BLACK EYED SUSAN (RUDBECKIA HIRTA), COMMON SNEEZEWEED (HELENIUM AUTUNALE), HEATH ASTER (ASTERPILOSUS/SYMPHYOTRICHUM PILOSUM), EARLY GOLDENROD (SOLIDAGO JUNCEA), UPLAND BENTGRASS (AGROSTIS PERENNANS).

   TEMPORARY LAWN MIX: (MIN. 47 LBS/ACRE)
   100% ANNUAL RYE

   A. PLACING LOAM ON SITE
      a. ALL SUBGRADE ELEVATIONS SHOULD BE UNIFORMLY GRADED TO RECEIVE LOAM AND SHALL BE INSPECTED AND APPROVED BY THE GENERAL CONTRACTOR PRIOR TO PLACEMENT OF LOAM.
      b. PLACE LOAM TO FORM A MINIMUM DEPTH OF 4" WHEN ROLLED, UNLESS OTHERWISE INDICATED.
      c. ALL DEPRESSIONS EXPOSED DURING THE ROLLING SHALL BE FILLED WITH ADDITIONAL LOAM.

   B. SEED BED PREPARATION
      AFTER FINISH GRADING AND JUST BEFORE SEEDING, THE AREAS TO BE SEEDED SHALL BE LOOSENED TO PROVIDE A ROUGH, FIRM BUT FINELY PULVERIZED SEEDBED. THE INTENT IS A TEXTURE CAPABLE OF RETAINING WATER, SEED AND FERTILIZER WHILE REMAINING STABLE AND ALLOWING SEED TIME TO GERMINATE. SEED SHALL BE APPLIED TO THE CONDITIONED SEEDBED NOT MORE THAN 48 HOURS AFTER THE SEEDBED HAS BEEN PREPARED.
6. LIME AND FERTILIZER SHALL BE INCORPORATED INTO THE SOIL PRIOR TO OR AT THE TIME OF AT THE TIME OF SEEDING. A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS. PER ACRE OF 10-20-20 FERTILIZER SHALL BE APPLIED. SEEDING PRACTICES SHALL COMPLY WITH LOCAL USDA SOIL CONSERVATION SERVICES RECOMMENDATIONS.
7. HAY MULCH OR JUTE MATTING SHALL BE USED WHERE INDICATED ON THE PLANS. A MINIMUM OF 1.5 TONS OF MULCH PER ACRE SHALL BE APPLIED. MULCH SHALL BE ANCHORED IN PLACE WHERE NECESSARY. JUTE MATTING SHALL BE LAID IN THE DIRECTION OF RUNOFF FLOW AND APPLIED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
8. PERMANENT OR TEMPORARY COVER MUST BE IN PLACE BEFORE THE GROWING SEASON ENDS. WHEN SEEDED AREAS ARE MULCHED, PLANTINGS MAY BE MADE FROM EARLY SPRING TO EARLY OCTOBER. 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.
9. WATER SHALL BE USED FOR DUST CONTROL IN APPROPRIATE AREAS.
10. SEDIMENT TRAPS AND/OR BASINS MUST BE USED AS NECESSARY TO CONTAIN RUNOFF UNTIL SOILS ARE STABILIZED.
11. WITHIN LIMITS OF FACILITY (INSIDE SECURITY FENCING) OWNER SHALL MAINTAIN 85% COVERAGE OF VEGETATION IN GOOD CONDITION AND REPAIR AREAS OF EROSION.

OVERWINTER STABILIZATION

1. PERMANENT STABILIZATION CONSISTS OF AT LEAST 85% VEGETATION, PAVEMENT/GRAVEL BASE OR RIPRAP.
2. DO NOT EXPOSE SLOPES OR LEAVE SLOPES EXPOSED OVER THE WINTER OR FOR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS FULLY PROTECTED WITH MULCH.
3. APPLY HAY MULCH AT TWICE THE STANDARD RATE (150 LBS. PER 1,000 SF). THE MULCH MUST BE THICK ENOUGH SUCH THAT THE GROUND SURFACE WILL NOT BE VISIBLE AND MUST
4. BE ANCHORED.

   USE MULCH AND MULCH NETTING OR AN EROSION CONTROL MULCH BLANKET OR MIX FOR ALL
5. SLOPES GREATER THAN 8% OR OTHER AREAS EXPOSED TO DIRECT WIND.

   INSTALL AN EROSION CONTROL BLANKET IN ALL DRAINAGE WAYS (BOTTOM AND SIDES) WITH A
6. SLOPE GREATER THAN 3%.

   SEE THE VEGETATION MEASURES FOR MORE INFORMATION ON SEEDING DATES AND TYPES.

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DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED
PROFESSIONAL ENGINEER
7/6/23

REV	DATE	DESCRIPTION	DR	CK

Unitil

SITE DEVELOPMENT PLANS

TAX MAP R12 LOTS 25 & 26

NOTES

UNITIL KINGSTON SOLAR PROJECT
14 & 24 TOWLE ROAD
KINGSTON, NH 03848

PREPARED FOR

UNITIL ENERGY SYSTEMS
30 ENERGY WAY
TER, NH 03833

SCALE: NOT TO SCALE **JULY 6, 2023**

TFM®
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	PROJ	DR	JB	FB	–	
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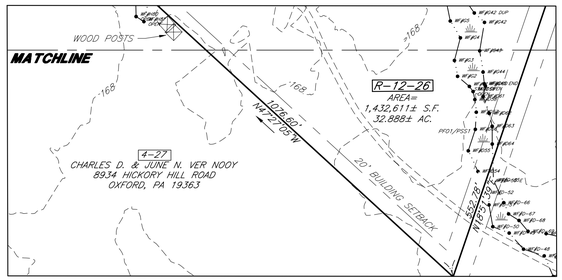

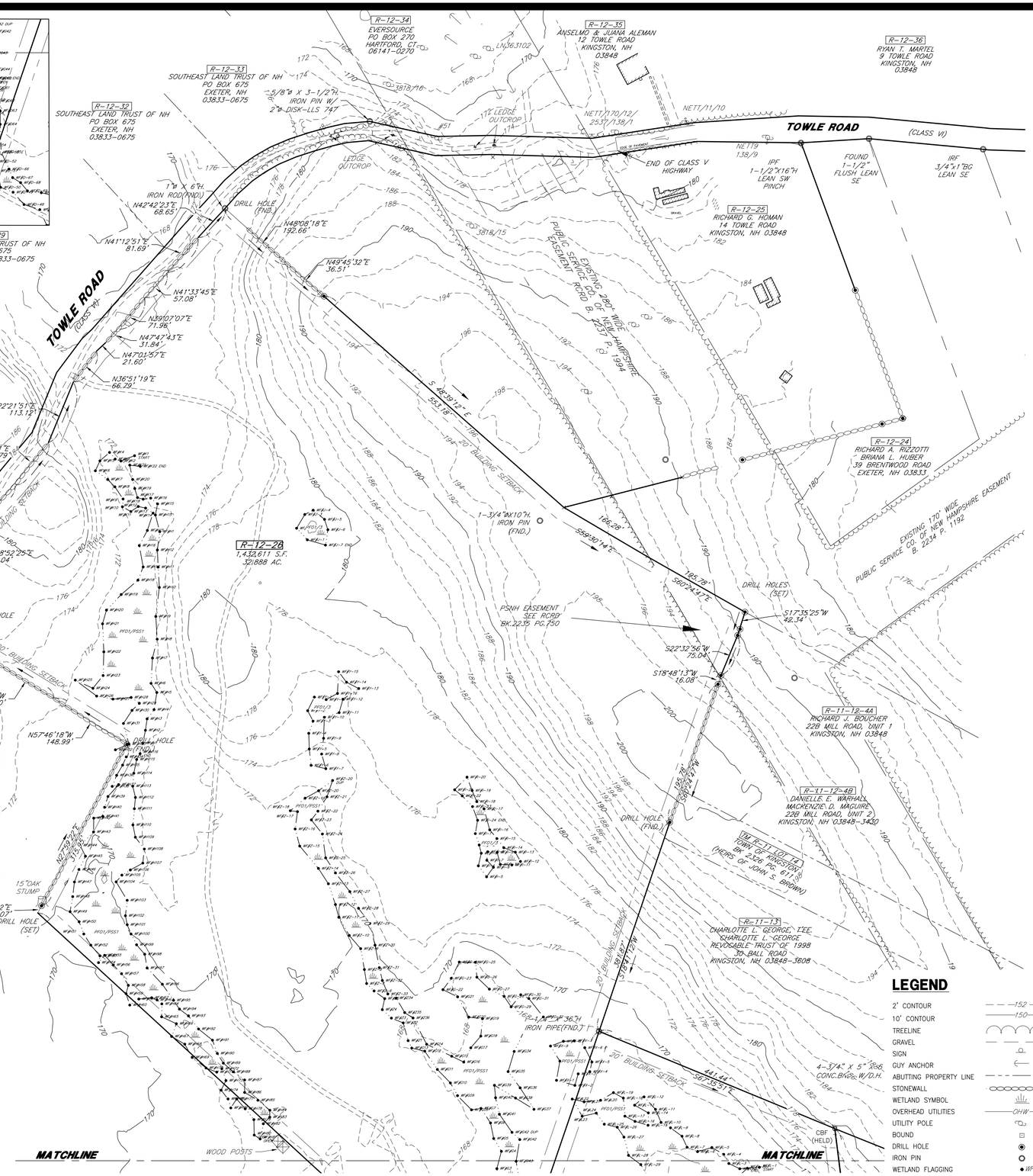

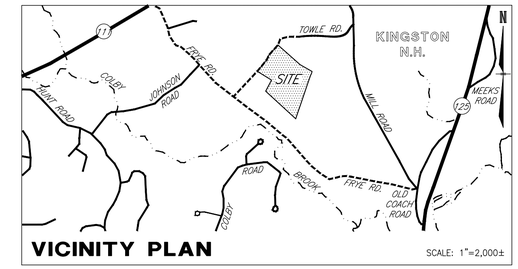

WETLAND SCIENTIST CERTIFICATION

WETLANDS DEPICTED ON THIS PLAN WERE DELINEATED ON OCTOBER 13, 2022 BY JASON R. AUBE, CWS NO. 313. THE WETLANDS WERE DELINEATED ACCORDING TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (JANUARY 1987) AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0 (JANUARY 2012).

STATE OF NEW HAMPSHIRE
JASON R. AUBE
No. 313
7/12/2023
CERTIFIED WETLAND SCIENTIST

DIG SAFE
MA ME NH RI VT
UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM
CALL 811 TOLL FREE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

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REV.	DATE	DESCRIPTION	DR	CK
1	7-12-23	add wetland classification, minor lot area corr.	mrd	mrd

NOTES

1. OWNER OF RECORD OF MAP R-12 LOT 26:
   24 TOWLE ROAD REALTY TRUST
   RICHARD W. SENTER (TRUSTEE)
   86 ROCKRIMMON ROAD
   KINGSTON, NH 03848
   DEED REFERENCE TO PARCEL IS BK. 2893 PG. 2190

   AREA OF PARCEL = 1,432,611 S.F.± OR 32.888 ACRES±
2. R-12-26 INDICATES TAX MAP AND LOT NUMBER.
3. THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS ON MAP R-12, LOT 26 LOCATED ON TOWLE ROAD IN KINGSTON, NEW HAMPSHIRE AS SHOWN HEREON AND NO OTHER PURPOSE.
4. CURRENT ZONING DISTRICT: RURAL RESIDENTIAL (RR)
   MINIMUM LOT FRONTAGE: 200 FEET ON CLASS V HIGHWAY OR BETTER.
   MINIMUM BUILDING SETBACKS:
   FRONT: 30 FEET
   SIDE: 20 FEET
   REAR: 20 FEET
5. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR ROCKINGHAM COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33015C0390E, EFFECTIVE DATE MAY 17, 2005, INDICATES THAT THE SUBJECT PARCELS ARE NOT LOCATED WITHIN A FLOOD HAZARD AREA.
6. HORIZONTAL DATUM: NAD83(2011)
   VERTICAL DATUM: NAVD88
   BENCHMARKS SET: AS NOTED
7. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL(S) MAY DETERMINE.
8. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG-SAFE AT 811.

WETLAND CLASSIFICATION LEGEND

WETLAND AREA #1: PFO1/3 PALUSTRINE FORESTED, BROAD-LEAVED, DECIDUOUS (PFO1) AND PALUSTRINE BROAD-LEAVED EVERGREEN (PFO3)
WETLAND AREA #2: PFO1/3 PALUSTRINE FORESTED, BROAD-LEAVED, DECIDUOUS (PFO1) AND PALUSTRINE BROAD-LEAVED EVERGREEN (PFO3)
WETLAND AREA #3: PFO1/3 PALUSTRINE FORESTED, BROAD-LEAVED, DECIDUOUS (PFO1) AND PALUSTRINE BROAD-LEAVED EVERGREEN (PFO3)
WETLAND AREA #4: PFO1/PSS1 PALUSTRINE FORESTED, BROAD-LEAVED, DECIDUOUS (PFO1) AND PALUSTRINE SCRUB-SHRUB BROAD-LEAVED, DECIDUOUS (PSS1)
WETLAND AREA #5: PFO1/PSS1 PALUSTRINE FORESTED, BROAD-LEAVED, DECIDUOUS (PFO1) AND PALUSTRINE SCRUB-SHRUB BROAD-LEAVED, DECIDUOUS (PSS1)

SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT THIS SURVEY AND PLAT WERE PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION, FURTHER, THIS PLAN IS THE RESULT OF AN ACTUAL FIELD SURVEY MADE ON THE GROUND BY THIS OFFICE DURING APRIL OF 2022, SAID SURVEY HAS AN ERROR OF CLOSURE OF NOT LESS ACCURACY THAN ONE PART IN TEN THOUSAND (1:10,000).

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN. (RSA 676:18-III)

STATE OF NEW HAMPSHIRE
LICENSED LAND SURVEYOR
No. 714
MICHAEL R. DAHLBERG
SIGNATURE
07-12-2023

07-12-2023
DATE

MICHAEL R. DAHLBERG, LLS
NH LICENSE NO. 714
FOR TF MORAN, INC.

Graphic Scale
100' 50' 0' 100' 200' 300' 400'
1" = 100'

TAX MAP R-12 LOT 26

EXISTING CONDITIONS PLAN

24 TOWLE ROAD

KINGSTON, NEW HAMPSHIRE

OWNED BY:

RICHARD W. SENTER (TRUSTEE)
24 TOWLE ROAD REALTY TRUST

PREPARED FOR:

UNITIL ENERGY SYSTEMS

SCALE: 1" = 100' **MAY 31, 2023**

LEGEND

2' CONTOUR
10' CONTOUR
TREELINE
GRAVEL
SIGN
GUY ANCHOR
ABUTTING PROPERTY LINE
STONEWALL
WETLAND SYMBOL
OVERHEAD UTILITIES
UTILITY POLE
BOUND
DRILL HOLE
IRON PIN
WETLAND FLAGGING

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
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Fax (603) 472-9747
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FILE	DR	FB	
20025.00	JB	2095	SHEET 1 OF 1
	CK MRD	CADFILE 20025-00 Survey	

F:\TFM Projects\20025 Unitil Utility Scale PV- Various locations\Carlson Survey\Dwgs\20025-00 Survey.dwg, Existing_Towle, 7/12/2023 10:27:54 AM, AutoCAD PDF (High Quality Print).pc3, Previous paper size (34.00 x 22.00 inches), 1:1

WETLAND IMPACT LEGEND

- TEMPORARY WETLAND IMPACTS
- PERMANENT WETLAND IMPACTS
- TOWN OF KINGSTON WETLAND BUFFER IMPACTS

WETLAND CLASSIFICATION LEGEND

WETLAND AREA #1: PFO1/3 PALUSTRINE FORESTED, BROAD-LEAVED, DECIDUOUS (PFO1) AND PALUSTRINE BROAD-LEAVED EVERGREEN (PFO3)
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WETLAND AREA #4: PFO1/PSS1 PALUSTRINE FORESTED, BROAD-LEAVED, DECIDUOUS (PFO1) AND PALUSTRINE SCRUB-SHRUB BROAD-LEAVED, DECIDUOUS (PSS1)
WETLAND AREA #5: PFO1/PSS1 PALUSTRINE FORESTED, BROAD-LEAVED, DECIDUOUS (PFO1) AND PALUSTRINE SCRUB-SHRUB BROAD-LEAVED, DECIDUOUS (PSS1)

NOTES

1. SEE SITE PREPARATION NOTES ON SHEET C-02.

TOWLE ROAD

EXISTING GRAVEL ACCESS TO BE REMOVED WITHIN LIMITS OF WORK (TYP.) (COORDINATE WITH TOWLE ROAD PLAN)
SILT SOCK OR MULCH BERM (TYP.)
TO BE REMOVED WITHIN LIMITS OF WORK
END OF CLASS V HIGHWAY
STABILIZED CONSTRUCTION ENTRANCE (SEE DETAILS)
STONEWALL TO BE REMOVED WITHIN LIMITS OF WORK (TYP.)
APPROX. LIMITS OF WORK (TYP.)
STABILIZED CONSTRUCTION ENTRANCE (SEE DETAILS)
LOT LINE TO BE DISCONTINUED (SEE LLA PLANS)
TOWLE ROAD (CLASS VI)
TP-#1
IT-#1
TP-#2
IT-#2
CLEAR & GRUB (TYP. WITHIN LIMITS OF WORK)
PROPOSED TREELINE (TYP.)
82,783± S.F. OF 75' WETLAND BUFFER IMPACT
75' WETLAND BUFFER
DOUBLE ROW SILT SOCK OR MULCH BERM WITHIN 50' OF WETLANDS (TYP.)
WETLAND IMPACT AREA 1: 2,087± SF. PERMANENT
1-3/4"ØX10"H. IRON PIN (FND.)
EXISTING TREES TO BE REMOVED, STUMPS TO REMAIN (TYP. OUTSIDE FENCE)
LIMITS OF MATTING FOR TREE CLEARING ACCESS (TYP.)
WETLAND IMPACT AREA 2: 4,481± SF. PERMANENT
WETLAND IMPACT AREA 4: 15,868± SF. TEMPORARY
PROPOSED TREELINE (TYP.)
WETLAND IMPACT AREA 3: 4,391± SF. PERMANENT
MATCHLINE

HORIZONTAL SCALE 1"=60'
60 30 0 60

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

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REV	DATE	DESCRIPTION	DR	CK

Unitil

SITE DEVELOPMENT PLANS

TAX MAP R12 LOTS 25 & 26

SITE PREPARATION PLAN

UNITIL KINGSTON SOLAR PROJECT
14 & 24 TOWLE ROAD
KINGSTON, NH 03848

PREPARED FOR

UNITIL ENERGY SYSTEMS
30 ENERGY WAY
EXETER, NH 03833

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 7/6/23

SCALE: 1"=60' **JULY 6, 2023**

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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Bedford, NH 03110
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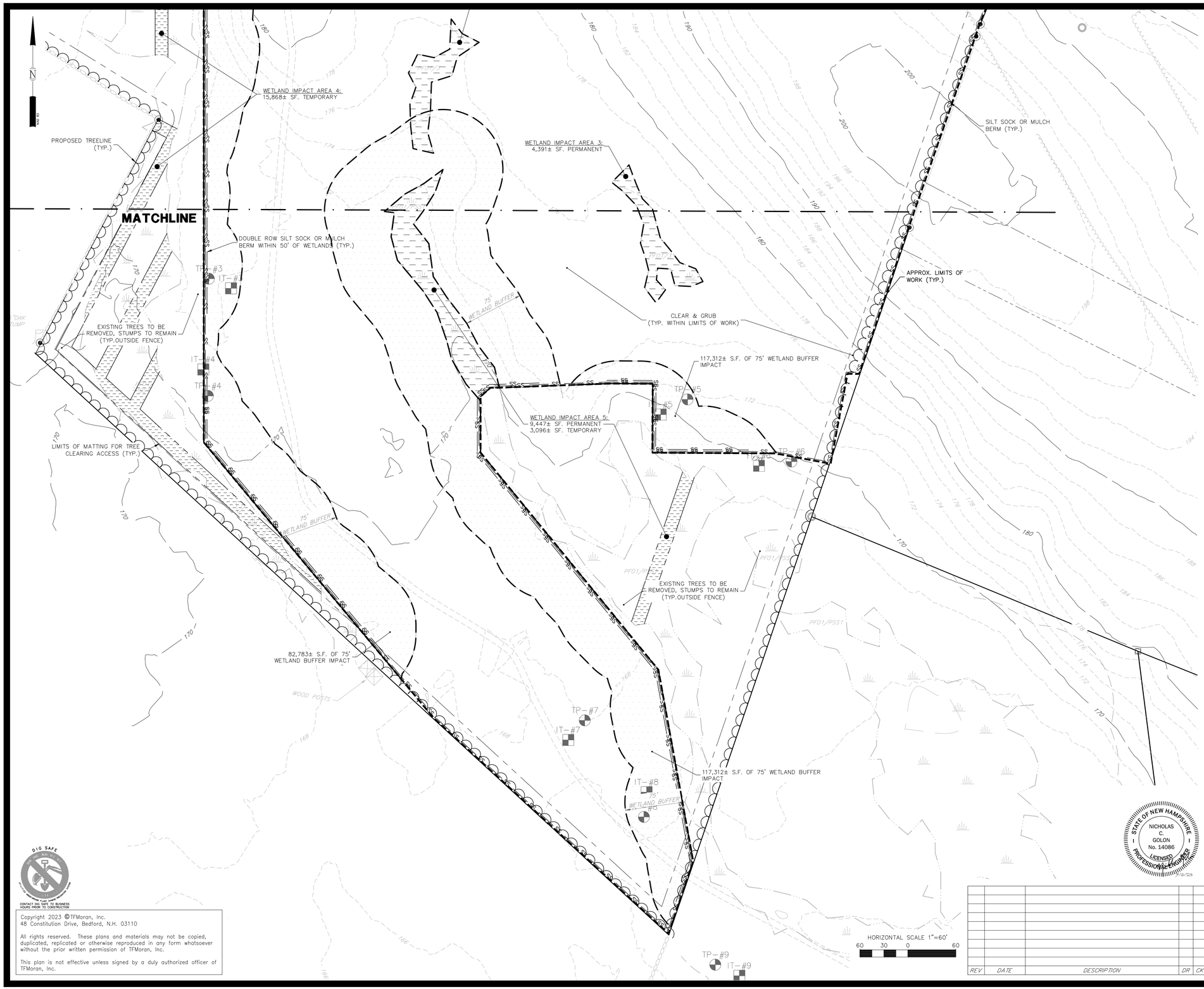
Fax (603) 472-9747
www.tfmoran.com

FILE	DR	JB	FB	–	
20025-00	CK	NG	CADFILE	20025-00 DESIGN_LAYOUT	C-04



NOTES

1. SEE SITE PREPARATION NOTES ON SHEET C-02.

WETLAND CLASSIFICATION LEGEND

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WETLAND IMPACT LEGEND

TEMPORARY WETLAND IMPACTS

PERMANENT WETLAND IMPACTS

TOWN OF KINGSTON WETLAND BUFFER IMPACTS

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED
PROFESSIONAL ENGINEER
7/6/23

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

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REV	DATE	DESCRIPTION	DR	CK

Unitil

SITE DEVELOPMENT PLANS

TAX MAP R12 LOTS 25 & 26

SITE PREPERATION PLAN

UNITIL KINGSTON SOLAR PROJECT
14 & 24 TOWLE ROAD
KINGSTON, NH 03848

PREPARED FOR

UNITIL ENERGY SYSTEMS
30 ENERGY WAY
EXETER, NH 03833

SCALE: 1"=60' **JULY 6, 2023**

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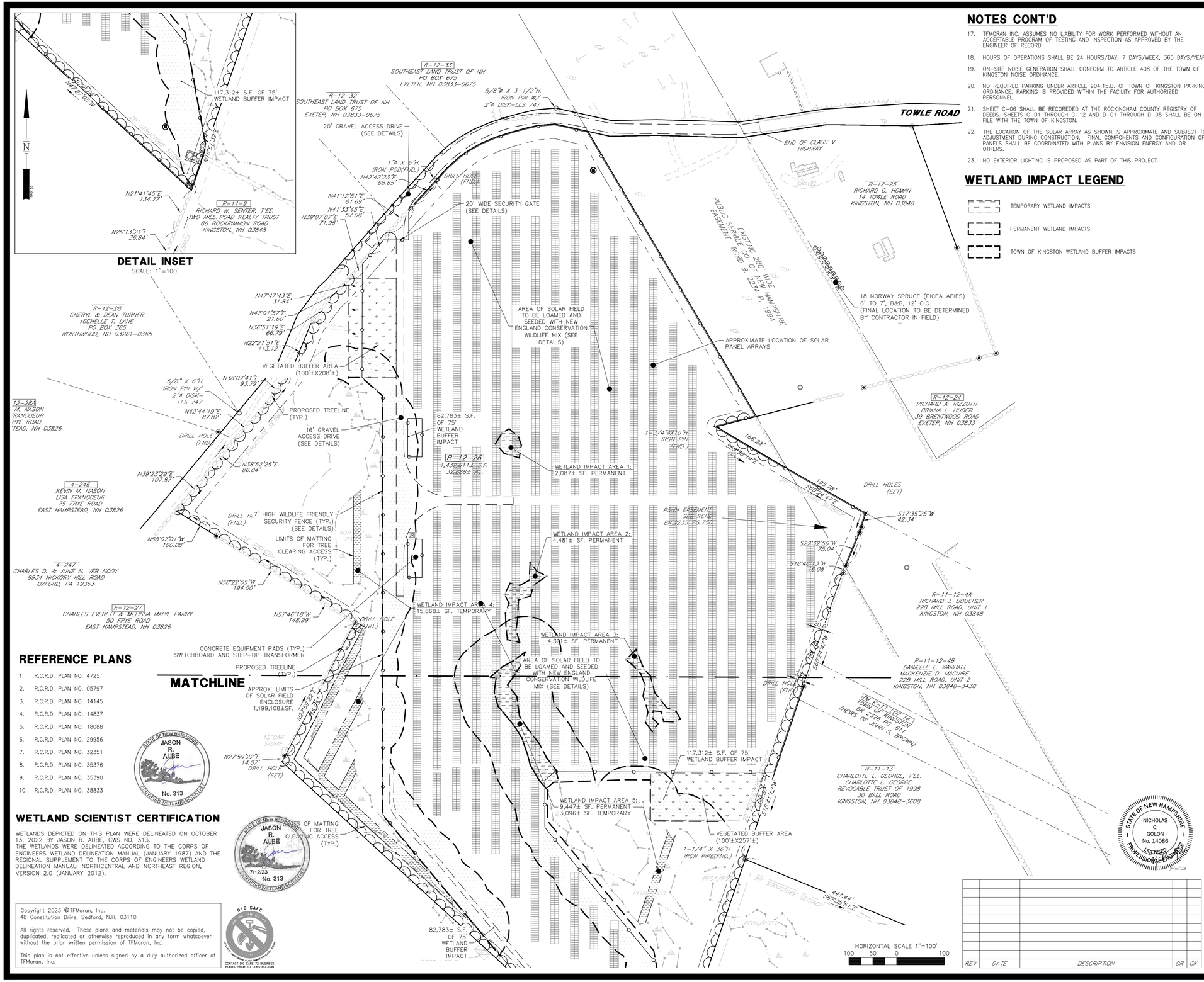
FILE	DR	JB	FB	–	
20025-00	CK	NG	CADFILE	20025-00 DESIGN_LAYOUT	C-05

DETAIL INSET

SCALE: 1"=100'

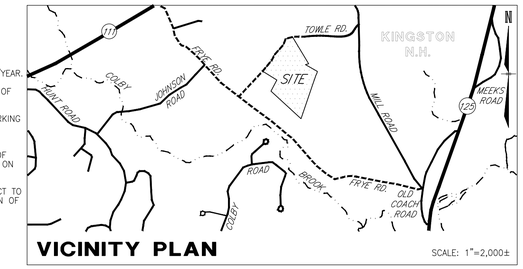


NOTES CONT'D

17. TFMORAN INC. ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE ENGINEER OF RECORD.
18. HOURS OF OPERATIONS SHALL BE 24 HOURS/DAY, 7 DAYS/WEEK, 365 DAYS/YEAR.
19. ON-SITE NOISE GENERATION SHALL CONFORM TO ARTICLE 408 OF THE TOWN OF KINGSTON NOISE ORDINANCE.
20. NO REQUIRED PARKING UNDER ARTICLE 904.15.B. OF TOWN OF KINGSTON PARKING ORDINANCE. PARKING IS PROVIDED WITHIN THE FACILITY FOR AUTHORIZED PERSONNEL.
21. SHEET C-06 SHALL BE RECOREDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. SHEETS C-01 THROUGH C-12 AND D-01 THROUGH D-05 SHALL BE ON FILE WITH THE TOWN OF KINGSTON.
22. THE LOCATION OF THE SOLAR ARRAY AS SHOWN IS APPROXIMATE AND SUBJECT TO ADJUSTMENT DURING CONSTRUCTION. FINAL COMPONENTS AND CONFIGURATION OF PANELS SHALL BE COORDINATED WITH PLANS BY ENVISION ENERGY AND OR OTHERS.
23. NO EXTERIOR LIGHTING IS PROPOSED AS PART OF THIS PROJECT.

WETLAND IMPACT LEGEND

- TEMPORARY WETLAND IMPACTS
- PERMANENT WETLAND IMPACTS
- TOWN OF KINGSTON WETLAND BUFFER IMPACTS



VICINITY PLAN

SCALE: 1"=2,000±

NOTES

1. OWNER OF RECORD OF MAP R-12 LOT 25:
   RICHARD G. HOMAN
   14 TOWLE ROAD
   KINGSTON, NH 03848
   DEED REFERENCE: BK. 2893 PG. 2178

   AREA OF PARCEL = 485,307 S.F.± OR 11.141 ACRES±

   OWNER OF RECORD OF MAP R-12 LOT 26:
   RICHARD W. SENTER (TRUSTEE)
   24 TOWLE ROAD AND SENTER ROAD REALTY TRUST
   86 ROCKRIMMON ROAD
   KINGSTON, NH 03848
   DEED REFERENCE: BK. 2893 PG. 2190

   AREA OF PARCEL = 1,432,611 S.F.± OR 32.888 ACRES±
2. R-12-26 INDICATES TAX MAP AND LOT NUMBER
3. THE PURPOSE OF THIS PLAN IS TO SHOW A PROPOSED SOLAR FACILITY LAYOUT.
4. CURRENT ZONING DISTRICT: RURAL RESIDENTIAL (RR), WETLANDS CONSERVATION & AQUIFER OVERLAY DISTRICT

	REQUIRED	EXISTING (R12-25/26)	PROPOSED (R12-25/26)
MIN. LOT FRONTAGE*:	200'	1,037'±/888'±	636'±/1289'±
MIN. LOT SIZE:	3 AC	11.1± AC/32.9± AC	7.6± AC/36.4± AC
MIN. SETBACKS:			
FONT:	30'	68.1'±/N/A	68.1'±/30.5'±
SIDE:	20'	129.0'±/N/A	129.0'±/20.0'
REAR:	20'	109.5'±/N/A	109.5'±/20.9'±
MAX. LOT COVER**:	25%	<1%/0%	<1%/2%±***

   *CLASS V HIGHWAY OR BETTER
   **PER AQUIFER PROTECTION DISTRICT, ZONE B
   ***PANELS ARE EXCLUDED FROM IMPERVIOUS COVER TOTAL IN ACCORDANCE WITH NHDES AOT GUIDANCE
5. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR ROCKINGHAM COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33015C0390E, EFFECTIVE DATE MAY 17, 2005, INDICATES THAT THE SUBJECT PARCELS ARE NOT LOCATED WITHIN A FLOOD HAZARD AREA.
6. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL(S) MAY DETERMINE.
7. IN THE EVENT THAT THE SNOW STORAGE AREAS PROVIDED ON THE SITE ARE COMPLETELY UTILIZED, EXCESS SNOW SHALL BE TRANSPORTED OFF SITE FOR DISPOSAL IN ACCORDANCE WITH N.H.D.E.S. REGULATIONS. IF SNOW IS STORED WITHIN PARKING AREA KEEP CATCH BASINS CLEAR.
8. THE CONTRACTOR SHALL BID AND PERFORM THE WORK IN ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES, SPECIFICATIONS, REGULATIONS AND STANDARDS.
9. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN CASE OF CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWING AND/OR SPECIFICATION, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATIONS.
10. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS, PREPARED BY TFMORAN, INC., DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE SURVEYOR OR ENGINEER HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
11. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE HIMSELF WITH THE SITE AND ALL SURROUNDING CONDITIONS. THE CONTRACTOR SHALL ADVISE THE APPROPRIATE AUTHORITY OF HIS INTENTIONS AT LEAST 48 HOURS IN ADVANCE.
12. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY HIS WORK AT ALL TIMES.
13. SITE WORK SHALL BE CONSTRUCTED FROM A COMPLETE SET OF PLANS. NOT ALL FEATURES ARE DETAILED ON EVERY PLAN. THE ENGINEER IS TO BE NOTIFIED OF ANY CONFLICT WITHIN THIS PLAN SET.
14. IN THE EVENT OF A CONFLICT BETWEEN PLANS, SPECIFICATIONS, AND DETAILS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.
15. IF CONDITIONS AT THE SITE ARE DIFFERENT THAN SHOWN ON THE PLANS, THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH THE AFFECTED WORK.
16. THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. TFMORAN INC. ASSUMES NO LIABILITY AS A RESULT OF ANY CHANGES OR NON-CONFORMANCE WITH THESE PLANS EXCEPT UPON THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.

Unitil

REFERENCE PLANS

1. R.C.R.D. PLAN NO. 4725
2. R.C.R.D. PLAN NO. 05797
3. R.C.R.D. PLAN NO. 14145
4. R.C.R.D. PLAN NO. 14837
5. R.C.R.D. PLAN NO. 18088
6. R.C.R.D. PLAN NO. 29956
7. R.C.R.D. PLAN NO. 32351
8. R.C.R.D. PLAN NO. 35376
9. R.C.R.D. PLAN NO. 35390
10. R.C.R.D. PLAN NO. 38833

STATE OF NEW HAMPSHIRE
JASON R. AUBE
No. 313
CERTIFIED WETLAND SCIENTIST

WETLAND SCIENTIST CERTIFICATION

WETLANDS DEPICTED ON THIS PLAN WERE DELINEATED ON OCTOBER 13, 2022 BY JASON R. AUBE, CWS NO. 313. THE WETLANDS WERE DELINEATED ACCORDING TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (JANUARY 1987) AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0 (JANUARY 2012).

STATE OF NEW HAMPSHIRE
JASON R. AUBE
7/12/23
No. 313
CERTIFIED WETLAND SCIENTIST

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED
PROFESSIONAL ENGINEER
7/6/23

SITE DEVELOPMENT PLANS

TAX MAP R12 LOTS 25 & 26

OVERALL LAYOUT PLAN

UNITIL KINGSTON SOLAR PROJECT

14 & 24 TOWLE ROAD

KINGSTON, NH 03848

PREPARED FOR

UNITIL ENERGY SYSTEMS

30 ENERGY WAY

EXETER, NH 03833

SCALE: 1"=100' **JULY 6, 2023**

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CONTACT DIG SAFE TO BUSINESS HOURS PRIOR TO CONSTRUCTION

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Structural Engineers
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Bedford, NH 03110
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Fax (603) 472-9747
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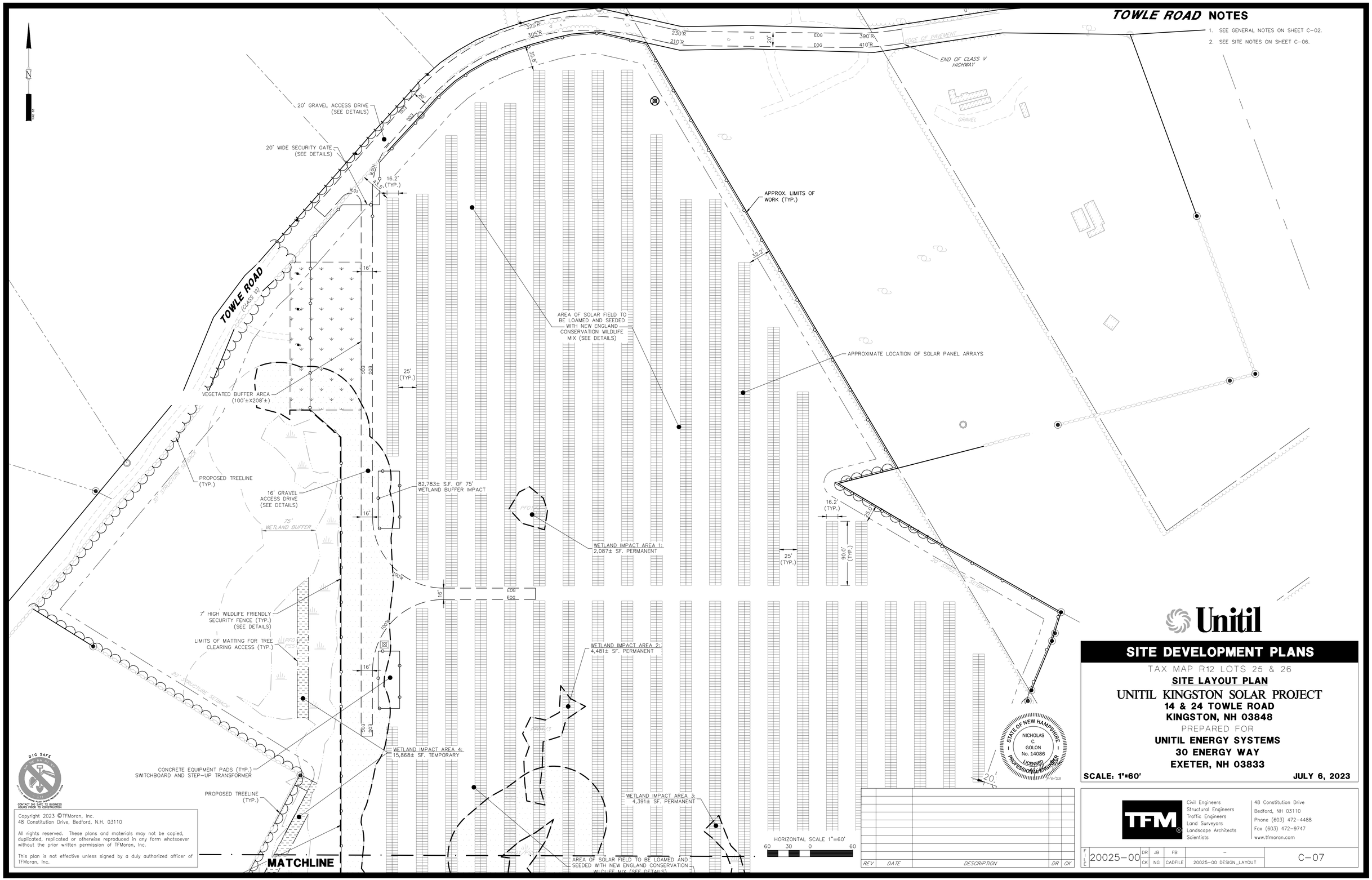
TOWLE ROAD NOTES

1. SEE GENERAL NOTES ON SHEET C-02.
2. SEE SITE NOTES ON SHEET C-06.



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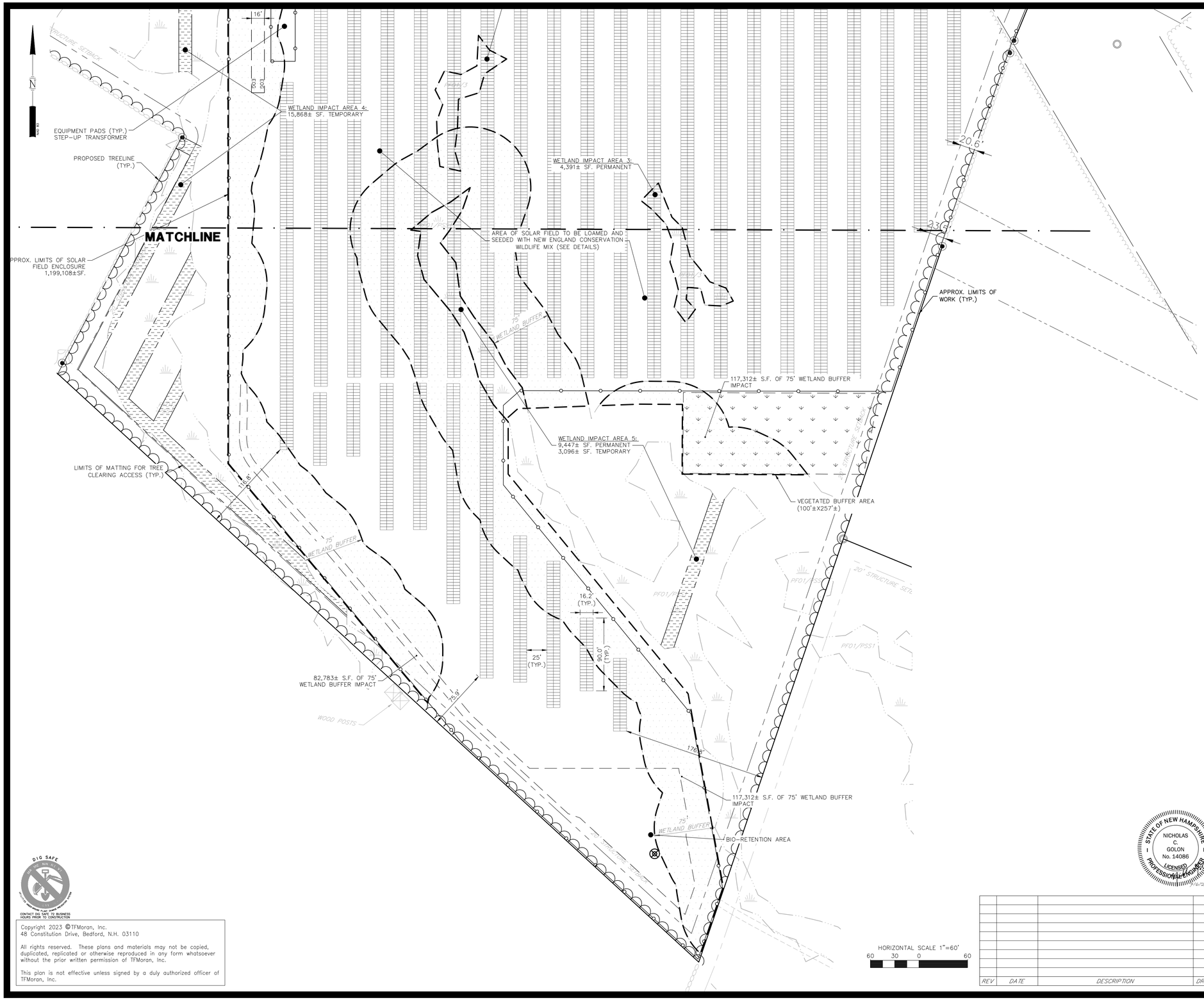

NOTES

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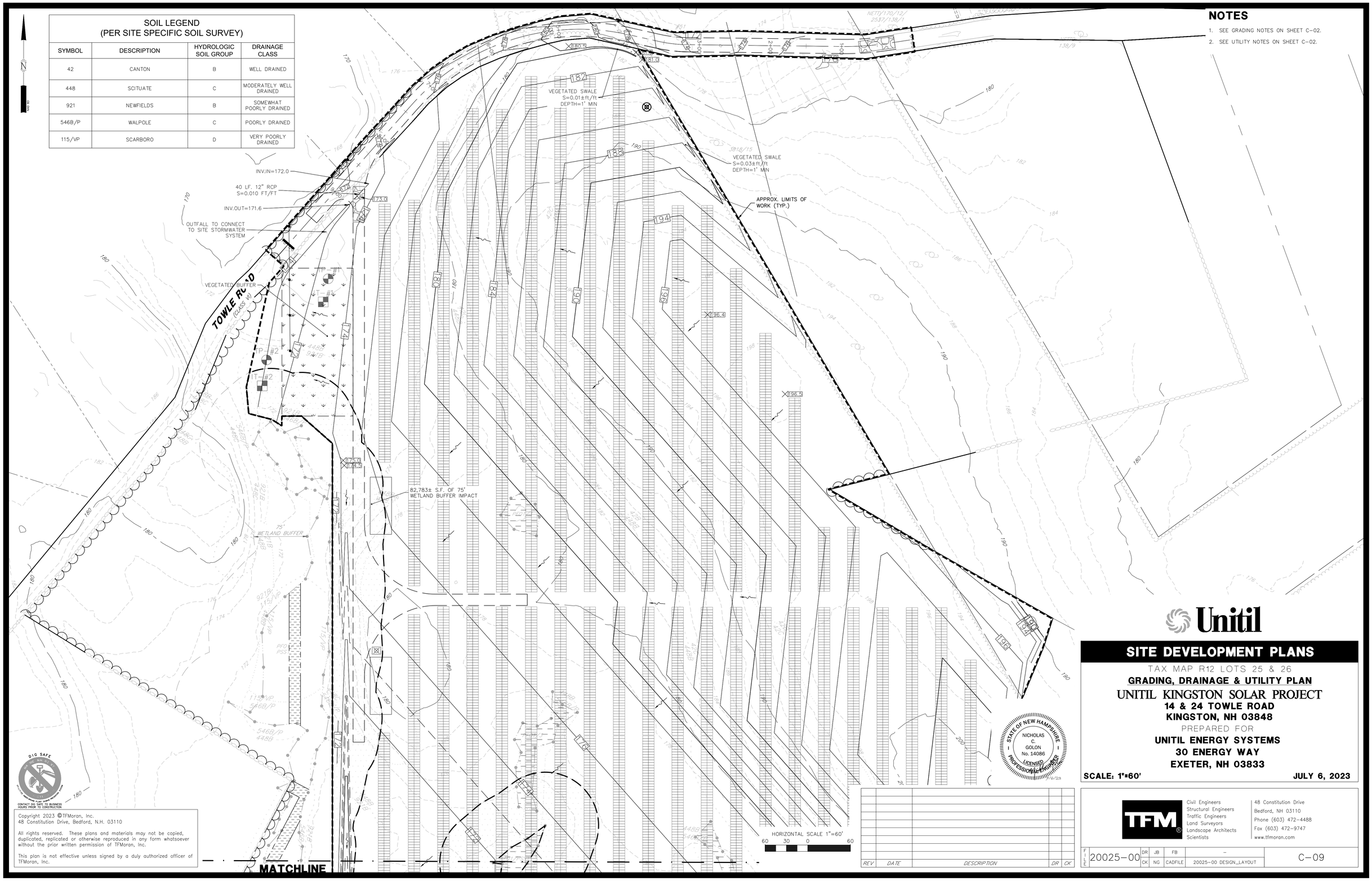
SOIL LEGEND
(PER SITE SPECIFIC SOIL SURVEY)

SYMBOL	DESCRIPTION	HYDROLOGIC SOIL GROUP	DRAINAGE CLASS
42	CANTON	B	WELL DRAINED
448	SCITUATE	C	MODERATELY WELL DRAINED
921	NEWFIELDS	B	SOMEWHAT POORLY DRAINED
546B/P	WALPOLE	C	POORLY DRAINED
115/VP	SCARBORO	D	VERY POORLY DRAINED



NOTES

1. SEE GRADING NOTES ON SHEET C-02.
2. SEE UTILITY NOTES ON SHEET C-02.

Unitil

SITE DEVELOPMENT PLANS

TAX MAP R12 LOTS 25 & 26

GRADING, DRAINAGE & UTILITY PLAN

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KINGSTON, NH 03848

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EXETER, NH 03833

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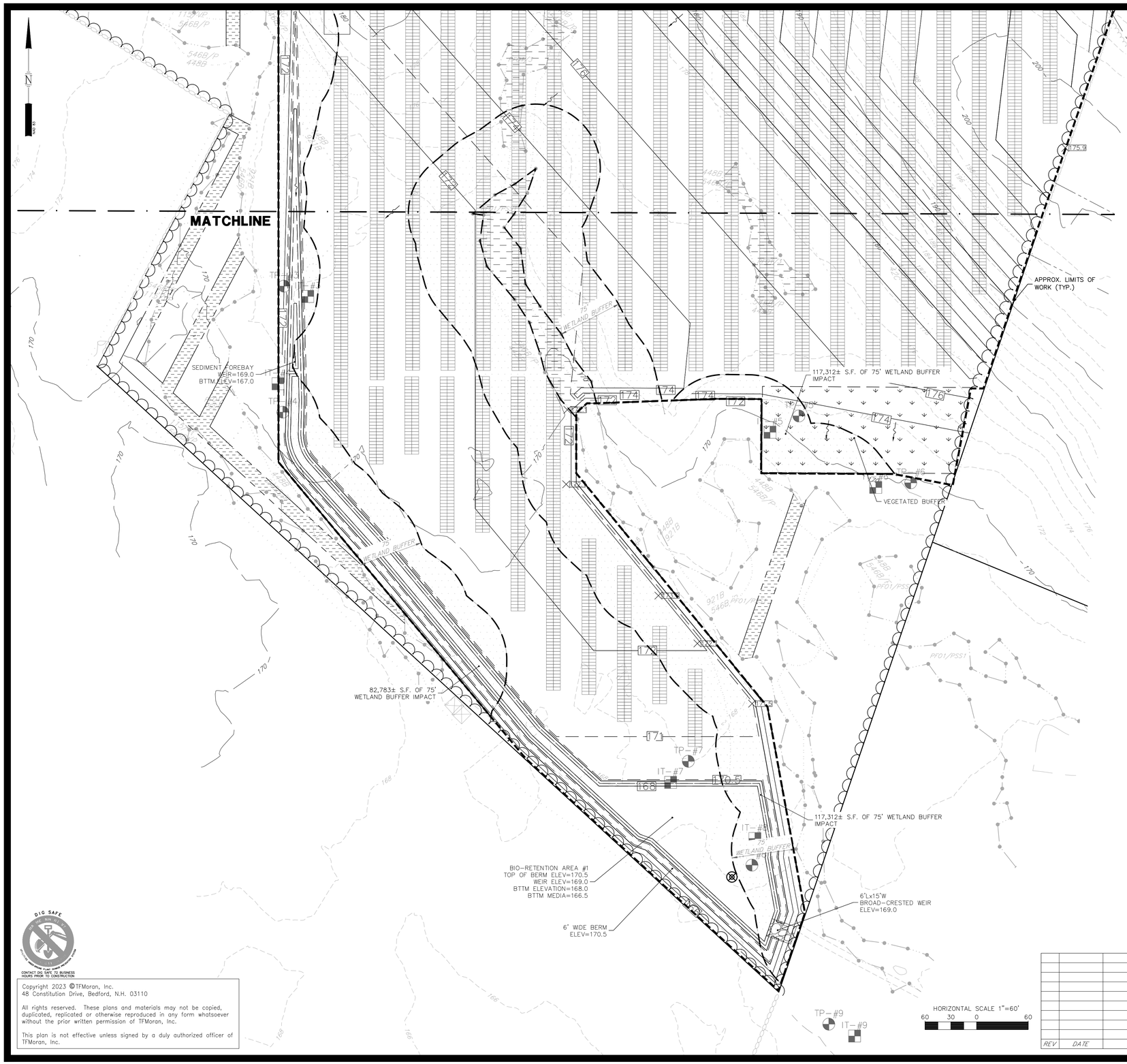

NOTES

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SOIL LEGEND (PER SITE SPECIFIC SOIL SURVEY)		
SYMBOL	DESCRIPTION	HYDROLOGIC SOIL GROUP
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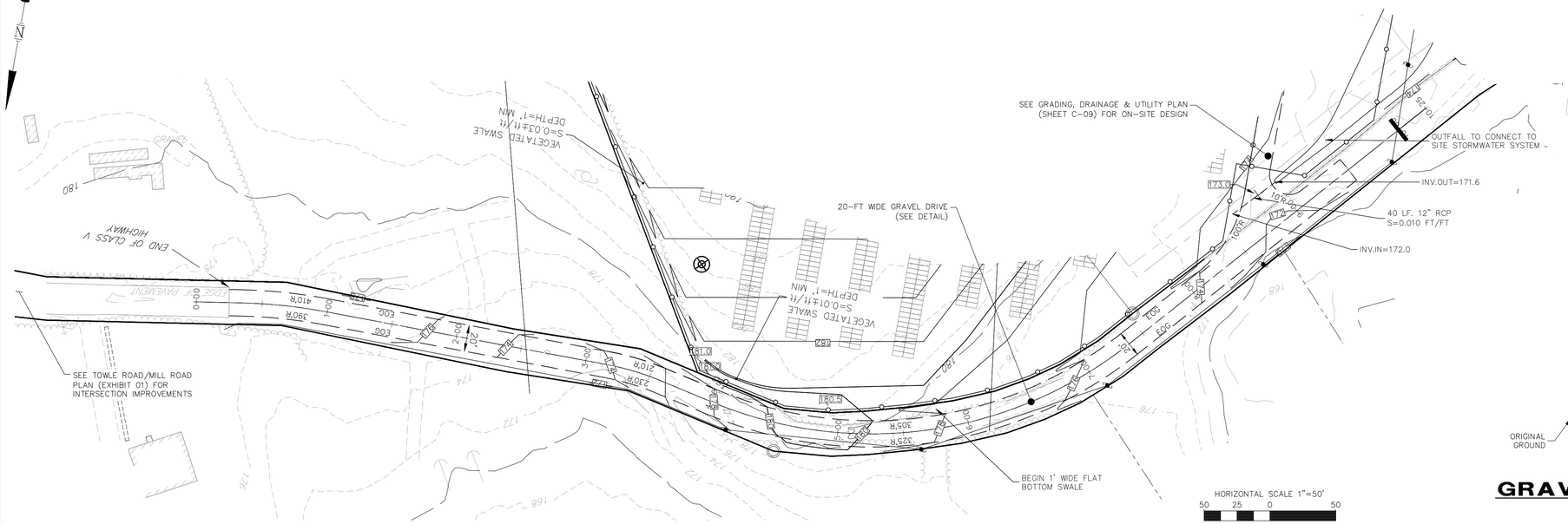
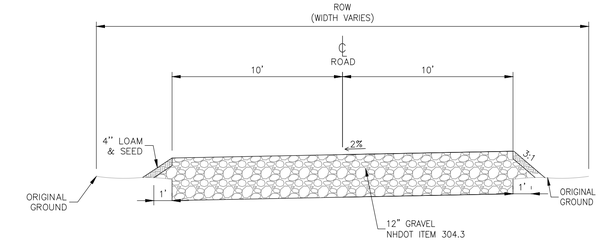


TOWLE ROAD DRIVEWAY PLAN VIEW

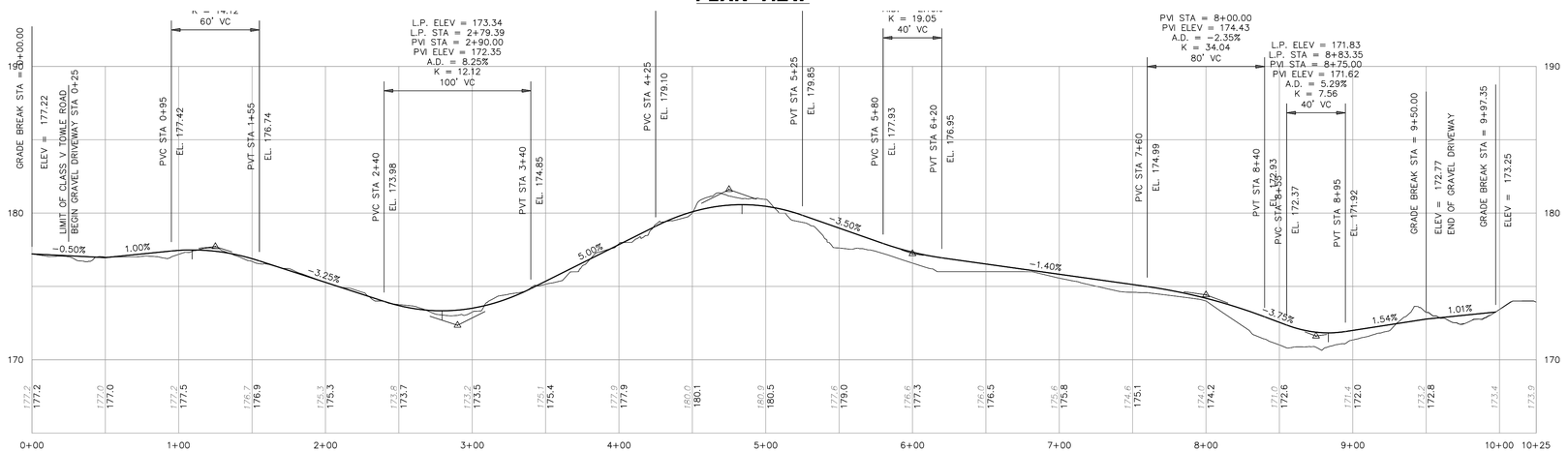


GRAVEL DRIVE CROSS-SECTION

NOT TO SCALE

NOTES

1. REMOVE ALL LOAM, CLAY, MUCK, STUMPS, AND OTHER IMPROPER PAVEMENT FOUNDATION MATERIAL WITHIN 2' OF SUBGRADE. REPLACE WITH COMPACTED GRANULAR FILL MATERIAL ACCEPTABLE TO APPROVING AGENCY. COMPACTION TO BE AT LEAST 95% OF STNDARD PROCTOR.



TOWLE ROAD DRIVEWAY PROFILE VIEW

HORIZONTAL SCALE 1"=50'
50 25 0 50
VERTICAL SCALE 1"=5'
5 0 5

Unitil

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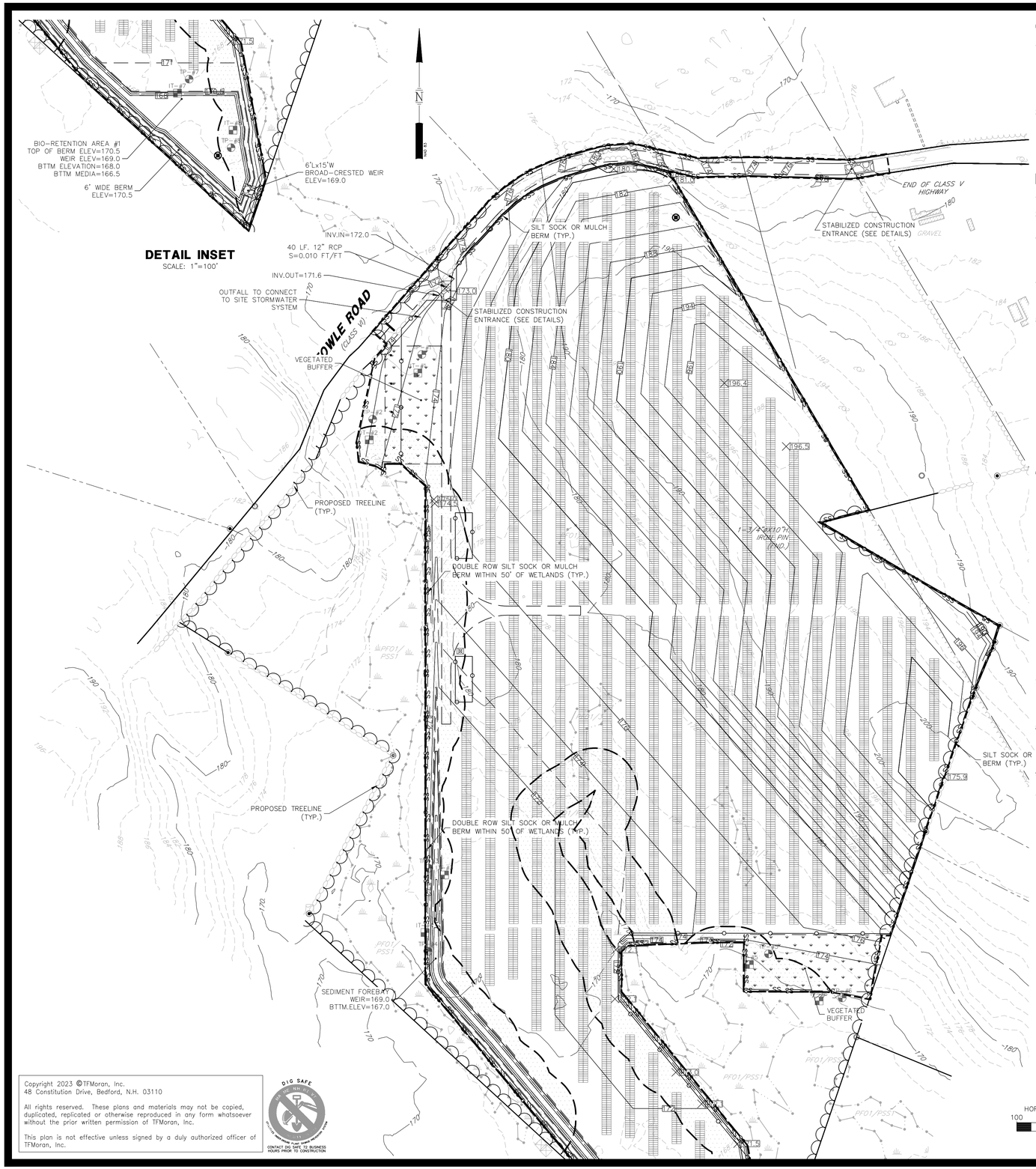

CONSTRUCTION GENERAL PERMIT

1. THE OWNER, IN CONJUNCTION WITH THE CONTRACTOR (OPERATORS), MUST OBTAIN A CONSTRUCTION GENERAL PERMIT (CGP) FOR LARGE CONSTRUCTION ACTIVITIES (FIVE OR MORE ACRES) OR SMALL CONSTRUCTION ACTIVITIES (GREATER THAN ONE ACRE BUT LESS THAN FIVE ACRES) FROM THE ENVIRONMENTAL PROTECTION AGENCY (EPA). AS PART OF THE CGP, A STORMWATER NOTICE OF INTENT (NOI) MUST BE SUBMITTED TO THE EPA AT LEAST 7 DAYS PRIOR TO COMMENCING CONSTRUCTION. THE NOI MUST BE SUBMITTED TO STORM WATER NOTICE OF INTENT (4203M), USEPA, 1200 PENNSYLVANIA AVE. NW, WASHINGTON, DC 20460.

2. THE CGP OUTLINES A SET OF PROVISIONS MANDATING THE OWNER AND CONTRACTOR TO COMPLY WITH THE REQUIREMENTS OF THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER REGULATIONS, INCLUDING, BUT NOT LIMITED TO, STORM WATER POLLUTION PREVENTION PLANS (SWPPP'S), IMPLEMENTATION OF EROSION AND SEDIMENTATION CONTROLS, EQUIPMENT MAINTENANCE GUIDELINES, ETC. PLEASE CONTACT USEPA OFFICE OF WASTEWATER MANAGEMENT AT 202-564-9545 OR AT WWW.EPA.GOV/NPDES/STORMWATER FOR ADDITIONAL INFORMATION. FOR FURTHER ASSISTANCE, CONTACT ABBY SWAINE OF NEW ENGLAND'S EPA REGION 1 AT 617-918-1841.

NOTES

1. IT IS BEING PROPOSED TO CONSTRUCT A SOLAR FACILITY ON THE SUBJECT PARCEL.

2. TOTAL SITE AREA: 35.6± AC
   TOTAL AREA OF DISTURBANCE: 29.3± AC

3. SOILS SHOWN ARE FROM THE SOIL SURVEY OF ROCKINGHAM COUNTY, NH, EASTERN PART, PREPARED BY USDA-SOIL CONSERVATION SERVICES.
   43B – CANTON FINE SANDY LOAM, 0-8% SLOPES, VERY STONY
   447B – SCITUATE-NEWFIELDS COMPLEX, 3-8% SLOPES, VERY STONY
   43B – WALPOLE VERY FINE SANDY LOAM, 3-8% SLOPES, VERY STONY

4. STORM WATER DRAINAGE SYSTEM IS SHOWN ON THE PLAN. SEE GRADING & DRAINAGE PLAN FOR RIM, INVERT, PIPE LENGTH, AND SLOPE INFORMATION.
   POST-CONSTRUCTION RUNOFF COEFFICIENT: C=0.31
   IMPERVIOUS SURFACE AREA: 0.59± AC

5. STABILIZATION PRACTICES FOR EROSION AND SEDIMENTATION CONTROLS:

   TEMPORARY STABILIZATION – TOPSOIL STOCKPILES AND DISTURBED AREAS OF THE CONSTRUCTION SITE THAT WILL NOT BE REDISTURBED FOR 14 DAYS OR MORE MUST BE STABILIZED BY THE 14TH DAY AFTER THE LAST DISTURBANCE. THE TEMPORARY SEED SHALL BE ANNUAL RYE APPLIED AT THE RATE OF 1.1 LBS PER 1,000 SF. PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS PER ACRE OF 10-20-20 FERTILIZER SHALL BE APPLIED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY. AREAS OF THE SITE THAT WILL BE PAVED WILL BE TEMPORARILY STABILIZED BY APPLYING GEOTEXTILES AND A STONE SUB-BASE UNTIL BITUMINOUS PAVEMENT CAN BE APPLIED. CALCIUM CHLORIDE SHALL BE USED FOR DUST CONTROL IF NEEDED.

   PERMANENT STABILIZATION – DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES PERMANENTLY CEASES SHALL BE STABILIZED WITH PERMANENT SEED NO LATER THAN 3 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY. THE PERMANENT SEED MIX SHALL CONSIST OF 0.45 LBS/1,000 SF TALL FESCUE, 0.20 LBS/1,000 SF CREEPING RED FESCUE, AND 0.20 LBS/1,000 SF BIRDSFOOT TREFOIL. PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS PER ACRE IF 10-20-20 FERTILIZER SHALL BE APPLIED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY.

6. STRUCTURAL PRACTICES FOR EROSION AND SEDIMENTATION CONTROL

   SILT SOCK – WILL BE CONSTRUCTED AROUND THE PERIMETER OF THE DISTURBED AREAS AND WILL DELINEATE THE LIMITS OF WORK FOR THE PROPOSED CONSTRUCTION. THE SILT SOCK WILL BE INSTALLED BY OTHERS. POSTS SHALL BE USED WITH AT LEAST 6" OF THE POST BURIED BELOW THE GROUND SURFACE TO PREVENT THE SILT SOCK FROM FORMING GAPS NEAR THE GROUND SURFACE. RUNOFF WILL FLOW THROUGH THE OPENINGS IN THE SILT SOCK WHILE RETAINING THE SEDIMENT WITHIN THE CONSTRUCTION AREA.

   STABILIZED CONSTRUCTION ENTRANCE – WILL BE INSTALLED IN ACCORDANCE WITH THE DETAIL AT THE ENTRANCE TO THE CONSTRUCTION SITE TO HELP REDUCE VEHICLE TRACKING OF SEDIMENTS OFF THE SITE. THE STABILIZED ENTRANCE WILL BE 20'-WIDE AND FLARE AT THE ENTRANCE TO THE PAVED ROAD AND HAVE A DEPTH OF 12" OF STONE. THE STABILIZED ENTRANCE SHALL BE MAINTAINED UNTIL THE REMAINDER OF THE CONSTRUCTION SITE HAS BEEN FULLY STABILIZED. THE PAVED STREET ADJACENT TO THE SITE SHALL BE SWEPT ON A WEEKLY BASIS TO REMOVE EXCESS MUD AND DIRT FROM BEING TRACKED FROM THE SITE. TRUCKS HAULING MATERIAL TO AND/OR FROM THE SITE SHALL BE COVERED WITH A TARPAULIN.

   BLANKET SLOPE PROTECTION – SHALL BE INSTALLED ON ALL 2:1 SLOPES OR STEEPER ON SITE. ANCHOR THE TOP OF THE BLANKET BY ANCHORING THE BLANKET IN A 6" DEEP TRENCH. BACKFILL AND COMPACT TRENCH AFTER STAPLING. ROLL THE BLANKET IN THE DIRECTION OF STORM WATER FLOW. WHERE 2 OR MORE STRIPS OF BLANKET ARE REQUIRED, A MINIMUM OF 4" OF OVERLAP SHALL BE PROVIDED.

   STONE CHECK DAMS – WILL BE INSTALLED IN EXISTING AND PROPOSED GRASS SWALES TO REDUCE THE VELOCITY OF CONCENTRATED STORM WATER FLOWS AND PREVENT EROSION OF THE SWALE.

7. STORM WATER MANAGEMENT

   STORM WATER DRAINAGE FOR DEVELOPED AREAS WILL BE COLLECTED BY AN OPEN DRAINAGE SYSTEM. APPROXIMATELY 7.2± ACRES OF THE 36.5± ACRE SITE WILL REMAIN IN ITS CURRENT STATE. WHEN CONSTRUCTION IS COMPLETE THE MAJORITY OF THE SITE WILL DRAIN TO A BIO-RETENTION AREA.

8. ALL CONSTRUCTION DEBRIS AND WASTE MATERIALS SHALL BE COLLECTED AND STORED IN SECURE DUMPSTERS OR APPROVED ENCLOSURE AND REMOVED FROM THE SITE ON A WEEKLY BASIS. NO CONSTRUCTION WASTE SHALL BE BURIED ON SITE. PORTABLE TOILET SANITARY WASTE FACILITIES WILL BE PROVIDED DURING CONSTRUCTION AND MAINTAINED/DISPOSED OF ON A REGULAR BASIS IN ACCORDANCE WITH TOWN AND STATE REGULATIONS.

9. THRUST BLOCK SHALL BE PROVIDED WHERE WATER LINE CHANGES DIRECTION OR TAPS INTO EXISTING WATER LINE.

10. A LIST OF CONSTRUCTION ITEMS AND OTHER PRODUCTS USED ON THIS PROJECT SHALL BE KEPT ON RECORD WITH THIS PLAN ONSITE. ALL CHEMICALS, PETROLEUM PRODUCTS AND OTHER MATERIALS USED DURING CONSTRUCTION SHALL BE STORED IN A SECURE AREA, AND PRECAUTIONS USED TO PREVENT POTENTIAL SOURCES OF CONTAMINATION OR POLLUTION. ANY SPILL OF THESE TYPES OF SUBSTANCES SHALL BE CLEANED UP AND DISPOSED OF IN A LEGAL MANNER AS SPECIFIED BY STATE REGULATIONS AND THE MANUFACTURER. ANY SPILL IN AMOUNTS EQUAL TO OR EXCEEDING REPORTABLE QUANTITY AS DEFINED BY THE EPA SHALL TAKE THE FOLLOWING STEPS:
    - NOTIFY THE NATIONAL RESPONSE CENTER IMMEDIATELY AT (888) 424-8802; IN WASHINGTON, D.C., CALL (202) 426-2675.
    - WITHIN 14 DAYS, SUBMIT A WRITTEN DESCRIPTION OF THE RELEASE TO THE EPA REGIONAL OFFICE PROVIDING THE DATE AND CIRCUMSTANCES OF THE RELEASE AND THE STEPS TO BE TAKEN TO PREVENT ANOTHER RELEASE.
    - MODIFY THE POLLUTION PREVENTION PLAN TO INCLUDE THE INFORMATION LISTED ABOVE.

GOOD HOUSEKEEPING:
THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ONSITE DURING THE CONSTRUCTION PROJECT.
- AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB;
- ALL MATERIALS STORED ONSITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE;
- PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL;
- SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER;
- WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER;
- MANUFACTURERS' RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED;
- TRASH DUMPSTERS SHALL BE GASKETED OR HAVE A SECURE WATERTIGHT LID AND BE PLACED AWAY FROM STORMWATER CONVEYANCES AND DRAINS.
- THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE.

HAZARDOUS PRODUCTS:
THESE PRACTICES ARE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:
- PRODUCTS WILL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE;
- ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED; THEY CONTAIN IMPORTANT PRODUCT INFORMATION;
- IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURER'S OR LOCAL AND STATE RECOMMENDED METHODS FOR PROPER DISPOSAL WILL BE FOLLOWED.

PRODUCT SPECIFIC PRACTICES:
THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON SITE:

PETROLEUM PRODUCTS:
ALL ONSITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTATIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ONSITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

FERTILIZERS:
FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. STORAGE WILL BE IN A COVERED SHED. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

PAINTS:
ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

CONCRETE TRUCKS:
EXCESS CONCRETE SHALL BE USED IN AREAS DESIGNATED BY THE SITE CONTRACTOR. WASH WATER SHALL BE DISPOSED OF USING BEST MANAGEMENT PRACTICES. BUILDING CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL DRUM WASH WATER ASSOCIATED WITH CONCRETE FOR THE BUILDING PAD. SITE CONTRACTOR TO COORDINATE AND PROVIDE BUILDING CONTRACTOR WITH AN AREA FOR DRUM WASH WATER.

SPILL CONTROL PRACTICES:
IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:
- MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
- MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ONSITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.
- ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
- THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
- SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF SIZE.
- THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE IS ANOTHER ONE. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED.
- THE SITE SUPERINTENDENT RESPONSIBLE FOR THE DAY-TO-DAY SITE OPERATIONS, WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. THEY WILL DESIGNATE AT LEAST THREE OTHER SITE PERSONNEL WHO WILL EACH RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ONSITE.

11. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN RECORDS OF CONSTRUCTION ACTIVITIES, INCLUDING DATES OF MAJOR GRADING ACTIVITIES, DATES WHEN CONSTRUCTION ACTIVITIES HAVE TEMPORARILY CEASED ON A PORTION OF THE SITE, DATES WHEN WORK IS COMPLETED ON A PORTION OF THE SITE, AND DATES WHEN STABILIZATION MEASURES ARE INITIATED ONSITE.

12. THE CONTRACTOR SHALL PERFORM INSPECTIONS OR HAVE A CONSULTING ENGINEER PERFORM INSPECTIONS EVERY SEVEN (7) DAYS AND WITHIN 24 HOURS AFTER A STORM OF 0.5" OR GREATER. INSPECTIONS REPORTS ARE TO BE KEPT ON FILE AT THE SITE WITH THIS PLAN. MAINTENANCE OR MODIFICATION SHALL BE IMPLEMENTED AND ADDED TO THE PLAN AS RECOMMENDED BY THE QUALIFIED INSPECTOR.

Unitil

SITE DEVELOPMENT PLANS

TAX MAP R12 LOTS 25 & 26

STORMWATER MANAGEMENT PLAN

UNITIL KINGSTON SOLAR PROJECT

14 & 24 TOWLE ROAD
KINGSTON, NH 03848

PREPARED FOR

UNITIL ENERGY SYSTEMS
30 ENERGY WAY
EXETER, NH 03833

SCALE: 1"=100' **JULY 6, 2023**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED
PROFESSIONAL ENGINEER
7/6/23

HORIZONTAL SCALE 1"=100'
100 50 0 100

REV	DATE	DESCRIPTION	DR	CK

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
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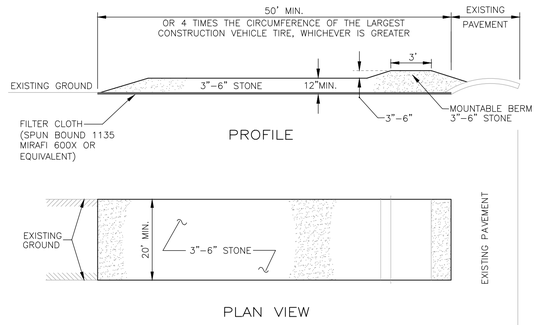
DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION



NOTES

FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE SURFACE.

NO SURFACE WATER SHALL BE DIRECTED TOWARD CONSTRUCTION ENTRANCES.

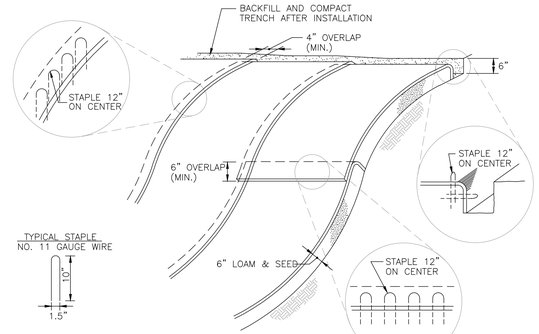
MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY MUST BE REMOVED IMMEDIATELY.

WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS–OF–WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN STORM EVENT.

CONSTRUCTION ENTRANCE

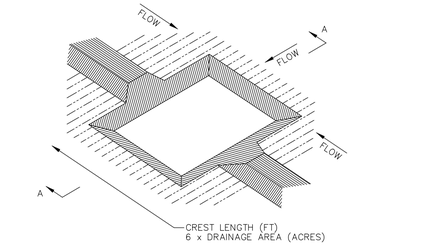
SEE PLAN FOR PROPOSED LOCATION — NOT TO SCALE



1. BEGIN AT THE TOP OF BLANKET INSTALLATION AREA BY ANCHORING BLANKET IN A 6" DEEP TRENCH. BACKFILL AND COMPACT TRENCH AFTER STAPLING.
2. ROLL THE BLANKET DOWN THE SWALE IN THE DIRECTION OF THE WATER FLOW.
3. THE EDGES OF BLANKETS MUST BE STAPLED WITH APPROX. 4 INCH OVERLAP WHERE 2 OR MORE STRIP WIDTHS ARE REQUIRED.
4. WHEN BLANKETS MUST BE SPLICED DOWN THE SWALE, PLACE BLANKET END OVER END WITH 6 INCH (MIN.) OVERLAP AND ANCHOR DOWN SLOPE BLANKET IN A 6 INCH DEEP TRENCH.
5. BLANKET SHALL BE NORTH AMERICAN GREEN C125BN, EAST COAST EROSION CONTROL ECC–2B, AMERICAN EXCELSIOR COMPANY CURLEX III FIBRENET, ROLANKA GEONATURAL EROSION & SEDIMENT CONTROL MATTE JUTEMAT OR BIOD–OCF 30, OR APPROVED EQUAL.
6. **BLANKET SHALL NOT CONTAIN WELDED PLASTIC, PLASTIC, MULTI–FILAMENT, OR MONO–FILAMENT POLYPROPYLENE NETTING OR MESH.**

BLANKET SLOPE PROTECTION

FOR EROSION CONTROL — NOT TO SCALE

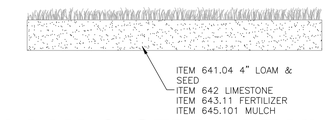


NOTES

1. SEDIMENT TRAP TO BE USED AS NECESSARY TO CONTAIN RUNOFF UNTIL BASINS/PONDS ARE STABILIZED. IF IT IS DETERMINED THAT CONSTRUCTION OF A SEDIMENT TRAP IS WARRANTED, CONSULT WITH ENGINEER TO DETERMINE APPROPRIATE NUMBER AND DIMENSIONS.

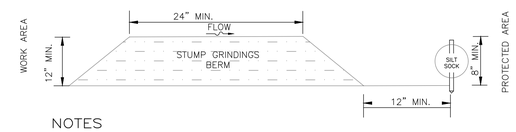
SEDIMENT TRAP

NOT TO SCALE



LOAM & SEED DETAIL

NOT TO SCALE

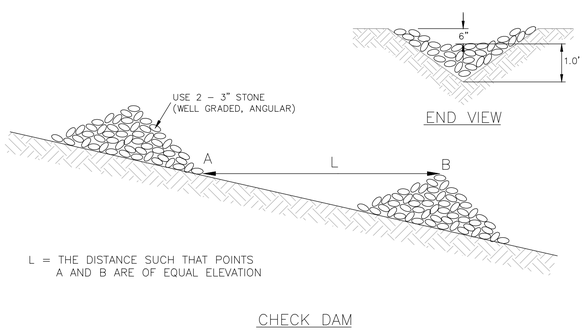


NOTES

1. THE BERM MUST BE A MINIMUM OF 12" HIGH, AS MEASURED ON THE UPHILL SIDE OF THE BARRIER, AND A MINIMUM OF TWO FEET WIDE (NHDES)
2. SILT SOCK TO BE INSTALLED PER MANUFACTURERS RECOMMENDATION AND THE STANDARD DETAIL IN THE APPROVED SITE PLANS

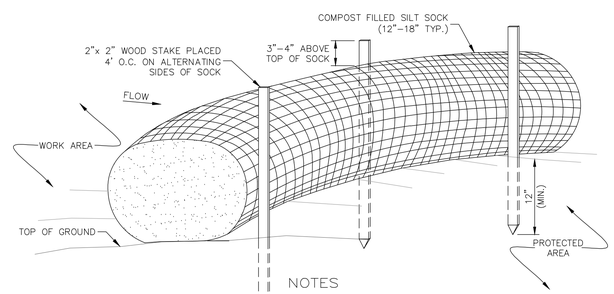
MULCH BERM

NOT TO SCALE



STONE CHECK DAM

AS NEEDED — NOT TO SCALE

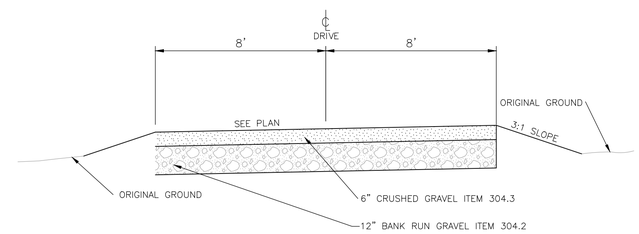


NOTES

1. **SILT SOCK SHALL BE FILTREXXtm SILTSOXXtm NATURAL ORIGINALtm (BIODEGRADABLE) OR APPROVED EQUIVALENT.**
2. SEE SPECIFICATIONS FOR SOCK SIZE AND COMPOST FILL REQUIREMENTS.
3. SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED AS NEEDED.
4. COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.

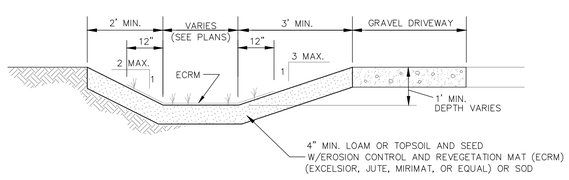
SILT SOCK

NOT TO SCALE



GRAVEL DRIVE

ON–SITE — NOT TO SCALE



GRASS LINED SWALE

FOR USE WHERE VELOCITIES ARE 3 FPS OR LESS — NOT TO SCALE

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DIG SAFE — CALL NH 811 — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

Unitil

SITE DEVELOPMENT PLANS

TAX MAP R12 LOTS 25 & 26

DETAILS

UNITIL KINGSTON SOLAR PROJECT
14 & 24 TOWLE ROAD
KINGSTON, NH 03848

PREPARED FOR

UNITIL ENERGY SYSTEMS
30 ENERGY WAY
TER, NH 03833

SCALE: NOT TO SCALE — **JULY 6, 2023**

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 7/6/23

REV	DATE	DESCRIPTION	DR	CK

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

48 Constitution Drive
Bedford, NH 03110
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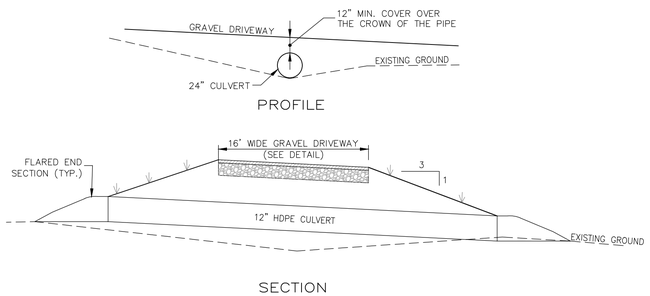
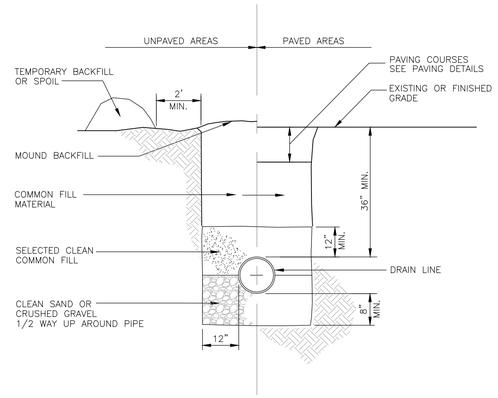


TYPICAL DRIVEWAY CULVERT

NOT TO SCALE



DRAINAGE LINE TRENCH

NOT TO SCALE

Unitil

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SCALE: NOT TO SCALE **JULY 6, 2023**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED
PROFESSIONAL ENGINEER
7/6/23

REV	DATE	DESCRIPTION	DR	CK

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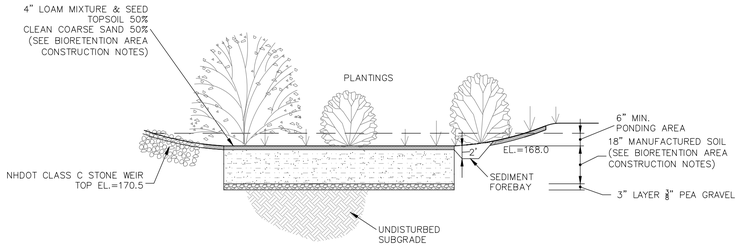
DIG SAFE
CONTACT DIG SAFE TO BUSINESS HOURS PRIOR TO CONSTRUCTION



BIORETENTION NOTES

1. THE INSTALLER SHALL NOT ALLOW ANY VEHICULAR OR CONSTRUCTION EQUIPMENT TRAVEL TO OCCUR ACROSS THE PROPOSED BASIN AREA AT ANY TIME EXCEPT DURING EXCAVATION OF TOPSOIL, SUBSOIL AND OTHER MATERIALS NOT SUITABLE FOR BED BOTTOM CONDITIONS.
2. CAUTION SHOULD BE EXERCISED DURING SITE PREPARATION TO AVOID COMPACTION OF THE INFILTRATIVE SURFACE.
3. SEED MIX
   NEW ENGLAND ROADSIDE MATRIX WET MEADOW SEED MIX (MIN. 35 LBS/ACRE)
4. MANUFACTURED SOIL SAMPLE TO BE PROVIDED TO THE ENGINEER PRIOR TO PLACEMENT. ON SITE MIXING OF MANUFACTURED SOIL MAY BE ACCEPTABLE PENDING ENGINEER APPROVAL.
5. DO NOT DISCHARGE SEDIMENT–LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE BASIN.
6. AFTER THE BASIN IS EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.
7. VEGETATION SHOULD BE ESTABLISHED IMMEDIATELY.
8. DO NOT PLACE BIORETENTION AREA INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
9. LINE THE SIDES OF THE BASIN TO A DEPTH OF 18 INCHES.

BIORETENTION AREA SECTION

NOT TO SCALE

BIORETENTION AREA CONSTRUCTION

1. CLEAR AND GRUB THE AREA WHERE THE BIORETENTION AREAS ARE TO BE LOCATED. STOCKPILE LOAM FOR REUSE ON SLOPES.
2. GRADE BIORETENTION AREAS ACCORDING TO PLAN AND DETAILS. SIDE SLOPES SHALL HAVE 4" LOAM AND SEED. BOTTOM OF BIORETENTION AREAS TO BE CONSTRUCTED WITH MULCH, MANUFACTURED SOIL, PEA STONE AND CRUSHED STONE (SEE BIORETENTION AREA DETAIL). SPECIFIC PLANTINGS SHALL BE FIELD LOCATED BY LANDSCAPE ARCHITECT AT TIME OF INSTALLATION.
3. BIORETENTION MANUFACTURED SOIL MIXTURE SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES EXCLUDING MULCH. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE BIORETENTION AREA THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVIDE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATION. THE MANUFACTURED SOIL MIX SHALL CONSIST OF THE FOLLOWING BY VOLUME:
   - ASTM C–33 CONCRETE SAND (50–55% BY VOLUME)
   - LOAMY SAND TOPSOIL (20–30% BY VOLUME) WITH 15–25% FINES PASSING THE NO. 200 SIEVE
   - MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH (20–30% BY VOLUME) WITH LESS THAN 5% PASSING THE NO. 200 SIEVE
4. TOPSOIL/LOAM SHALL CONSIST OF LOOSE FRIABLE TOPSOIL WITH NO ADMIXTURE OF REFUSE OR MATERIAL TOXIC TO PLANT GROWTH. LOAM SHALL BE FREE FROM STONES, LUMPS, STUMPS, OR SIMILAR OBJECTS LARGER THAN ONE INCH ("1") IN GREATEST DIAMETER, SUBSOIL, ROOTS, AND WEEDS. THE MINIMUM AND MAXIMUM PH VALUE SHALL BE FROM 5.5 TO 7.2. LOAM SHALL CONTAIN A MINIMUM OF FOUR PERCENT (4%) AND A MAXIMUM OF FIVE AND A HALF PERCENT (5.5%) ORGANIC MATTER AS DETERMINED BY WEIGHT. NOT MORE THAN TWENTY–FIVE PERCENT (25%) SHALL PASS A NO. 200 SIEVE. IN NO INSTANCE SHALL MORE THAN 20% OF THAT MATERIAL PASSING THE #4 SIEVE CONSIST OF CLAY SIZE PARTICLES. THE RATIO OF THE PARTICLE SIZE FOR 80% PASSING (D80) TO THE PARTICLE SIZE FOR 30% PASSING (D30) SHALL BE 6.0 OR LESS (D80/D30 $\leq$ 6.0). SATURATED HYDRAULIC CONDUCTIVITY OF TOPSOIL/LOAM SHALL BE BETWEEN 3 INCHES/HOUR AND 10 INCHES/HOUR ACCORDING TO ASTM D5856–95 WHEN COMPACTED TO A MINIMUM OF 88% STANDARD PROCTOR, ASTM 698.
5. CLEAN COARSE SAND SHALL MEET THE FOLLOWING SPECIFICATION:

US STANDARD SIEVE SIZE	PERCENT FINER
3/8 INCH	100
#4	65–90
#10	40–75
#40	5–40
#100	0
#200	0

6. SEEDING FOR BIORETENTION AREA SIDE SLOPES SHALL HAVE A MINIMUM OF 4" LOAM MIXTURE INSTALLED WITH TYPICAL LAWN MIX (MIN. 200 LBS/ACRE):
   33% CREEPING RED FESCUE (MIN. 66 LBS/ACRE)
   42% PERENNIAL RYEGRASS (MIN. 84 LBS/ACRE)
   21% KENTUCKY BLUEGRASS (MIN. 42 LBS/ACRE)
   4% REDTOP (MIN. 8 LBS/ACRE)
7. SEEDING FOR BIORETENTION AREA BASIN SHALL BE NEW ENGLAND WETLAND PLANTS, INC. NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES (MIN. 35 LBS/ACRE).
8. THE DRAINAGE LAYER MATERIAL SHALL BE PLACED WITH ONLY NOMINAL COMPACTION APPLIED BY A DOZER OR GRADER. FORMAL COMPACTION USING A VIBRATORY STEEL DRUM ROLLER SHALL NOT BE USED AS DENSIFICATION WILL REDUCE THE PERMEABILITY AND ABILITY FOR THE MANUFACTURED SOIL TO PROPERLY DRAIN. THE CONTRACTOR SHALL TAKE MEASURES TO PREVENT EQUIPMENT & VEHICLE TRAFFIC FROM DRIVING IN THE AREA OF THE PROPOSED BIORETENTION AREA DURING CONSTRUCTION. THE CONTRACTOR SHALL TAKE MEASURES TO PREVENT SMEARING OF THE SUBGRADE DURING CONSTRUCTION.

BIORETENTION AREA INSPECTION & MAINTENANCE

INSPECTION & MAINTENANCE SCHEDULE TO BEGIN AFTER CONSTRUCTION SITE IS STABILIZED AND FLOW DIRECTED TO BASIN.

BIORETENTION AREA SHALL BE INSPECTED TWICE A YEAR AND MAINTENANCE PERFORMED AS REQUIRED PER INSPECTION. AT LEAST ONCE ANNUALLY THE BASIN SHALL BE INSPECTED FOR DRAWDOWN TIME. IF THE BASIN DOES NOT DRAIN WITHIN 72 HOURS, THEN A QUALIFIED PROFESSIONAL SHOULD ASSESS THE CONDITION AND DETERMINE MEASURES REQUIRED TO RESTORE FUNCTION.

VEGETATION – SHALL BE INSPECTED AND MAINTAINED IN A HEALTHY CONDITION BY REMOVING/REPLACING DEAD OR DISEASED VEGETATION AND REMOVING INVASIVE SPECIES. THE VEGETATED AREAS SHALL BE PROTECTED FROM DAMAGE BY TRAFFIC AND DENSE WEED GROWTH. VEGETATION MAINTENANCE A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS. PER ACRE OF 10–20–20 FERTILIZER SHALL BE APPLIED.

BOTTOM OF BASIN – BOTTOM OF BASIN SHALL BE INSPECTED FOR EROSION, SEDIMENT ACCUMULATION, TRASH & DEBRIS. REPAIR ANY ERODED AREA OF THE BIORETENTION AREA WITH APPROPRIATE GRASS COVER AFTER REPLACING ANY LOST FILL MATERIAL AND LOAM. REMOVED SEDIMENT, TRASH & DEBRIS SHALL BE REMOVED AND DISPOSED OF PROPERLY.

INLET/OUTLET – CONDITIONS OF PIPES/RIPRAP SHALL BE NOTED AND REPAIRS MADE IF NEEDED. ACCUMULATED SEDIMENT & DEBRIS SHALL BE REMOVED AND DISPOSED OF PROPERLY. IF EROSION HAS OCCURED, THEN MEASURES SHALL BE TAKEN TO STABILIZE AND PROTECT THE AREAS.

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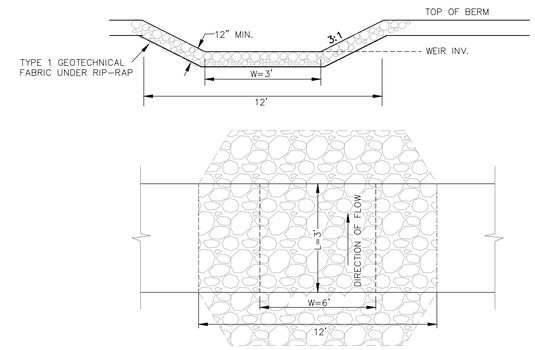
DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION



WEIR	TOP OF BERM EL.	WEIR INV.
SEDIMENT FOREBAY #1	170.5	169.0

BROAD CRESTED WEIR

NOT TO SCALE

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED
PROFESSIONAL ENGINEER
7/6/23

REV	DATE	DESCRIPTION	DR	CK

Unitil

SITE DEVELOPMENT PLANS

TAX MAP R12 LOTS 25 & 26

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NHF&G SPECIES INFORMATION

Records in New Hampshire of BLANDING'S TURTLE

Current (1998 to 2021)

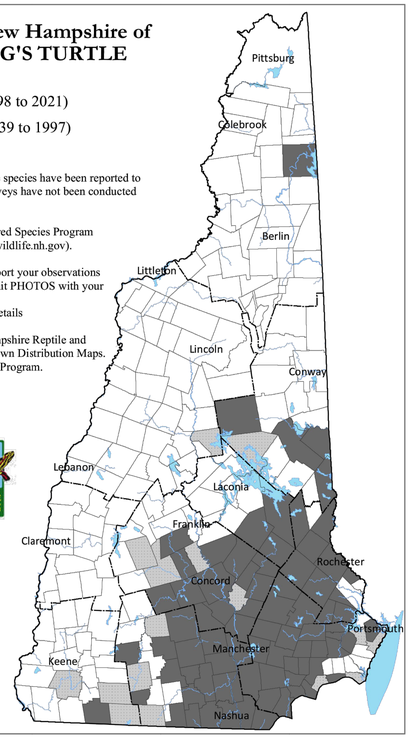
Historic (1939 to 1997)

Distribution maps represent where species have been reported to NH Fish & Game. Systematic surveys have not been conducted for most species.

Contact the Nongame & Endangered Species Program for more information (RAARP@wildlife.nh.gov).

HELP FILL IN THE GAPS! Report your observations to NH Fish & Game. Please submit PHOTOS with your observations whenever possible.
See: www.wildnh.com for more details

Cite as: 'RAARP 2021. New Hampshire Reptile and Amphibian Reporting Program Town Distribution Maps. Nongame & Endangered Wildlife Program. NH Fish & Game Department.'



Blanding's Turtle

Emydoidea blandingii

Federal Listing	N/A
State Listing	E
Global Rank	G4
State Rank	S1
Regional Status	Very High

Records in New Hampshire of SPOTTED TURTLE

Current (1998 to 2021)

Historic (1939 to 1997)

Distribution maps represent where species have been reported to NH Fish & Game. Systematic surveys have not been conducted for most species.

Contact the Nongame & Endangered Species Program for more information (RAARP@wildlife.nh.gov).

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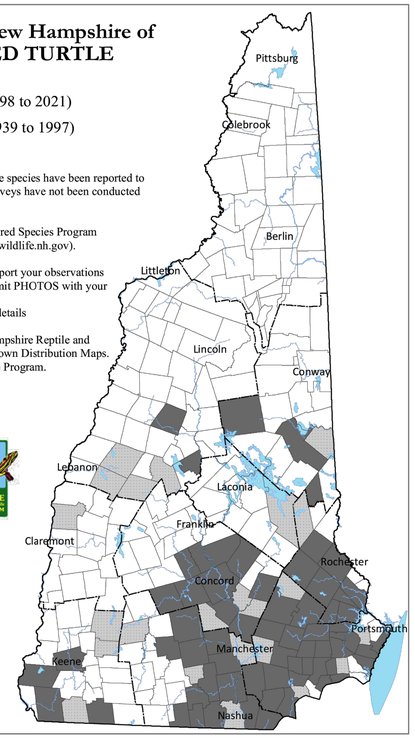


Spotted Turtle

Clemmys guttata

Federal Listing	N/A
State Listing	T
Global Rank	G5
State Rank	S2
Regional Status	Very High

Records in New Hampshire of NORTHERN BLACK RACER

Current (1998 to 2021)

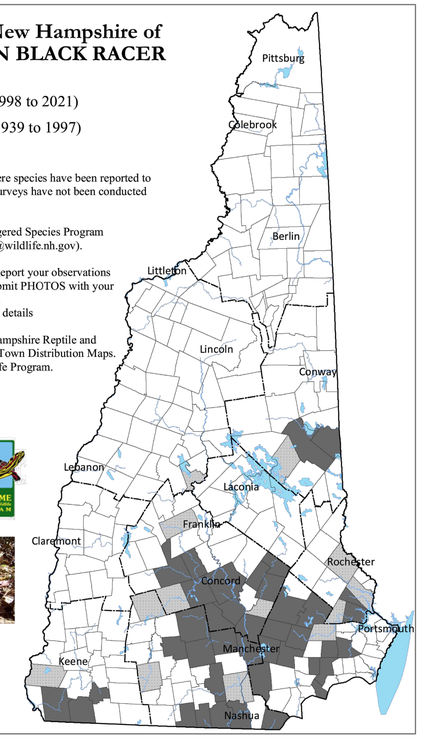
Historic (1939 to 1997)

Distribution maps represent where species have been reported to NH Fish & Game. Systematic surveys have not been conducted for most species.

Contact the Nongame & Endangered Species Program for more information (RAARP@wildlife.nh.gov).

HELP FILL IN THE GAPS! Report your observations to NH Fish & Game. Please submit PHOTOS with your observations whenever possible.
See: www.wildnh.com for more details

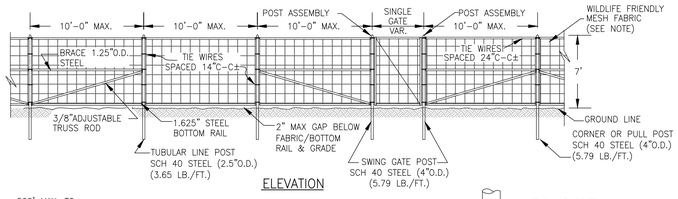
Cite as: 'RAARP 2021. New Hampshire Reptile and Amphibian Reporting Program Town Distribution Maps. Nongame & Endangered Wildlife Program. NH Fish & Game Department.'



Northern Black Racer

Coluber constrictor constrictor

Federal Listing	N/A
State Listing	T
Global Rank	G5
State Rank	S2
Regional Status	High



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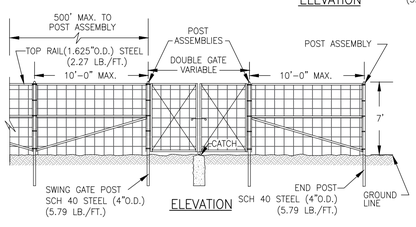

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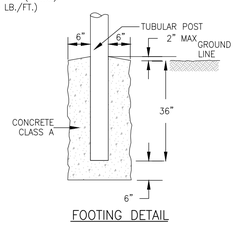

FOOTING DETAIL

NOTES:

1. WILDLIFE FRIENDLY MESH FABRIC SHALL BE 6" MAX. SQUARE STOCK, METAL OR APPROVED EQUIVALENT.
2. MESH SHALL BE HIGH TENSILE STEEL 6"X6" FIXED-KNOT 12.5 GAGE WIRE.
3. ALL END POSTS SHALL HAVE ONE BRACE ALL CORNER AND INTERMEDIATE BRACE OR PULL POSTS SHALL HAVE TWO BRACES, WITH A MAXIMUM SPACING OF BETWEEN POST ASSEMBLIES OF 500 FEET.
4. CONCRETE ANCHOR/BASE SHALL BE MIN. 3,000 PSI CAST-IN-PLACE FOR ALL CORNERS, PULL, TERMINAL AND GATE POSTS. ALL OTHER POSTS CAN BE DIRECT PUSH/BURIAL IF POST IS EMBEDDED MIN. 3 FEET AND AS APPROVED BY MANUFACTURER.

5. FENCE FABRIC SHALL EXTEND A MIN. 7 FEET ABOVE GRADE.
6. ALL POSTS SHALL BE SCHEDULE 40 STEEL LINE POSTS 2.5" O.D.

WILDLIFE FRIENDLY FENCE DETAIL

NOT TO SCALE

Unitil

SITE DEVELOPMENT PLANS

TAX MAP R12 LOTS 25 & 26

DETAILS

UNITIL KINGSTON SOLAR PROJECT

14 & 24 TOWLE ROAD

KINGSTON, NH 03848

PREPARED FOR

UNITIL ENERGY SYSTEMS

30 ENERGY WAY

TER, NH 03833

SCALE: NOT TO SCALE **JULY 6, 2023**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED
PROFESSIONAL ENGINEER
7/6/23

REV	DATE	DESCRIPTION	DR	CK

TFM®
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

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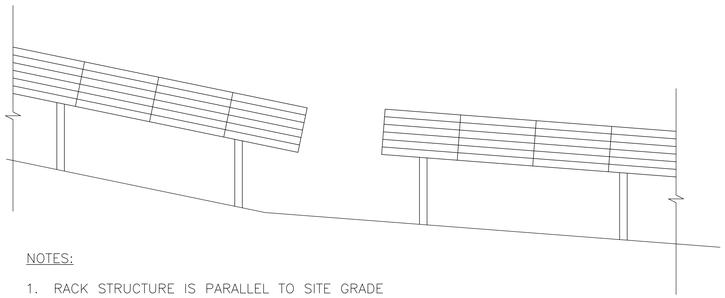
1-888-DIG-SAFE (1-888-344-7233)
CALL 811
NOT ALL UTILITIES MEMBERS OPERATE WITHIN NH
PLEASE CONTACT DIG SAFE, 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

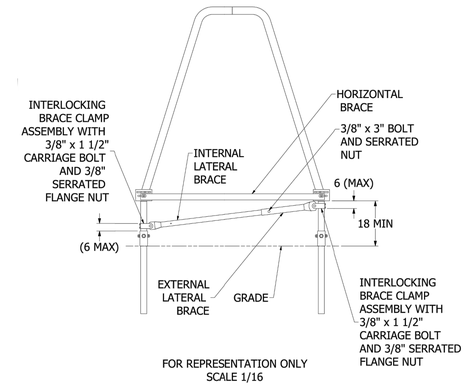


NOTES:

1. RACK STRUCTURE IS PARALLEL TO SITE GRADE
2. POST LENGTHS ARE EQUAL THROUGHOUT UNLESS NOTED OTHERWISE

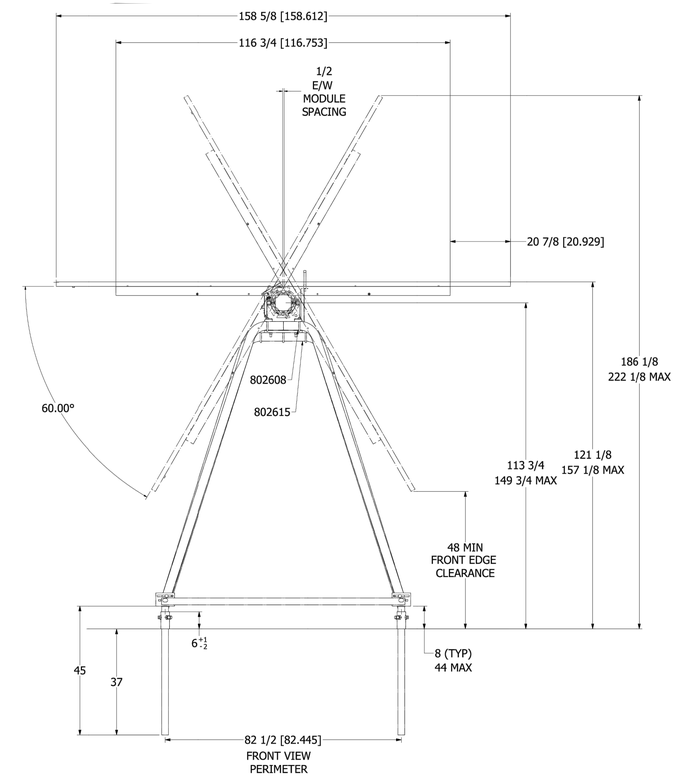
RACK SYSTEM TOPOGRAPHIC RELATIONSHIP

FOLLOW GRADE — NOT TO SCALE



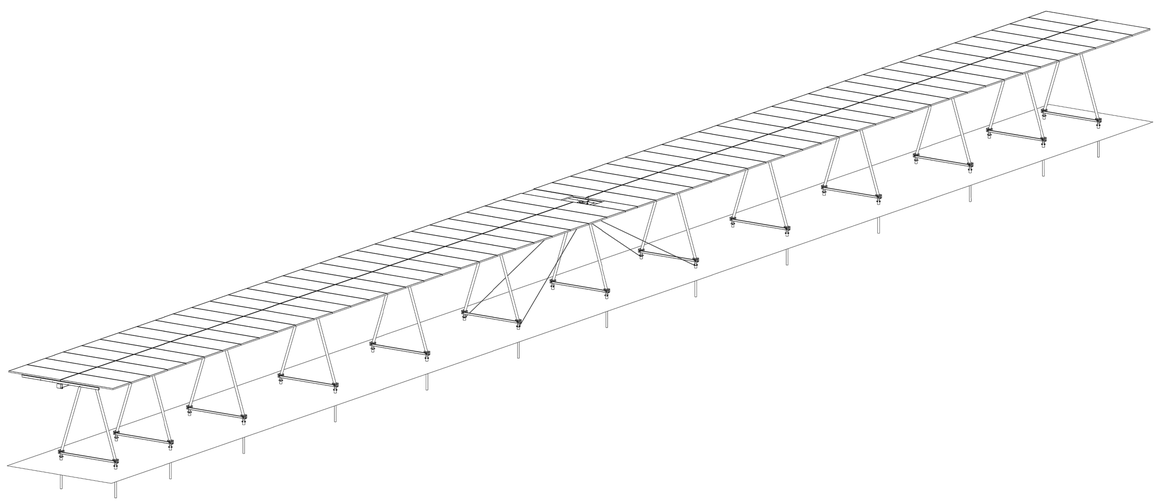
DESIGN RACK BASE SECTION

TERRATRACK — NOT TO SCALE



DESIGN RACK SECTION PLAN VIEW

TERRATRACK — NOT TO SCALE



SOLAR ARRAY RENDERING

TERRATRACK — NOT TO SCALE

SOLAR ARRAY RENDERING

TERRATRACK — NOT TO SCALE

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED
PROFESSIONAL ENGINEER
7/6/23

Unitil

SITE DEVELOPMENT PLANS

TAX MAP R12 LOTS 25 & 26

DETAILS

UNITIL KINGSTON SOLAR PROJECT

14 & 24 TOWLE ROAD
KINGSTON, NH 03848

PREPARED FOR

UNITIL ENERGY SYSTEMS
30 ENERGY WAY
TER, NH 03833

SCALE: NOT TO SCALE — **JULY 6, 2023**

REV	DATE	DESCRIPTION	DR	CK

TFM®
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

PROJ. NO.	DR	JB	FB	–	DWG. NO.
20025-00	CK	NG	CADFILE	20025-00 COVER & DETAILS	D-05

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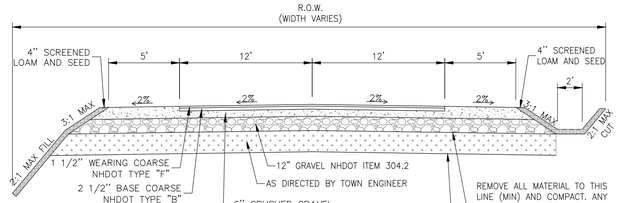
DIG SAFE — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION



NOTES

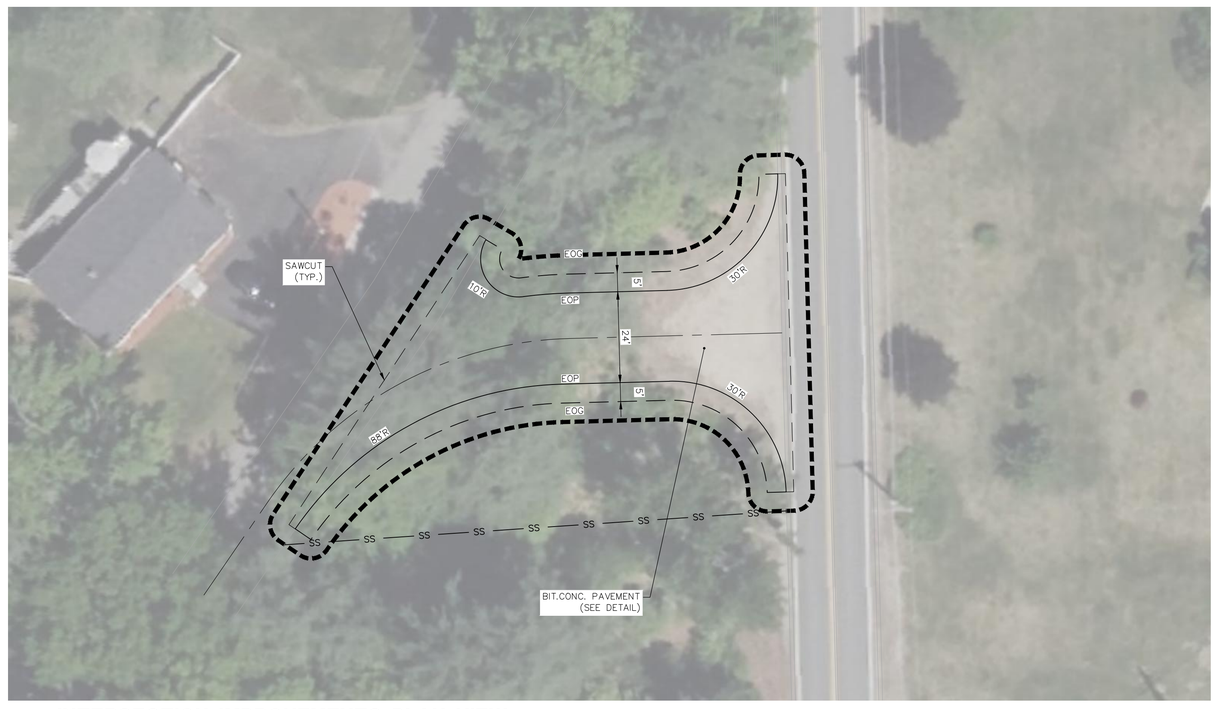
1. INSTALLATION, SPECIFICATIONS, AND PROCEDURES SHALL COMPLY WITH NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
2. INSTALL UNDERDRAIN IN WET AREAS OR AS DIRECTED BY TOWN ENGINEER.
3. ALL MATERIAL MUST BE A MINIMUM OF 95% COMPACTION @ 8% MOISTURE CONTENT.
4. SIGNS, MAILBOXES, AND GUARDRAILS (WHEN REQUIRED) SHALL BE INSTALLED NO CLOSER THAN 5' FROM THE EDGE OF PAVEMENT.

TYP. ROADWAY CROSS-SECTION

NOT TO SCALE

NOTES

1. THE PURPOSE OF THIS PLAN IS TO SHOW PROPOSED INTERSECTION IMPROVEMENTS AT THE INTERSECTION OF TOWLE ROAD AND MILL ROAD IN KINGSTON, NH.
2. ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE TOWN OF KINGSTON, AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. ALL WORK TO CONFORM TO THE TOWN OF KINGSTON DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS. ALL WORK WITHIN THE RIGHT-OF-WAY OF THE TOWN SHALL COMPLY WITH APPLICABLE STANDARDS. COORDINATE ALL WORK WITHIN THE RIGHT-OF-WAY WITH APPROPRIATE TOWN, COUNTY AND/OR STATE AGENCY.
3. ALL WORK SHALL BE CONSTRUCTED FROM A COMPLETE SET OF PLANS, NOT ALL FEATURES ARE DETAILED ON EVERY PLAN. THE ENGINEER OF RECORD IS TO BE NOTIFIED OF ANY CONFLICT WITHIN THIS PLAN SET.
4. CLOSURE OF EXISTING TOWLE ROAD/MILL ROAD INTERSECTION SHALL BE BY KINGSTON DPW.
5. FOR ADDITIONAL INFORMATION, CONSTRUCTION NOTES, AND DETAILS, REFER TO SITE PLANS PREPARED BY TFMORAN, INC. TITLED "UNITIL KINGSTON SOLAR PROJECT", DATED JUNE 8, 2023.



INTERSECTION IMPROVEMENTS PLAN VIEW

HORIZONTAL SCALE 1"=20'
20 10 0 20

Unitil

SITE DEVELOPMENT PLANS

TAX MAP R12 LOTS 25 & 26

TOWLE ROAD-MILL ROAD INTERSECTION PLAN

UNITIL KINGSTON SOLAR PROJECT

14 & 24 TOWLE ROAD
KINGSTON, NH 03848

PREPARED FOR

UNITIL ENERGY SYSTEMS
30 ENERGY WAY
EXETER, NH 03833

SCALE: AS NOTED **JULY 6, 2023**

REV	DATE	DESCRIPTION	DR	CK

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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DIG SAFE
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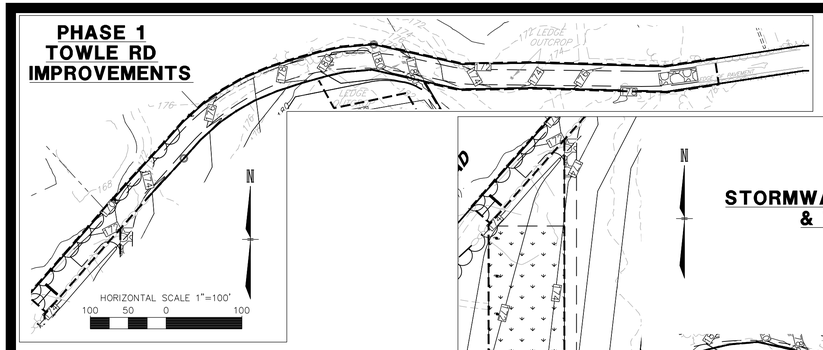
PHASE 1
TOWLE RD
IMPROVEMENTS



NOTES

1. EACH AREA MUST BE STABILIZED BEFORE ADVANCING TO A SUCCESSIVE PHASE

ENV-WQ 1505.03 – MAXIMUM OPEN AREA ALLOWED

(d) SUBJECT TO (e) BELOW, THE ENVIRONMENTAL MONITOR SHALL:
(1) INSPECT THE PROJECT SITE ONCE EACH WEEK FROM THE START OF TERRAIN ALTERATION ACTIVITIES UNTIL ALL TERRAIN ACTIVITIES ARE COMPLETED AND THE SITE IS STABILIZED;

(2) IN ADDITION TO REGULAR WEEKLY INSPECTIONS, INSPECT THE PROJECT SITE DURING ANY RAIN EVENT IN WHICH 0.5 INCH OF PRECIPITATION OR MORE FALLS WITHIN A 24 HOUR PERIOD, PROVIDED THAT IF THE ENVIRONMENTAL MONITOR IS UNABLE TO BE PRESENT DURING SUCH A STORM, THE MONITOR SHALL INSPECT THE SITE WITHIN 24 HOURS OF THE RAIN EVENT;

(3) SUBMIT A WRITTEN REPORT, STAMPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, TO THE DEPARTMENT WITHIN 24 HOURS OF EACH INSPECTION THAT:

(A) DESCRIBES THE PROGRESS OF THE PROJECT, INCLUDING WHETHER ALL CONDITIONS OF THE PERMIT ARE BEING MET AND, IF NOT, WHICH REQUIREMENTS ARE NOT BEING MET;

(B) IF ANY REQUIREMENTS ARE NOT BEING MET, AN EXPLANATION OF THE CORRECTIVE ACTION(S) THAT WILL BE OR ARE BEING TAKEN TO BRING THE PROJECT INTO COMPLIANCE WITH APPLICABLE REQUIREMENTS AND THE DEADLINE BY WHICH SUCH ACTIONS WILL BE COMPLETED; AND

(C) INCLUDES PHOTOGRAPHS OF THE SITE THAT ARE REPRESENTATIVE OF THE PROJECT; AND

(4) RETAIN A COPY OF THE REPORT PREPARED PURSUANT TO (3), ABOVE, ON-SITE FOR REVIEW DURING SITE INSPECTIONS BY FEDERAL, STATE, AND LOCAL OFFICIALS.

(e) ROUTINE INSPECTION FREQUENCY MAY BE REDUCED FROM ONCE EACH WEEK TO AT LEAST ONCE EACH MONTH IS EITHER OF THE FOLLOWING CONDITIONS IS MET:

(1) WORK AS BEEN SUSPENDED AND THE ENTIRE SITE IS STABILIZED IN ACCORDANCE WITH ENV-WQ 1505.04; OR

(2) RUNOFF IS UNLIKELY BECAUSE:

(A) THE GROUND OS FROZEN OR THE SITE IS COVERED WITH SNOW OR ICE; AND

(B) THE PROJECT IS IN AN AREA WHERE FROZEN CONDITIONS ARE ANTICIPATED TO CONTINUE FOR MORE THAN ONE MONTH.

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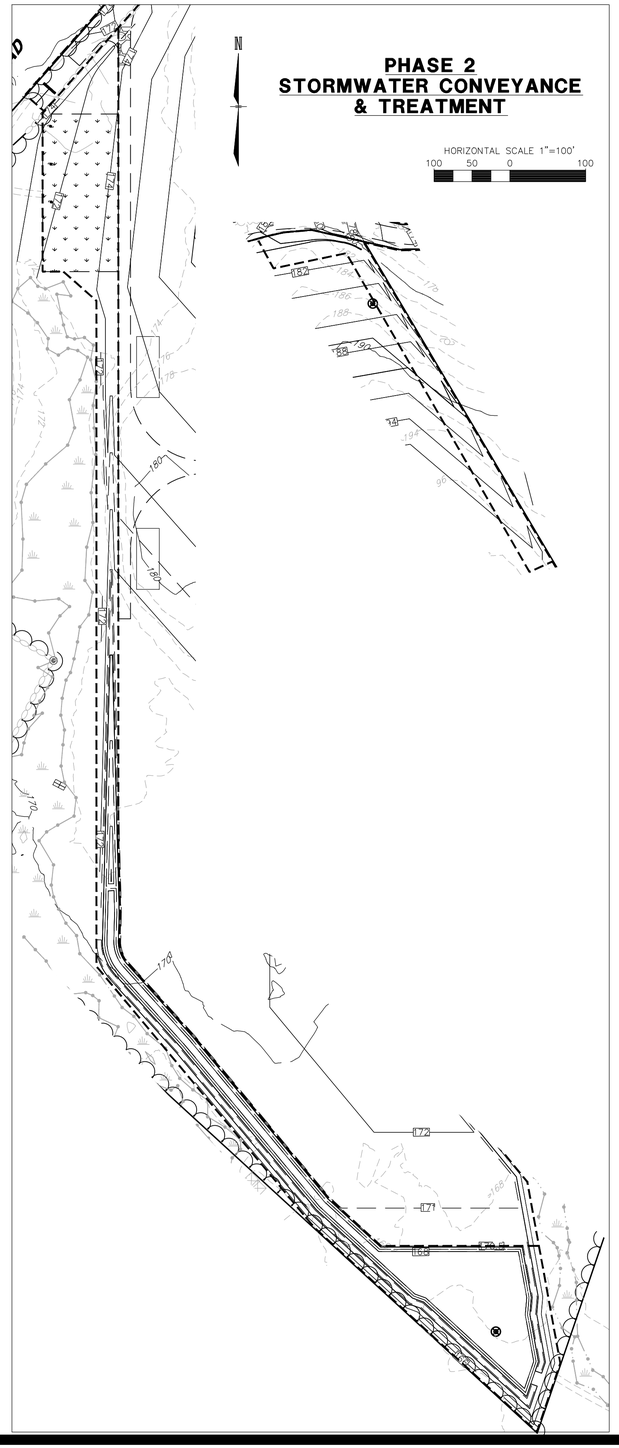
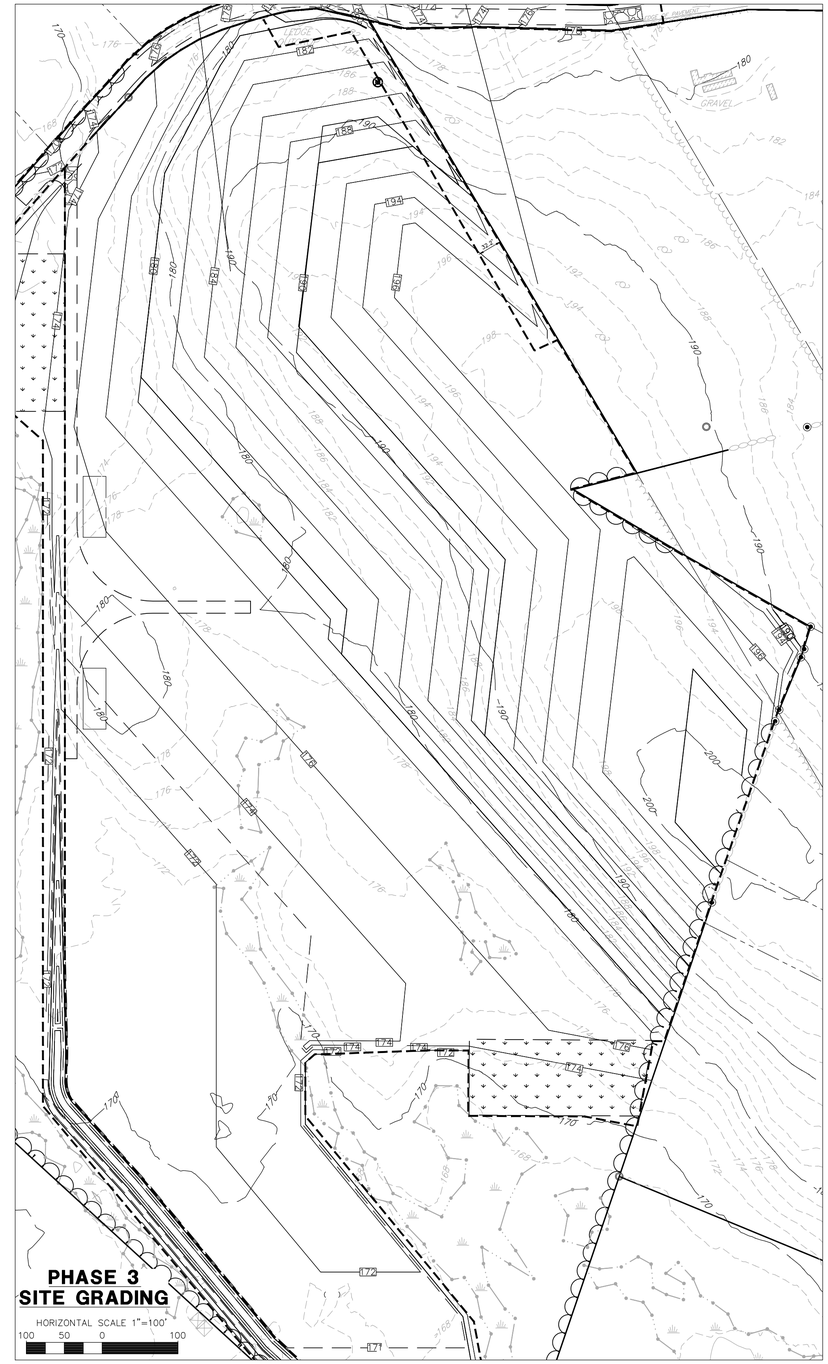
CONTACT DIG SAFE TO BUSINESS HOURS PRIOR TO CONSTRUCTION

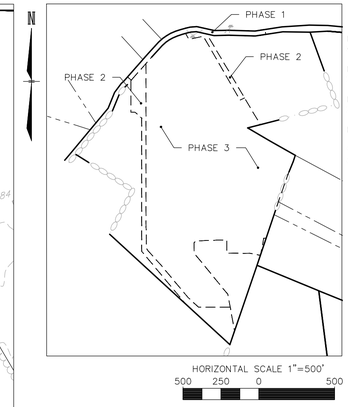
PHASE 2
STORMWATER CONVEYANCE & TREATMENT





PHASE 3
SITE GRADING

PHASING



PHASE 1: TOWLE RD IMPROVEMENTS 0.81± ACRES

PHASE 2: STORMWATER AREAS 2.53± ACRES

PHASE 3: SITE GRADING 25.97± ACRES*

PHASE 4: SOLAR ARRAYS

*SEE MAXIMUM ALLOWABLE OPEN AREA REGULATIONS

WORK SEQUENCE NOTES

1. AT LEAST 48-HOURS PRIOR TO COMMENCING THE CONSTRUCTION ACTIVITIES, THE PROPERTY OWNER, OR THEIR AGENT, WILL NOTIFY NHDES VIA THE INITIATION OF CONSTRUCTION NOTIFICATION FORM.
2. CONSTRUCTION EQUIPMENT WILL BE INSPECTED DAILY FOR LEAKING FUEL, OIL, AND HYDRAULIC FLUID, AND, IF NECESSARY, REPAIRS WILL BE MADE IMMEDIATELY.
3. CONTRACTORS RESPONSIBLE FOR OPERATING CONSTRUCTION EQUIPMENT WILL HAVE ADEQUATE OIL SPILL KITS ON SITE AND READILY ACCESSIBLE DURING CONSTRUCTION AND THEY WILL BE TRAINED IN DEPLOYING THIS EQUIPMENT SHOULD IT BE REQUIRED.
4. PRIOR TO CONSTRUCTION, SEDIMENT AND EROSION CONTROLS (STUMP GRINDINGS BERM) WILL BE INSTALLED AT THE LIMITS OF THE APPROVED IMPACT AREA.
5. ONCE INSTALLED, A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROLS (CPESC), CERTIFIED EROSION, SEDIMENT AND STORMWATER INSPECTOR (CESSWI) OR EPA CONSTRUCTION GENERAL PERMIT (CGP) SITE INSPECTOR WILL INSPECT THE EROSION AND SILTATION CONTROL DEVICES.
6. THE EROSION AND SILTATION CONTROL DEVICES WILL BE MONITORED, INSPECTED, AND ADJUSTED THROUGHOUT THE DURATION OF THE PROJECT AS REQUIRED.
7. EARTHWORK ASSOCIATED WITH STORMWATER MANAGEMENT FEATURES SHALL BE CONSTRUCTED AND STABILIZED PRIOR TO PROCEEDING WITH MASS EARTHWORK FOR THE GRAVEL ACCESS DRIVE.
8. APPROPRIATE DUST CONTROL/MONITORING SHALL BE PROVIDED TO CONTAIN AIRBORNE PARTICLES DURING CONSTRUCTION OF THE GRAVEL ACCESS DRIVE.
9. LEDGE REMOVAL AND STOCKPILING OF MATERIALS FOR REUSE WILL BE CONDUCTED IN VARIOUS AREAS OF THE SITE IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL CODES.
10. ROUGH GRADING OF THE SITE SHALL BE PERFORMED WITH ALL DISTURBED AREAS TO BE STABILIZED WITHIN 72 HOURS AFTER CONSTRUCTION ACTIVITY CEASES.
11. STORMWATER MANAGEMENT AREAS SHALL BE INSTALLED AND STABILIZED PRIOR TO DIRECTING FLOW TO THEM.
12. SITE SHALL BE GRADED TO FINISH GRADE; THE DRIVEWAY SHALL BE FILLED WITH GRAVEL.
13. PERMANENT SEEDING SHALL BE COMPLETED.
14. REMOVE TEMPORARY EROSION CONTROL MEASURES ONCE ALL AREAS ARE STABILIZED WITH A SUITABLE STAND OF GRASS, PAVEMENT OR COMPACTED GRAVEL.
15. UPON COMPLETING THE PROJECT, THE PROPERTY OWNER, OR THEIR AGENT, WILL NOTIFY NHDES VIA THE COMPLETION OF CONSTRUCTION NOTICE AND CERTIFICATE OF COMPLIANCE FORM.

Unitil

SITE DEVELOPMENT PLANS

TAX MAP R12 LOTS 25 & 26

PHASING PLAN

UNITIL KINGSTON SOLAR PROJECT

14 & 24 TOWLE ROAD
KINGSTON, NH 03848

PREPARED FOR

UNITIL ENERGY SYSTEMS
30 ENERGY WAY
EXETER, NH 03833

SCALE: 1"=100' **JULY 6, 2023**

REV	DATE	DESCRIPTION	DR	CK

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