Joint Application for Permit

Submitted to the New York District Office of the US Army Corps of Engineers
and Region 5 of the New York State Department of Environmental Conservation

for the

Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont
Franklin County, New York

Prepared for:

Jericho Rise Wind Farm, LLC
808 Travis Street, Suitte 700
Houston, TX 77002
P. (713) 265-0350
E. info@edpr.com

Prepared by:

Environmental Design & Research, Landscape Architecture,
Engineering & Environmental Services, D.P.C.
217 Montgomery Street, Suite 1000
Syracuse, NY 13202

December 2015

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

COMMONLY USED ACRONYMS AND ABBREVIATIONS

BMP	Best Management Practice
DEC	Department of Environmental Conservation
DEIS	Draft Environmental Impact Statement
EAF	Environmental Assessment Form
EDR	Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C.
EPA	Environmental Protection Agency
ESA	Endangered Species Act of 1973
FEIS	Final Environmental Impact Statement
GIS	Geographic Information System
HCP	Habitat Conservation Plan
ISCP	Invasive Species Control Plan
ITP	Incidental Take Permit
kV	Kilovolt
m	Meter
MW	megawatt
MWh	megawatt-hours
NEPA	National Environmental Policy Act
NYISO	New York Independent Service Operator
NYCRR	Official Compilation of Codes, Rules, and Regulations of the State of New York
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSERDA	New York State Energy Research and Development Authority
O&M	Operations and Maintenance
OPRHP	New York State Office of Parks, Recreation, and Historic Preservation
PILOT	Payment in Lieu of Taxes
POI	Point of Interconnection
RPS	Renewable Portfolio Standard
SEQRA	State Environmental Quality Review Act
sf	Square feet
SHPO	New York State Historic Preservation Office
SPCC	Spill Prevention, Control, and Countermeasure

SPDES	State Pollutant Discharge Elimination System
SWPPP	Stormwater Pollution Prevention Plan
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USDOE	U.S. Department of Energy
USFWS	U.S. Fish & Wildlife Service
USGS	U.S. Geological Survey
WNS	White-Nose Syndrome

JOINT APPLICATION FORM

For Permits/Determinations to undertake activities affecting streams, waterways, waterbodies, wetlands, coastal areas and sources of water withdrawal.

New York State

You must separately apply for and obtain separate Permits/Determinations from each involved agency prior to proceeding with work. Please read all instructions.

US Army Corps of Engineers (USACE)

APPLICATIONS TO

1. NYS Department of Environmental Conservation

Check all permits that apply:

- ☐ Stream Disturbance
- ☐ Excavation and Fill in Navigable Waters
- ☐ Docks, Moorings or Platforms
- ☐ Dams and Impoundment Structures
- ☑ 401 Water Quality Certification
- ☐ Freshwater Wetlands
- ☐ Tidal Wetlands
- ☐ Coastal Erosion Management
- ☐ Wild, Scenic and Recreational Rivers
- ☐ Water Withdrawal
- ☐ Long Island Well
- ☐ Aquatic Vegetation Control
- ☐ Aquatic Insect Control
- ☐ Fish Control
- ☐ Incidental Take of Endangered/Threatened Species

☑ I am sending this application to this agency.

2. US Army Corps of Engineers

Check all permits that apply:

- ☑ Section 404 Clean Water Act
- ☐ Section 10 Rivers and Harbors Act
- ☑ Nationwide Permit(s) - Identify Number(s): 51

Preconstruction Notification - ☑ Y / ☐ N

☑ I am sending this application to this agency.

3. NYS Office of General Services

Check all permits that apply:

- ☐ State Owned Lands Under Water
  - ☐ Utility Easement (pipelines, conduits, cables, etc.)
  - ☐ Docks, Moorings or Platforms

☐ I am sending this application to this agency.

4. NYS Department of State

Check if this applies:

- ☐ Coastal Consistency Concurrence

☐ I am sending this application to this agency.

5. Name of Applicant (use full name)

Jericho Rise Wind Farm, LLC

Mailing Address: 88 Travis Street, Suite 700

Post Office City: Houston

State: Texas Zip Code: 77002

Telephone (daytime): 713-265-0350

Email: info@edpr.com

Applicant must be: ☐ Owner ☑ Operator ☑ Lessee (check all that apply)

Taxpayer ID (If applicant is NOT an individual): 20-3172505

6. Name of Facility or Property Owner (if different than Applicant)

Mailing Address

Post Office City

State Zip Code

Telephone (daytime) Email

7. Contact/Agent Name

John Hecklau

Company Name: Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C.

Mailing Address: 217 Montgomery Street, Suite 1000

Post Office City: Syracuse

State: New York Zip Code: 13202

Telephone (daytime): (315) 471-0688

Email: jhecklau@edrdpc.com

8. Project / Facility Name

Jericho Rise Wind Farm

Property Tax Map Section / Block / Lot Number

Project Location - Provide directions and distances to roads, bridges and bodies of waters:

Towns of Chateaugay and Bellmont
Franklin County, NY

Street Address, if applicable: See attached Figures 1 and 2

Post Office City State: NY Zip Code

Town / Village / City: Belmont & Chateaugay

County: Franklin

Name of USGS Quadrangle Map: Chateaugay, Brainardsville, Burke, Chasm Falls

Stream/Water Body Name: Various - see attached Figures

Location Coordinates: Enter NYTMs in kilometers, **OR** Latitude/Longitude Project Center Point:

NYTM-E	NYTM-N	Latitude	Longitude
		44.885N	-74.101W

For Agency Use Only DEC Application Number: USACE Number:

9. **Project Description and Purpose:** Provide a complete narrative description of the proposed work and its purpose. Attach additional page(s) if necessary. Include: description of current site conditions and how the site will be modified by the proposed project; structures and fill materials to be installed; type and quantity of materials to be used (i.e., square ft of coverage and cubic yds of fill material and/or structures below ordinary/mean high water) area of excavation or dredging, volumes of material to be removed and location of dredged material disposal or use; work methods and type of equipment to be used; pollution control methods and mitigation activities proposed to compensate for resource impacts; and where applicable, the phasing of activities. **ATTACH PLANS ON SEPARATE PAGES.**

Jericho Rise Wind Farm LLC (the Applicant), a wholly owned subsidiary of EDP Renewables, is proposing to construct a wind energy generation facility (and associated necessary Project infrastructure) in the Towns of Chateaugay and Bellmont in Franklin County, New York (see Figure 1). The Project will consist of 37 turbines; each with a nameplate capacity of 2.1 megawatts (MW), for a total anticipated nameplate generating capacity of approximately 77 MW. The wind turbine proposed for the Project is the Gamesa G-114 or equivalent model. In addition to the turbines, the Project will include construction and operation of a single permanent meteorological tower, a system of gravel access roads, electrical collection and communication cables, and a substation. Along with the permanent components of the Project, construction of the Project will also require a temporary construction laydown yard to store Project components, accommodate construction trailers, and provide parking for construction vehicles. The proposed Project is located on approximately 5,895 acres of leased private land, or land that is currently under negotiation to lease, roughly bound by State Route 11 to the north, the Chateaugay River to the east, County Route 24 to the south, and the Burke/Chateaugay town boundary to the west (see Figure 2).

Additional details regarding the Project Site, and the location and construction of Project components are provided in the attached Joint Application Information Report.

Proposed Use: ☑ Private ☐ Public ☐ Commercial	Proposed Start Date: February 1, 2016	Estimated Completion Date: December 31, 2016
Has Work Begun on Project? ☐ Yes ☑ No If Yes, explain.		
Will Project Occupy Federal, State or Municipal Land? ☐ Yes ☑ No If Yes, please specify.		

10. List Previous Permit / Application Numbers (if any) and Dates:

N/A

11. Will this project require additional Federal, State, or Local Permits including zoning changes? ☑ Yes ☐ No If yes, please list:

Local Site Plan Approvals/Wind Energy Permits;
NYSDEC SPDES GP-0-15-002;
USFWS Secton 7 Consultation

12. **Signatures.** If applicant is not the owner, both must sign the application.

I hereby affirm that information provided on this form and all attachments submitted herewith is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law. Further, the applicant accepts full responsibility for all damage, direct or indirect, of whatever nature, and by whomever suffered, arising out of the project described herein and agrees to indemnify and save harmless the State from suits, actions, damages and costs of every name and description resulting from said project. In addition, Federal Law, 18 U.S.C., Section 1001 provides for a fine of not more than $10,000 or imprisonment for not more than 5 years, or both where an applicant knowingly and willingly falsifies, conceals, or covers up a material fact; or knowingly makes or uses a false, fictitious or fraudulent statement.

Signature	Printed Name	Title	Date
Signature of Applicant	Aron Branam	Project Manager	12/10/15
Signature of Owner	Printed Name	Title	Date
Signature of Agent	John Hecklau	Principal	12/4/15

For Agency Use Only **DETERMINATION OF NO PERMIT REQUIRED**

Agency Project Number _____

_____ (Agency Name) has determined that No Permit is required from this Agency for the project described in this application.

Agency Representative: Name (printed) _____ Title _____

Signature _____ Date _____

JOINT APPLICATION INFORMATION

1.0 OVERVIEW AND PROJECT PURPOSE

Jericho Rise Wind Farm LLC (the Applicant), a wholly owned subsidiary of EDP Renewables (EDPR), is proposing to construct the Jericho Rise Wind Farm (Project), a wind energy generation facility (and associated necessary Project infrastructure) in the Towns of Chateaugay and Bellmont in Franklin County, New York (see Figure 1). The Project will consist of 37 turbines; each with a nameplate capacity of 2.1 megawatts (MW), for a total anticipated nameplate generating capacity of approximately 78 MW. The wind turbine proposed for the Project is the Gamesa G-114 or equivalent model. In addition to the turbines, the Project will include construction and operation of a single permanent meteorological tower, a system of gravel access roads, electrical collection and communication cables, and a substation. Along with the permanent components of the Project, construction of the Project will also require a temporary construction laydown yard to store Project components, accommodate construction trailers, and provide parking for construction vehicles. The proposed Project (including alternate turbine sites not addressed in this application) is located on approximately 5,895 acres of leased private land, or land that is currently under negotiation to lease, roughly bound by State Route 11 to the north, the Chateaugay River to the east, County Route 24 to the south, and the Burke/Chateaugay town boundary to the west (see Figure 2).

The immediate benefits of utility scale renewable projects such as the Jericho Rise Wind Farm include economic development and jobs for the community, lease payments to landowners, and compliance with State and Federal renewable energy and other policy mandates. In the long run, as recognized by the newly issued New York State Energy Plan, benefits may include below-market electricity prices by avoiding reliance on commodity fuel costs and a healthier environment associated with electricity generation that does not produce greenhouse gases and other harmful emissions. The Project is consistent with State policies designed to encourage the development of renewable energy projects, fight climate change, and contribute to the transition of New York's energy markets.

Federal policy has recognized the need for renewable energy projects. The Jericho Rise Wind Farm is consistent with Executive Order 13212 (dated May 18, 2001), which states, "*The increased production and transmission of energy in a safe and environmentally sound manner is essential to the well-being of the American people. In general, it is the policy of this Administration that executive departments and agencies shall take appropriate actions, to the extent consistent with applicable law, to expedite projects that will increase the production, transmission, or conservation of energy.*" On June 25, 2013, President Obama announced the Climate Action Plan, and on August 3, 2015 the final rule of Environmental Protection Agency's (EPA) Clean Power Plan was announced. The Plan represents a national plan for tackling climate change. The Plan directs the EPA to establish the first ever restrictions on carbon pollution from power plants, the largest source of unregulated CO2 emissions in the U.S. The Plan states, *"With abundant clean*

energy solutions available, and building on the leadership of states and local governments, we can make continued progress in reducing power plant pollution to improve public health and the environment while supplying the reliable, affordable power needed for economic growth. By doing so, we will continue to drive American leadership in clean energy technologies" (Executive Office of the President, 2013).

Global climate change has been recognized as one of the most important environmental challenges of our time (see New York State Climate Action Plan Interim Report, November 2010; DEC's Commissioner Policy 49, issued October 22, 2010; DEC Guidance Assessing Energy Use and Greenhouse Gas Emissions in Environmental Impact Statements, issued July 15, 2009). There is scientific consensus that human activity is increasing the concentration of greenhouse gases in the atmosphere and that this, in turn, is leading to serious climate change. By its nature, climate change will continue to impact the environment and natural resources of the State of New York. New York has been proactive in its efforts to address the serious threat posed by climate change. For example, the latest iteration of the New York State Energy Plan, which was announced on June 25, 2015, has committed to achieving a 40% reduction in greenhouse gas emissions from 1990 levels by 2030 and 80% reduction in reducing total carbon emissions by 2050 (NYSEPB, 2015). In addition, the State Energy Plan calls for 50% of generation of electricity from renewable energy sources by 2030. According to the Plan, "Renewable Energy sources, such as wind, will play a vital role in reducing electricity price volatility and curbing carbon emissions." The Jericho Rise Wind Farm fully advances the objectives of the State Energy Plan and assists the State in achieving the 50% renewable energy generation objective.

The purpose of the proposed Project is to create an economically viable, 78 MW wind-powered electrical-generating facility (consistent with the approved New York Independent System Operator interconnection request) that will provide a significant source of renewable energy to the New York power grid to:

- Satisfy regional energy needs in an efficient and environmentally sound manner;
- Supplement and offset fossil-fuel electricity generation in the region, with emission free wind generated energy;
- Contribute to reducing the amount of electricity imported to New York State;
- Maximize the potential of the wind resource in the Project area;
- Promote the long-term economic viability of rural areas in New York State;
- Assist the Federal Government in meeting the goals established in Executive Order 13212, and the Final Rule of the EPA's Clean Power Act; and
- Assist New York State in meeting its proposed Renewable Portfolio Standard (RPS) for the consumption of renewable energy in the State.

Total net electricity delivered to the existing New York power grid is expected to be approximately 211,002 to 217,809 megawatt hours (MWh) (i.e., 37 turbines x 2.1 MW x 24 hours/day x 365 days x 31-32% net capacity factor). This is enough electricity to meet the average annual consumption of approximately 30,000 households, based on the average annual electric consumption of 7.2 MWh for New York State residences (U.S. Energy Information Administration [EIA], 2015a).

2.0 PROJECT LOCATION & SITE DESCRIPTION

2.1 Project Location

The Project is located in the Towns of Chateaugay and Bellmont in Franklin County, New York (see Figure 1). The current Project Site includes approximately 5,895 acres of leased private lands that are roughly bound by State Route 11 to the north, the Chateaugay River to the east, Brainardsville Road to the south, and the Burke/Chateaugay town boundary to the west (see Figure 2). The Project Site is situated within the St. Lawrence-Champlain Lowlands, north of the Adirondack Park boundary. This area is characterized by topography with elevations ranging from approximately 780 feet above mean sea level to 1,500 feet above mean sea level. Land use within the area is dominated by forest land and active agriculture, with farms and single-family rural residences generally occurring along the road frontage. The Applicant has secured sufficient acreage under lease and easement option agreements to construct the Project. A total of 52 landowners are participating in the Project. These landowners control the 94 parcels of land that host Project infrastructure. For the purposes of this application, the Project Site includes these parcels of land, plus areas where temporary public road improvements are necessary to accommodate construction of the Project. The construction Transportation Routing Plan, and the location of proposed temporary road improvements to accommodate construction traffic, are indicated in Figures 2 and 4.

2.2 Water Resources

Wetlands

The Freshwater Wetlands Act (Article 24 and Title 23 of Article 71 of the Environmental Conservation Law) gives the New York State Department of Environmental Conservation (NYSDEC) jurisdiction over state-protected wetlands and 100-foot upland adjacent areas. The Freshwater Wetlands Act requires the NYSDEC to map all state-regulated wetlands (typically over 12.4 acres in size) to allow landowners and other interested parties a means to determine where state jurisdictional wetlands exist. Review of NYSDEC mapping indicates that there are no state-regulated wetlands located within the Wetland Delineation Study Area (the "Study Area"), which includes the limits of disturbance for construction and operation of the Project (see Figures 3 and 4). The closest state-regulated wetland (CG-6) is about

335 feet from the Study Area and about 530 feet from the nearest Project component. No state-regulated wetlands will be impacted by the Project.

Review of U.S. Fish & Wildlife Services (USFWS) National Wetland Inventory (NWI) mapping indicates that a total of 11 federally-mapped wetlands are located within the Study Area (Figure 3). All NWI wetlands mapped in the Study Area are palustrine forested/scrub-shrub wetlands (PFO/PSS). All wetlands on the Project Site have the potential to be regulated by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act.

Streams

Under Article 15 of the Environmental Conservation Law (Protection of Waters), the NYSDEC has regulatory jurisdiction over any activity that disturbs the bed or banks of protected streams, including small lakes and ponds with a surface area of 10 acres or less located within the course of a protected stream. Protected streams include any stream, or particular portion of a stream, that has been assigned any of the following classes and standards: AA, AA(T), AA(TS), A, A(T), A(TS), B, B(T), B(TS), C(T) or C(TS) (6 NYCRR Part 701). Streams classified with a (T) or (TS) support trout or trout spawning, respectively, and include seasonal work restrictions. NYSDEC classifications of unprotected watercourses include Class C and Class D streams.

Based on a review of available NYSDEC stream classification mapping, streams within the Study Area include only Class C(T) and D waters. Protected streams and tributaries within the Project Site include Alder Brook, Allen Brook, and the Little Trout River (see Table 1). These streams, along with all other perennial and intermittent streams in the Project Site, are also protected by the USACE under Section 404 of the Clean Water Act.

Table 1. Mapped NYSDEC Streams within the Study Area

Name	Class	Status
Alder Brook	C(T)[1]	Protected
Little Trout River	C(T)[1]	Protected
Allen Brook	C(T)[1]	Protected
Unnamed Tributary of Alder Brook	C(T)[1]	Protected
Unnamed Tributary of Alder Brook	D	Unprotected
Unnamed Tributary of Alder Book	D	Unprotected
Unnamed Tributary of Allen Brook	D	Unprotected
Unnamed Tributary of Allen Brook	D	Unprotected
Unnamed Tributary of Little Trout River	D	Unprotected

Name	Class	Status
Unnamed Tributary of Little Trout River	D	Unprotected
Unnamed Tributary of Little Trout River	D	Unprotected

[1]No work is allowed in C(T) streams between October 1 and May 15.

To confirm the presence of wetlands, streams and other surface waters within the Project Site, Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR) wetland biologists investigated and delineated all wetlands/waterbodies within the Project Site that could be impacted by proposed Project components or the delivery of those components along public roads. This involved delineation of all streams and wetlands within 200 feet of a proposed turbine, within 100 feet of proposed access road and collection line crossings, within approximately 100 feet of the center line of the proposed 115 kV transmission line, and at the proposed sites of the construction laydown yard and the substation. In addition, investigations and delineations were also conducted at all locations where public road improvements along the construction delivery route (e.g., increased turning radii) are anticipated. The area covered by the delineation is referred to as the "Study Area" in this document and in Appendix A. Field delineations of wetlands were conducted over multiple weeks during the and 2015 growing season. Based upon these field delineations, 58 wetlands and 17 streams occur within the Study Area (Figure 4). See the attached Wetland Delineation Report (Appendix A), for delineation methodologies and a comprehensive description of the delineated areas. A jurisdictional determination site visit to verify the delineated wetland boundaries was conducted with a representative of the USACE on October 27 and 28, 2015.

3.0 PROJECT DESCRIPTION

3.1 Project Components

3.1.1 Wind Turbines

The wind turbines currently anticipated to be used for this Project are the Gamesa G-114-2.1 model. This wind turbine was selected because its performance and efficiency are suited to the wind resource/wind conditions on site. Each wind turbine consists of three major components: the tower, the nacelle, and the rotor. The height of the tower, or "hub height" (height from the base of the tower to the center of the rotor hub on top of tower) will be approximately 93 meters (305 feet). The nacelle sits atop the tower, and the rotor hub is mounted on a drive shaft that is connected to the gearbox and generator contained within the nacelle. The rotor has a 114 meter (374 feet) diameter, and the total turbine height (i.e., height at the highest blade tip position) will be approximately 150 meters (492 feet).

3.1.2 Electrical System

The proposed Project is anticipated to have an electrical system that consists of the following: 1) a system of buried and overhead 34.5 kV cables that will collect power from each wind turbine (electrical collection lines), and 2) a substation that will step up the power from 34.5 kV to 115 kV, and interconnect with an adjacent existing 115 kV transmission line. Each of these components is described below, and their location indicated in Figure 2:

Electrical Collection System: A transformer located near the base of the tower, or the interior of the nacelle, will raise the voltage of electricity produced by the turbine generator from typically 690 volts up to the 34.5 kV voltage level of the collection system. From the transformer, power cables will collect the electricity produced by wind turbine generators to be connected through underground circuits. The Project will include a total of approximately 17.4 miles of collection lines. All of these are currently anticipated to be installed underground, except in those limited instances (cumulatively totaling approximately 1,100 feet in distance) where installation of overhead collection lines would reduce environmental impacts and/or logistical difficulties (e.g., crossing of sensitive wetlands or steep ravines).

Substation: A site directly south and adjacent to the existing New York State Electric and Gas Company (NYSEG) Willis Substation has been selected as the Project substation site. This site is located along Willis Road in the Town of Chateaugay. The substation transformers will increase the voltage delivered by the collection system from 34.5 kV to 115 kV. The substation will include 34.5 and 115 kV busses, a transformer, circuit breakers, towers, a control building, and related structures. The substation will also include electrical switches and related equipment necessary to tie into the existing NYSEG Willis Substation and associated 115 kV transmission line. The Project substation will be enclosed by chain link fencing, and will occupy approximately 2 acres.

3.1.3 Access Roads

The total length of access road required to service the 37 proposed wind turbines and the substation is approximately 10.7 miles, some of which will be upgrades to existing farm lanes and logging roads. Construction access roads will be gravel surfaced and up to 40 feet wide to accommodate construction vehicles/component delivery and crane travel. Following construction, roads will be restored for use as permanent access roads. The permanent roads will be gravel-surfaced and typically are 16 feet in width.

3.1.4 Wind Measurement Tower

One permanent 93-meter (305-foot) tall wind measurement tower (meteorological tower) will be installed to collect wind data and support performance testing of the Project. The tower will be a self-supporting (unguyed) steel structure, and

will be equipped with wind velocity and directional measuring instruments at three different elevations and temperature and humidity monitors near ground level. The meteorological tower will be located in an upland area (agricultural land) in the Town of Bellmont

3.1.5 Laydown Yard

Construction of the Project will require the development of a temporary construction laydown yard, which will accommodate construction trailers, storage containers, large project components, and parking for construction workers. The laydown yard will be approximately 10 acres in size, and will be located on participating land south and east of the existing NYSEG Willis substation on County Route 33 south of Toohill/Hartnett Road and north of Taylor Road. The laydown yard is a temporary feature associated with construction of the Project, and will be restored following the completion of construction.

3.1.6 Operations and Maintenance Facility

Operation and maintenance (O&M) of the Jericho Rise Wind Farm will be conducted from EDPR's existing O&M facility at the Marble River Wind Farm in the Town of Clinton, approximately 9 miles east of the Project Site. No on-site O&M facility is proposed.

3.2 Project Construction

Pending the receipt of all required permits, construction is currently scheduled to start in the winter of 2016 and be completed by December 31 of that year. Project construction will be performed in several stages and will include the main elements and activities described below.

3.2.1 Pre-Construction Activities

Before construction commences, a site survey will be performed to stake out the exact location of proposed Project components. To assure compliance with various environmental protection commitments and permit conditions, the Applicant will provide funding for an Environmental Monitor to oversee Project construction and restoration activities and to ensure compliance with all applicable environmental conditions. Prior to the start of construction at any given site, an Environmental Monitor and the contractor will conduct a walk-over of areas to be affected, or potentially affected, by proposed construction activities. This pre-construction walk-over will focus on the previously identified sensitive resources to avoid (e.g., wetlands, archaeological, or agricultural resources), as well as the limits of clearing, location of wetland and stream crossings, location of drainage features (e.g., culverts, ditches), location of underground utilities and tile lines, and layout of sedimentation and erosion control measures. Upon identification of these features, they will be marked in the field (by staking, flagging, fencing, etc.).

3.2.2 Laydown Yard Construction

The construction laydown yard will be developed by stripping and stockpiling the topsoil and grading and compacting the subsoil. Geotextile fabric and approximately 8 inches of gravel will then be installed to create a level working area. Electric and communication lines will be brought in from existing distribution poles to allow connection with construction trailers.

3.2.3 Site Preparation for Construction

Project construction will be initiated by clearing woody vegetation from all tower sites, access roads, and electrical collection line routes. Trees cleared from the work area will be removed and disposed of off-site (outside of any wetlands, streams or floodways). It is generally assumed that a radius of up to 250 feet will be cleared around each tower, a 100-foot wide corridor will be cleared along access roads, and a 75-foot-wide corridor will be cleared along underground electric collection lines that are not adjacent to access roads. Actual clearing impacts on this Project will be based on final engineering design, and are described and quantified in Section 4.0.

3.2.4 Public Road Improvements

Turn-outs at the intersection of Project access roads and certain public roads will be temporarily established to allow an uninterrupted flow of construction traffic. Public roadway intersections along the construction and delivery routes may also require spot radii improvements and the construction of short temporary road segments to accommodate the turning radius of over-length delivery vehicles, and minimize disruption of local roads and traffic caused by large construction/delivery vehicles and equipment. These improvements will generally require soil stripping and the temporary placement of gravel over geotextile fabric. It is anticipated that such improvements will be removed, and the affected areas restored to their preconstruction condition following construction.

3.2.5 Access Road Construction

Wherever feasible, existing roads and farm drives will be upgraded for use as Project access roads in order to minimize impacts to both active agricultural areas and wetland/stream areas. Where an existing road or farm drive is unavailable or unsuitable, new gravel surfaced access roads will be constructed. Road construction will involve topsoil stripping and grubbing of stumps, as necessary. Stripped topsoil will be stockpiled (and segregated from subsoil) along the road corridor for use in site restoration. Any grubbed stumps will be removed, chipped, or buried in upland areas of the site. Following removal of topsoil, subsoil will be graded, compacted, and surfaced with 8 to 12 inches of gravel or crushed stone. A geotextile fabric or grid will be installed beneath the road surface, if necessary, to provide additional support.

Culverts and waterbars shall be installed to maintain natural drainage patterns. Where access roads must cross wetlands or streams with flowing water, a temporary pump-around or coffer dam will be used to install crossings "in the dry". Appropriate sediment and erosion control measures will be installed and maintained according to the Project-specific NYSDEC-approved stormwater pollution prevention plan (SWPPP) for the Project (see representative details in Figure 7). During construction, roads up to 40 feet wide will be required to accommodate large cranes and oversized construction vehicles. At the completion of construction, the travel surface of access roads will generally be reduced to 16 feet. Typical access road details are included in Figure 9.

3.2.6 Foundation Construction

Once the roads are complete for a particular group of turbine sites, turbine foundation construction will commence on that completed access road section. Initial activity at each tower site will typically involve clearing and leveling up to a 250-foot radius around each tower location. Topsoil be stripped from the excavation area, and stockpiled for future site restoration. Following topsoil removal, tracked excavators will be used to excavate the foundation hole. Subsoil and rock will be segregated from topsoil and stockpiled for reuse as backfill. All stockpiled soils will be located outside of wetlands and will be stabilized in accordance with the Project SWPPP. If necessary, dewatering of foundation excavations will involve pumping the water to a discharge point, which will include measures/devices to slow water velocities and trap any suspended sediment. Dewatering activities will not result in the direct discharge of water into any streams or wetlands, and will be conducted in accordance with the Project SWPPP.

Turbine foundations will be reinforced concrete, approximately 10 feet deep, and 50 to 65 feet in diameter. Any excess concrete and concrete wash water at turbine sites will be properly disposed of by pouring it into an excavation (either into the foundation excavation or "wash-out pits" created for this purpose) and then burying it or removing it from the site. No concrete will be buried or otherwise disposed of in wetlands. Once the foundation concrete is sufficiently cured, the excavation area around and over it is backfilled with the excavated on-site material. The top of the foundation is typically an 18-foot diameter pedestal that extends 6 to 8 inches above grade. The base of each tower will be surrounded by a 6-foot wide gravel skirt, and an area approximately 100 feet by 60 feet will remain as a permanent gravel crane pad.

3.2.7 Electrical Collection System Installation

Direct burial methods utilizing appropriate industry equipment including, but not limited to, a cable plow, rock saw, rock wheel and/or trencher will be used during the installation of underground electrical collection system whenever possible. Direct burial involves the installation of bundled cable (electrical and fiber optic bundles) directly into a narrow cut or "rip" in the ground. The rip disturbs an area approximately 24 inches wide with bundled cable installed to a minimum depth of 36 inches in most areas, and 48 inches in active agriculture and pasture lands. Where direct burial is not

possible, an open trench will be excavated. Using this installation technique, topsoil and subsoil are excavated, segregated, and stockpiled adjacent to the trench. Following cable installation, the trench is backfilled with suitable fill material and any additional spoils are spread out or otherwise properly disposed of (see typical trench detail in Figure 8, Sheet 4). Following installation of the buried collection line, areas will be returned to pre-construction grades. Installation of buried electrical lines would typically require a width of up to 50 feet of vegetation clearing. However, in areas where buried electrical lines are collinear with proposed access roads or public roads, no additional vegetation or soil disturbance, beyond that anticipated for road construction, is expected. The cleared area along the buried electrical line will be restored through seeding and mulching, and allowed to regenerate naturally. In some places, directional drilling or short sections of overhead line will be used to reduce wetland and stream impacts during construction. At crossings of perennial streams and high quality forested wetlands, directional drilling will be used to completely avoid impacts. Directional drilling involves installing the cable under the wetland or stream using boring equipment set up on either side of the crossing. No surface disturbance is required between the bore pits, and all existing vegetation along the streams and within the wetlands (including mature trees) can remain in place. The only potential impact associated with directional drilling is a surface release of drilling mud. Such "frac-outs" are rare, and the contractor will be required to develop a frac-out plan that will be implemented during construction.

3.2.8 Wind Turbine Assembly, Erection and Commissioning

Turbine assembly and erection involves mainly the use of large track mounted cranes, smaller rough terrain cranes, boom trucks, and rough terrain fork-lifts for loading and off-loading materials. The tower sections, rotor components, and nacelle for each turbine will be delivered to each site by flatbed trucks and unloaded by crane. A large erection crane will set the tower segments on the foundation, place the nacelle on top of the tower, and install the rotor either by individual blade installation or, following ground assembly, place the rotor onto the nacelle.

3.2.9 Substation

Substation construction will begin with clearing the site and stockpiling topsoil for later use in site restoration. The site will be graded, and a laydown area for construction equipment, materials, and parking will be prepared. Concrete foundations for major equipment and structural supports will be placed, followed by the installation of various conduits, cable trenches, and grounding grid conductors. Above-ground construction will involve the installation of structural steel, bus conductors and insulators, switches, circuit breakers, transformers, control buildings, etc. The final steps involve laying down crushed stone across the station, erecting the chain link fence, connecting the high voltage links, and testing the control systems. Restoration of the area immediately adjacent to the substations will then be completed.

4.0 JURISDICTIONAL IMPACTS

By carefully siting proposed Project components, the Applicant has avoided or minimized impacts to delineated wetlands and streams to the maximum extent practicable. This has been accomplished by locating all of the turbines, the substation, meteorological tower, and laydown yard entirely outside of wetland boundaries. Access roads and collection lines have been located in a manner that largely avoids wetlands. No state-regulated wetlands, state regulated wetland adjacent areas, or state protected streams will be disturbed by construction and operation of the proposed Project. Where impact avoidance was not possible, wetland and stream crossings by collection lines and access roads were located in narrow and/or previously disturbed areas. Directional drilling of several of the collection line crossings is proposed to avoid impacting perennial streams and high quality forested wetlands. However, unavoidable temporary disturbance and minor permanent loss of wetlands and other Waters of the U.S. will result from Project activities. These impacts are described below.

4.1 Temporary Wetland/Stream Impacts

Temporary wetland and stream impacts that will occur during Project construction include the following:

1. Where directional drilling is not proposed, vegetation clearing and soil disturbance will occur during installation of buried and overhead collection lines. Although the installation of buried collection lines is generally anticipated to occur through direct burial, to account for possible worst case disturbance, vegetation and/or soil disturbance is calculated for a corridor up to 50 feet wide. For overhead collection lines, vegetation clearing will occur within a 35 foot wide corridor, and no significant soil disturbance is anticipated. Furthermore, poles supporting the overhead collection line will not be placed in wetlands. As indicated in Table 2, 12 emergent and scrub-shrub wetlands and three stream channels will be temporarily impacted by buried cable installation. Several of these crossings will be co-located in areas being disturbed by access road construction. Vegetation removal will be limited to the area necessary to open and fill the trench that will accommodate the cable, and associated areas required for equipment operation and soil stockpiling/backfilling (if needed). If trench excavation is required, wetland top soils will be segregated from excavated subsoils, and will be used to restore the surface of the wetland following cable installation. If running water is encountered, the work site will be dewatered during cable installation, (see Figure 7, Sheet 1). Following installation, all disturbed areas will be regraded to their pre-construction contours and seeded with a native wetland seed mix (see Figure 7, Sheet 5). Steam beds and banks will be restored with natural substrate material and fiber rolls, if necessary (Figure 7, Sheet 12).

2. Some vegetation clearing and soil disturbance will be required in emergent and scrub-shrub wetlands along the periphery of Project access roads and public road improvements beyond the limits of permanent fill/grading required for the road, to accommodate soil stockpiling and equipment operation. Affected areas will be cleared of vegetation, and wetland top soils will be stripped from the area and stockpiled for future use in restoration. Geotextile fabric will be placed over the compacted subsoil prior to installation of gravel fill. In some places temporary culvert extensions may also be required to widen wetland and stream crossings along existing roads where additional road width is required to accommodate construction vehicles (see Figure 8, Sheet 1). Temporary culvert extensions will be sized to match the existing culvert, and will be removed, along with temporary fill, at the completion of Project construction. No temporary culvert extensions are required at any proposed stream crossings. As indicated in Table 2, nine emergent and scrub-shrub wetlands and one stream channel (Stream NN) will be temporarily impacted by access road construction. As with the temporary disturbance associated with the buried collection lines, all temporarily disturbed areas adjacent to Project access roads and temporary public road improvements will be restored to pre-construction grades, stream beds and banks will be stabilized, and wetlands will be reseeded with a wetland seed mix at the completion of construction (see Figure 7, Sheet 5). All affected wetlands in these areas will be allowed to revegetate to their previous condition.

Of the 21 streams identified within the Study Area, the Project will avoid impacts to 17. The Project will require access road and collection line crossing of streams in 14 places. However, six of the collection line crossings (43%) will be installed through directional drilling, thus avoiding any disturbance to stream beds or banks. Where surface installation is proposed, temporary construction-related stream impacts at collection line crossings will include clearing of some streamside vegetation and disturbance of stream beds and banks. This temporary disturbance will also occur along the periphery of access roads.

As mentioned previously, all turbines have been sited in upland areas and temporary work space around the turbines will not encroach on wetlands. Any wetlands in the vicinity of these work areas (i.e., within 250 feet) will be flagged and fenced prior to construction to assure that they are not disturbed. The same protection measures will be employed when proposed access roads and collection lines are within 25 feet of a wetland or stream. To assure wetland impacts are minimized to the greatest extent practicable, sediment and erosion control measures will also be implemented wherever Project construction occurs within, or adjacent to, wetlands and streams in accordance with the Project SWPPP (Appendix G). Temporary construction-related impacts to wetlands and streams are summarized in Table 2, in the consolidated spreadsheet included in Appendix F, and illustrated in Figure 6.

Table 2. Summary of Temporary Impacts to Wetlands and Streams

Delineation ID	Community Type[1]	Temporary Wetland Impact (Square Feet)	Temporary Linear Stream Impact (Feet)	Impact Type	Figure 6 Sheet Reference
A	PEM	626	-	Buried Collection Line Construction	1
H	PSS	883		Buried Collection Line Construction	2
H	RIN	907	74	Buried Collection Line Construction	2
L	PEM	211	-	Grading/Fill for Access Road Construction	3
M	PEM	957	-	Buried Collection Line Construction and Access Road Construction	4
P	PEM	1,669	-	Access Road Construction	5
S	PEM	1,239	-	Overhead Collection Line Construction	7
S	PSS	767	-	Overhead Collection Line Construction	7
U	PEM	1,964	-	Buried Collection Line Construction	8
X	PEM	5,991	-	Buried Collection Line Construction	9
CC	PEM	443	-	Overhead Collection Line Construction	10
FF	RIN	509	51	Buried Collection Line Construction	11
LL	PEM	541	-	Buried Collection Line Construction and Culvert Installation for Access Road	12
NN	PEM	352	-	Access Road Construction and Culvert Installation	13
NN	RIN	184	34	Access Road Construction and Culvert Installation	13
AAA	PSS	7,802	-	Temporary Public Road Improvement	14
CCC	PSS	1,492	-	Culvert Installation for Access Road and Road Improvement Construction	15
GGG	RIN	640	50	Buried Collection Line Installation	16
HHH	PEM	3,021	-	Culvert Installation for Temporary Public Road Improvement	17
III	PEM	727	-	Buried Collection Line Construction	18
III	PSS	10,697	-	Buried Collection Line Construction	18
	Total	41,622 (0.95 Acre)	209		

[1] Wetland cover types noted are based upon the Cowardin *et al* (1979) classification system: PFO = forested wetland, PSS = shrub scrub wetland, PEM= emergent marsh.

Temporary construction-related impacts to wetlands and streams will be minimized and mitigated as described below:

- To the extent practicable, impacts to wetlands and streams will be avoided or minimized by siting Project components outside of wetlands or utilizing narrow or previously disturbed areas as crossing locations. The Project will temporarily disturb over 423 acres of land, of which only 0.95 acre (0.2%) will be wetlands and streams.

- Directional drilling will be utilized for the installation of buried collection lines across six streams, thus completely avoiding impact to the bed and banks of these streams.
- Where running water is encountered, a temporary pump-around will be used to assure that all stream and wetland crossings are constructed "in the dry" (see Figure 7, Sheet 2).
- Where vegetation clearing in wetlands is unavoidable, such clearing will be done without grubbing stumps, and cut vegetation will be dropped and lopped in place to minimize soil disturbance. Cut material will only be removed from stream channels. Vegetation will be allowed to regrow along all buried collection lines.
- Timber mats will be installed in wetlands that have to be temporarily crossed by construction vehicles. All matting will be removed following completion of construction.
- Where wetland soils are disturbed, any temporary fill will be removed at the completion of the construction , stockpiled wetland soils will be redistributed, and these areas will be restored to their original grade and profile.
- All disturbed areas will be stabilized with straw or cellulose mulch and a native wetland seed mix.
- All temporarily disturbed stream banks and channels will be stabilized using native substrate material, fiber rolls and appropriately sized stone as necessary to prevent scouring and erosion (see Figure 7, Sheet 12).
- The NYS Standards and Specifications for Erosion and Sediment Control will be followed as outlined in the Project SWPPP (see Appendix G).

In addition, all construction activities will be overseen by an Environmental Monitor to ensure that environmental protection measures, permit-specific conditions, and SWPPP protocols are followed.

4.2 Permanent Wetland/Stream Impacts

Although long-term or permanent impacts to surface waters will generally be avoided, based on engineering plans developed by the Project civil engineers, there will be minor permanent impacts to 10 wetlands and one stream. Permanent impacts to wetlands include placement of fill for the establishment of access roads and permanent conversion of forested wetlands to non-forested cover types. Permanent wetland and stream impacts include installation of six new culverted road crossings. As indicated in Table 3, placement of fill for access roads will affect six wetlands and result in permanent loss of a total of 0.12 acre of wetland and 63 feet of stream channel. No poles associated with overhead sections of the collection system will be placed in wetlands. As indicated in Table 3, four forested wetlands, totaling 0.27 acre will be converted to non-forested cover types as a result of Project construction. These impacts are described in greater detail below:

Fill/Road Crossings - The proposed permanent crossings at wetlands L, M, P, LL, NN, and CCC will each consist of a 16 foot wide gravel road plus required shoulders/side slopes on both sides. The crossings will

generally be located at the narrowest section of the wetlands or along the edge of the wetlands to minimize impacts. Prior to installation of the crossing, the top layer of soil will be removed from the work site and re-used as part of wetland restoration efforts. A geotextile fabric will be installed and bank run gravel fill will be placed, along with necessary provisions for cross drainage to maintain an equalization of wetland hydrology. Upon completion of construction, the travel surface will be topped with crushed stone and the side slopes (and any other disturbed areas) will be dressed with topsoil, stabilized with native seed mixes and protected with straw or cellulose mulch, or biodegradable erosion control matting per the Project SWPPP.

Culvert Installation – Road widths at the one proposed new stream crossing will be the same as described above for wetlands. The new 72 inch culvert to be installed in Stream NN is sized to span the entire stream channel and maintain bank-full flows. The buried invert will include an embedment depth of a minimum of 20 percent of the culvert's vertical rise (see Figure 8, Sheet 3).

Forest Wetland Conversion – A total of 0.27 acre of forested wetland will be cleared and converted to emergent or scrub-shrub wetlands along the route of the collection lines and along the periphery of access road crossings in some locations. Collection lines have generally been sited to minimize conversion impacts to forested wetlands, but complete avoidance of this impact was not possible. Cut vegetation will be dropped and lopped-up where it falls to minimize wetland disturbance (except within stream channels) and no herbicides will be used to manage vegetation within the wetland boundaries. Other than where overhead collection lines are proposed, affected areas of forested wetland will be allowed to regrow following construction, but for the purposes of this permit application are considered permanent forested wetland conversion.

Permanent impacts to wetlands and streams are summarized below in Table 3, and depicted on Figure 6.

Table 3. Summary of Permanent Impacts to Wetlands and Streams

Delineation ID	Community Type[1]	Permanent Wetland Impact (Square Feet)	Permanent Wetland Conversion (Square Feet)	Permanent Linear Stream Impact (Feet)	Impact Type	Figure 7 Sheet Reference
L	PEM	57	-	-	Access Road Grading/Fill and Culvert Installation	3
M	PEM	81	-	-	Access Road Grading/Fill and Culvert Installation	4
P	PEM	2,212	-	-	Access Road Grading/Fill and Culvert Installation	5
R	PFO	-	2,043	-	Overhead Collection Line Construction	6
U	PFO	-	1,560	-	Buried Collection Line Construction	8
CC	PFO	-	3,771	-	Overhead Collection Line Construction	10

Delineation ID	Community Type[1]	Permanent Wetland Impact (Square Feet)	Permanent Wetland Conversion (Square Feet)	Permanent Linear Stream Impact (Feet)	Impact Type	Figure 7 Sheet Reference
FF	PFO	-	4,478	-	Buried Collection Line Construction	11
LL	PEM	1,150	-	-	Access Road Grading/Fill and Culvert Installation	12
NN	PEM	630	-	-	Access Road Grading/Fill and Culvert Installation	13
NN	RIN	595	-	63	Access Road Grading/Fill and Culvert Installation	13
CCC	PSS	412	-	-	Access Road Grading/Fill and Culvert Installation	15
	Total	5,137 (0.12 Acre)	11,852 (0.27 Acre)	63		

[1] Wetland cover types noted are based upon the Cowardin *et al* (1979) classification system: PFO = forested wetland, PSS = shrub scrub wetland, PEM= emergent marsh.

4.3 Summary of Impacts

In summary, based on engineering plans, and worst case assumptions regarding the potential extent of impacts, construction activities will result in permanent loss (filling) of 0.12 acre of wetlands and 63 linear feet of streams. However, a partially buried culvert will maintain natural stream channel substrate and flow within the filled areas at the one proposed stream crossing. Permanent conversion of forested wetland to non-forested wetland cover types will total 0.27 acre. The primary functional impacts associated with this degree of permanent loss and conversion is a minor reduction in forest wetland habitat for wildlife, and a very small reduction in other wetland functions and services, such as water quality improvement and stormwater retention. Temporary impacts associated with the construction of Project components will total 0.95 acre. All temporarily disturbed areas will be fully restored to pre-construction conditions, and will result in no long-term loss of wetland functions and values.

4.4 Mitigation

To mitigate for unavoidable permanent impacts to wetlands, the Applicant will purchase mitigation credits from Ducks Unlimited within the Eastern St. Lawrence River watershed. A letter from Ducks Unlimited indicating the availability of up to two mitigation credits for purchase by Jericho Rise Wind Farm, LLC is included in Appendix C. The Applicant proposes to fund the creation of 1 acre of wetland within the watershed, which equates to approximately 3:1 replacement for permanent wetland loss (i.e., 0.36 acre of wetland for 0.12 acre of wetland fill), plus 2:1 replacement for permanent conversion of forested wetlands (i.e., 0.68 acre of new wetland for 0.34 acre of wetland conversion).

5.0 ALTERNATIVES ANALYSIS

Alternatives to the proposed action that were evaluated by the Applicant included; Alternative Project Sites, Alternative Project Design/Layout, Alternate Project Size, Alternative Technologies, Alternative Construction Techniques, and No Action. Each of these alternatives is described below.

5.1 Alternative Project Sites

This section provides background information on the selection of the Project Site to facilitate understanding of the criteria that the Applicant employed.

The preliminary selection of wind turbine locations on a regional or statewide basis is constrained by several factors that are essential for the Project to operate in a technically and economically viable manner. These factors include the following:

- adequate wind resource
- adequate access to the bulk power transmission system, from the standpoints of proximity and ability of the system to accommodate the interconnection and accept and transmit the power from the Project
- contiguous areas of available land
- compatible land use
- willing land lease participants and host communities
- limited population/residential development
- limited sensitive ecological issues
- compliance with local, state, and federal laws and regulations

Several areas of upstate New York have the desired combination of attributes that make them suitable for commercial wind development, such as rural settings, proximity to high-voltage power lines, and higher elevations with stronger winds. The Applicant has researched other potentially suitable sites in northern New York, including areas in Clinton County, and evaluated the sites to include the above referenced essential factors to operate a viable wind power facility. During this site search, the Applicant identified the current Project Site as a preferred site due its desirable wind resource and supportive community. In addition to landowner support, the proposed Project Site offers following advantages:

- It is proximate to the NYSEG 115 kV transmission line and Willis Substation, which has available capacity to transmit power from the Project to the New York State power grid.

- The site is relatively rural, and has a low population density. Therefore turbines on the this site will generally have limited impact on area residents.
- The Project Site includes an abundance of existing farm lanes and forest roads that can be upgraded and will minimize the need for new access roads.

5.2 Alternative Project Design/Layout

5.2.1 Alternate Turbine Layouts

The process of determining Project design and layout involves continuous evaluation of alternatives. A preliminary layout of the Project was based on constraint information from a desktop review and wind resource data. A process of refinement was then initiated that included incorporating information from engineering and environmental work to account for wetlands and other significant natural resources. Additional changes to the Project layout were made to incorporate setbacks, turbine spacing, meteorological data, and landowner participation. This process resulted in the 53 turbine layout of the Project that was presented in the Draft Environmental Impact Statement (DEIS).

Subsequent to the preparation of the DEIS, the Applicant has continued the process of revision by conducting additional support studies and revising the engineering plans for the Project facilities. Furthermore, rapid improvements in wind turbine technology in recent years have allowed the Applicant to opt for taller, higher output capacity turbines compared to the models considered in the DEIS (which were proposed in 2008). Consequently, fewer turbines are required to achieve a similar nameplate capacity to the layouts presented in the DEIS and maintain the positive benefits associated with the original proposed renewable energy output for the Project. The combination of the above mentioned factors has resulted in the 37 turbine layout presented in the Supplemental Environmental Impacts Statement (SEIS). This layout represents a significant reduction in both the number of turbines, and the Project impacts footprint when compared to the layout presented in the DEIS. Most notably, two of the turbine locations proposed in the DEIS layout, which were to be located east of the Chateaugay River, have been eliminated, thus avoiding the need to cross the Chateaugay River with the collection lines. In addition, six alternate turbine sites that were under consideration and evaluated in the SEIS have been dropped. Turbines and associated infrastructure associated with these alternatives would have impacted up to eight additional wetlands and streams. The Project layout currently proposed has resulted in a decrease in predicted total wetland and stream impacts (temporary and permanent) from over 9.5 acres predicted in the DEIS to the 1.34 acres currently proposed.

5.2.2 Electrical Collection Lines

As a matter of general economical design preference, the Applicant would prefer to build all electrical lines in the shortest, most direct alignment between turbines. However, the Project's electrical collection system will be primarily

buried along existing and proposed access roads and through active agricultural fields to significantly consolidate and minimize crossing impacts to forested ecological communities and wetland/stream systems. The overall length of the proposed collection system has been reduced from 21 miles to 17.2 miles by going from a 53 turbine layout to a 37 turbine layout. Temporary wetland impacts along the collection line route has been reduced from an estimated 2.7 acres to 0.6 acre.

5.2.3 Substation

The location of the Project substation has been selected for its proximity to the existing Willis Substation and other proposed Project components. In addition, the site was selected from a broader area based upon existing grades, avoidance of wetlands and other ecological resource impacts, and landowner requests/concerns. The proposed location consists of successional old field/shrubland, thus eliminating the need for significant tree removal/clearing, and avoiding wetland impacts.

5.2.4 Access Roads

Permanent access road widths will be the minimum necessary to operate and maintain the Project, and will be coincident with existing farm drives and forest roads whenever possible. Access will be reduced from a construction width of approximately 40 feet to an operation/maintenance width of 16 feet. Shorter, more direct routes are a more desirable alternative from a Project development/cost perspective. However, this alternative is inconsistent with the objectives of minimizing impacts to agricultural land, forest and wetlands. Early site reconnaissance was used to identify all streams and wetlands that could potentially be impacted by the proposed Project, and to avoid road crossings of streams and wetlands to the extent practicable. Temporary and permanent wetland impacts associated with road crossings have been reduced from an estimated 0.5 acre and 0.9 acre, respectively, for the 53 turbine (DEIS) layout, to 0.1 acre and 0.1 acre, respectively, for the current 37 turbine layout.

5.3 Alternative Project Size

Jericho Rise Wind Farm has a 79.9 MW interconnection request with the NYISO, therefore the preferred alternative is to construct a facility that has the ability to produce this amount of power. A project with significantly more, or fewer, turbines would pose challenges to the technical or economic feasibility of the Project, and would not meet the stated objectives of the Project.

If the proposed number of turbines were significantly reduced, the maximum benefit of the available wind resource would not be realized. If the turbine number were even moderately reduced, the Project would cease to be economically viable due to the high fixed cost of interconnection with the power grid. Economic benefits, including

payments to local taxing jurisdictions (which are typically developed on a per MW or per turbine basis), as well as construction expenditures, would also be reduced proportionately with a smaller project.

Various siting constraints dictate the size and layout of a wind power project. These constraints make a significantly larger number of turbines within the Project Site highly unlikely. A larger project would result in the location of wind turbines in areas that do not have ideal wind resources, or have more sensitive resources and/or higher population density. Although a larger facility might have more economic value, the greater environmental impacts would not justify the marginally increased power generation potential of the Project.

5.4 Alternative Technologies

The turbines proposed for the Project will utilize the latest in wind power generation technology to enhance Project efficiency and safety. Alternative power generation technologies, such as fossil-fuel and biomass combustion, would not meet the goals of the Project, are not the area of expertise of the Applicant, and would pose more significant adverse environmental impacts, particularly on air quality but also on land use, aesthetics, and water resources. Most fossil fuel-fired generating facilities would require significant amounts of water to operate, the use of which may pose impacts to surface water or groundwater resources as well as fish and other aquatic organisms. Conventional power plants also would not advance the RPS goal of generating 30% of the state's power by 2015 (NYSEPB, 2015).

In regard to other renewable sources of generation, hydroelectric plants have significant impacts on terrestrial and aquatic ecological resources, land use, and aesthetics. They can also only be developed in places with appropriate water volumes and topographic conditions (which do not exist within the Project Site). Other renewable energy technologies, such as solar power and hydrogen, are still either cost-prohibitive or difficult to develop at utility scale. Currently, wind is the only renewable energy source that can help meet energy needs in a technologically and economically efficient manner.

5.5 Alternative Construction Techniques

5.5.1 Boring under Wetlands

As indicated previously, construction-related impacts to eight wetlands and streams (66% of those being crossed by the collection system) will be avoided through the use of directional drilling. An alternative would be to make greater use of boring or directional drilling technology to further reduce wetland impacts. While directional drilling is the preferred construction technique for crossing perennial streams or to avoid potential impacts to high quality forested wetlands, this technique is generally not warranted at wetland and intermittent stream crossings where impacts are anticipated to be minor and temporary. As discussed in Section 4, impacts from direct burial of cables will affect

primarily emergent and scrub-shrub wetlands and all temporarily disturbed areas will be fully restored to pre-construction conditions. Thus, the additional cost and construction duration that would be necessary to make greater use of drilling equipment would not result in a commensurate benefit of reducing serious/permanent impacts to wetlands.

5.5.2 Overhead Electrical Collection Lines

An overhead electric collection system could be installed to avoid most of the temporary soil disturbance that will be caused by the proposed installation of buried collection lines in wetlands. However, overhead construction of the electrical collection system would substantially increase the visibility of Project components by adding both poles and overhead cables to the landscape. The permanent long-term visual impacts of an overhead collection system would be a more serious adverse impact than the temporary impacts that will result from the direct burial of the collection system. As discussed above, conversion of forested wetlands could not be avoided with an overhead line, and disturbed areas of emergent and scrub-shrub wetlands along the buried collection line will be restored following construction.

5.6 No Action

The no action alternative assumes that the Project Site would continue to exist as agricultural, forested, successional and rural residential land. This no action alternative would not affect on-site ambient noise conditions, construction traffic or public road conditions, wildlife or wildlife habitat, wetlands and streams, or television/communication systems, and would maintain community character, economic and energy-generating conditions as they currently exist.

If the no action alternative is pursued, the following positive environmental impacts associated with adding approximately 78 MW of new renewable energy capacity to the NYISO electric power system would not occur:

- A reduction of air emissions, specifically the displacement of up to 46 tons of NO_x and 121 tons of SO_2 during Project operation;
- A reduction in the emission of greenhouse gases, specifically the displacement of up to 59,440 tons of CO_2 during Project operation;
- A displacement of 5.4 pounds of mercury;
- A displacement of 2,989 tons of lead compounds; and
- Loss of opportunity to develop wind resource in Project Area consistent with State Energy Plan and policies promoting the development of renewable energy projects.

Furthermore, if the no action alternative is pursued, the lack of economic development resulting from Project construction and operation would result in undesirable economic impacts. These would include loss of income from local operating and maintenance jobs of over $420,000 per year, loss of income from approximately 73 local construction jobs, loss of lease revenues for participating landowners, loss of increased revenues of local taxing jurisdictions, and loss of payments to Project neighbors.

Given the short-term nature of anticipated construction impacts and the generally minor long-term impacts of Project operation, as compared to the significant economic, policy and environmental benefits that the Project would generate, the no action alternative is not considered a preferred alternative.

6.0 AVOIDANCE, MINIMIZATION, AND MITIGATION

Design, engineering, and construction of the Project have been, and will be, guided by the following criteria in an effort to minimize overall impacts to delineated streams and wetlands:

- Wetlands and streams have been avoided to the extent practicable.
- Where full avoidance was not possible, wetlands and streams are being crossed in narrow and/or previously distributed locations, and areas of forested wetland are being avoided whenever possible. Total wetland filling will be limited to 0.12 acre.
- Temporary construction-related impacts to wetlands will be avoided/minimized with the use of timber mats and erosion and sediment controls.
- Temporary dewatering of stream channels will be conducted (if necessary) to assure that culvert and buried cable installation is conducted “in the dry”.
- Invasive species control measures will be utilized during construction.
- Cleared vegetation and excess excavated soil will not be placed within wetlands.
- Preconstruction contours/grades will be re-established in temporarily disturbed areas following construction.
- Partially buried culverts will be used for all stream crossings to maintain natural substrate and flow conditions.

Wetland restoration/clean-up will include removal of all construction matting from temporary work areas, as well as the removal of any construction debris. If necessary, disturbed portions of wetlands will be regraded to restore approximate pre-construction contours and hydrology. Grading of wetlands will be limited to the minimum necessary to restore conditions comparable to those that existed prior to the initiation of construction in the area. Wetlands will be reseeded

with a native wetland seed mix, no fertilizer will be used in wetlands. Mulch will only be used if necessary to enhance the revegetation or stabilization. Only straw or cellulose mulch will be used in wetlands. See wetland restoration detail in Figure 7, Sheet 5.

Mitigation

To mitigate for unavoidable permanent impacts to wetlands, the Applicant will purchase mitigation credits from Ducks Unlimited within the Eastern St. Lawrence River watershed. These credits will fund the creation of 1.0 acre of wetland within the watershed, which equates to approximately 3:1 replacement for permanent wetland loss plus 2:1 replacement for permanent conversion of forested wetlands.

7.0 COMPLIANCE WITH THE FEDERAL ENDANGERED SPECIES ACT

There is one federally threatened bat species, the northern long-eared bat (*Myotis septentrionalis*), with potential habitat within the Project Site. The northern long-eared bat, whose range encompasses all of New York State, is listed by the USFWS as threatened. Based on the results of site-specific survey results and the best available scientific literature, occurrence of northern long-eared bat at the Project Site during different seasons is expected to be as follows:

Winter Hibernation Season (November 1 to March 31)

During this period, northern long-eared bats are expected to be hibernating within caves and abandoned mines. Although northern long-eared bats have occasionally been captured outside hibernacula during the winter and have also been documented to move from one hibernaculum to another during a winter season, the physiological costs of long-distance movements make it unlikely that winter flight in northern long-eared bats involves either long distances or extended periods. Based on the distance of the Project from known hibernacula, any northern long-eared bats occurring outside of the hibernacula during the winter are not expected to occur within the Project Site. Therefore, it is unlikely that tree clearing activities (which are anticipated to result in the removal of approximately 132 acres of forest within the 5,895 acre Project Site) would have a potential to impact northern long-eared bats during the winter hibernation season.

Spring Migration Season (April 1 to May 15)

The timing of spring bat emergence from hibernacula and migration to summer habitat varies depending on a number of factors such as latitude, elevation, and weather patterns but typically occurs between mid-April and the end of May in northern New York. The NYSDEC generally conducts emergence surveys in May when night time temperatures exceed 50ºF. Northern long-eared bats occurring as possible summer residents on the Project Site would migrate to the area from hibernacula during the spring season and could begin roosting within the Project Site during this time

period. Therefore, tree clearing activities have a potential to impact northern long-eared bats during the spring migration season.

Summer Maternity Season (May 16 to September 30)

On-site presence/probable absence acoustic surveys conducted in 2015 showed positive acoustic identifications for northern long-eared bats at two out of the 48 locations surveyed. Both locations were located in the central part of the Project Site. No northern long-eared bats were captured during follow-up mist nest surveys at the positive acoustic locations. These results indicate that northern long-eared bats may occur as summer residents though likely in low numbers. Therefore, tree clearing activities have a potential to impact northern long-eared bats during the summer maternity season.

Fall Migration Season (August 1 to September 30)

Following the summer maternity season, there is a period when northern long-eared bats disperse away from the maternity areas and migrate back to their hibernaculum. This period overlaps with the summer season as some bats may stay in summer habitat throughout much of this period. During this period there may be more "relaxed" movements between the maternity areas and the hibernacula and thus northern long-eared bats may be more dispersed on the landscape (e.g., not concentrated around maternity areas). Hibernacula are a destination for northern long-eared bats migrating from their maternity area to wintering areas; the closest known hibernaculum (located approximately 15 miles south of the Project Site) is expected to be the destination for northern long-eared bats migrating in the vicinity of the Project Site, although it is recognized that there are likely other unknown hibernacula in northern New York, or outside of New York, that could also be winter destinations for bats leaving the Project Site. Bat populations have been severely reduced due to white nose syndrome (WNS), indicating that few northern long-eared bats are likely to migrate across the Project Site. None-the-less, tree clearing activities have a potential to impact northern long-eared bats during the fall migration season.

Fall Swarming and Late Fall Season (October 1 to October 31)

When northern long-eared bats arrive at their hibernaculum in the fall, they engage in swarming (mating) activity in the habitat at the entrance and around the hibernaculum. It is believed that northern long-eared bats generally occupy the habitat within five miles of their hibernaculum during the fall swarming period. Based on the distance between any known hibernacula and the Project Site, and the reduced populations of the hibernacula, it is unlikely that fall swarming bats occur within the Project Site. Therefore, it is unlikely that the limited tree clearing required for construction of the Project would have a potential to impact northern long-eared bats during the fall swarming and late fall season.

As mentioned previously, construction of the Project will require clearing of approximately 132 acres of trees with the Project Site. Due to the potential to impact the northern long-eared bat in the vicinity of the Project Site, the Applicant has developed interim measures that will be implemented to avoid potential take of federally listed species during construction. The following measures to avoid impacts to northern long-eared bats during construction have been proposed to the U.S. Fish and Wildlife Service (USFWS), and the Applicant anticipates response from USFWS in December 2015.

To avoid potential take during construction, tree removal on-site will only occur during the period of October 1 to March 31, except in the case of emergency tree removal, which will be carried out according to the provisions described below. During this period of October 1 to March 31, northern long-eared bats are expected to be engaged in swarming behavior at the hibernacula, roosting and foraging in habitat near the hibernacula, or hibernating over the winter months, and therefore not roosting in trees in the Project area. Tree removal during this period would avoid taking this species because it would not be present in the Project area.

If any emergency tree removal is necessary it will be conducted as needed. If removal of high-risk hazard trees is necessary from April 1 – September 30 during construction, maintenance, or decommissioning of the Project, the Applicant will notify the USFWS in advance and, if appropriate, have a qualified biologist conduct an emergence survey at the tree(s) requiring removal. If no bats are observed during the emergence survey, the high-risk hazard tree(s) will be promptly removed. This will reduce the risk of removing an undiscovered roost tree. If bats are observed, then the Project Sponsor will conduct further consultation with the USFWS to determine the appropriate course of action.

Please see Appendix D for additional detail regarding mitigation of potential operational impacts to northern long-eared bat.

8.0 COMPLIANCE WITH THE HISTORIC PRESERVATION ACT

The Project's potential impacts on cultural (historic and archaeological) resources were considered in accordance with the New York State Environmental Quality Review Act (SEQRA), with the Towns of Bellmont and Chateaugay acting as SEQRA Co-Lead Agencies. The New York State Office of Parks, Recreation, and Historic Preservation (NYSOPRHP) acted as an interested agency in the coordinated agency review of the Project under SEQRA (per their role as State Historic Preservation Office [SHPO]). NYSOPRHP's review of correspondence related to the Project references review under SEQRA as well as Section 106 of the National Historic Preservation Act. Review was predicated on the assumption that wetland permitting by the USACE and NYSDEC could be necessary. Cultural resource investigations for the Project were therefore conducted by qualified personnel, in accordance with

professional standards and methodologies, and in accordance with applicable agency (i.e., SHPO) guidance to ensure that the results and findings of cultural investigations would satisfy not only the SEQRA review of the Project, but also provide necessary information for any additional agency or public consideration of effects on cultural resources under Section 14.09 of the New York State Parks, Recreation, and Historic Preservation Law, Section 106 of the National Historic Preservation Act, and/or the National Environmental Protection Act (NEPA).

To support the review of the Project's effect on cultural resources, the Applicant retained EDR to conduct cultural resources investigations to investigate the Project's potential effect on archaeological and historic-architectural resources. All cultural resources studies prepared by EDR for the Project were conducted under the direction of personnel who meet the Secretary of the Interior's Standards for Archaeology and/or Architectural History (per 36 CFR Part 61). In addition, EDR's studies were prepared in accordance with the *New York State Historic Preservation Office Guidelines for Wind Farm Development Cultural Resources Survey Work* (the *SHPO Wind Guidelines*; NYSOPRHP, 2006). Furthermore, EDR's archaeological survey was conducted in accordance with the applicable portions of the New York Archaeological Council's *Standards for Cultural Resources Investigations and the Curation of Archaeological Collections in New York State* (the *NYAC Standards*; NYAC, 1994) and the *New York State Historic Preservation Office Phase 1 Archaeological Report Format Requirements* (the *SHPO Guidelines*; NYSOPRHP, 2005).

A summary of cultural resources studies and consultation with the NYSOPRHP that have been conducted to date is provided below.

Archaeological Resources

The Project's area of potential effect (APE) for archaeological resources is defined as those areas where soil disturbance is proposed to occur during construction. Subsequent to the release of the DEIS in 2008, a Phase 1B archaeological survey was conducted for an earlier layout of the Project (Tetra Tech, 2008a), which at that time consisted of a total of 47 proposed wind turbines. The Phase 1B survey was conducted subsequent to the completion of the DEIS for the Project, and the survey report was never submitted to NYSOPRHP for review. The 2008 Phase 1B survey was adequate to evaluate 217 acres of potential ground disturbance, and included the excavation of 3,455 shovel test pits and pedestrian surface survey of 0.67 acres. This 2008 archaeological survey effort resulted in the identification of five historic-period archaeological sites (NYSOPRHP Sites A03303.000041, A03308.000053, A03308.000054, A03308.000055, and A03308.000056). All of these sites were recommended as not eligible for listing on the National Register of Historic Places (NRHP) and Tetra Tech recommended no additional archaeological investigations of these sites (Tetra Tech, 2008a). Although the layout and archaeological APE for the current Project layout are similar to the Project layout evaluated in the 2008 Phase 1B survey, additional archaeological studies were completed for the current Project layout (37 turbine sites and six alternate sites) in 2015, as discussed below.

Because construction of the Project will include ground disturbance, the Project has the potential to result in adverse impacts to archaeological resources. Impacts associated with archaeological resources, which are identified through the Phase 1B survey work, are typically avoided though careful siting of the Project and construction planning. It is worth noting that the previous Phase 1B survey conducted in 2008 (Tetra Tech, 2008a) evaluated a preliminary Project layout that resulted in the identification of five archaeological sites. The current Project layout has been sited to avoid impacts to those sites.

EDR is currently consulting with NYSORPHP staff to evaluate the current Project layout's potential effect on archaeological resources. Because the current Project layout been revised since the 2008 Phase 1B survey, an updated archaeological resources survey was determined to be necessary. The supplemental archaeological survey work for the Project was conducted in accordance with the *SHPO Wind Guidelines* (NYSOPRHP, 2006) and applicable portions of NYSOPRHP's *Phase 1 Archaeological Report Format Requirements* (NYSOPRHP, 2005), which specify an archaeological testing methodology that intensively samples selected areas within the larger Project Area. Per these guidelines, the required amount of archaeological survey work (i.e., the number of shovel tests excavated) was determined based on the total area of anticipated ground disturbance (archaeological APE). The *SHPO Wind Guidelines* are based on the assumption that additional archaeological survey work is not necessary if Project components move around during the Project development process, as long as the total area of ground disturbance for the Project does not increase. Relative to the areas that were evaluated in the 2008 Phase 1B survey, cases, the portion of the archaeological APE for the current Project layout that requires archaeological survey is approximately 166 acres.

A work plan detailing the proposed level of effort and methodology for the Phase 1B archaeological survey was submitted to NYSOPRHP on September 4, 2015. In correspondence dated September 15, 2015, NYSOPRHP concurred with EDR's recommendations for the Phase 1B archaeological survey presented in the Work Plan (Bonafide, 2015). The Phase 1B archaeological survey fieldwork was conducted between June 2 and August 21, 2015. EDR personnel excavated a total of 1,721 shovel tests and conducted pedestrian survey (of agricultural fields with ground surface greater than 80%) over approximately 623.1 acres during the course of Phase 1B fieldwork. The locations of areas selected for intensive archaeological survey were selected based on the work plan that was submitted to and approved by NYSOPRHP. A detailed Phase 1B archaeological survey report, which describes the methodology and results of the survey in accordance with NYSOPRHP's *Phase 1 Archaeological Report Format Requirements* (NYSOPRHP, 2005), was submitted to NYSOPRHP on November 19, 2015.

The 2015 Phase 1B survey resulted in the identification of 14 historic-period archaeological sites. No prehistoric (Native American) archaeological sites were identified within the Project Site. For the most part, the identified archaeological sites included foundation remains and/or artifacts associated with nineteenth-century farmstead sites, as well as a family plot cemetery, and a portion of the berm or embankment associated with the former Ogdensburg and Lake Champlain Railroad. Following completion of the Phase 1B archaeological survey, minor modifications to the Project layout and proposed construction techniques were made to avoid impacts to archaeological resources. Because the Project layout is being intentionally sited to avoid archaeological resources so no Phase 2 site investigations are anticipated to be necessary. The mapped locations of identified archaeological sites will be included on Project construction maps surrounded by a 100-foot (minimum) buffer, identified as "Environmentally Sensitive Areas" or similar, and marked in the field by construction fencing with signs that restrict access. These measures should be adequate to ensure that impacts to archaeological resources are avoided.

In the event that unanticipated archaeological resources are encountered during construction, the environmental monitoring plan will include provisions to stop all work in the vicinity of the archaeological finds until those resources can be evaluated and documented by a Registered Professional Archaeologist.

Historic Architectural Resources

The 2008 historic-architectural resources survey report for the Jericho Rise Wind Farm (Tetra Tech, 2008b) was submitted to NYSOPRHP on March 26, 2008, and included the identification of 90 individual NRHP-eligible historic properties, including a 27-acre portion of the National Historic Landmark Adirondack Park. (Note: the locations of all of these resources were confirmed in the field to determine if due to changes in the Project layout, some of these properties are no longer included in the APE for the Project). In a June 10, 2008 letter from NYSOPRHP to the Public Service Commission (PSC), NYSOPRHP indicated its concurrence with the recommendations of NRHP eligibility contained within the 2008 survey report, and identified three key loci where visual impacts should be carefully assessed: the Chateaugay Village Historic District, Burke village, and the north end of Lower Chateaugay Lake. In addition, NYSOPRHP noted that several rural agrarian properties and other identified historic resources would be located within the viewshed of the proposed wind turbines, and recommended that visual simulations be prepared in the areas identified above, as well as the Adirondack Park (Bonafide, 2008).

On June 17, 2015, the Applicant's cultural resources consultant (EDR) conducted research concerning the previous architectural resources surveys in the vicinity of the Project at NYSOPRHP's office in Waterford, NY. During that research visit, EDR met with NYSOPRHP staff to review and discuss the previous historic architectural surveys, as well as the proposed historic architectural resources survey for the revised Jericho Rise Wind Farm study area. During this discussion, it was agreed upon by NYSOPRHP and EDR that due to the considerable amount of recent historic

resources surveys that have occurred within the Project APE, no additional survey of buildings located within the APE would be required as part of the current review of the Jericho Rise Wind Farm. In lieu of an new historic resources survey, a field review of previously identified historic resources was proposed, where previously identified historic resources would be photographed and given updated recommendations of NRHP eligibility (where applicable). The plan for this historic architectural resources survey as discussed by NYSOPRHP and EDR is described in greater detail in a Historic Resources Survey Work Plan that was submitted to NYSOPRHP for review on July 10, 2015. On August 6, 2015, NYSOPRHP staff replied that they concurred with EDR's proposed methodology to re-evaluate historic resources and the potential visual effect of the Project (Pierpont, 2015).

EDR conducted a field review of historic properties within the 5-mile study area between August 12 and August 14, 2015. The historic resources review included site visits to 120 properties. The results of the survey are as follows:

- One property (the Almanzo Wilder Boyhood Home) listed on the NRHP is located within the APE.
- There are 92 properties located within the APE that EDR recommends are NRHP-eligible (note that 86 of these are properties that have been previously determined eligible by NYSOPRHP, two properties were previously included in the NYSOPRHP Cultural Resources Information System (CRIS) but were not formally evaluated for NRHP-eligibility, and four are newly identified by EDR).
- There are 25 additional properties within the APE that were formerly determined NRHP-eligible (or were previously included in CRIS but were not formally evaluated for NRHP-eligibility) that EDR is recommending are not NRHP-eligible, and two properties that were formerly determined NRHP-eligible that are now demolished.

This information was provided directly to NYSOPRHP, via their CRIS website, on November 19, 2015.

In their review of the 2008 historic resources Survey for the Project (Bonafide, 2008), NYSOPRHP stated that the Project would result in an indirect (visual) adverse effect on historic properties and that mitigation measures need to be considered:

> *OPRHP believes that sufficient information does exist to determine that under Section 14.09, l(c) of New York State Parks and Recreation Law, the undertaking will have an Adverse Impact on cultural resources. The introduction of the sleek, ultramodern, approximately 390 foot tall kinetic wind turbines (up to 53 proposed) throughout this scenic landscape forever alters and changes the rural setting, which itself is a significant element in much of the survey area and serves as the backdrop for the architectural, cultural and scenic tourism heritage of these communities.*

> *We would recommend that the applicant utilize the visual analysis as a tool to aid in the exploration of feasible and prudent alternatives that avoid the adverse impact(s). The assessment of potential impact avoidance options may include a reduction in turbine numbers and/or height, relocation of turbine units, and various screening options. We would recommend that only after an assessment of avoidance options has been established should potential mitigation options be discussed. All consultation regarding avoidance options and potential later mitigation options should involve those state/federal agencies directly associated with the permitting/approval process for this project* (Bonafide, 2008).

Relative to the Project layout that was evaluated in the DEIS and presented in the 2008 report to NYSOPRHP, the reduction of the number of turbines currently proposed, and the corresponding reduced size of the visual study area, does serve to reduce the potential visual impact of the Project. However, the overall visual effect of the Project is not anticipated to be significantly different than that described in the DEIS. As described above, the Applicant is continuing to consult with NYSOPRHP regarding the condition of integrity and condition of historic resources within the study area. In correspondence dated September 15, 2015 (Bonafide, 2015), NYSOPRHP restated their determination of an adverse effect for the current configuration of the Project.

Status of Mitigation

Mitigation for potential impacts to archaeological resources involved the relocation of Project components or a commitment to utilize special construction techniques (directional drilling) to avoid impact to all of the identified resources. Visual impact mitigation options (such as screening) are limited, given the nature of the Project (tall structures placed at high elevations to access the wind resource and spread out across many acres of land) and other constraints on turbine siting (e.g., required set-backs from roads and houses). Mitigation for impacts to historic properties therefore typically consists of projects that benefit historic properties and/or enhance the public's appreciation of historic resources to offset potential impacts to historic properties resulting from the introduction of wind turbines into their visual setting. Mitigation projects that have been proposed for other wind energy projects in New York State have included activities such as additional historic resources surveys, NRHP nominations, monetary contributions to historic resource preservation and restoration causes, development of heritage tourism promotional materials, development of educational materials and lesson plans, and development of public history materials, such as roadside markers.

To mitigate the Project's potential adverse effect on historic resources, the Applicant intends to enter into an agreement with the Towns of Bellmont and Chateaugay to fund historic preservation projects that will benefit historic resources

within the Project's APE. A preliminary list of potential cultural resources mitigation projects was presented in the 2008 historic resources survey (Tetra Tech, 2008b). These suggested potential mitigation projects included (Tetra Tech, 2008b:20):

Record cultural resources

- *Create GIS based map of cultural resources within the APE*
- *Conduct a thematic survey of architecture within the APE, identifying specific architectural styles and types of buildings, structures and landscapes, e.g. a detailed survey of barns within the APE*
- *Identify, conduct necessary research, and prepare a NRHP nomination form for an appropriate property within the APE*
- *Identify and document a historic resource for recordation in either the Historic American Buildings Survey, Historic American Engineering Record, or Historic American Landscape Survey*
- *Prepare Cultural Resource Management Plans for the Towns of Chateaugay and Bellmont*

Contribute to the preservation of cultural resources

- *Create a fund for the restoration and maintenance of cemeteries within the APE*
- *Create a fund for providing technical assistance to those within the APE who seek to restore historic buildings*
- *Create a fund to support the planning for a Rail to Trail program along stretches of the Ogdensburg and Lake Champlain Rail Road within the APE*

Promote heritage tourism

- *Create audio driving/walking tour highlighting the areas cultural resources*
- *Sponsor a brochure for one of the area's cultural attractions to be placed at rest areas along highways in the area*
- *Create a web page on the Franklin County Tourist Board's web site, adirondacklakes.com, highlighting the heritage tourism opportunities in the area*

Educate people about the area's vibrant history

- *Prepare grade-appropriate local history/archaeology curricula for use by local schools*
- *Create historic markers*
- *Sponsor oral history project*
- *Prepare outdoor signboards to explain the important role of the Ogdensburg and Lake Champlain Rail Road or the Old Military Road in the area*

As noted above, the Applicant will continue to consult with NYSOPRHP and the Lead Agencies to define appropriate mitigation projects that will benefit the local community, with the goal of developing a memorandum of agreement (MOA) between the parties. Once a draft MOA has been prepared, it will be provided to the USACE as a follow-up to this permit application.

9.0 COMPLIANCE WITH SEQRA

The potential environmental impacts of the proposed Project are being reviewed under SEQRA, with the Towns of Chateaugay and Bellmont serving as Co-Lead Agencies.

The SEQRA review of the Project began in 2007. The Co-lead Agencies issued a determination of significance on September 18, 2007 (Appendix E) and a DEIS was prepared and released to the public on February 5, 2008. A Supplemental Environmental Impact Statement (SEIS) has subsequently been prepared to build upon the information and analysis presented in the 2008 DEIS. The SEIS is scheduled for filing in early December 2015 and will address all changes to the proposed action that have occurred subsequent to the release of the DEIS in 2008, including additional studies and analyses. A comprehensive responsiveness summary, which will specifically respond to all substantive comments received on both the DEIS and SEIS, will be included in the Final Environmental Impact Statement (FEIS) for the Jericho Rise Wind Farm. The FEIS will be prepared and published for public review subsequent to the issuance of the SEIS.

10.0 REFERENCES

Bonafide, John A. 2008. Re: PSC, Jericho Rise Wind Farm/53 Turbines/87.45, 07PR04701. Review correspondence, New York State Office of Parks, Recreation, and Historic Preservation, Waterford, NY.

Bonafide, John A. 2015. Re: SEQR Jericho Rise Wind Farm/37-492' Turbines/77.7 MW (Revised Plan) 07PR04701. Review correspondence dated September 15, 2015. NYSOPRHP, Division for Historic Preservation, Waterford, NY.

Cowardin, L.M., V. Carter, F.C. Goblet, and E.T. LaRoae. 1979. *Classification of Wetlands and Deepwater Habitats of the United States.* U.S. Fish and Wildlife Service, OBS-79/31, Washington, D.C.

Environmental Design & Research, Landscape Architecture, Engineering, and Environmental Services, D.P.C. (EDR). 2015. *Supplemental Environmental Impact Statement (SEIS) for the Jericho Rise Wind Farm, Towns of Chateaugay and Bellmont, Franklin County, New York*. Report prepared for Jericho Rise Windfarm, LLC by EDR, Syracuse, NY.

Executive Office of the President. 2013. *The President's Climate Action Plan*. The White House, Washington, DC. June 2013.

New York Archaeological Council (NYAC). 1994. *Standards for Cultural Resources Investigations and the Curation of Archaeological Collections in New York* State. New York State Office of Parks, Recreation, and Historic Preservation, Waterford, NY.

New York State Energy Planning Board (NYSEPB). 2015. *2015 New York State Energy Plan*. June 25, 2015.

New York State Office of Parks, Recreation, and Historic Preservation (NYSOPRHP). 2005. *New York State Historic Preservation Office (SHPO) Phase 1 Archaeological Report Format Requirements*. New York State Office of Parks, Recreation, and Historic Preservation, Waterford, NY.

NYSOPRHP. 2006. *New York State Historic Preservation Office Guidelines for Wind Farm Development Cultural Resources Survey Work*. New York State Office of Parks, Recreation, and Historic Preservation, Waterford, NY.

Pierpont, R. 2015. Re: SEQRA, Jericho Rise Wind Farm, 15PR03895. Review correspondence, New York State Office of Parks, Recreation, and Historic Preservation, Waterford, NY.

Tetra Tech, Inc. 2008a. *Phase 1B Archeological Investigation: Jericho Rise Wind Farm, Clinton and Franklin Counties, NY. OPRHP 07PR04701*. Report prepared for Jericho Rise Wind Farm, LLC by Tetra Tech, Inc., Morris Plains, NJ.

Tetra Tech, Inc. 2008b. *Historic Architectural Resources Investigation 5-Mile Ring Study: Jericho Rise Wind Farm, Clinton and Franklin Counties, NY. OPRHP 07PR04701*. Report prepared for Jericho Rise Wind Farm, LLC by Tetra Tech, Inc., Morris Plains, NJ.

U.S. Energy Information Administration (USEIA). 2015a. *How Much Electricity Does an American Home Use?* Available at: http://www.eia.gov/tools/faqs/faq.cfm?id=97&t=3 (Last updated February 20, 2015; Accessed May 26, 2015).

FIGURES

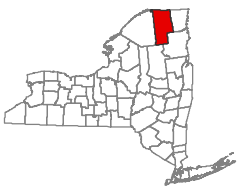
Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont, Franklin County, New York

Figure 1: Regional Project Location

December 2015

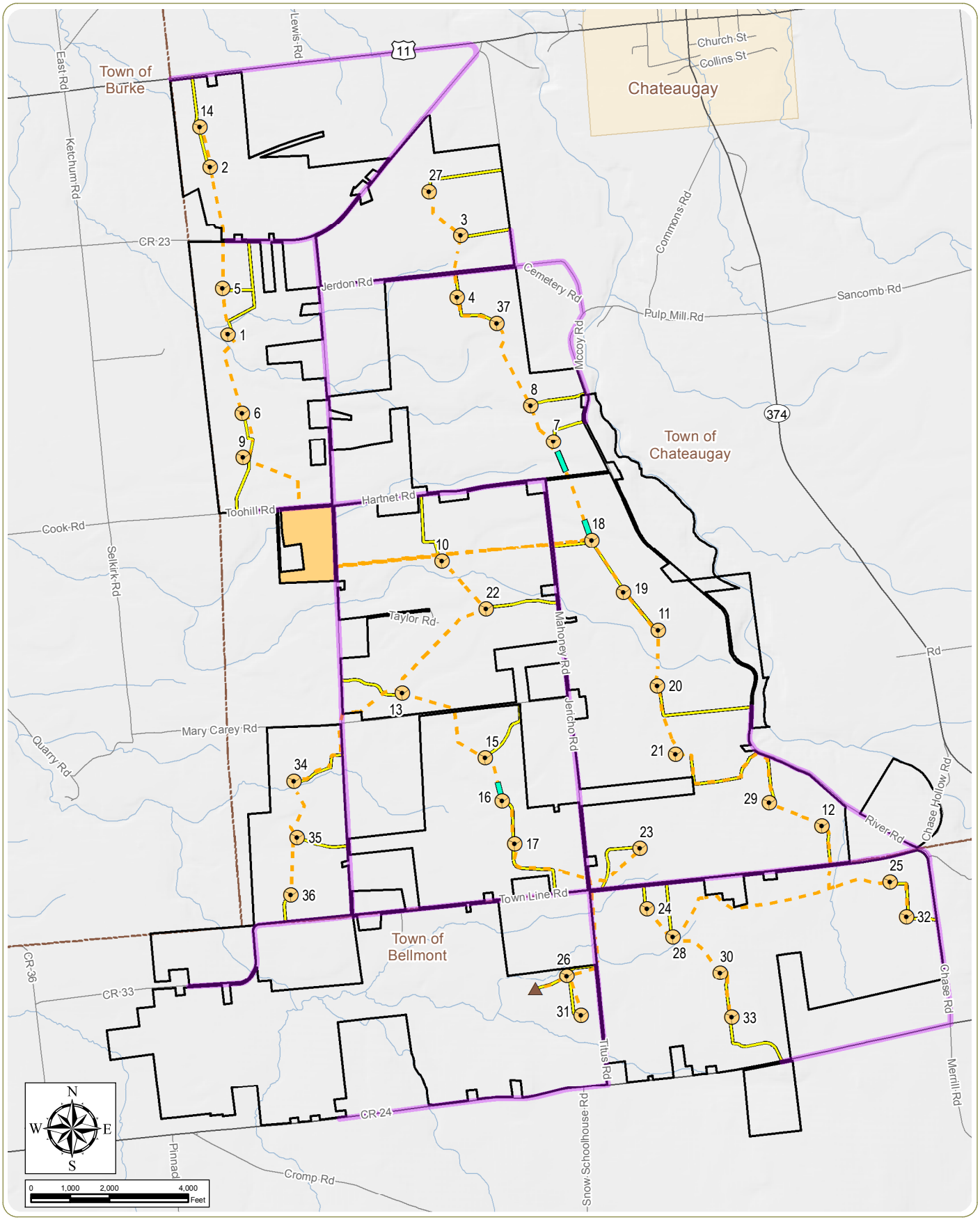
Notes: 1. Basemap: ESRI ArcGIS Online "World Shaded Relief" Map Service and ESRI StreetMap North America, 2008.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.



JERICHO RISE WIND FARM

edr

www.edrdpc.com



Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 2: Project Layout and Transportation Routing Plan

December 2015

Notes: 1. Basemap: Hillshade derived from USGS digital elevation model data.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

- Wind Turbine
- Met Tower
- Buried Collection Line
- Overhead Collection Line
- Access Road
- Transportation Route
- Substation Parcel
- Project Site
- Town Boundary

JERICHO RISE WIND FARM

edr

Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 3: Mapped Wetlands and Streams

December 2015

Notes: 1. Basemap: ESRI ArcGIS Online "World Imagery" Map Service.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

- Wind Turbine
- Met Tower
- Buried Collection Line
- Access Road
- Overhead Collection Line
- NYSDEC Protected Stream
- Unprotected Stream
- NYSDEC Wetland
- NWI Wetland
- Substation Parcel
- Project Site
- Town Boundary

JERICHO RISE WIND FARM

edr

Jericho Rise Wind Farm

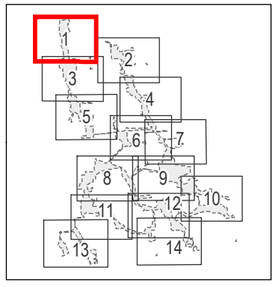
Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 4: Wetland Survey Area

December 2015

- Wind Turbine
- Met Tower
- Overhead Collection Line
- Buried Collection Line
- Directional Drill
- Access Road
- Construction Turning Radius
- Laydown Yard
- Substation
- Wetland Continues
- Delineated Wetlands
- Wetland Delineation Study Area

Sheet 1 of 14



Notes:

1. Basemap: ESRI ArcGIS Online "World Imagery" Map Service.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

JERICHO RISE WIND FARM

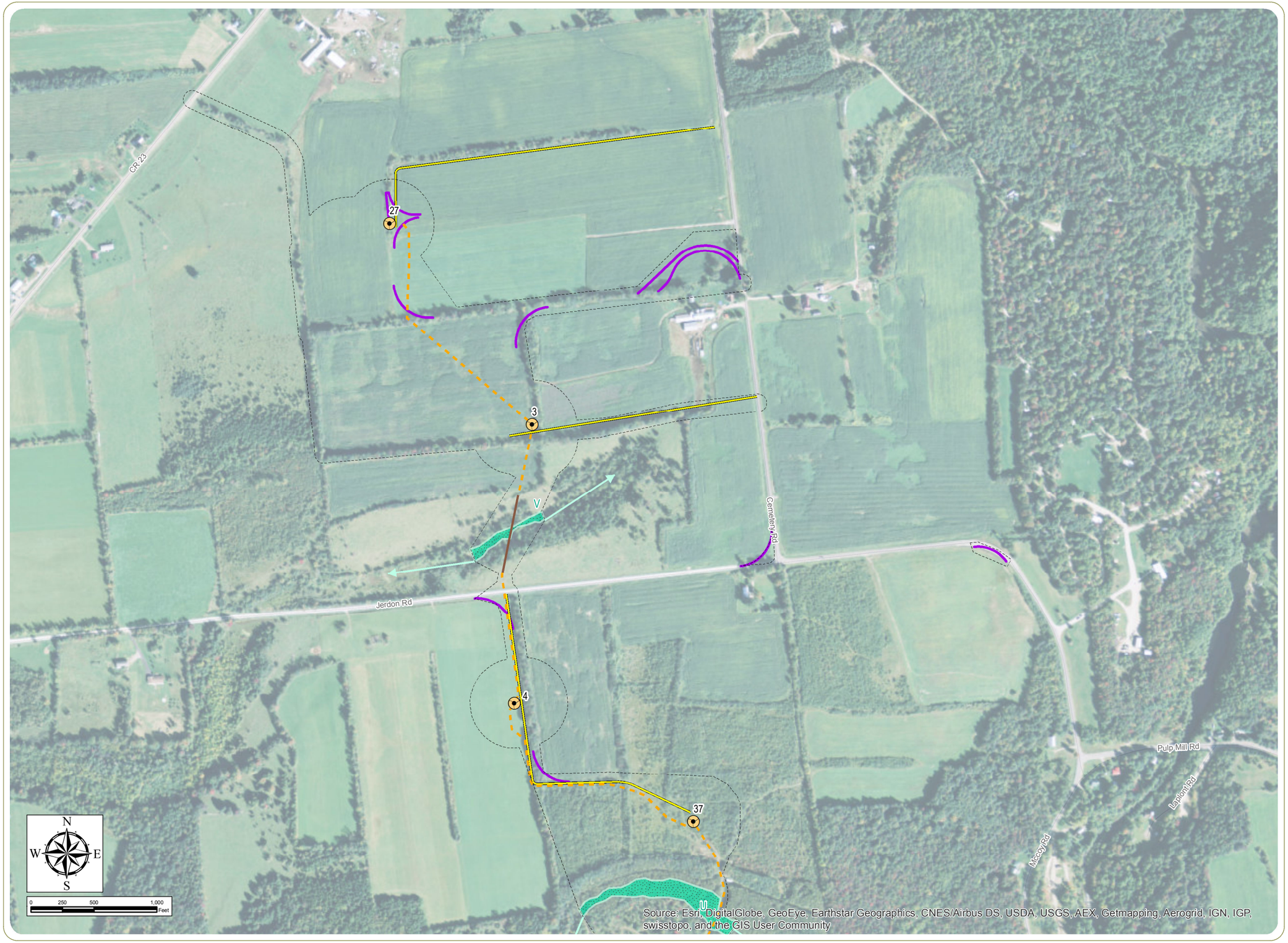
edr

Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

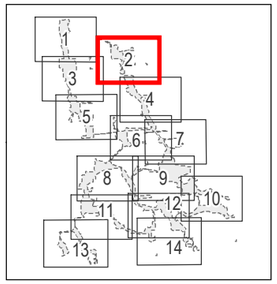
Figure 4: Wetland Survey Area

December 2015



- Wind Turbine
- Met Tower
- Overhead Collection Line
- Buried Collection Line
- Directional Drill
- Access Road
- Construction Turning Radius
- Laydown Yard
- Substation
- Wetland Continues
- Delineated Wetlands
- Wetland Delineation Study Area

Sheet 2 of 14



Notes:
1. Basemap: ESRI ArcGIS Online "World Imagery" Map Service.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

JERICHO RISE WIND FARM

edr

Jericho Rise Wind Farm

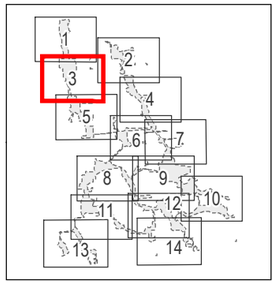
Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 4: Wetland Survey Area

December 2015

- Wind Turbine
- Met Tower
- Overhead Collection Line
- Buried Collection Line
- Directional Drill
- Access Road
- Construction Turning Radius
- Laydown Yard
- Substation
- Wetland Continues
- Delineated Wetlands
- Wetland Delineation Study Area

Sheet 3 of 14



Notes:
1. Basemap: ESRI ArcGIS Online "World Imagery" Map Service.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

JERICHO RISE WIND FARM

edr

Jericho Rise Wind Farm

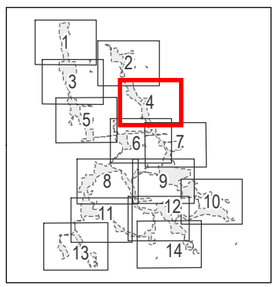
Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 4: Wetland Survey Area

December 2015

- Wind Turbine
- Met Tower
- Overhead Collection Line
- Buried Collection Line
- Directional Drill
- Access Road
- Construction Turning Radius
- Laydown Yard
- Substation
- Wetland Continues
- Delineated Wetlands
- Wetland Delineation Study Area

Sheet 4 of 14



Notes:
1. Basemap: ESRI ArcGIS Online "World Imagery" Map Service.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

JERICHO RISE WIND FARM

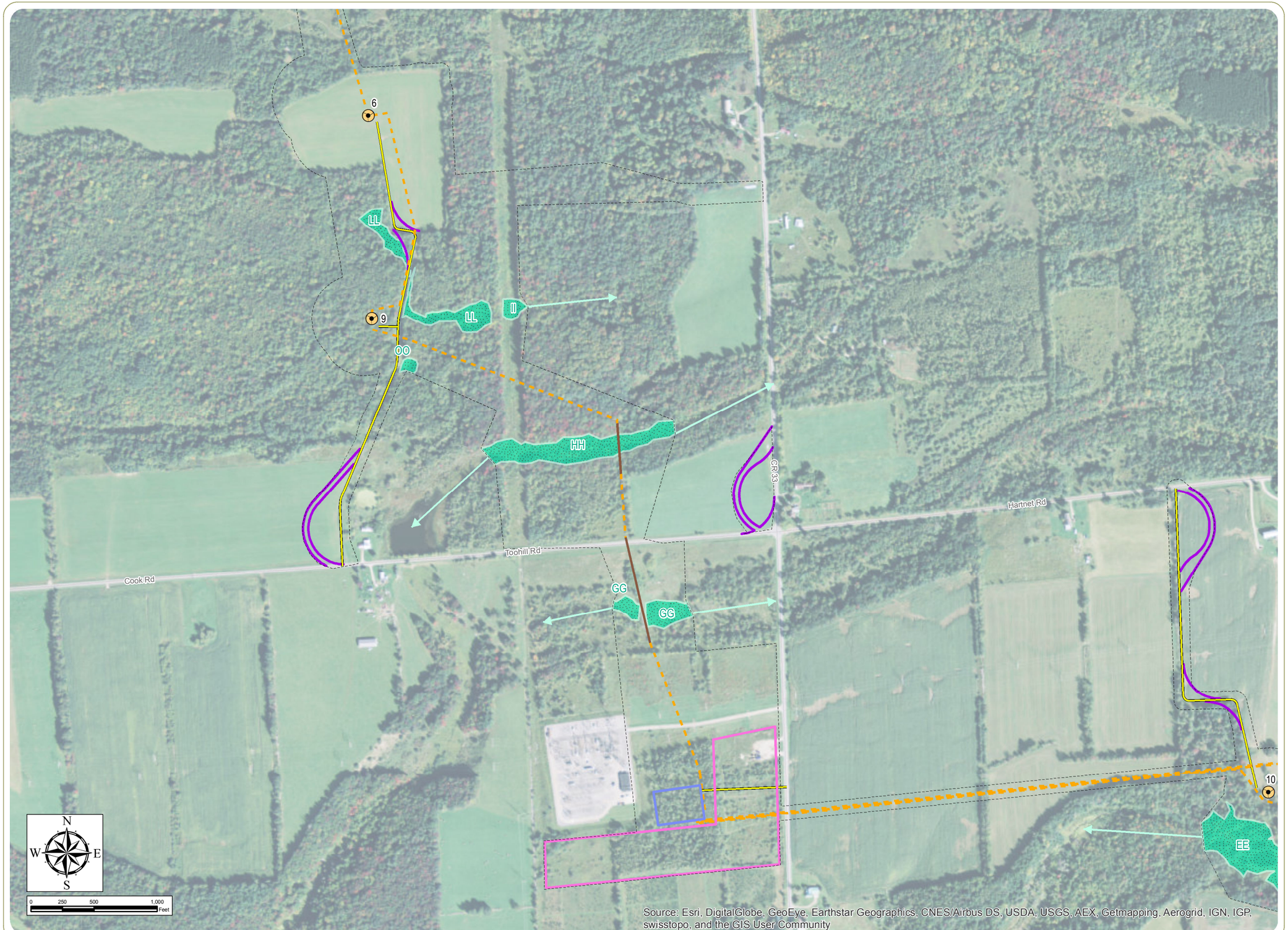
edr

Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

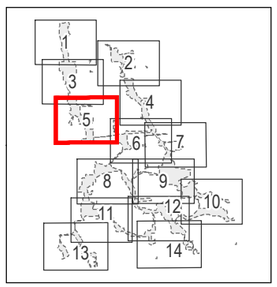
Figure 4: Wetland Survey Area

December 2015



- Wind Turbine
- Met Tower
- Overhead Collection Line
- Buried Collection Line
- Directional Drill
- Access Road
- Construction Turning Radius
- Laydown Yard
- Substation
- Wetland Continues
- Delineated Wetlands
- Wetland Delineation Study Area

Sheet 5 of 14



Notes:
1. Basemap: ESRI ArcGIS Online "World Imagery" Map Service.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

JERICHO RISE WIND FARM

edr

Jericho Rise Wind Farm

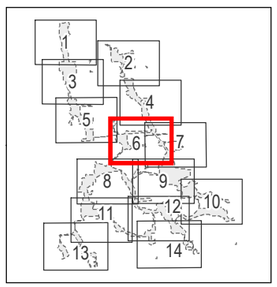
Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 4: Wetland Survey Area

December 2015

- Wind Turbine
- Met Tower
- Overhead Collection Line
- Buried Collection Line
- Directional Drill
- Access Road
- Construction Turning Radius
- Laydown Yard
- Substation
- Wetland Continues
- Delineated Wetlands
- Wetland Delineation Study Area

Sheet 6 of 14



Notes:
1. Basemap: ESRI ArcGIS Online "World Imagery" Map Service.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

JERICHO RISE WIND FARM

edr

Hartnet Rd
River Rd
Mahoney Rd
Taylor Rd
10
11
18
19
22
R
EE
FF
CCC
Q
P
N
W
E
S
0 250 500 1,000 Feet

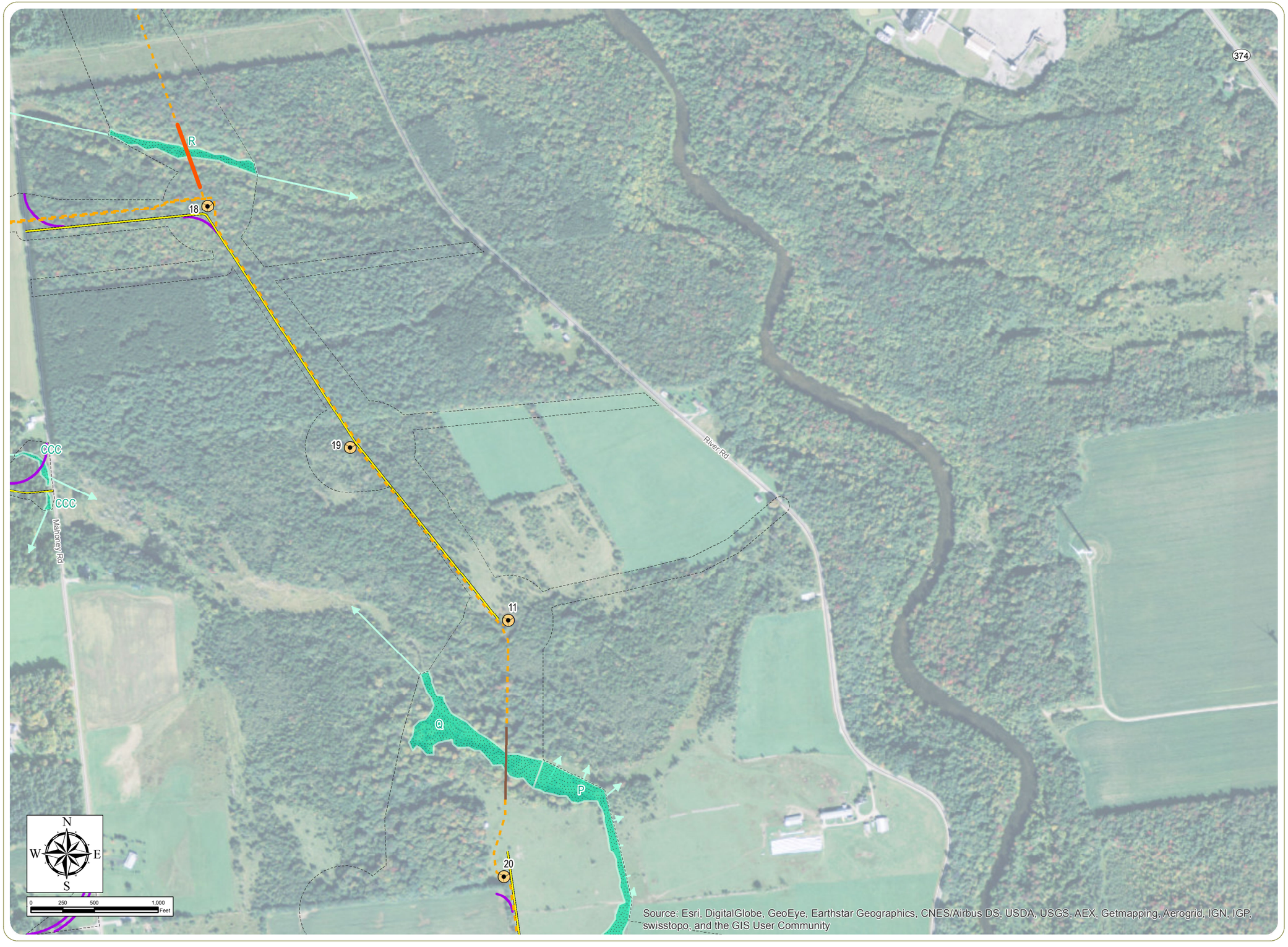
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

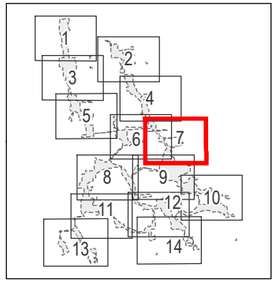
Figure 4: Wetland Survey Area

December 2015



- Wind Turbine
- Met Tower
- Overhead Collection Line
- Buried Collection Line
- Directional Drill
- Access Road
- Construction Turning Radius
- Laydown Yard
- Substation
- Wetland Continues
- Delineated Wetlands
- Wetland Delineation Study Area

Sheet 7 of 14



Notes:
1. Basemap: ESRI ArcGIS Online "World Imagery" Map Service.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

JERICHO RISE WIND FARM

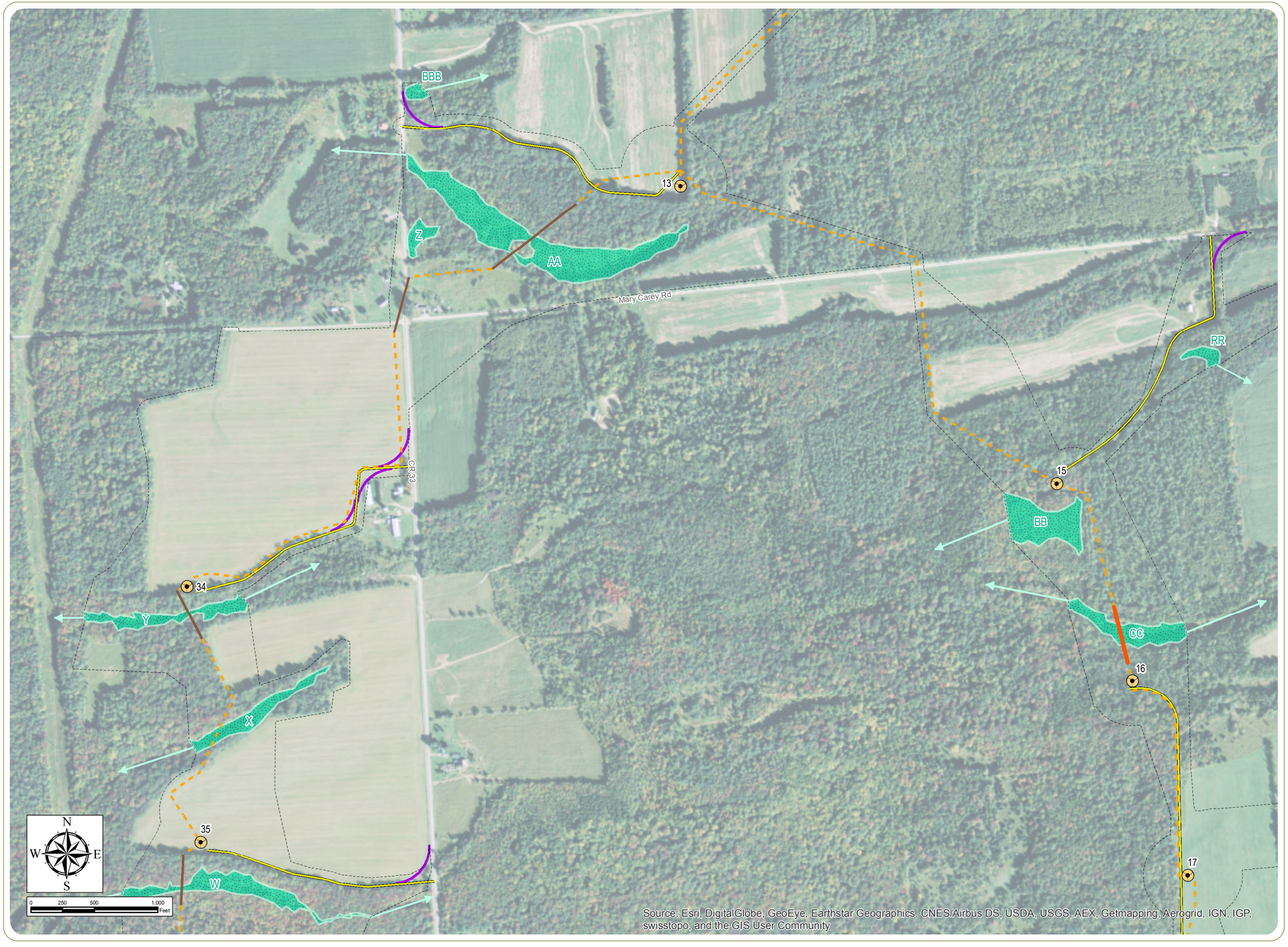
edr

Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont - Franklin County, New York

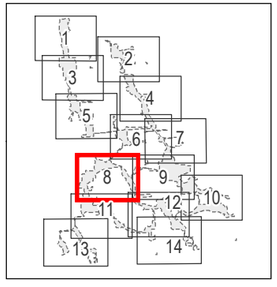
Figure 4: Wetland Survey Area

December 2015



- Wind Turbine
- Met Tower
- Overhead Collection Line
- Buried Collection Line
- Directional Drill
- Access Road
- Construction Turning Radius
- Laydown Yard
- Substation
- Wetland Continues
- Delineated Wetlands
- Wetland Delineation Study Area

Sheet 8 of 14



Notes:
1. Basemap: ESRI ArcGIS Online "World Imagery" Map Service.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

JERICHO RISE WIND FARM

edr

Jericho Rise Wind Farm

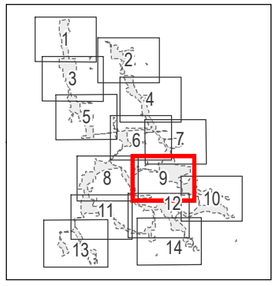
Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 4: Wetland Survey Area

December 2015

- Wind Turbine
- Met Tower
- Overhead Collection Line
- Buried Collection Line
- Directional Drill
- Access Road
- Construction Turning Radius
- Laydown Yard
- Substation
- Wetland Continues
- Delineated Wetlands
- Wetland Delineation Study Area

Sheet 9 of 14



Notes:
1. Basemap: ESRI ArcGIS Online "World Imagery" Map Service.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

JERICHO RISE WIND FARM

edr

Jericho Rise Wind Farm

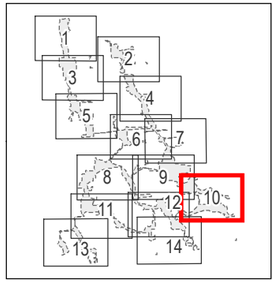
Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 4: Wetland Survey Area

December 2015

- Wind Turbine
- Met Tower
- Overhead Collection Line
- Buried Collection Line
- Directional Drill
- Access Road
- Construction Turning Radius
- Laydown Yard
- Substation
- Wetland Continues
- Delineated Wetlands
- Wetland Delineation Study Area

Sheet 10 of 14

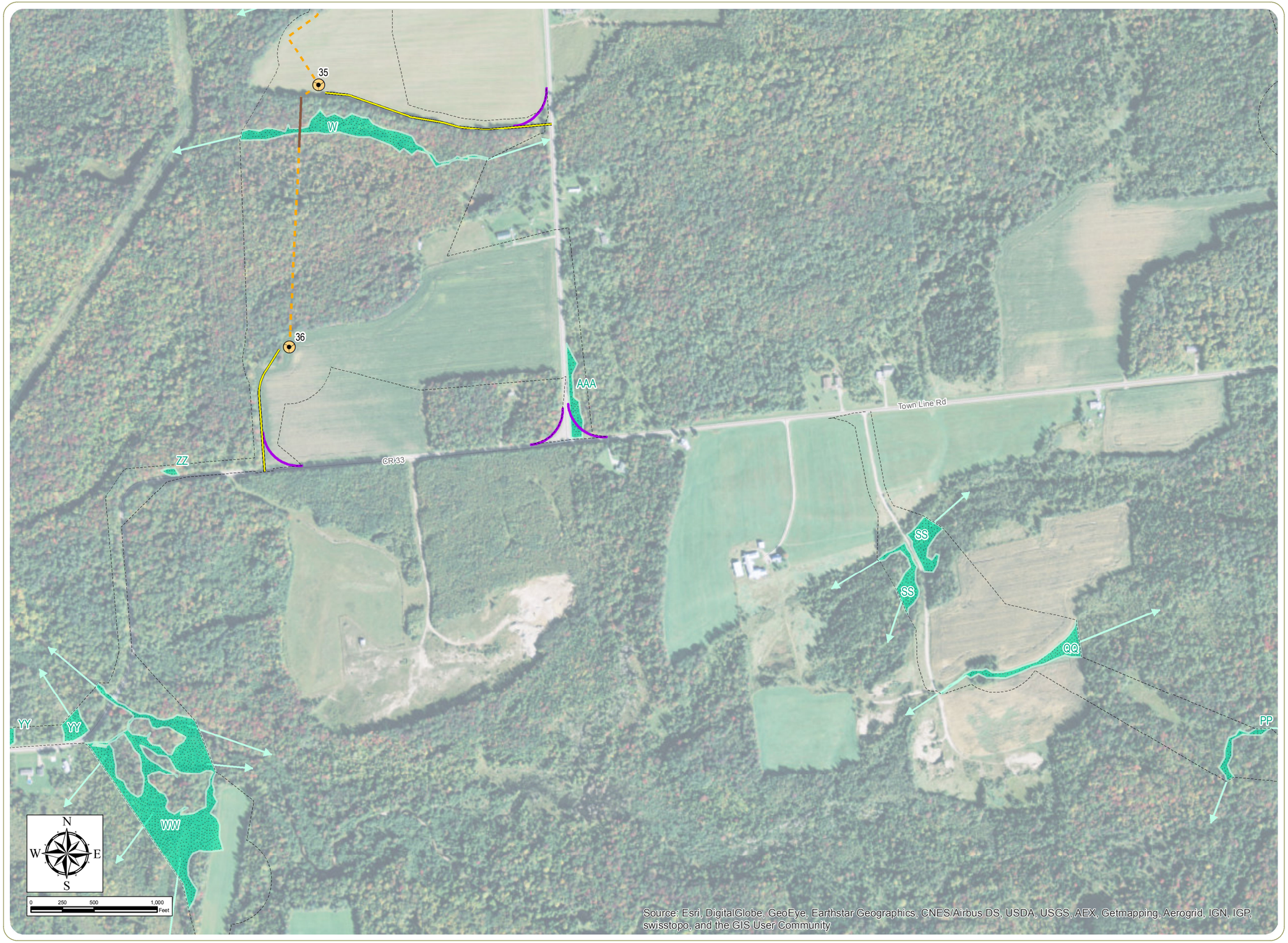


Notes:
1. Basemap: ESRI ArcGIS Online "World Imagery" Map Service.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

JERICHO RISE WIND FARM

edr

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Jericho Rise Wind Farm

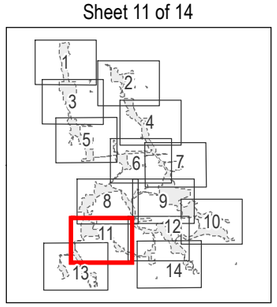
Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 4: Wetland Survey Area

December 2015

- Wind Turbine
- Met Tower
- Overhead Collection Line
- Buried Collection Line
- Directional Drill
- Access Road
- Construction Turning Radius
- Laydown Yard
- Substation
- Wetland Continues
- Delineated Wetlands
- Wetland Delineation Study Area

Sheet 11 of 14



Notes:
1. Basemap: ESRI ArcGIS Online "World Imagery" Map Service.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

JERICHO RISE WIND FARM

edr

Jericho Rise Wind Farm

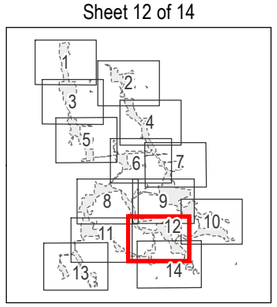
Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 4: Wetland Survey Area

December 2015

- Wind Turbine
- Met Tower
- Overhead Collection Line
- Buried Collection Line
- Directional Drill
- Access Road
- Construction Turning Radius
- Laydown Yard
- Substation
- Wetland Continues
- Delineated Wetlands
- Wetland Delineation Study Area

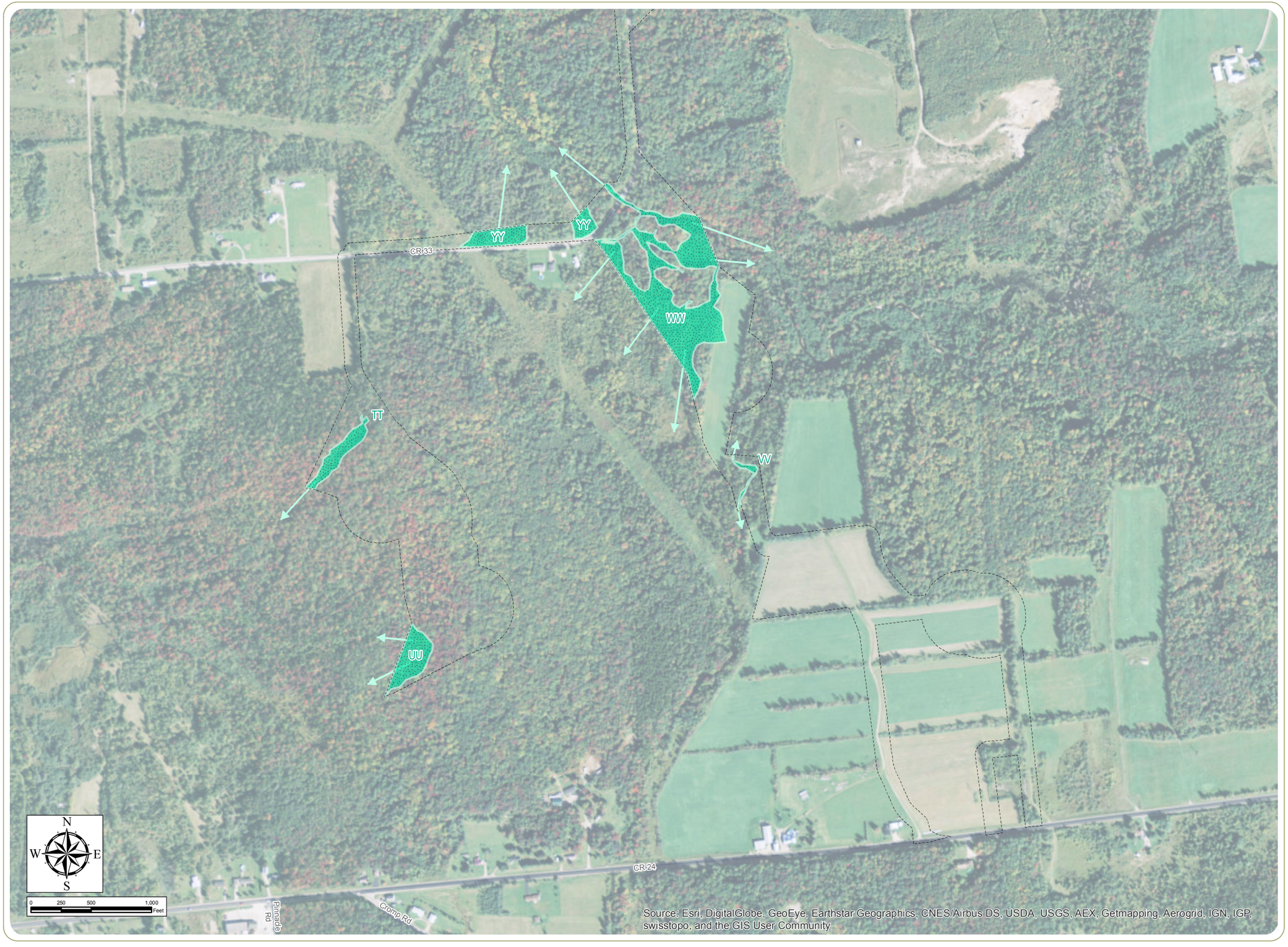
Sheet 12 of 14



Notes:
1. Basemap: ESRI ArcGIS Online "World Imagery" Map Service.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

JERICHO RISE WIND FARM

edr



Jericho Rise Wind Farm

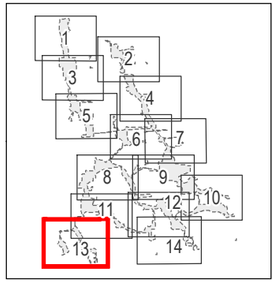
Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 4: Wetland Survey Area

December 2015

- Wind Turbine
- Met Tower
- Overhead Collection Line
- Buried Collection Line
- Directional Drill
- Access Road
- Construction Turning Radius
- Laydown Yard
- Substation
- Wetland Continues
- Delineated Wetlands
- Wetland Delineation Study Area

Sheet 13 of 14



Notes:
1. Basemap: ESRI ArcGIS Online "World Imagery" Map Service.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

JERICHO RISE WIND FARM

edr

Jericho Rise Wind Farm

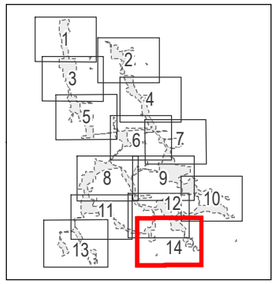
Towns of Chateaugay and Bellmont - Franklin County, New York

Figure 4: Wetland Survey Area

December 2015

- Wind Turbine
- Met Tower
- Overhead Collection Line
- Buried Collection Line
- Directional Drill
- Access Road
- Construction Turning Radius
- Laydown Yard
- Substation
- Wetland Continues
- Delineated Wetlands
- Wetland Delineation Study Area

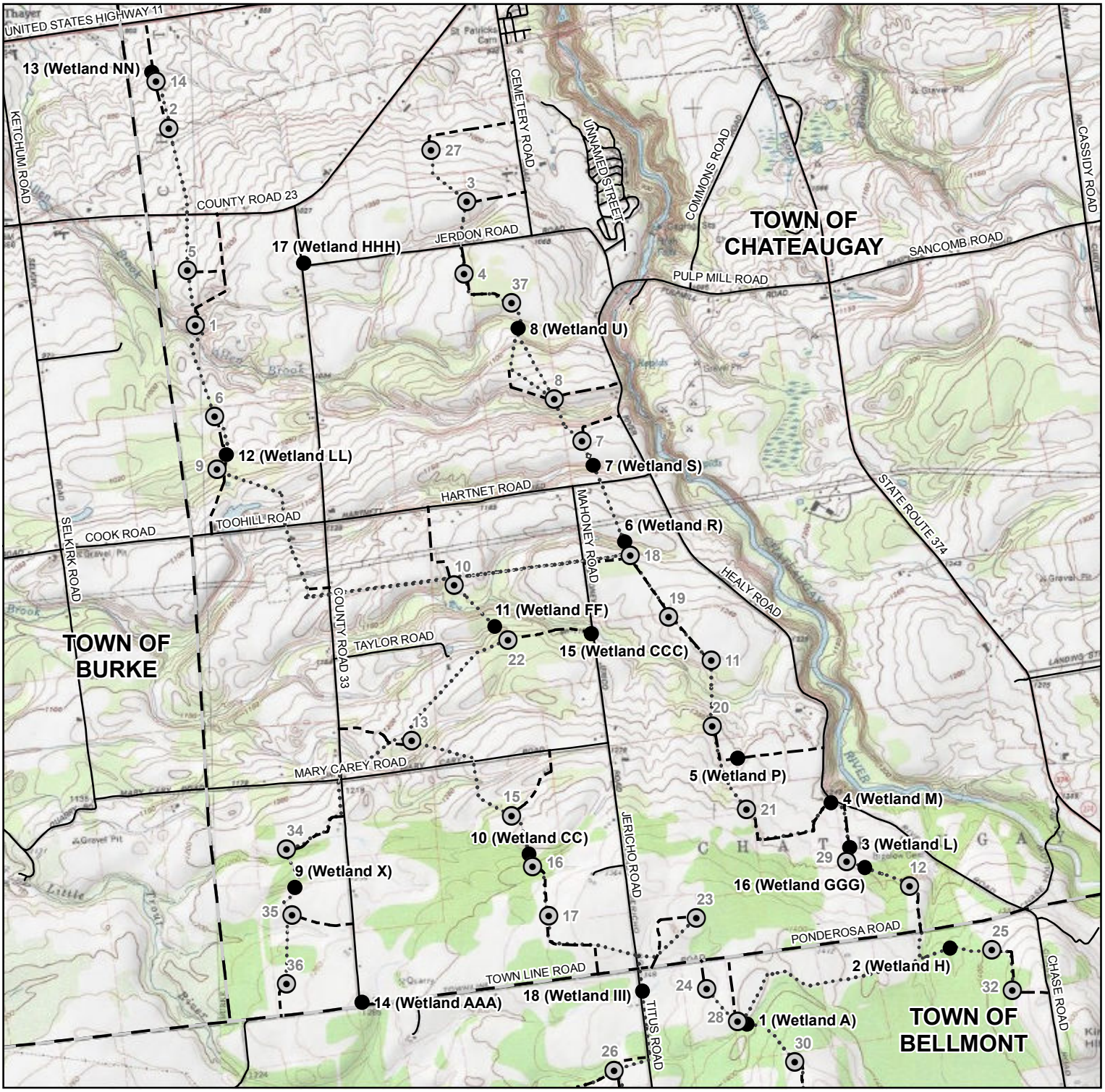
Sheet 14 of 14



Notes:
1. Basemap: ESRI ArcGIS Online "World Imagery" Map Service.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

JERICHO RISE WIND FARM

edr



SUMMARY OF WETLAND IMPACTS:

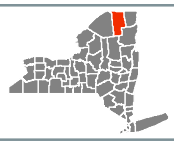
PERMANENT IMPACTS = 5,137 FT^2
PERMANENT FOREST CONVERSION = 11,852 FT^2
TEMPORARY IMPACTS = 41,621 FT^2

Project USGS Quads:

Brainardsville, Burke, Chasm Falls, Chateaugay

Franklin County
New York

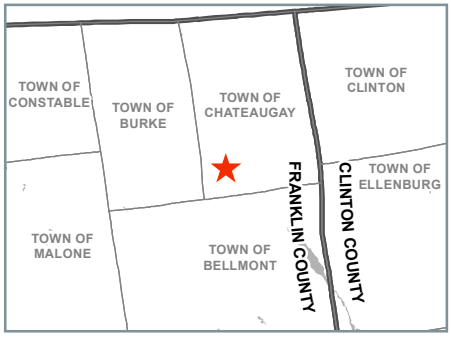
Center of Project Study Limits:
44.885 N, -74.101 W
North American Datum 1983



Wetland Impact Sheet Location
Proposed Turbine
Project Location
Public Road
Access Road
Collection Line - Underground
Collection Line - Overhead

Data Sources:

Roads: NYS GIS Program Office (9/30/2015) - nysgis.state.ny.us
United States Geological Survey 24k Topo Quad Map - usgs.gov



0 1,500 3,000 Feet

FISHER ASSOCIATES

JERICHO RISE WIND PROJECT
FIGURE 5
WETLAND IMPACTS
INDEX SHEET

Author: DanT | Revision Date: 12/4/2015

J:\Market\GIS\20140807_Jericho_Wind_Farm\Jericho_Rise_Wetland_Impact_Index.mxd - 2:07:13 PM

Wetland A	Temporary PEM Impact = 626 FT^2 | No Permanent Impact | No Stream Impact

- Proposed Utility Pole
- Impact Location
- Access Road Centerline
- Access Road Edge
- Temporary Improvement Edge
- Public Road Centerline -
- Collection Line - Overhead
- Collection Line - Underground
- Existing Culvert
- Proposed Culvert
- 2 ft Elevation Contour
- Delineated Stream
- Crane Pad
- Delineated Wetland
- Permanent Wetland Impact
- Permanent Forest Conversion
- Temporary Wetland Impact
- Limit of Disturbance
- Parcel Boundary
- Municipal Boundary

Impact Location:
TOWN OF BELLMONT
FRANKLIN COUNTY
NEW YORK

Impact Coordinates:
-74.081 W
44.862 N

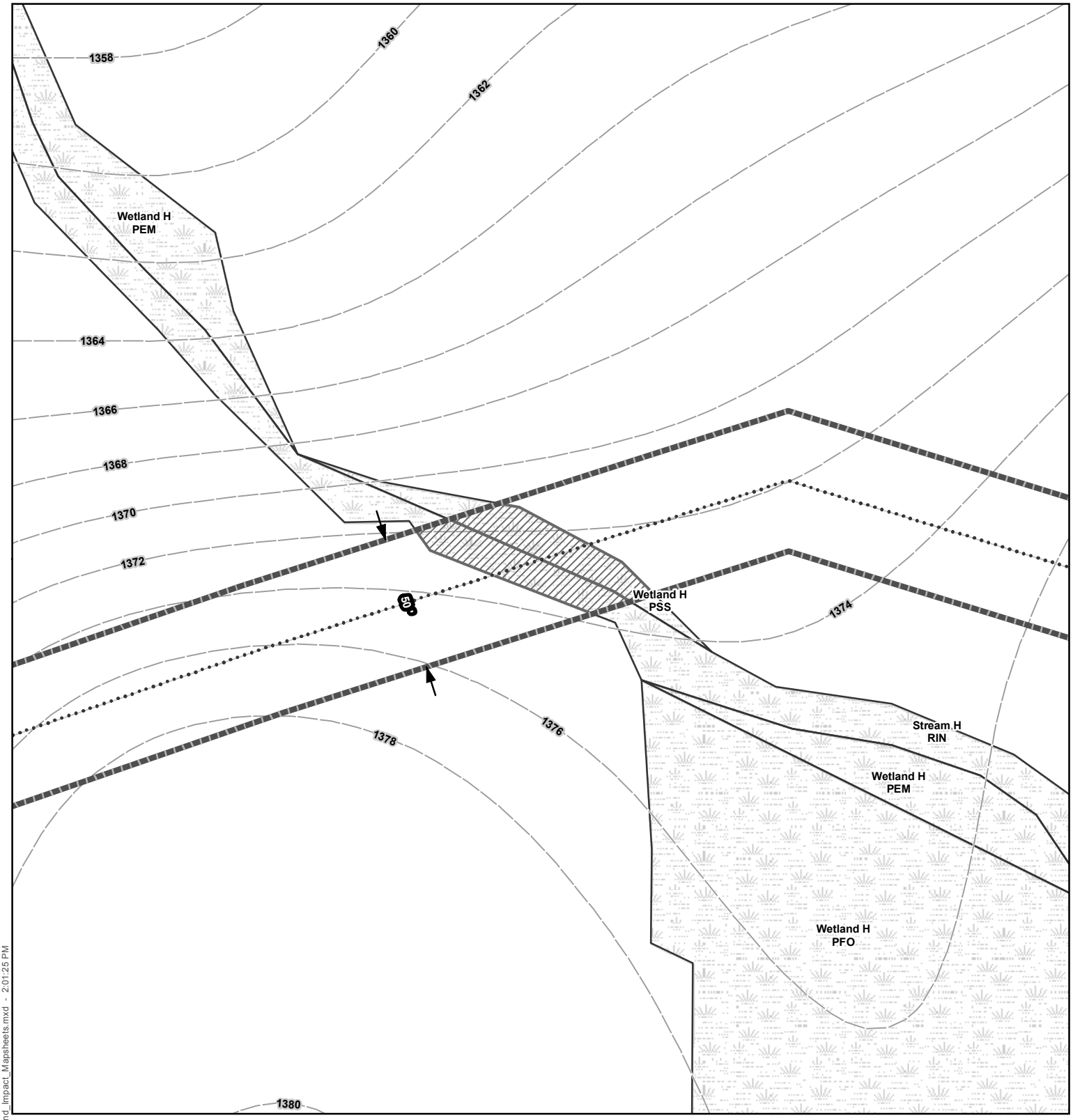
0 25 50 Feet

FISHER ASSOCIATES

JERICHO RISE WIND PROJECT
FIGURE 6 - WETLAND IMPACTS
WETLAND A
SHEET 1 OF 18

Author: dant | Revision Date: 12/4/2015

J:\Market\GIS\20140807_Jericho_Wind_Farm\Jericho_Rise_Wetland_Impact_Mapsheets.mxd - 2:01:25 PM



Wetland H	Temporary PSS / RIN Impact = 883 / 907 FT^2 | No Permanent Impact | Impacted Stream Length = 74'

- Proposed Utility Pole
- Impact Location
- Access Road Centerline
- Access Road Edge
- Temporary Improvement Edge
- Public Road Centerline -
- Collection Line - Overhead
- Collection Line - Underground
- Existing Culvert
- Proposed Culvert
- 2 ft Elevation Contour
- Delineated Stream
- Crane Pad
- Delineated Wetland
- Permanent Wetland Impact
- Permanent Forest Conversion
- Temporary Wetland Impact
- Limit of Disturbance
- Parcel Boundary
- Municipal Boundary

Impact Location:
TOWN OF BELLMONT
FRANKLIN COUNTY
NEW YORK

Impact Coordinates:
-74.064 W
44.866 N

Author: dant

Revision Date: 12/4/2015

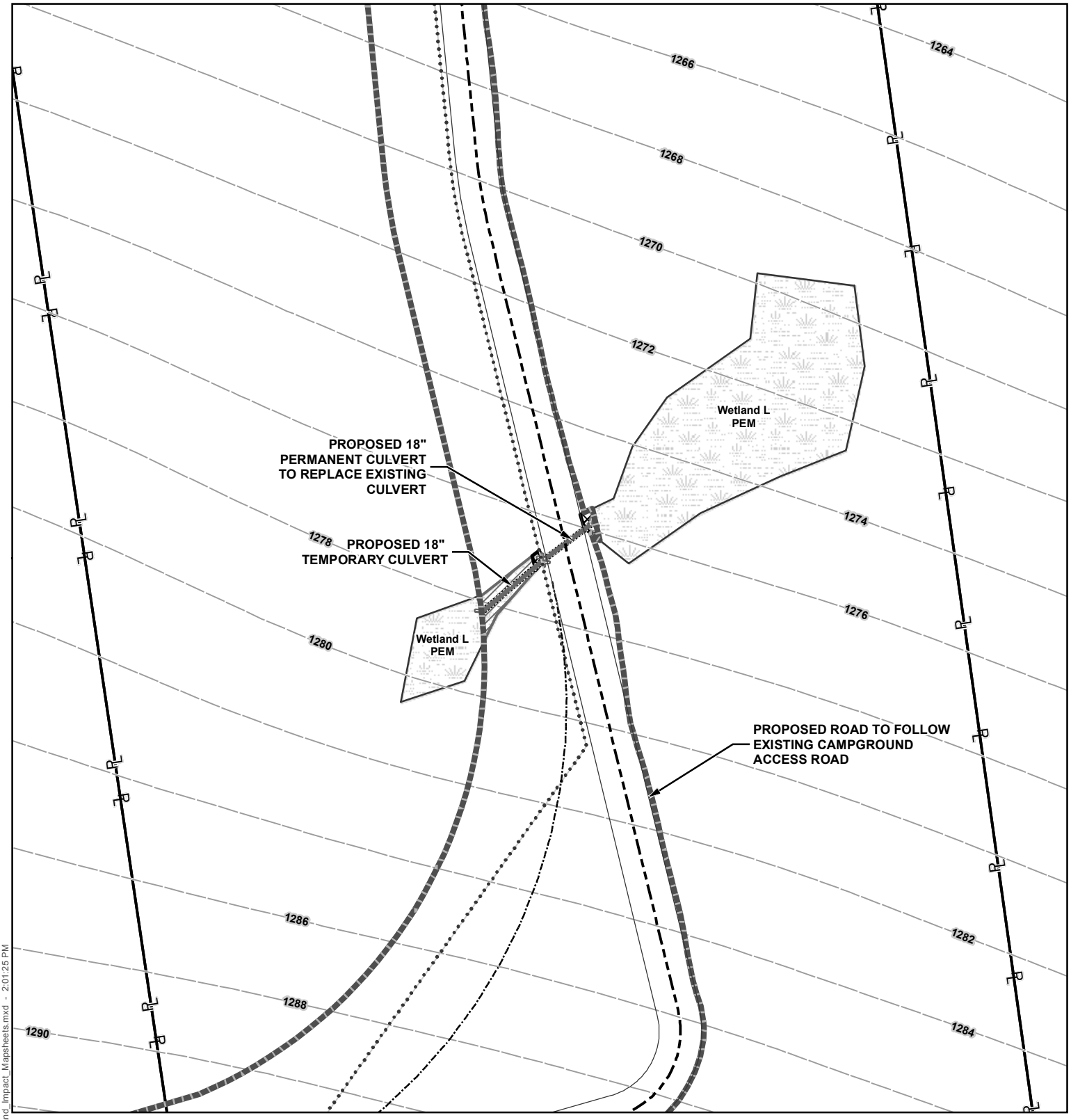
0 25 50 Feet

FISHER ASSOCIATES

JERICHO RISE WIND PROJECT
FIGURE 6 - WETLAND IMPACTS
WETLAND H

SHEET 2 OF 18

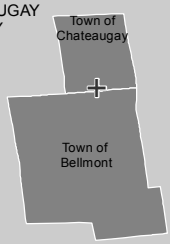
J:\Market\GIS\20140807_Jericho_Wind_Farm\Jericho_Rise_Wetland_Impact_Mapsheets.mxd - 2:01:25 PM



Wetland L	Temporary PEM Impact = 211 FT^2 | Permanent PEM Impact = 57 FT^2 | No Stream Impact

- Proposed Utility Pole
- Impact Location
- Access Road Centerline
- Access Road Edge
- Temporary Improvement Edge
- Public Road Centerline -
- Collection Line - Overhead
- Collection Line - Underground
- Existing Culvert
- Proposed Culvert
- 2 ft Elevation Contour
- Delineated Stream
- Crane Pad
- Delineated Wetland
- Permanent Wetland Impact
- Permanent Forest Conversion
- Temporary Wetland Impact
- Limit of Disturbance
- Parcel Boundary
- Municipal Boundary

Impact Location:
TOWN OF CHATEAUGAY
FRANKLIN COUNTY
NEW YORK



Impact Coordinates:
-74.072 W
44.873 N

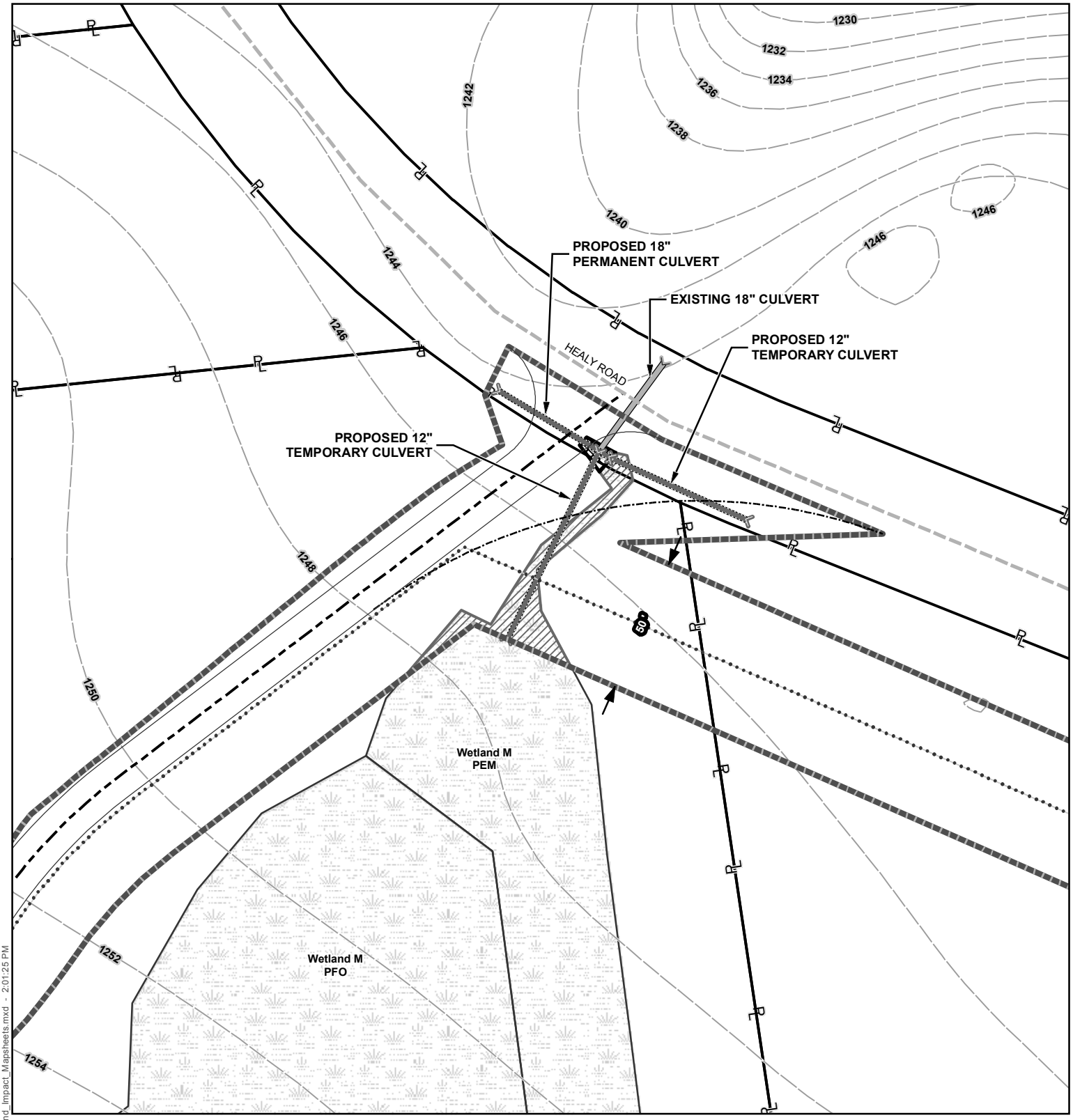
0 25 50 Feet

FISHER ASSOCIATES

JERICHO RISE WIND PROJECT
FIGURE 6 - WETLAND IMPACTS
WETLAND L
SHEET 3 OF 18

Author: dant | Revision Date: 12/4/2015

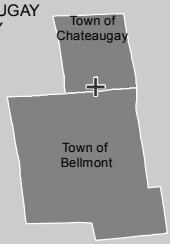
J:\Market\GIS\20140807_Jericho_Wind_Farm\Jericho_Rise_Wetland_Impact_Mapsheets.mxd - 2:01:25 PM



Wetland M	Temporary PEM Impact = 957 FT^2 | Permanent PEM Impact = 81 FT^2 | No Stream Impact

- Proposed Utility Pole
- Impact Location
- Access Road Centerline
- Access Road Edge
- Temporary Improvement Edge
- Public Road Centerline -
- Collection Line - Overhead
- Collection Line - Underground
- Existing Culvert
- Proposed Culvert
- 2 ft Elevation Contour
- Delineated Stream
- Crane Pad
- Delineated Wetland
- Permanent Wetland Impact
- Permanent Forest Conversion
- Temporary Wetland Impact
- Limit of Disturbance
- Parcel Boundary
- Municipal Boundary

Impact Location:
TOWN OF CHATEAUGAY
FRANKLIN COUNTY
NEW YORK



Impact Coordinates:
-74.073 W
44.875 N

0 25 50 Feet

FISHER ASSOCIATES

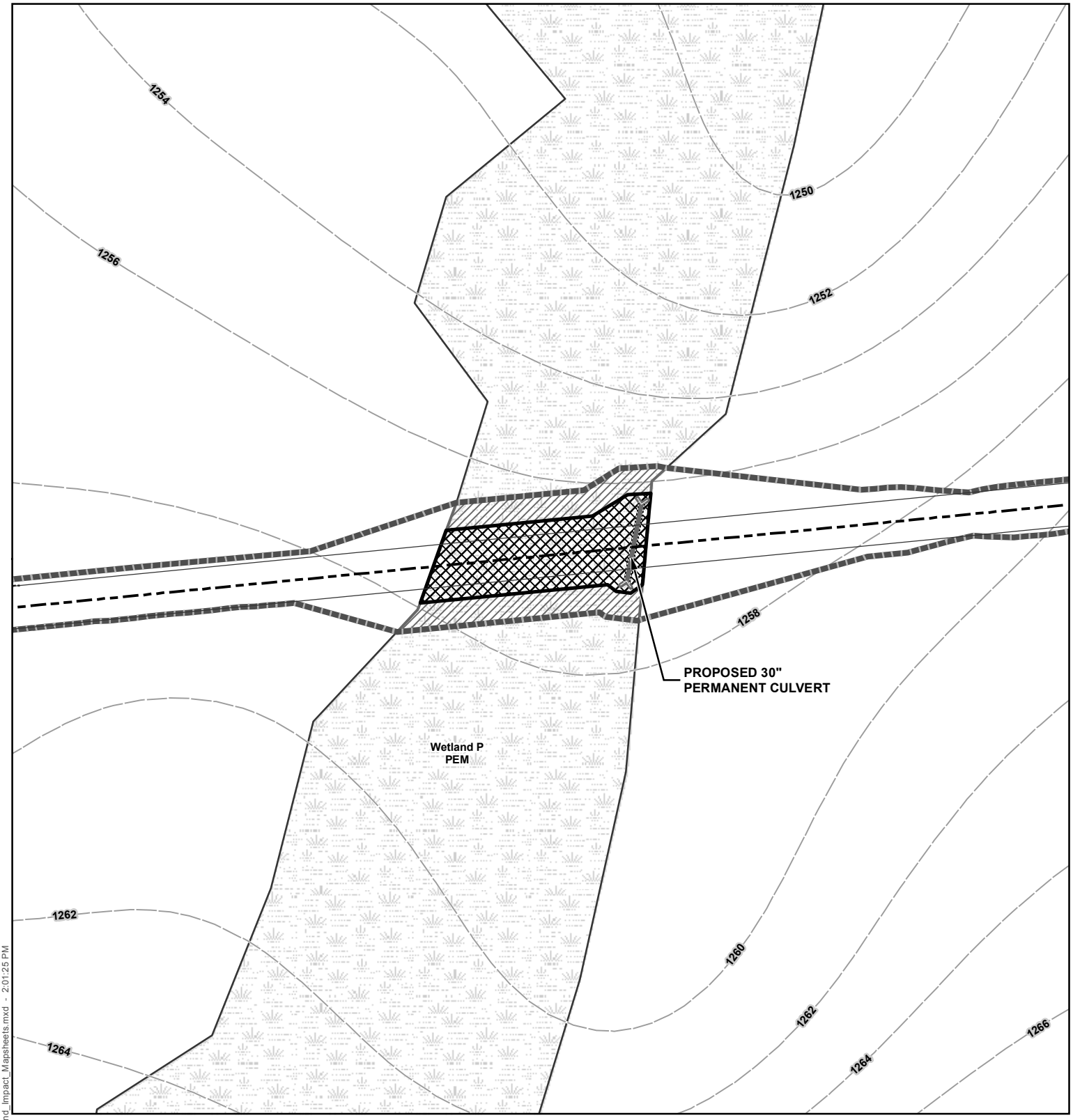
JERICHO RISE WIND PROJECT
FIGURE 6 - WETLAND IMPACTS
WETLAND M

SHEET 4 OF 18

Author: dant

Revision Date: 12/4/2015

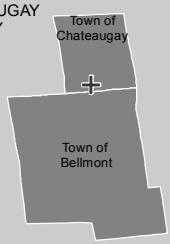
J:\Market\GIS\20140807_Jericho_Wind_Farm\Jericho_Rise_Wetland_Impact_Mapsheets.mxd - 2:01:25 PM



Wetland P	Temporary PEM Impact = 1,669 FT^2 | Permanent PEM Impact = 2,212 FT^2 | No Stream Impact

- Proposed Utility Pole
- Impact Location
- Access Road Centerline
- Access Road Edge
- Temporary Improvement Edge
- Public Road Centerline -
- Collection Line - Overhead
- Collection Line - Underground
- Existing Culvert
- Proposed Culvert
- 2 ft Elevation Contour
- Delineated Stream
- Crane Pad
- Delineated Wetland
- Permanent Wetland Impact
- Permanent Forest Conversion
- Temporary Wetland Impact
- Limit of Disturbance
- Parcel Boundary
- Municipal Boundary

Impact Location:
TOWN OF CHATEAUGAY
FRANKLIN COUNTY
NEW YORK



Impact Coordinates:
-74.081 W
44.878 N

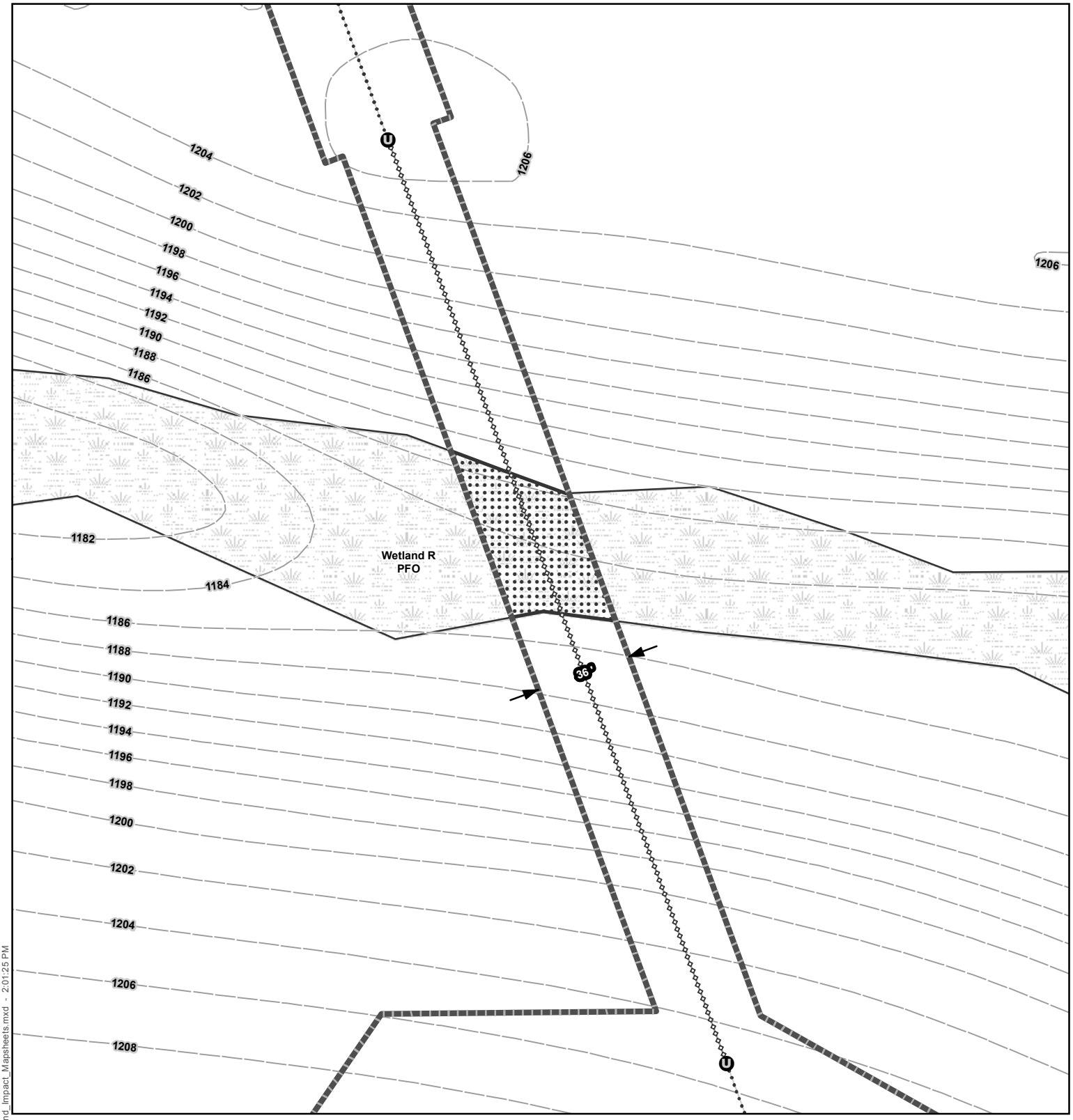
0 25 50 Feet

FISHER ASSOCIATES

JERICHO RISE WIND PROJECT
FIGURE 6 - WETLAND IMPACTS
WETLAND P
SHEET 5 OF 18

Author: dant | Revision Date: 12/4/2015

J:\Market\GIS\20140807_Jericho_Wind_Farm\Jericho_Rise_Wetland_Impact_Mapsheets.mxd - 2:01:25 PM



Wetland R	No Temporary Impact | Permanent Forest Conversion = 2,043 FT^2 | No Stream Impact

- Proposed Utility Pole
- Impact Location
- Access Road Centerline
- Access Road Edge
- Temporary Improvement Edge
- Public Road Centerline -
- Collection Line - Overhead
- Collection Line - Underground
- Existing Culvert
- Proposed Culvert
- 2 ft Elevation Contour
- Delineated Stream
- Crane Pad
- Delineated Wetland
- Permanent Wetland Impact
- Permanent Forest Conversion
- Temporary Wetland Impact
- Limit of Disturbance
- Parcel Boundary
- Municipal Boundary

Impact Location:
TOWN OF CHATEAUGAY
FRANKLIN COUNTY
NEW YORK

Impact Coordinates:
-74.090 W
44.891 N

0 25 50 Feet

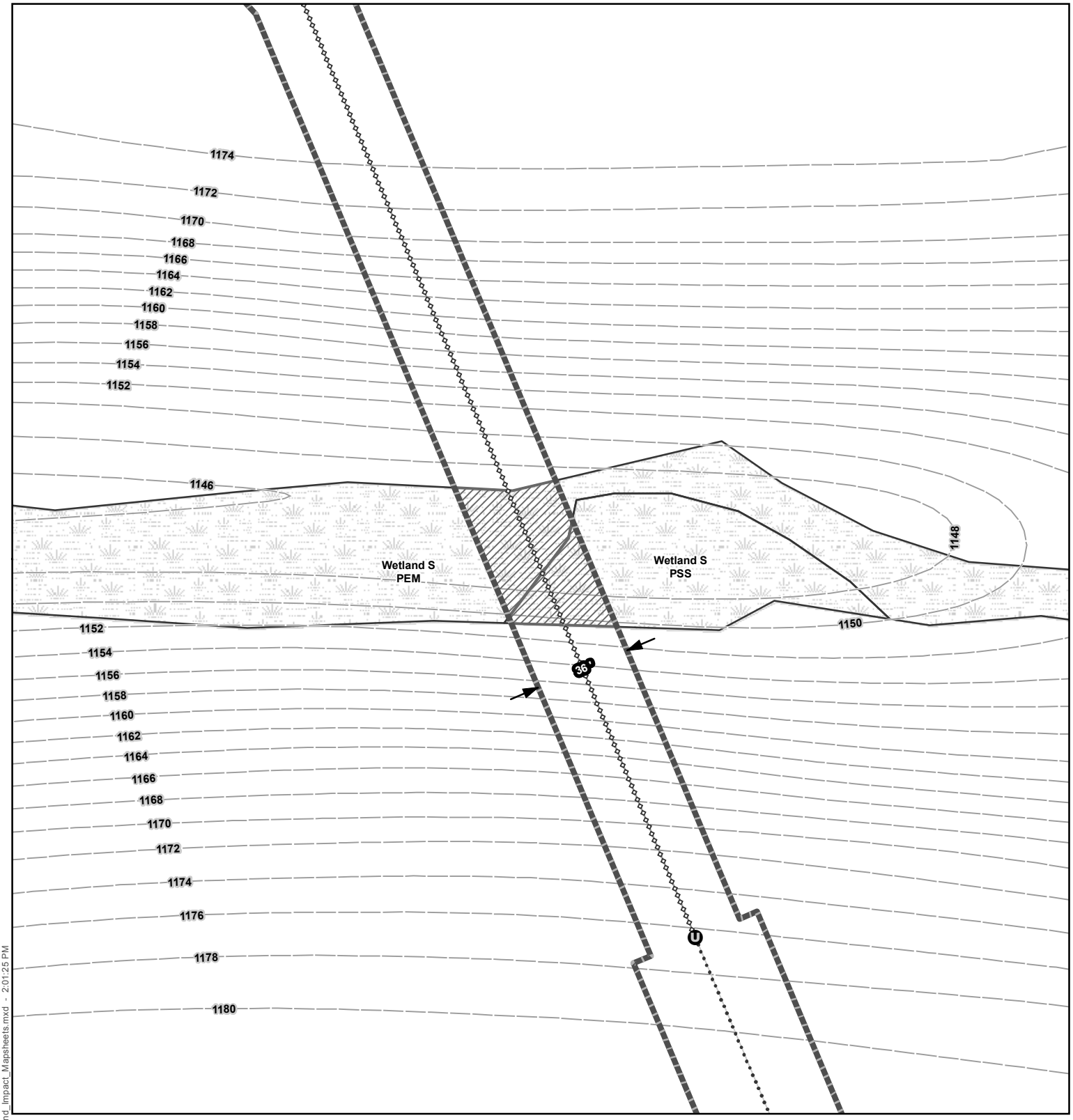
FISHER ASSOCIATES

JERICHO RISE WIND PROJECT
FIGURE 6 - WETLAND IMPACTS
WETLAND R

SHEET 6 OF 18

Author: dant | Revision Date: 12/4/2015

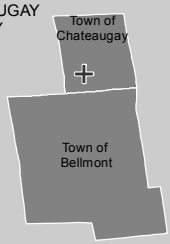
J:\Market\GIS\20140807_Jericho_Wind_Farm\Jericho_Rise_Wetland_Impact_Mapsheets.mxd - 2:01:25 PM



Wetland S	Temporary PEM / PSS Impact = 1,239 / 767 FT^2 | No Permanent Impact | No Stream Impact

- Proposed Utility Pole
- Impact Location
- Access Road Centerline
- Access Road Edge
- Temporary Improvement Edge
- Public Road Centerline -
- Collection Line - Overhead
- Collection Line - Underground
- Existing Culvert
- Proposed Culvert
- 2 ft Elevation Contour
- Delineated Stream
- Crane Pad
- Delineated Wetland
- Permanent Wetland Impact
- Permanent Forest Conversion
- Temporary Wetland Impact
- Limit of Disturbance
- Parcel Boundary
- Municipal Boundary

Impact Location:
TOWN OF CHATEAUGAY
FRANKLIN COUNTY
NEW YORK



Impact Coordinates:
-74.092 W
44.896 N

0 25 50 Feet

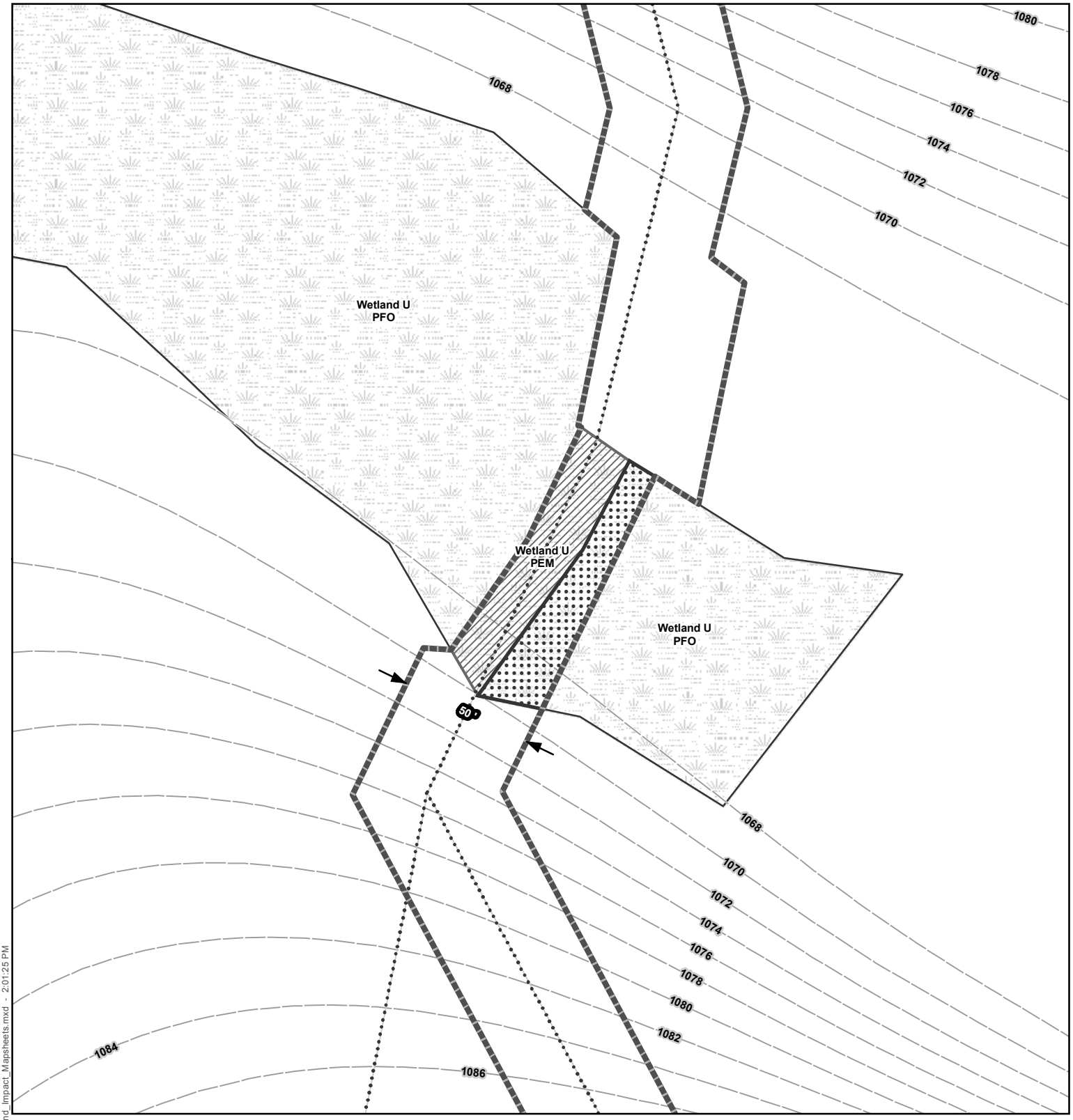
FISHER ASSOCIATES

JERICHO RISE WIND PROJECT
FIGURE 6 - WETLAND IMPACTS
WETLAND S
SHEET 7 OF 18

Author: dant

Revision Date: 12/4/2015

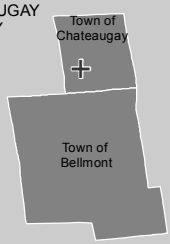
J:\Market\GIS\20140807_Jericho_Wind_Farm\Jericho_Rise_Wetland_Impact_Mapsheets.mxd - 2:01:25 PM



Wetland U	Temporary PEM Impact = 1,964 FT^2 | Permanent Forest Conversion = 1,560 FT^2 | No Stream Impact

- Proposed Utility Pole
- Impact Location
- Access Road Centerline
- Access Road Edge
- Temporary Improvement Edge
- Public Road Centerline -
- Collection Line - Overhead
- Collection Line - Underground
- Existing Culvert
- Proposed Culvert
- 2 ft Elevation Contour
- Delineated Stream
- Crane Pad
- Delineated Wetland
- Permanent Wetland Impact
- Permanent Forest Conversion
- Temporary Wetland Impact
- Limit of Disturbance
- Parcel Boundary
- Municipal Boundary

Impact Location:
TOWN OF CHATEAUGAY
FRANKLIN COUNTY
NEW YORK



Impact Coordinates:
-74.098 W
44.904 N

0 25 50 Feet

FISHER ASSOCIATES

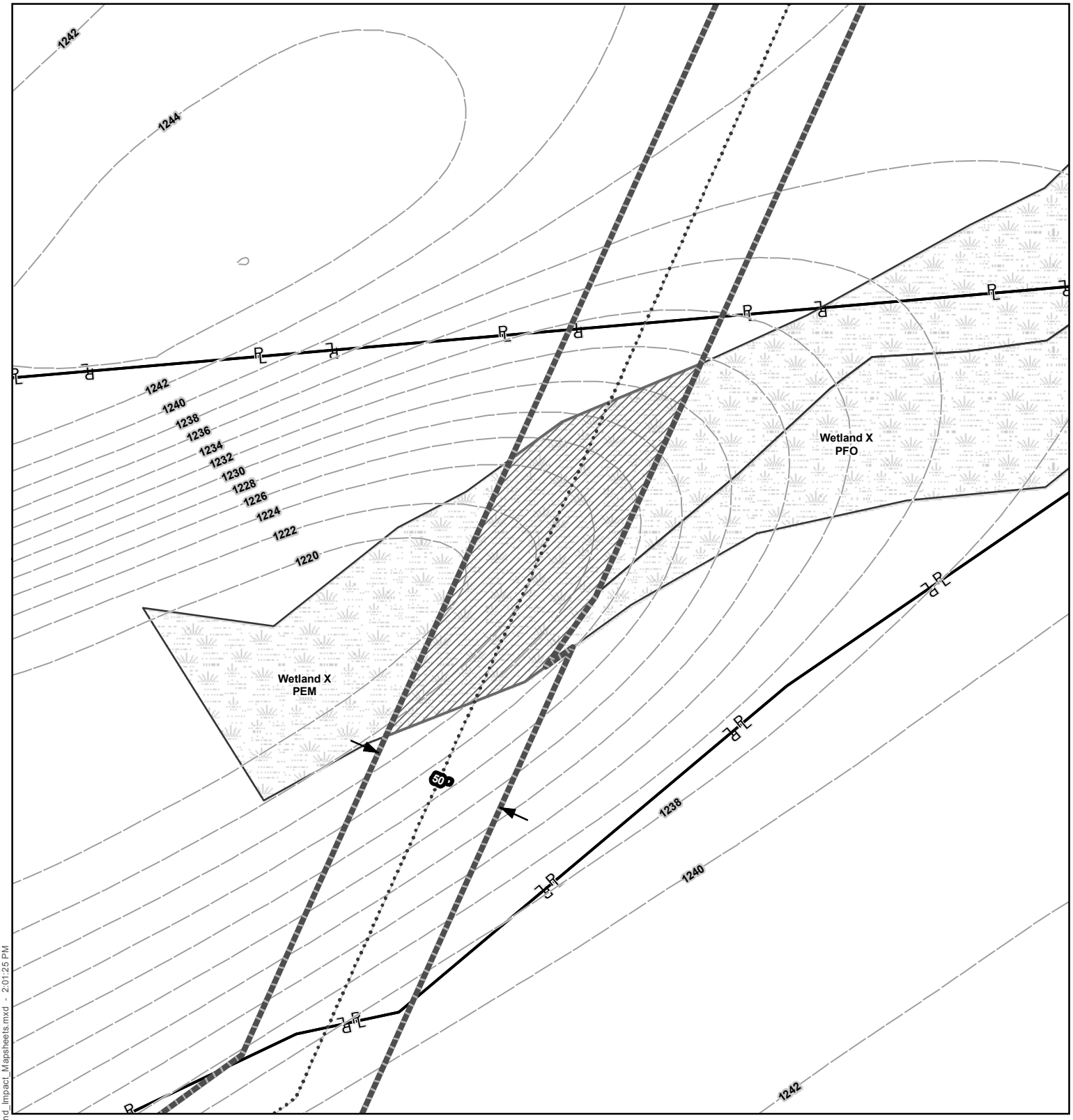
JERICHO RISE WIND PROJECT
FIGURE 6 - WETLAND IMPACTS
WETLAND U

SHEET 8 OF 18

Author: dant

Revision Date: 12/4/2015

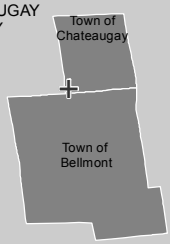
J:\Market\GIS\20140807_Jericho_Wind_Farm\Jericho_Rise_Wetland_Impact_Mapsheets.mxd - 2:01:25 PM



Wetland X	Temporary PEM Impact = 5,991 FT^2 | No Permanent Impact | No Stream Impact

- Proposed Utility Pole
- Impact Location
- Access Road Centerline
- Access Road Edge
- Temporary Improvement Edge
- Public Road Centerline -
- Collection Line - Overhead
- Collection Line - Underground
- Existing Culvert
- Proposed Culvert
- 2 ft Elevation Contour
- Delineated Stream
- Crane Pad
- Delineated Wetland
- Permanent Wetland Impact
- Permanent Forest Conversion
- Temporary Wetland Impact
- Limit of Disturbance
- Parcel Boundary
- Municipal Boundary

Impact Location:
TOWN OF CHATEAUGAY
FRANKLIN COUNTY
NEW YORK



Impact Coordinates:
-74.118 W
44.871 N

0 25 50 Feet

FISHER ASSOCIATES

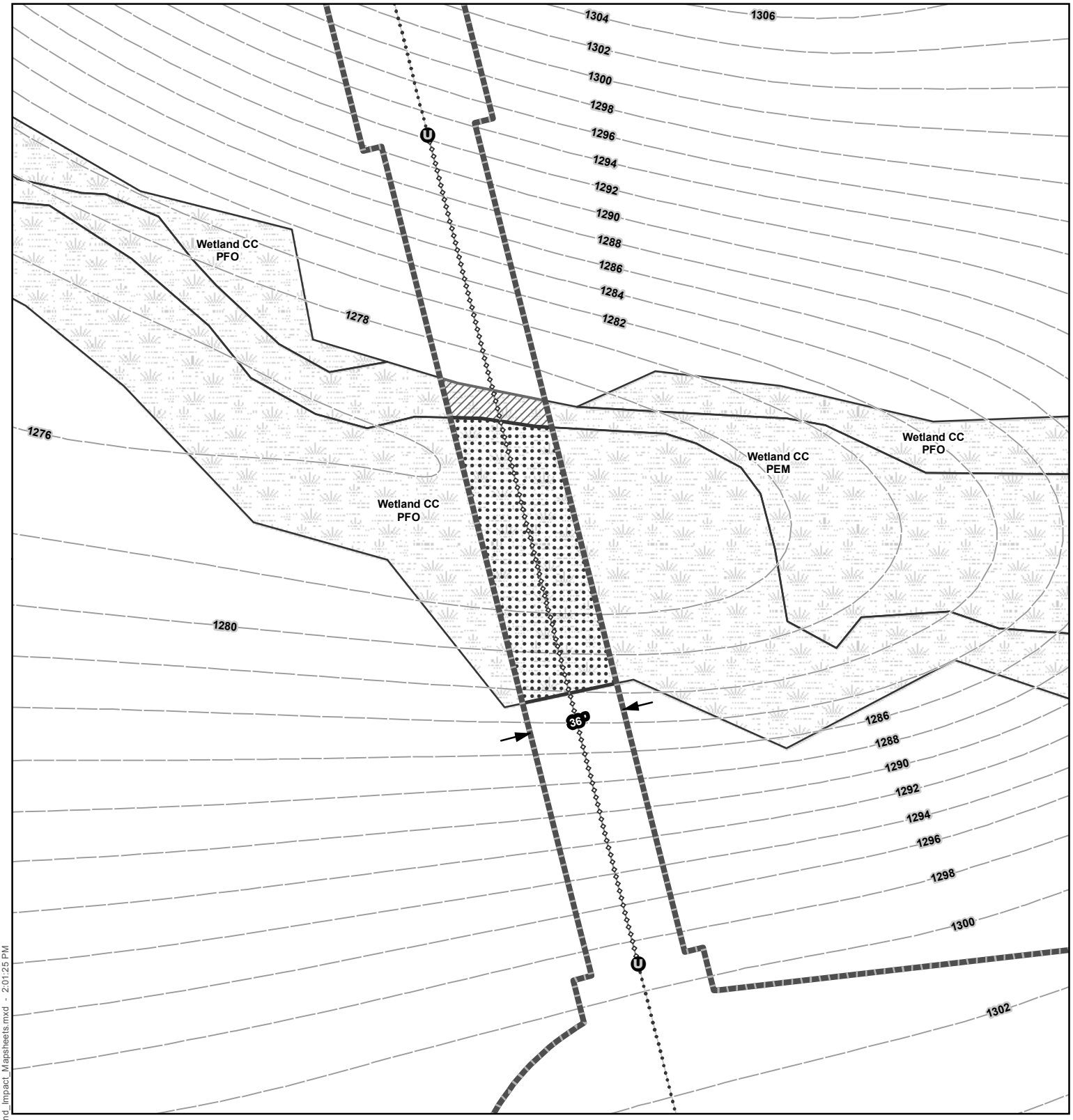
JERICHO RISE WIND PROJECT
FIGURE 6 - WETLAND IMPACTS
WETLAND X

SHEET 9 OF 18

Author: dant

Revision Date: 12/4/2015

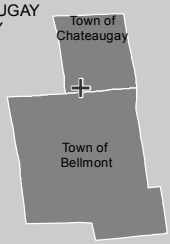
J:\Market\GIS\20140807_Jericho_Wind_Farm\Jericho_Rise_Wetland_Impact_Mapsheets.mxd - 2:01:25 PM



Wetland CC	Temporary PEM Impact = 443 FT^2 | Permanent Forest Conversion = 3,771 FT^2 | No Stream Impact

- Proposed Utility Pole
- Impact Location
- Access Road Centerline
- Access Road Edge
- Temporary Improvement Edge
- Public Road Centerline -
- Collection Line - Overhead
- Collection Line - Underground
- Existing Culvert
- Proposed Culvert
- 2 ft Elevation Contour
- Delineated Stream
- Crane Pad
- Delineated Wetland
- Permanent Wetland Impact
- Permanent Forest Conversion
- Temporary Wetland Impact
- Limit of Disturbance
- Parcel Boundary
- Municipal Boundary

Impact Location:
TOWN OF CHATEAUGAY
FRANKLIN COUNTY
NEW YORK



Impact Coordinates:
-74.098 W
44.873 N

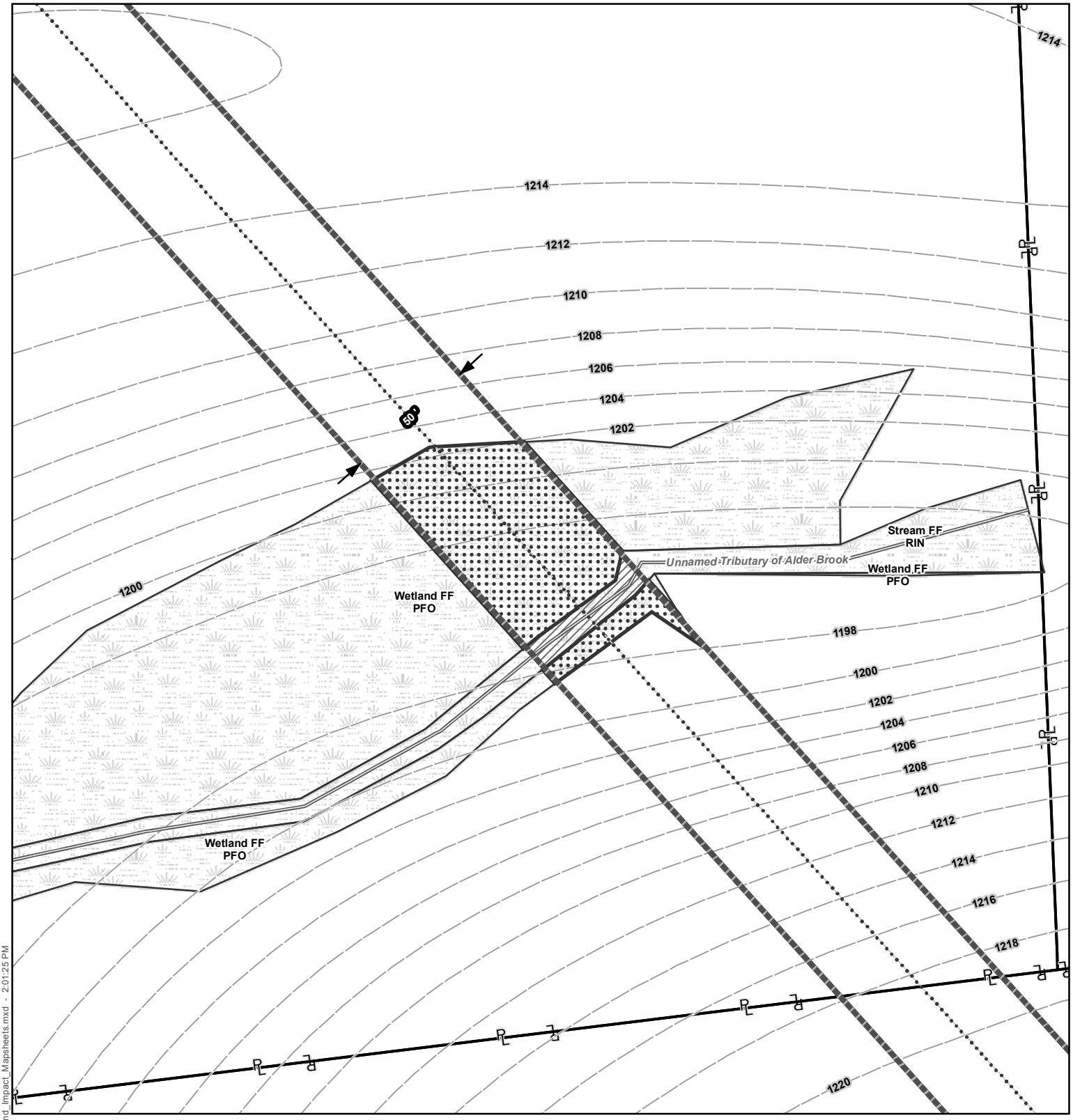
0 25 50 Feet

FISHER ASSOCIATES

JERICHO RISE WIND PROJECT
FIGURE 6 - WETLAND IMPACTS
WETLAND CC
SHEET 10 OF 18

Author: dant | Revision Date: 12/4/2015

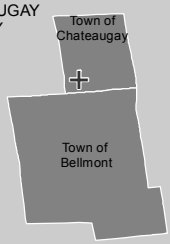
J:\Market\GIS\20140807_Jericho_Wind_Farm\Jericho_Rise_Wetland_Impact_Mapsheets.mxd - 2:01:25 PM



Wetland FF	Temporary RIN Impact = 509 FT^2 | Permanent Forest Conversion = 4,478 FT^2 | Impacted Stream Length = 51'

- Proposed Utility Pole
- Impact Location
- Access Road Centerline
- Access Road Edge
- Temporary Improvement Edge
- Public Road Centerline -
- Collection Line - Overhead
- Collection Line - Underground
- Existing Culvert
- Proposed Culvert
- 2 ft Elevation Contour
- Delineated Stream
- Crane Pad
- Delineated Wetland
- Permanent Wetland Impact
- Permanent Forest Conversion
- Temporary Wetland Impact
- Limit of Disturbance
- Parcel Boundary
- Municipal Boundary

Impact Location:
TOWN OF CHATEAUGAY
FRANKLIN COUNTY
NEW YORK



Impact Coordinates:
-74.101 W
44.886 N

0 25 50 Feet

FISHER ASSOCIATES

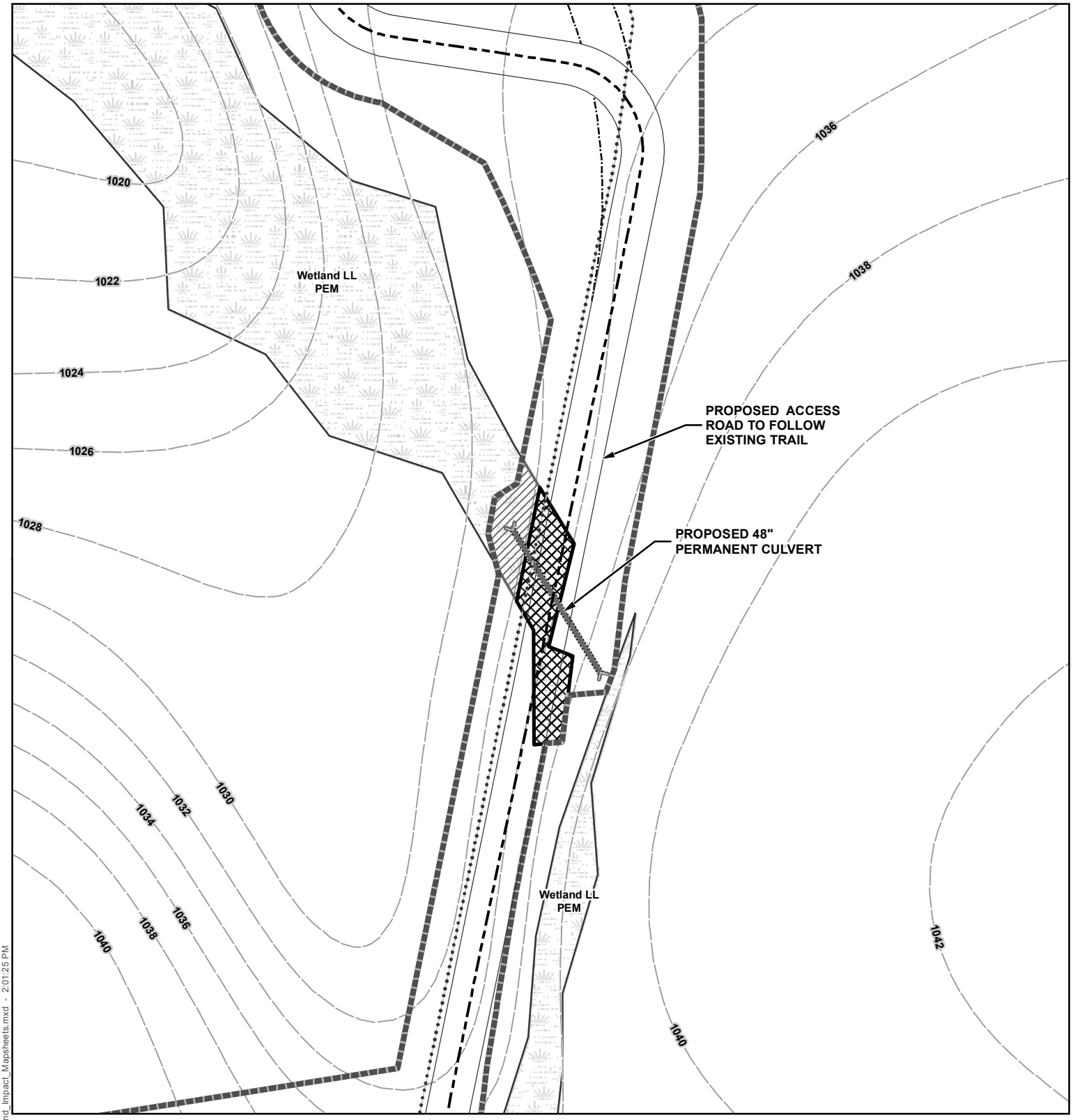
JERICHO RISE WIND PROJECT
FIGURE 6 - WETLAND IMPACTS
WETLAND FF

SHEET 11 OF 18

Author: dant

Revision Date: 12/4/2015

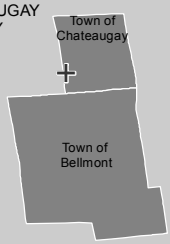
J:\Market\GIS\20140807_Jericho_Wind_Farm\Jericho_Rise_Wetland_Impact_Mapsheets.mxd - 2:01:25 PM



Wetland LL	Temporary PEM Impact = 541 FT^2 | Permanent PEM Impact = 1,150 FT^2 | No Stream Impact

- Proposed Utility Pole
- Impact Location
- Access Road Centerline
- Access Road Edge
- Temporary Improvement Edge
- Public Road Centerline -
- Collection Line - Overhead
- Collection Line - Underground
- Existing Culvert
- Proposed Culvert
- 2 ft Elevation Contour
- Delineated Stream
- Crane Pad
- Delineated Wetland
- Permanent Wetland Impact
- Permanent Forest Conversion
- Temporary Wetland Impact
- Limit of Disturbance
- Parcel Boundary
- Municipal Boundary

Impact Location:
TOWN OF CHATEAUGAY
FRANKLIN COUNTY
NEW YORK



Impact Coordinates:
-74.123 W
44.897 N

0 25 50 Feet

FISHER ASSOCIATES

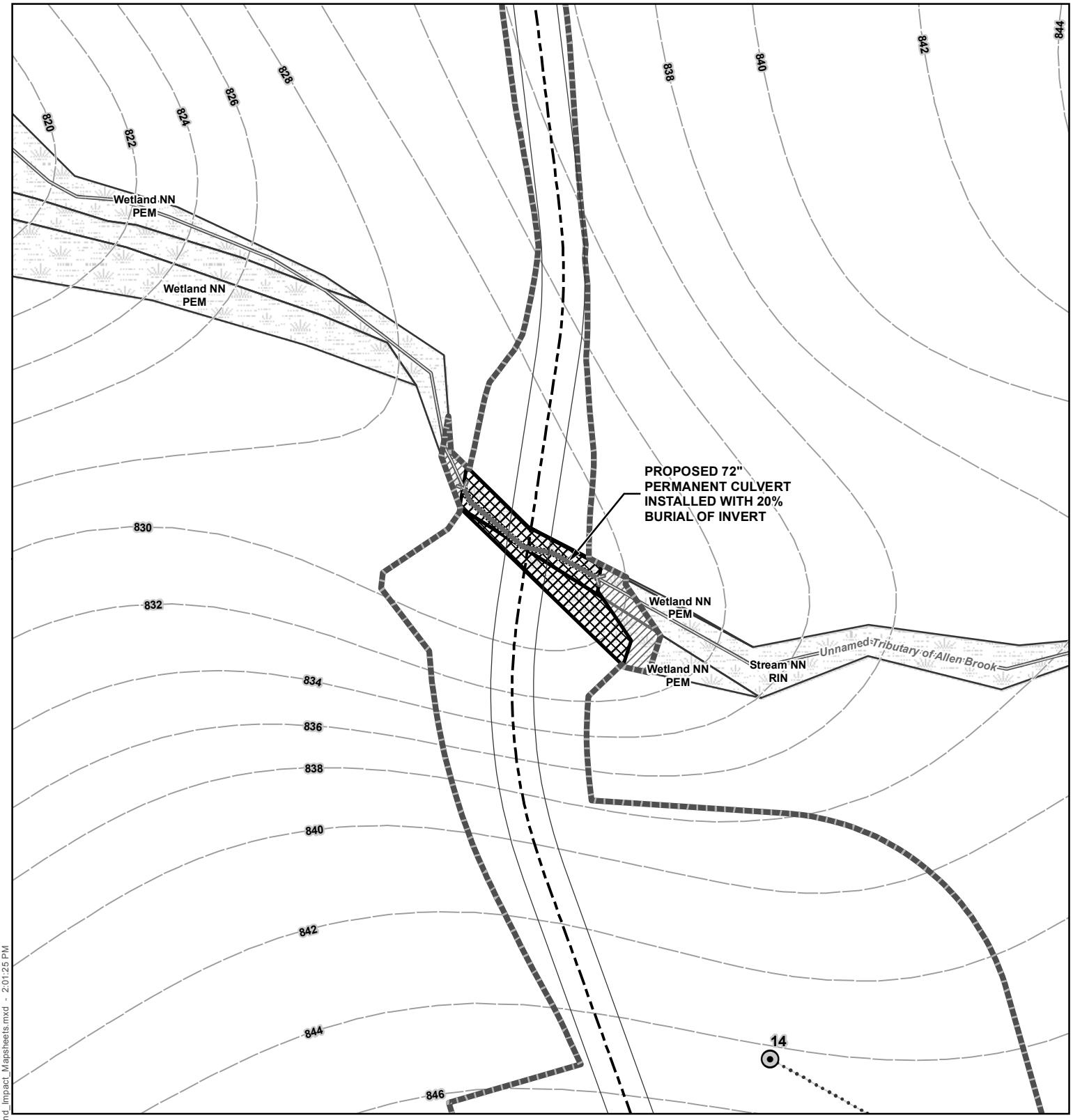
JERICHO RISE WIND PROJECT
FIGURE 6 - WETLAND IMPACTS
WETLAND LL

SHEET 12 OF 18

Author: dant

Revision Date: 12/4/2015

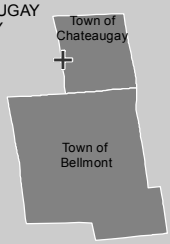
J:\Market\GIS\20140807_Jericho_Wind_Farm\Jericho_Rise_Wetland_Impact_Mapsheets.mxd - 2:01:25 PM



Wetland NN	Temporary PEM / RIN Impact = 352 / 184 FT^2 | Permanent PEM / RIN Impact = 630 / 595 FT^2 | Impacted Stream Length = 97'

- Proposed Utility Pole
- Impact Location
- Access Road Centerline
- Access Road Edge
- Temporary Improvement Edge
- Public Road Centerline -
- Collection Line - Overhead
- Collection Line - Underground
- Existing Culvert
- Proposed Culvert
- 2 ft Elevation Contour
- Delineated Stream
- Crane Pad
- Delineated Wetland
- Permanent Wetland Impact
- Permanent Forest Conversion
- Temporary Wetland Impact
- Limit of Disturbance
- Parcel Boundary
- Municipal Boundary

Impact Location:
TOWN OF CHATEAUGAY
FRANKLIN COUNTY
NEW YORK



Impact Coordinates:
-74.128 W
44.920 N

0 25 50 Feet

FISHER ASSOCIATES

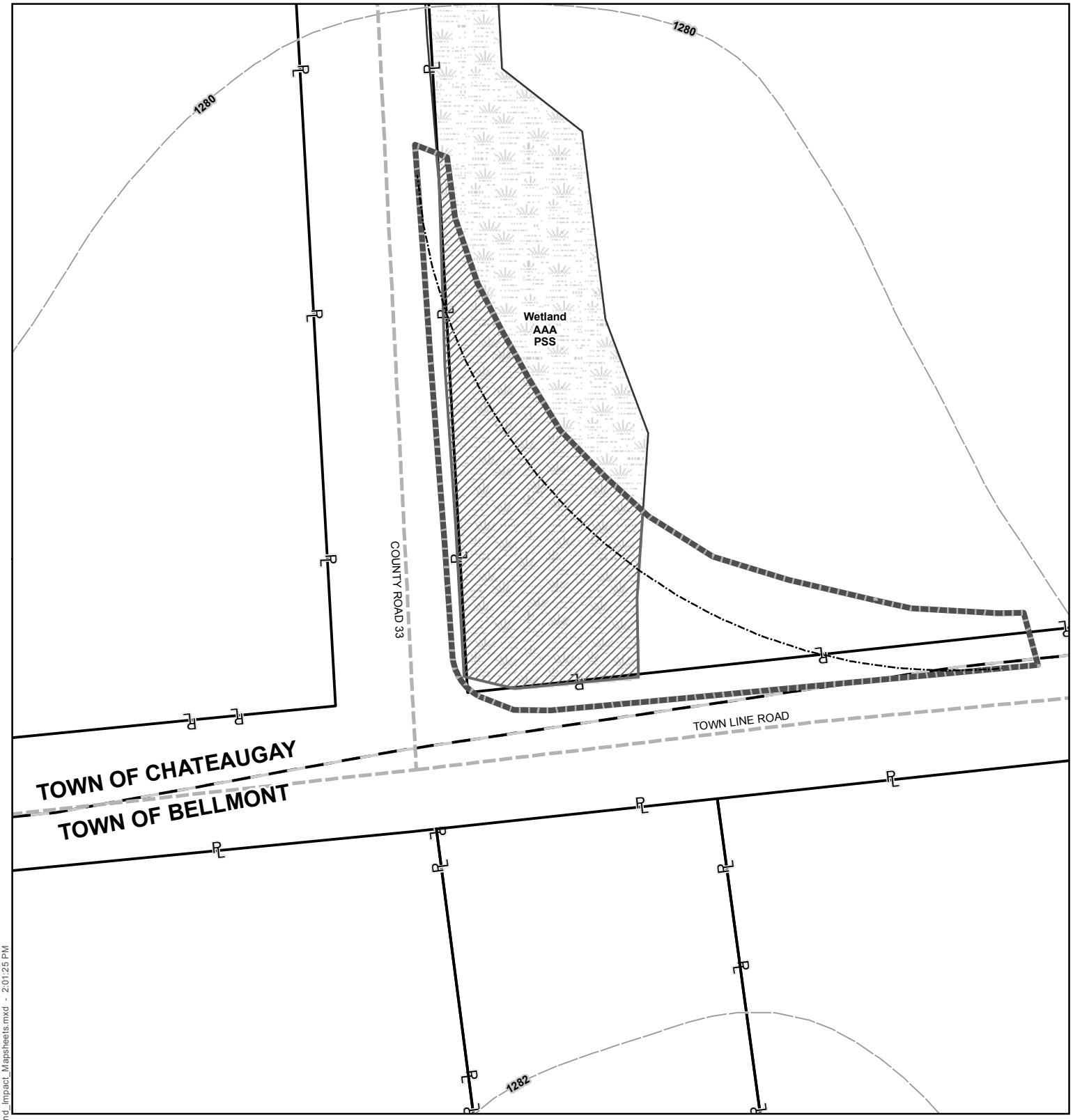
JERICHO RISE WIND PROJECT
FIGURE 6 - WETLAND IMPACTS
WETLAND NN

SHEET 13 OF 18

Author: dant

Revision Date: 12/4/2015

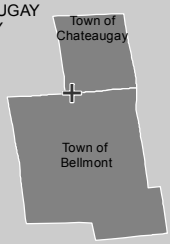
J:\Market\GIS\20140807_Jericho_Wind_Farm\Jericho_Rise_Wetland_Impact_Mapsheets.mxd - 2:01:25 PM



Wetland AAA	Temporary PSS Impact = 7,802 FT^2 | No Permanent Impact | No Stream Impact

- Proposed Utility Pole
- Impact Location
- Access Road Centerline
- Access Road Edge
- Temporary Improvement Edge
- Public Road Centerline -
- Collection Line - Overhead
- Collection Line - Underground
- Existing Culvert
- Proposed Culvert
- 2 ft Elevation Contour
- Delineated Stream
- Crane Pad
- Delineated Wetland
- Permanent Wetland Impact
- Permanent Forest Conversion
- Temporary Wetland Impact
- Limit of Disturbance
- Parcel Boundary
- Municipal Boundary

Impact Location:
TOWN OF CHATEAUGAY
FRANKLIN COUNTY
NEW YORK



Impact Coordinates:
-74.113 W
44.864 N

0 25 50 Feet

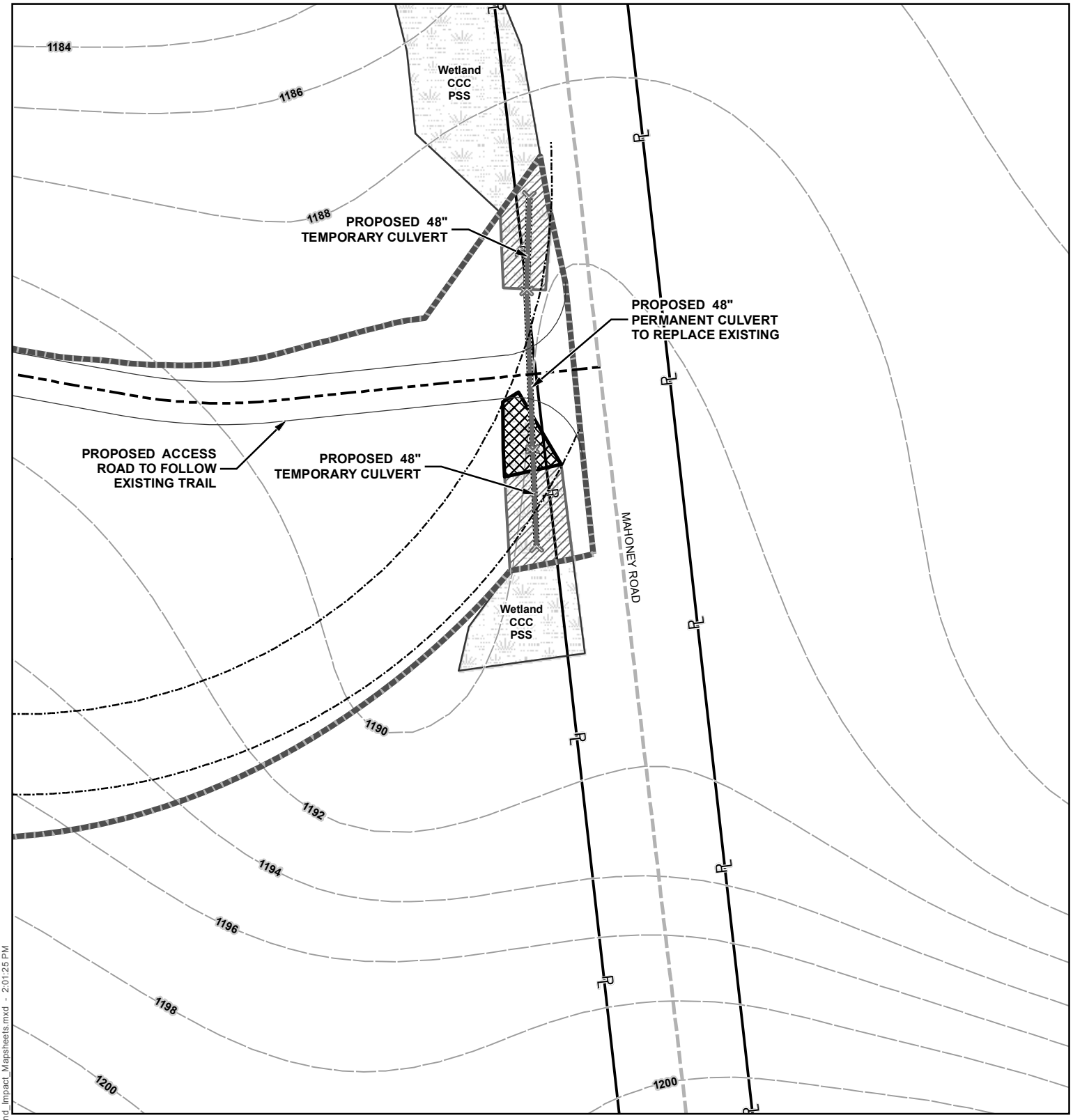
FISHER ASSOCIATES

JERICHO RISE WIND PROJECT
FIGURE 6 - WETLAND IMPACTS
WETLAND AAA

SHEET 14 OF 18

Author: dant | Revision Date: 12/4/2015

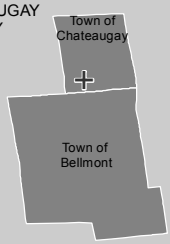
J:\Market\GIS\20140807_Jericho_Wind_Farm\Jericho_Rise_Wetland_Impact_Mapsheets.mxd - 2:01:25 PM



Wetland CCC	Temporary PSS Impact = 1,492 FT^2 | Permanent PSS Impact = 412 FT^2 | No Stream Impact

- Proposed Utility Pole
- Impact Location
- Access Road Centerline
- Access Road Edge
- Temporary Improvement Edge
- Public Road Centerline -
- Collection Line - Overhead
- Collection Line - Underground
- Existing Culvert
- Proposed Culvert
- 2 ft Elevation Contour
- Delineated Stream
- Crane Pad
- Delineated Wetland
- Permanent Wetland Impact
- Permanent Forest Conversion
- Temporary Wetland Impact
- Limit of Disturbance
- Parcel Boundary
- Municipal Boundary

Impact Location:
TOWN OF CHATEAUGAY
FRANKLIN COUNTY
NEW YORK



Impact Coordinates:
-74.093 W
44.886 N

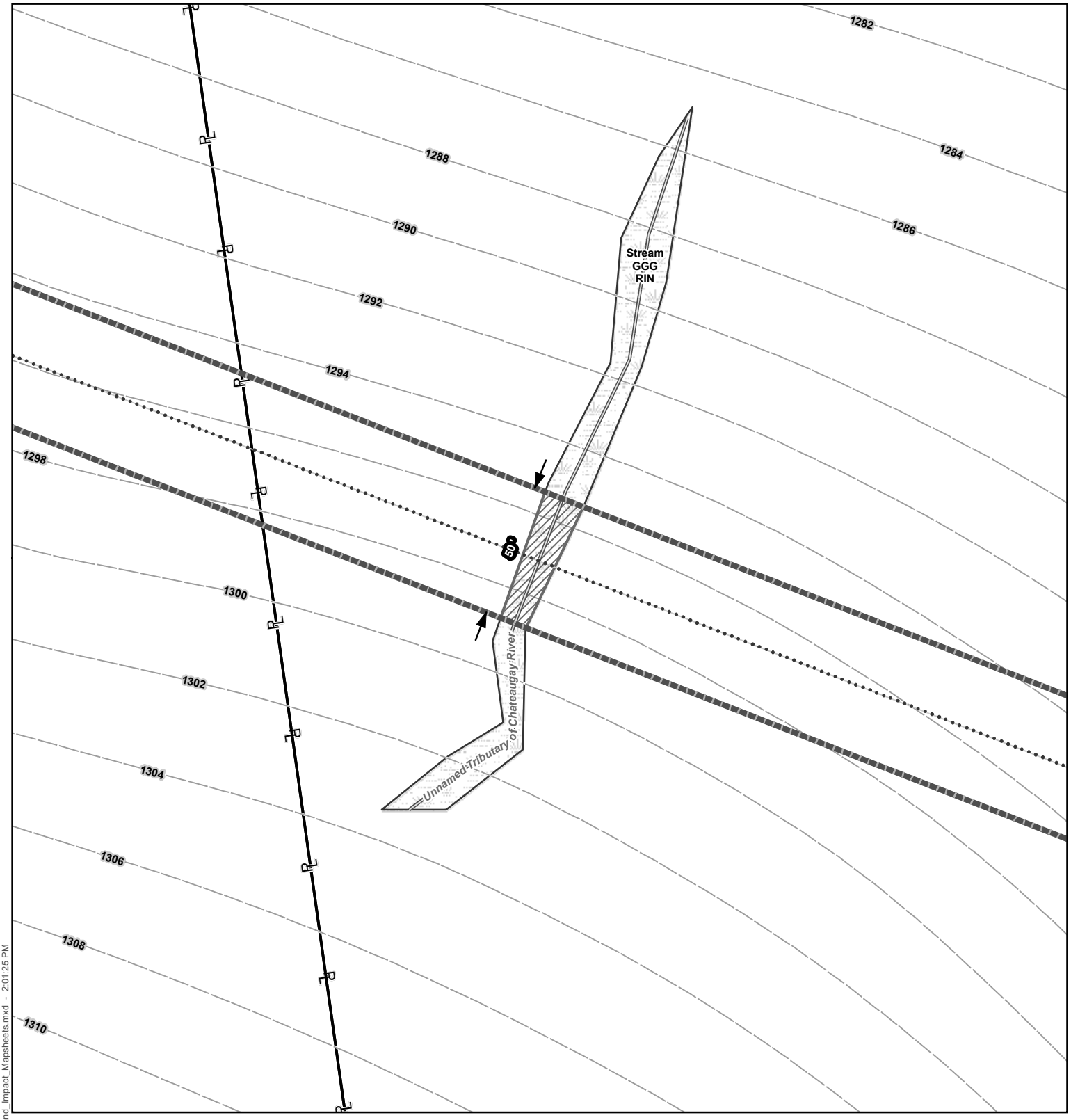
0 25 50 Feet

FISHER ASSOCIATES

JERICHO RISE WIND PROJECT
FIGURE 6 - WETLAND IMPACTS
WETLAND CCC
SHEET 15 OF 18

Author: dant | Revision Date: 12/4/2015

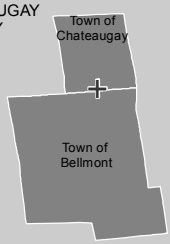
J:\Market\GIS\20140807_Jericho_Wind_Farm\Jericho_Rise_Wetland_Impact_Mapsheets.mxd - 2:01:25 PM



Wetland GGG	Temporary RIN Impact = 640 FT^2 | No Permanent Impact | Impacted Stream Length = 50'

- Proposed Utility Pole
- Impact Location
- Access Road Centerline
- Access Road Edge
- Temporary Improvement Edge
- Public Road Centerline -
- Collection Line - Overhead
- Collection Line - Underground
- Existing Culvert
- Proposed Culvert
- 2 ft Elevation Contour
- Delineated Stream
- Crane Pad
- Delineated Wetland
- Permanent Wetland Impact
- Permanent Forest Conversion
- Temporary Wetland Impact
- Limit of Disturbance
- Parcel Boundary
- Municipal Boundary

Impact Location:
TOWN OF CHATEAUGAY
FRANKLIN COUNTY
NEW YORK



Impact Coordinates:
-74.071 W
44.871 N

0 25 50 Feet

Author: dant

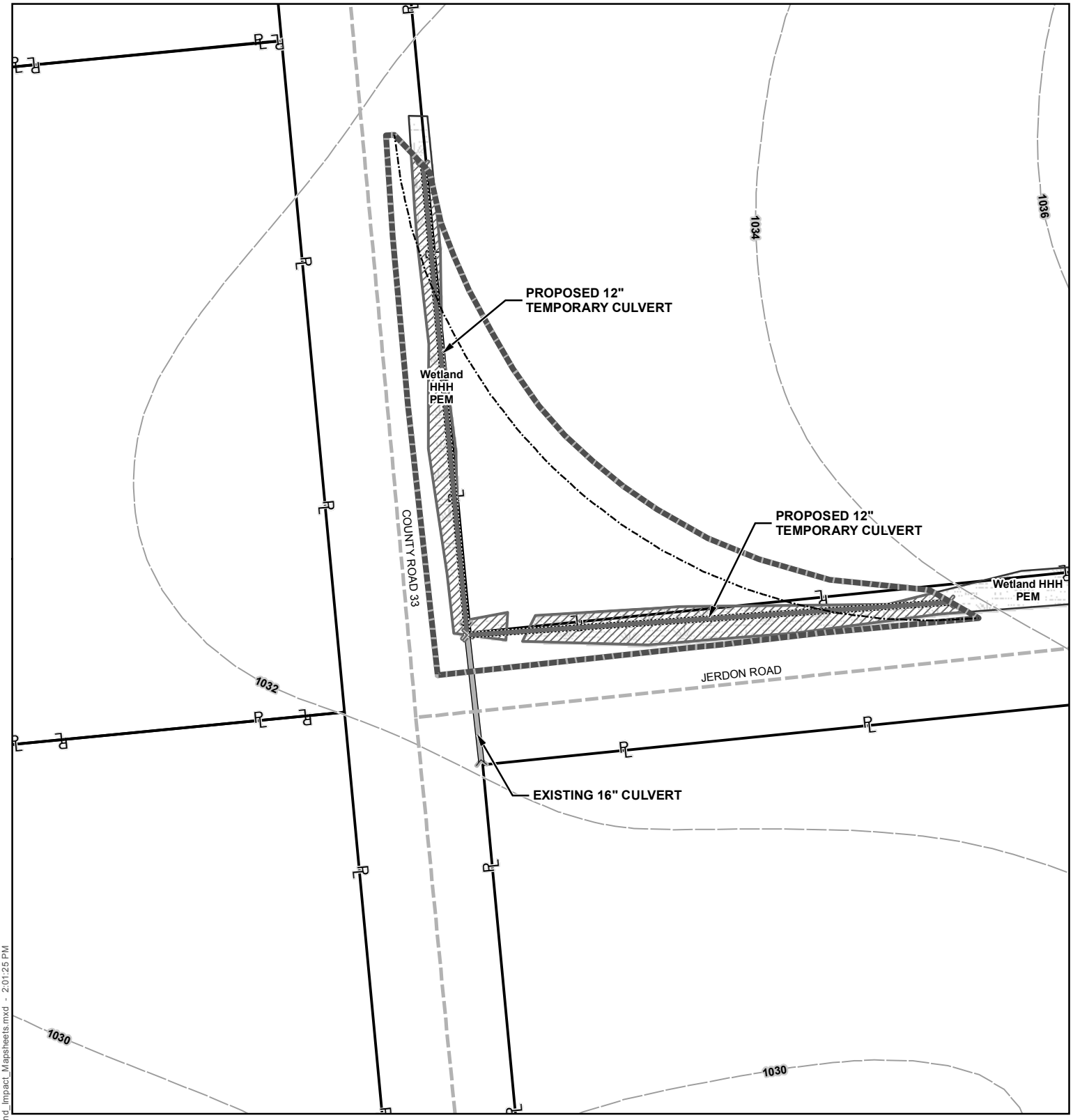
Revision Date: 12/4/2015

FISHER ASSOCIATES

JERICHO RISE WIND PROJECT
FIGURE 6 - WETLAND IMPACTS
WETLAND GGG

SHEET 16 OF 18

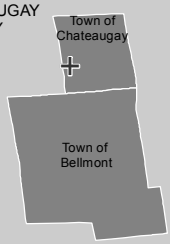
J:\Market\GIS\20140807_Jericho_Wind_Farm\Jericho_Rise_Wetland_Impact_Mapsheets.mxd - 2:01:25 PM



Wetland HHH	Temporary PEM Impact = 3,021 FT^2 | No Permanent Impact | No Stream Impact

- Proposed Utility Pole
- Impact Location
- Access Road Centerline
- Access Road Edge
- Temporary Improvement Edge
- Public Road Centerline -
- Collection Line - Overhead
- Collection Line - Underground
- Existing Culvert
- Proposed Culvert
- 2 ft Elevation Contour
- Delineated Stream
- Crane Pad
- Delineated Wetland
- Permanent Wetland Impact
- Permanent Forest Conversion
- Temporary Wetland Impact
- Limit of Disturbance
- Parcel Boundary
- Municipal Boundary

Impact Location:
TOWN OF CHATEAUGAY
FRANKLIN COUNTY
NEW YORK



Impact Coordinates:
-74.116 W
44.908 N

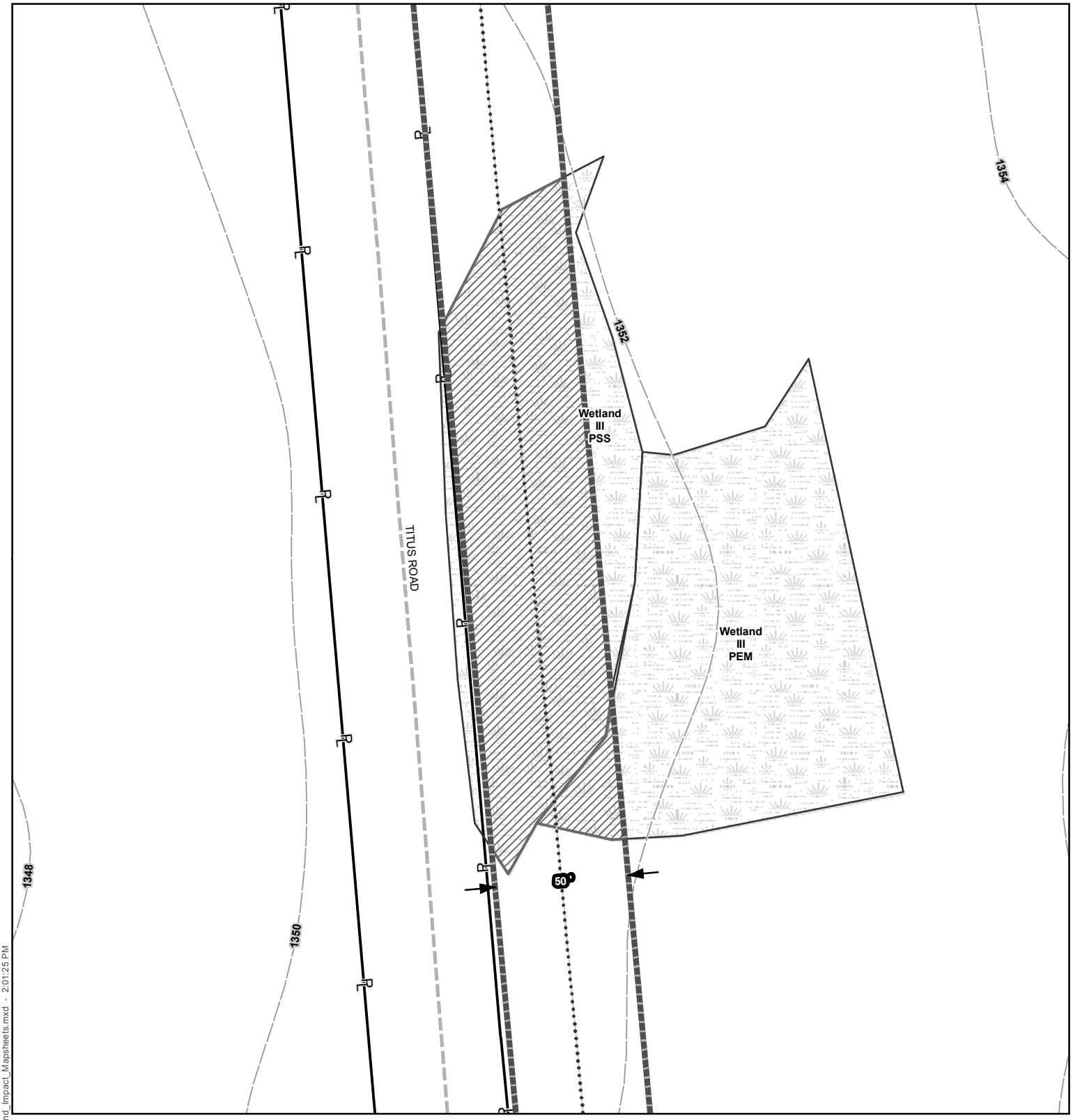
0 25 50 Feet

FISHER ASSOCIATES

JERICHO RISE WIND PROJECT
FIGURE 6 - WETLAND IMPACTS
WETLAND HHH
SHEET 17 OF 18

Author: dant | Revision Date: 12/4/2015

J:\Market\GIS\20140807_Jericho_Wind_Farm\Jericho_Rise_Wetland_Impact_Mapsheets.mxd - 2:01:25 PM



Wetland III	Temporary PSS / PEM Impact = 10,697 / 727 FT^2 | No Permanent Impact | No Stream Impact

- Proposed Utility Pole
- Impact Location
- Access Road Centerline
- Access Road Edge
- Temporary Improvement Edge
- Public Road Centerline -
- Collection Line - Overhead
- Collection Line - Underground
- Existing Culvert
- Proposed Culvert
- 2 ft Elevation Contour
- Delineated Stream
- Crane Pad
- Delineated Wetland
- Permanent Wetland Impact
- Permanent Forest Conversion
- Temporary Wetland Impact
- Limit of Disturbance
- Parcel Boundary
- Municipal Boundary

Impact Location:
TOWN OF BELLMONT
FRANKLIN COUNTY
NEW YORK

Impact Coordinates:
-74.089 W
44.864 N

0 25 50 Feet

FISHER ASSOCIATES

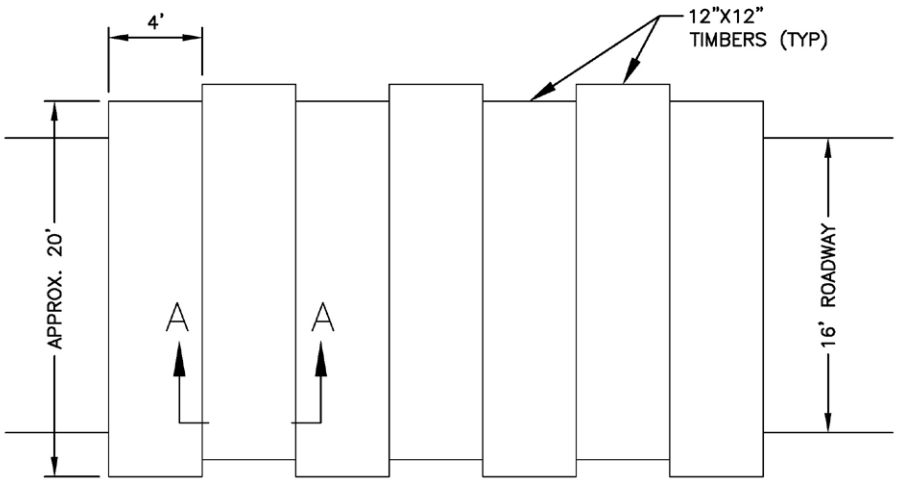
JERICHO RISE WIND PROJECT
FIGURE 6 - WETLAND IMPACTS
WETLAND III

SHEET 18 OF 18

Author: dant

Revision Date: 12/4/2015

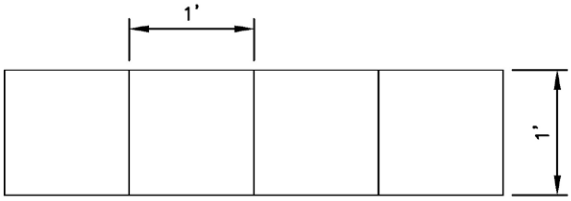
J:\Market\GIS\20140807_Jericho_Wind_Farm\Jericho_Rise_Wetland_Impact_Mapsheets.mxd - 2:01:25 PM



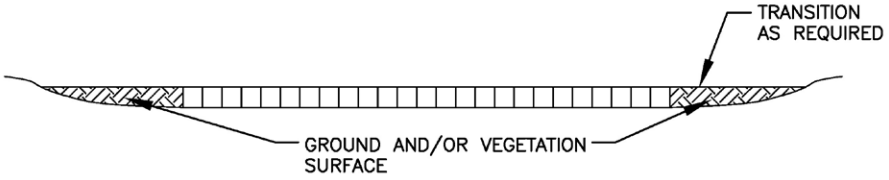
TYPICAL PLAN VIEW

NOTES:

1. TO BE INSTALLED IF NECESSARY TO PREVENT RUTTING, TO ACCESS STRUCTURES.
2. THIS DETAIL SHOWS TYPICAL DIMENSIONS. SOME CONTRACTORS SWAMP MATS ARE DIMENSIONALLY DIFFERENT FROM WHAT IS SHOWN HERE.
3. DEPENDENT ON SITE CONDITIONS, MULTIPLE LAYERS OF SWAMP MATS MAT BE INSTALLED.



SECTION A–A
TYPICAL MAT SECTION

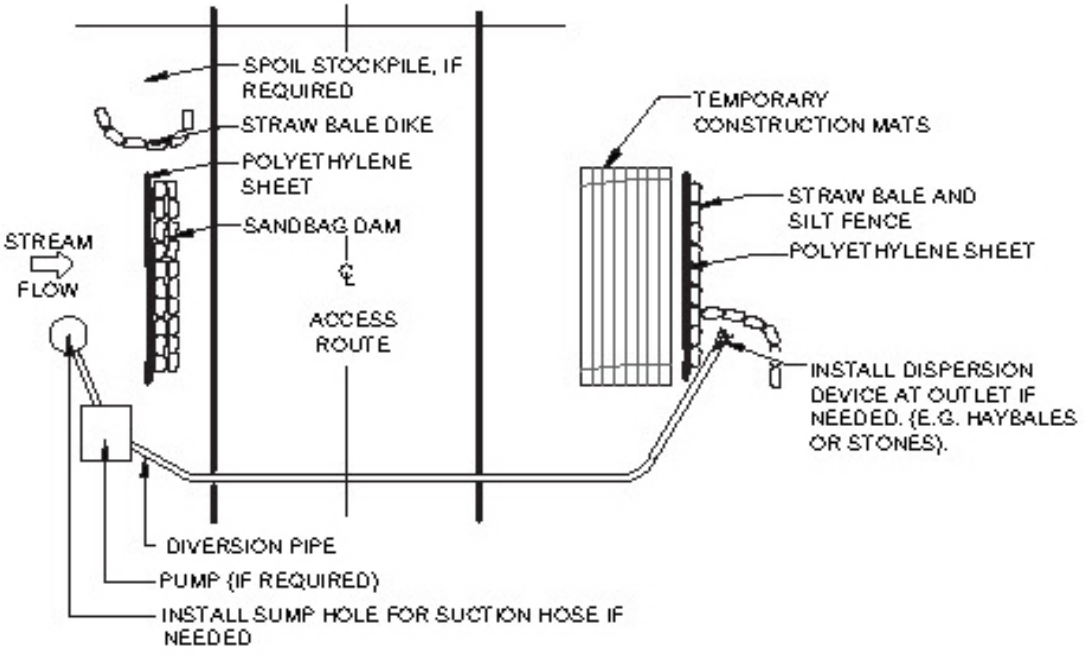


TYPICAL SECTION VIEW

TYPICAL SWAMP MAT DETAIL

N.T.S

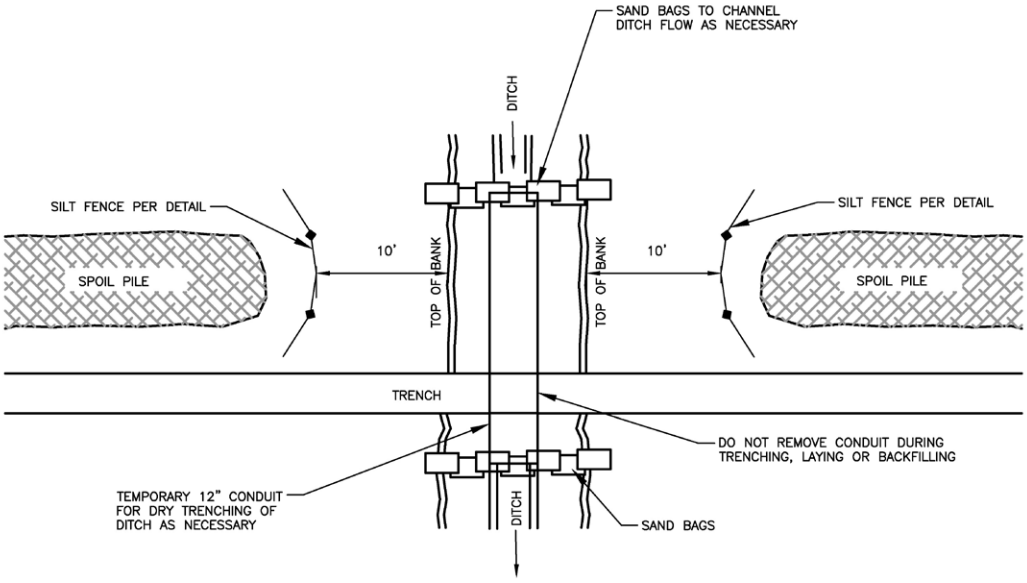
Source: Fisher Associates



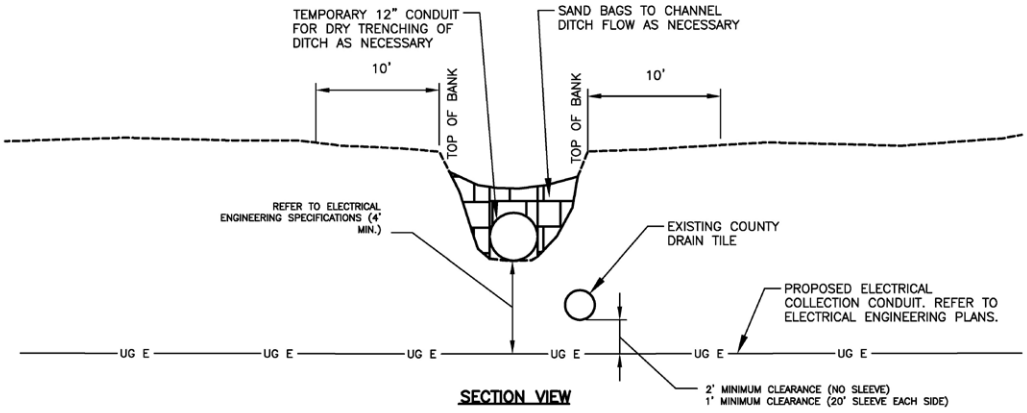
TEMPORARY STREAM DIVERSION

N.T.S

Source: Fisher Associates



PLAN VIEW



SECTION VIEW

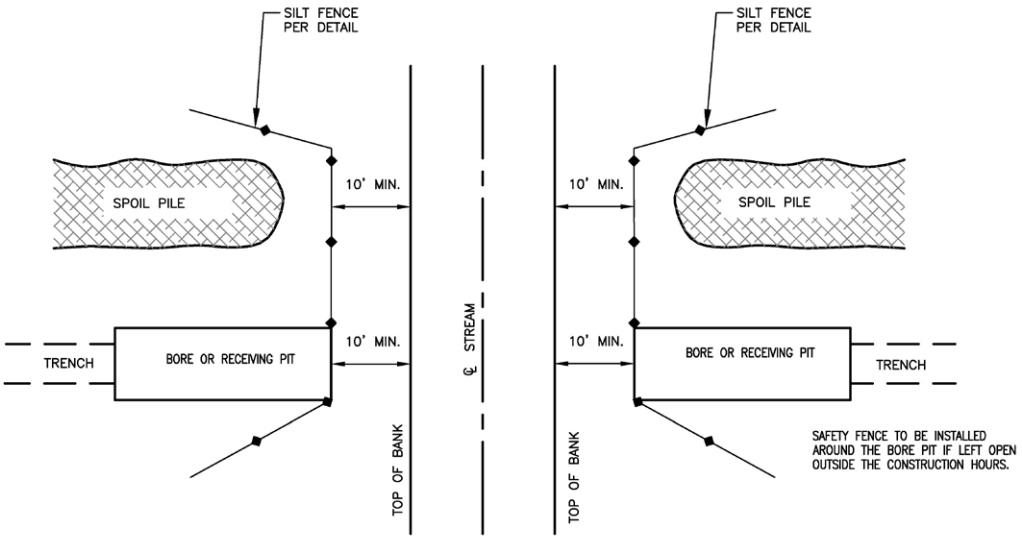
NOTES:

1. TEMPORARY SAND BAGS AND CONDUIT ARE TO BE INSTALLED PRIOR TO ANY CONSTRUCTION WITHIN THE LIMITS OF THE DITCH. IN THE EVENT THAT THE DITCH IS DRYING DURING CONSTRUCTION, SAND BAGS AND CONDUIT ARE NOT NECESSARY.
2. EXCAVATED TRENCH MATERIAL SHALL BE STOCKPILED ADJACENT TO THE TRENCH, NO CLOSER THAN 25' FROM THE TOP OF BANK OF THE DITCH.
3. SILT FENCE SHALL BE INSTALLED BETWEEN THE STOCKPILED MATERIAL AND THE TOP OF BANK OF THE DITCH.
4. IMMEDIATELY AFTER CONSTRUCTION IS COMPLETE, PERMANENT STABILIZATION MEASURES SHALL BE APPLIED.
5. REFER TO ELECTRICAL DESIGN FOR CONDUIT DEPTH AND TRENCH DETAILS.

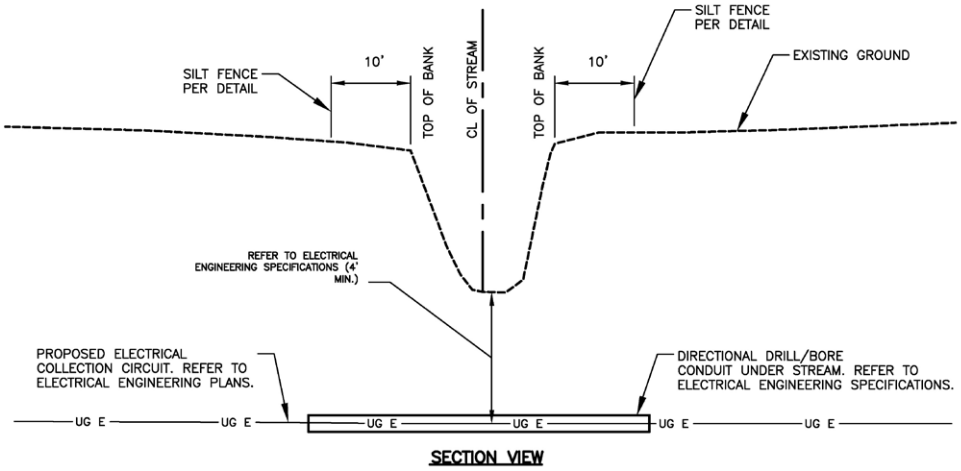
TYPICAL EROSION CONTROL & CLEARENCE DETAIL FOR COLLECTION LINE OPEN CUT DITCH/TILE CROSSING

N.T.S

Source: Fisher Associates



PLAN VIEW



SECTION VIEW

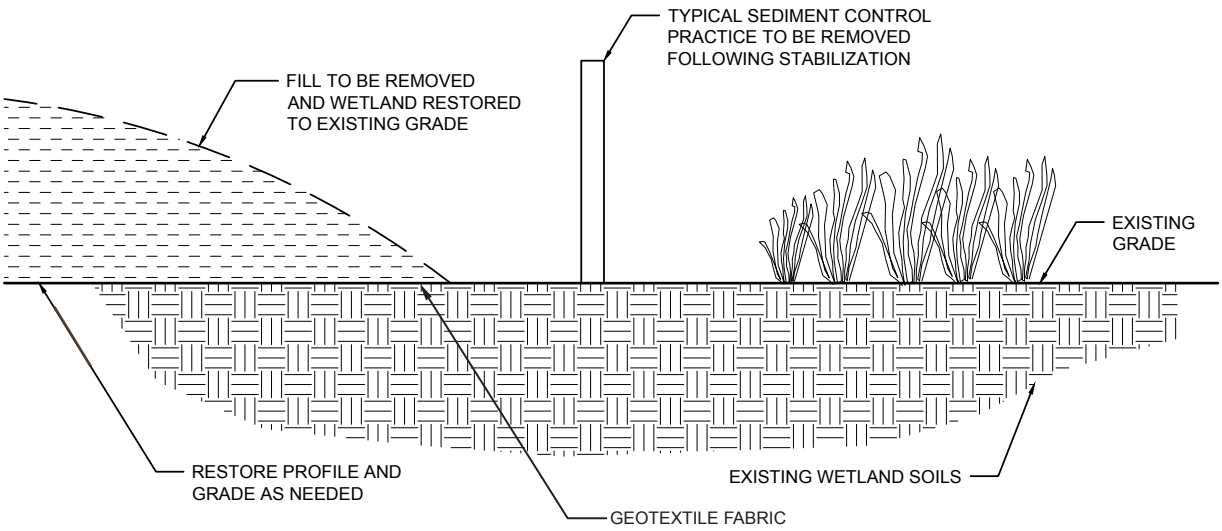
NOTES:

1. EXCAVATED TRENCH AND BORE/RECIEVING PIT MATERIAL SHALL BE STOCKPILED ADJACENT TO THE TRENCH, NO CLOSER THAN 10' FROM THE TOP OF BANK OF THE DITCH.
2. SILT FENCE SHALL BE INSTALLED BETWEEN THE STOCKPILED MATERIAL AND BORE/RECIEVEING PIT AND THE TOP OF BANK ON BOTH SIDES OF THE STREAM.
3. IMMEDIATELY AFTER CONSTRUCTION IS COMPLETE, PERMANENT STABILIZATION MEASURES SHALL BE APPLIED.
4. THERE SHALL BE NO DISTURBANCE TO THE STREAM DURING CONSTRUCTION.
5. REFER TO ELECTRICAL DESIGN FOR CONDUIT DEPTH AND TRENCH DETAILS.

TYPICAL EROSION CONTROL & CLEARENCE DETAIL FOR COLLECTION LINE TRENCHLESS STREAM CROSSING

N.T.S

Source: Fisher Associates



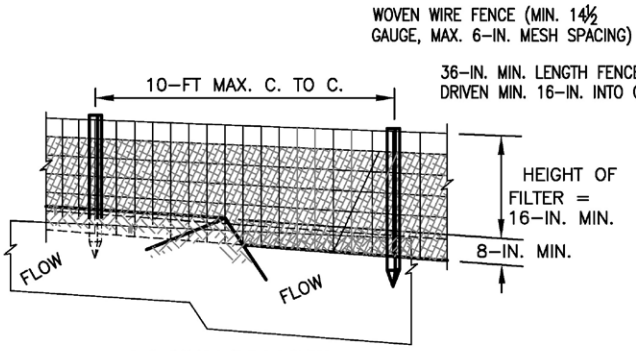
NOTES:

1. ALL FILL TO BE REMOVED FROM WETLAND.
2. ALL FILL MATERIAL TO BE DISCHARGED TO A LEGAL UPLAND LOCATION.
3. WETLAND SURFACE TO BE RESTORED TO PRE-CONSTRUCTION GRADE AND PROFILE.
4. LOOSEN WETLAND SOIL AND APPLY NATIVE SEED (ERNST WETLAND MIX OR EQUAL) AT MINIMUM RATE OF 20LBS/ACRE ($\frac{1}{2}$ LB/1000 SQ FT).
5. STABILIZE AREA IN ACCORDANCE WITH SWPPP.
6. LIMIT WORK TO TEMPORARY DISTURBED AREAS AS SHOWN ON PERMIT DRAWING.

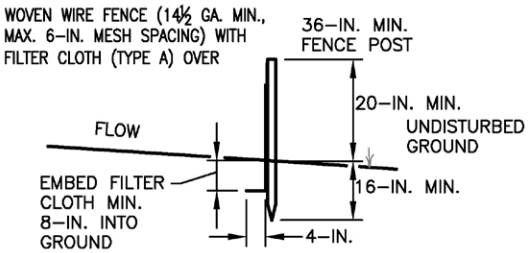
WETLAND RESTORATION DETAIL

N.T.S

Source: EDR



PERSPECTIVE VIEW



SECTION

APPLICATION NOTES:

1. SILT FENCE SHALL BE USED IN SMALL AREAS WITH SHEET FLOW RUNOFF TO INTERCEPT SEDIMENT AND REDUCE RUNOFF VELOCITY.
2. MAXIMUM SLOPE LENGTH FOR SLOPES FLATTER THAN 5:1 SHALL BE 100 FEET.
3. MAXIMUM DRAINAGE AREA TO SILT FENCE SHALL NOT EXCEED ¼ ACRE PER 100–FT OF FENCE.

CONSTRUCTION SPECIFICATIONS:

1. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES, FOLDED AND STAPLED TO PREVENT SEDIMENT BYPASS.
2. POSTS SHALL BE A MINIMUM 36–IN. LONG AND SHALL BE TYPE T OR U STEEL WEIGHING NOT LESS THAN 1.0 LBS PER SQ.FT.; OR HARDWOOD WITH A MINIMUM CROSS SECTIONAL AREA OF 3.0 SQUARE INCHES.
3. FILTER CLOTH SHALL BE FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL.
4. WOVEN WIRE FENCE SHALL BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
5. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24–IN. AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 14½ GAUGE, 6–IN. MAXIMUM MESH SPACING.
6. PREFABRICATED UNITS SHALL BE ENVIROFENCE OR APPROVED EQUAL.

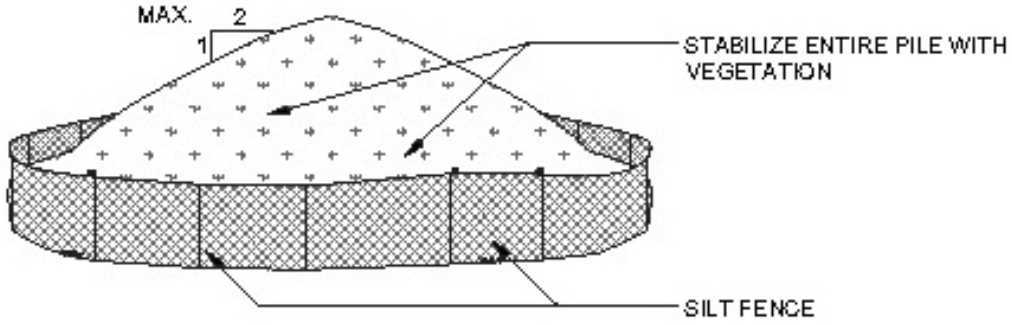
MAINTENANCE NOTES:

1. INSPECT SILT FENCE ONCE A WEEK AND AFTER RAINFALLS, REMOVE AND REPLACE THE FABRIC WHEN BULGES DEVELOP IN THE SILT FENCE.
2. MAINTENANCE SHALL BE PERFORMED AS NEEDED, REPLACE ALL SILT FENCE EVERY 9–MONTHS OR AS DIRECTED BY THE PROJECT REPRESENTATIVE.
3. UPON STABILIZATION OF THE SITE REMOVE SILT FENCE SO AS NOT TO BLOCK STORM FLOW OR DRAINAGE.

SILT FENCE DETAIL

N.T.S

Source: Fisher Associates



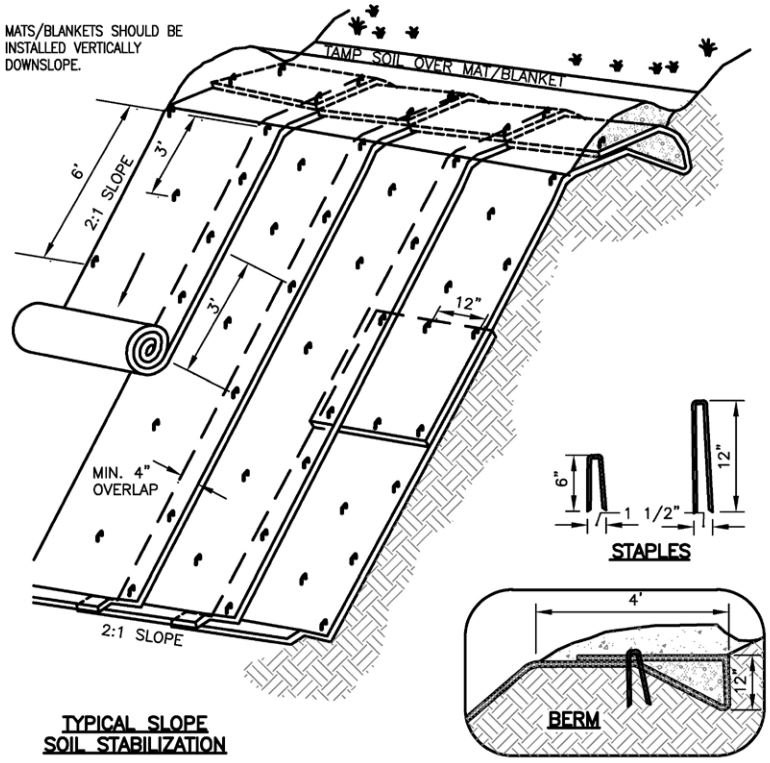
NOTES:

1. AREA CHOSEN FOR STOCKPILING SHALL BE LOCATED IN FIELD BY ENVIRONMENTAL INSPECTOR, OUTSIDE OF WETLANDS.
2. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
3. MAXIMUM SLOPE OF STOCKPILE SHALL BE 2:1.
4. EACH PILE SHALL BE SURROUNDED WITH SILT FENCING, INSTALLED PER CORRESPONDING DETAIL, THEN STABILIZED WITH MULCH OR SEEDING WITHIN 3 DAYS.
5. A PERIMETER DIKE/SWALE SHALL BE LOCATED UP-SLOPE OF THE TOPSOIL STOCKPILE.
6. FOR SMALL SOIL STOCKPILES, COMPLETELY COVERING WITH A TARP AND ANCHORING OUTSIDE EDGES OF THE TARP IS AN ALTERNATIVE TO SEED AND MULCH AND SILT FENCING.

STABALIZED TOPSOIL STOCKPILE

N.T.S

Source: EDR



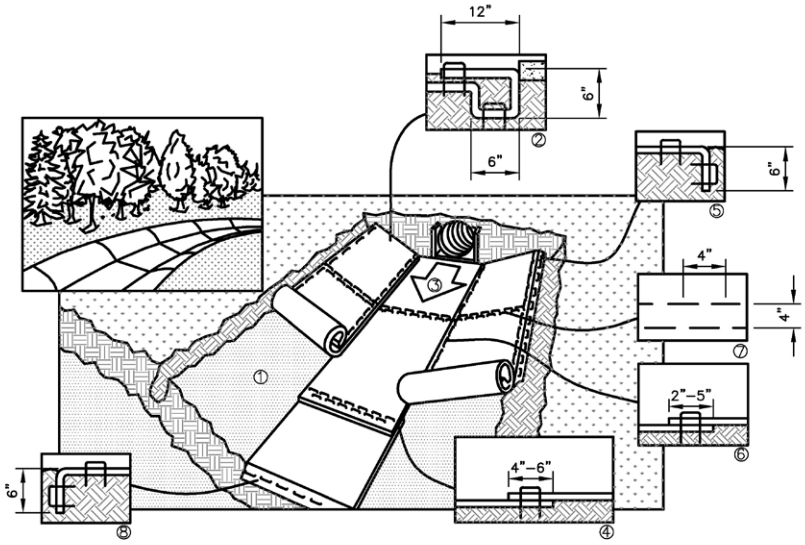
NOTES:

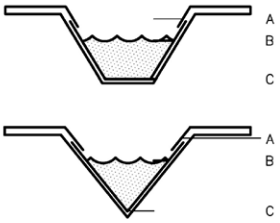
1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS/BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
3. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.

EROSION BLANKETS SLOPE INSTALLATION

N.T.S

Source: Fisher Associates





CRITICAL POINTS

A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.

** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS.

NOTES

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.

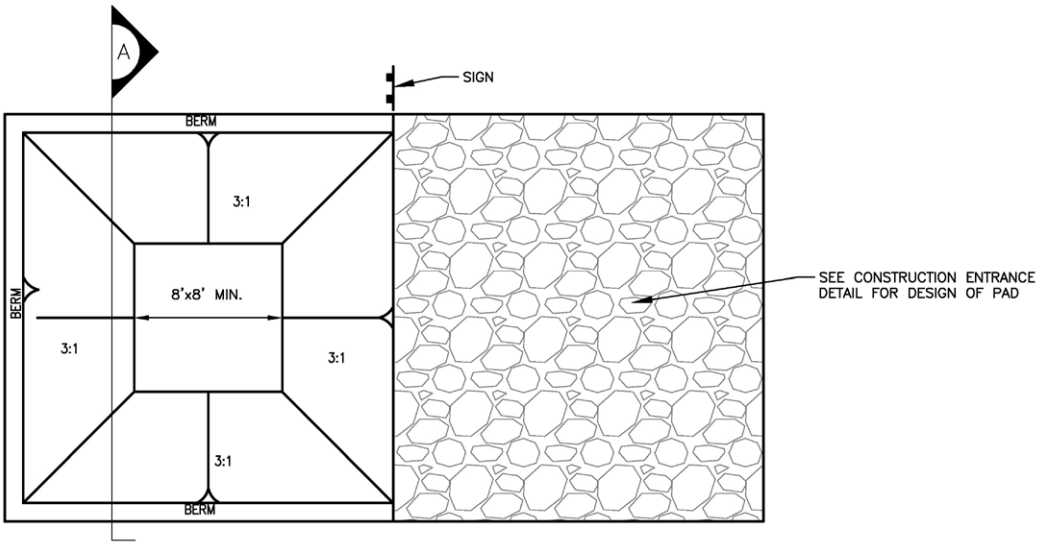
CHANNEL INSTALLATION SPECIFICATIONS

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED, DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH THE PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. PLACE CONSECUTIVE BLANKETS END OVER END (SHINGLE STYLE) WITH A 4"-6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER TO SECURE BLANKETS.
5. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ADJACENT BLANKETS MUST BE OVERLAPPED APPROXIMATELY 2"-5" (DEPENDING ON BLANKET TYPE) AND STAPLED. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE BLANKET BEING OVERLAPPED.
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30' TO 40' INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER OVER ENTIRE WIDTH OF CHANNEL.
8. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
9. EROSION CONTROL BLANKETS INSTALLED WITHIN CHANNELS/SWALES/DITCHES SHALL BE NORTH AMERICAN GREEN SC-250 OR APPROVED EQUAL.

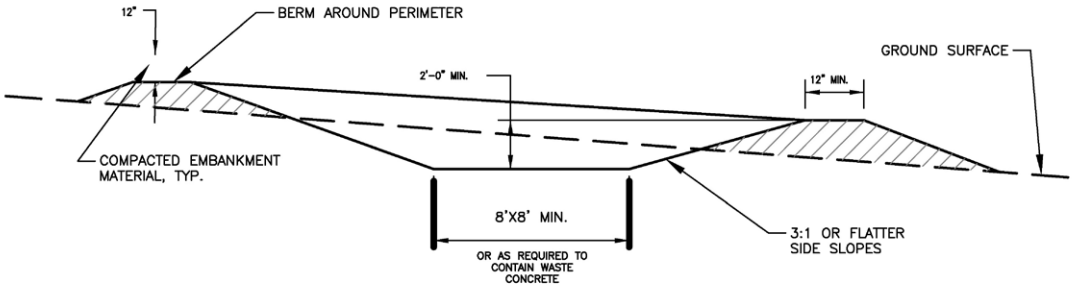
EROSION CONTROL BLANKET - CHANNEL INSTALLATION

N.T.S

Source: Fisher Associates



PLAN VIEW



SECTION A

CONCRETE WASHOUT AREA INSTALLATION NOTES:

1. CONCRETE WASHOUT AREAS ARE TO BE INSTALLED AT EACH WTG PAD LOCATION, O & M BUILDING SITE, SUBSTATION SITE, LAYDOWN AREA AND WHEREVER ELSE CONCRETE IS USED FOR THE PROJECT.
2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON THE SITE.
3. VEHICLE TRACKING CONTROL IS REQUIRED AT THE ACCESS POINT.
4. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
5. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION.

CONCRETE WASHOUT AREA MAINTENANCE NOTES:

1. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
3. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, COVER THE DISTURBED AREA WITH TOPSOIL, DRILL SEED AND CRIMP MULCH OR OTHERWISE STABILIZE IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

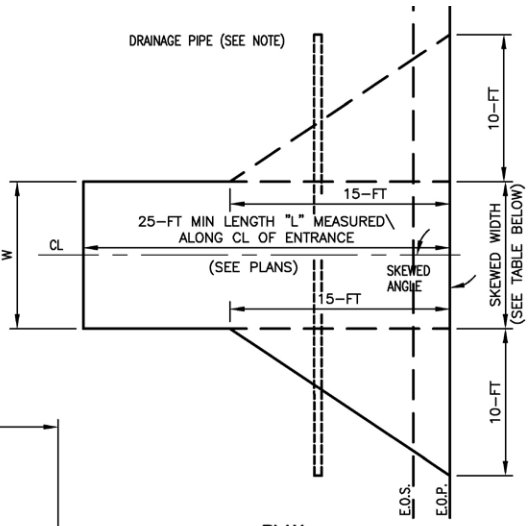
CONCRETE WASHOUT AREA

N.T.S

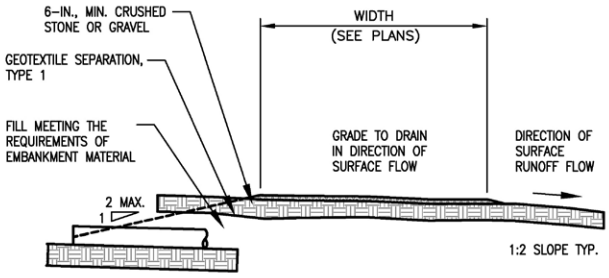
Source: Fisher Associates

SKEWED ENTRANCE LAYOUT WIDTHS (W)					
	SKEW ANGLE (°)				
ENTRANCE TYPE	60	75	90	105	120
ONE–WAY	14.0	12.5	12.0	12.5	14.0
TWO–WAY	28.0	25.0	24.0	25.0	28.0

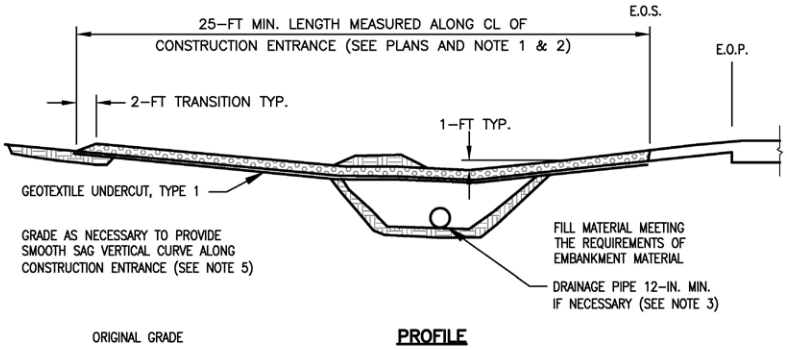
NOTE:
FOR CORNER ANGLES NOT SHOWN IN TABLE. SEE NYSDOT "POLICY AND STANDARDS FOR ENTRANCES TO STATE HIGHWAYS, FEBRUARY 1998–IN., MINOR COMMERCIAL DRIVEWAYS.



PLAN



SECTION



PROFILE

APPLICATION NOTES:

A. THE PURPOSE OF A STABILIZED CONSTRUCTION ENTRANCE IS TO REDUCE OR ELIMINATE THE TRACKING OF SEDIMENT ONTO ADJACENT CAMPUS STREETS.

CONSTRUCTION SPECIFICATIONS:

1. MODIFICATIONS MAY BE REQUIRED TO MATCH FIELD CONDITIONS AS DIRECTED BY THE PROJECT REPRESENTATIVE.
2. A 30–FT WASH AREA SHALL BE PROVIDED CENTERED ON LOW POINT OF DRIVEWAY SAG VERTICAL CURVE. ADDITIONAL GRADING MAY BE REQUIRED TO PROVIDE WASHING AREA. WASHING SHALL BE PERFORMED AS NEEDED TO PREVENT TRACKING SEDIMENT ONTO LOCAL ROADWAYS.
3. PROPOSED DRAINAGE PIPES SHALL BE SIZED WITH SUFFICIENT CAPACITY TO CARRY DITCH FLOWS. ALTERNATE WAYS OF TRANSPORTING DITCH DRAINAGE ACROSS CONSTRUCTION ENTRANCES MAY BE PROPOSED BY CONTRACTOR FOR APPROVAL BY THE PROJECT REPRESENTATIVE.
4. THE CONTRACTOR SHALL GRADE TO PREPARE AND SMOOTH ORIGINAL GROUND FOR PLACEMENT OF 0.50–FT OF #3 CRUSHED STONE ENTRANCE MATERIAL UP TO THE EDGE OF PAVEMENT.
5. THE CONTRACTOR SHALL RESTORE LAWN AND ROADWAY SHOULDER TO ORIGINAL CONDITION AT NO ADDITIONAL EXPENSE TO THE OWNER.

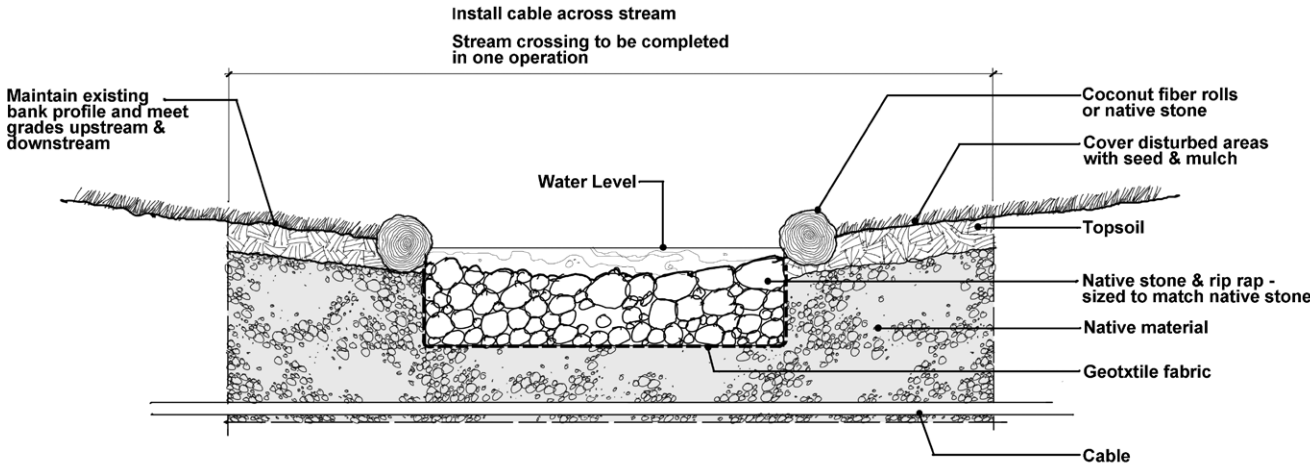
MAINTENANCE NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT PREVENTS THE TRACKING OF SEDIMENT ONTO THE CAMPUS ROADWAYS. THIS CAN BE DONE BY PROVIDING TOP DRESSING OF ADDITIONAL AGGREGATE.
2. ALL SEDIMENT SPILLED, DROPPED, OR WASHED ONTO THE CAMPUS OR PUBLIC ROADWAYS SHOULD BE REMOVED IMMEDIATELY.

STABALIZED CONSTRUCTION ENTRANCE

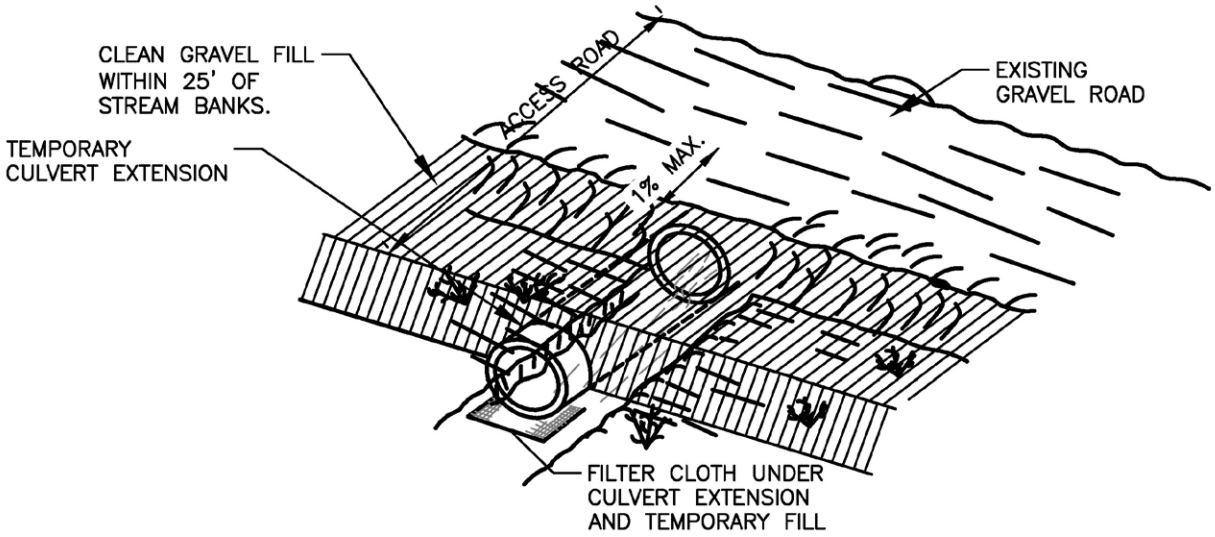
N.T.S

Source: Fisher Associates



STREAM CHANNEL RESTORATION DETAIL

N.T.S



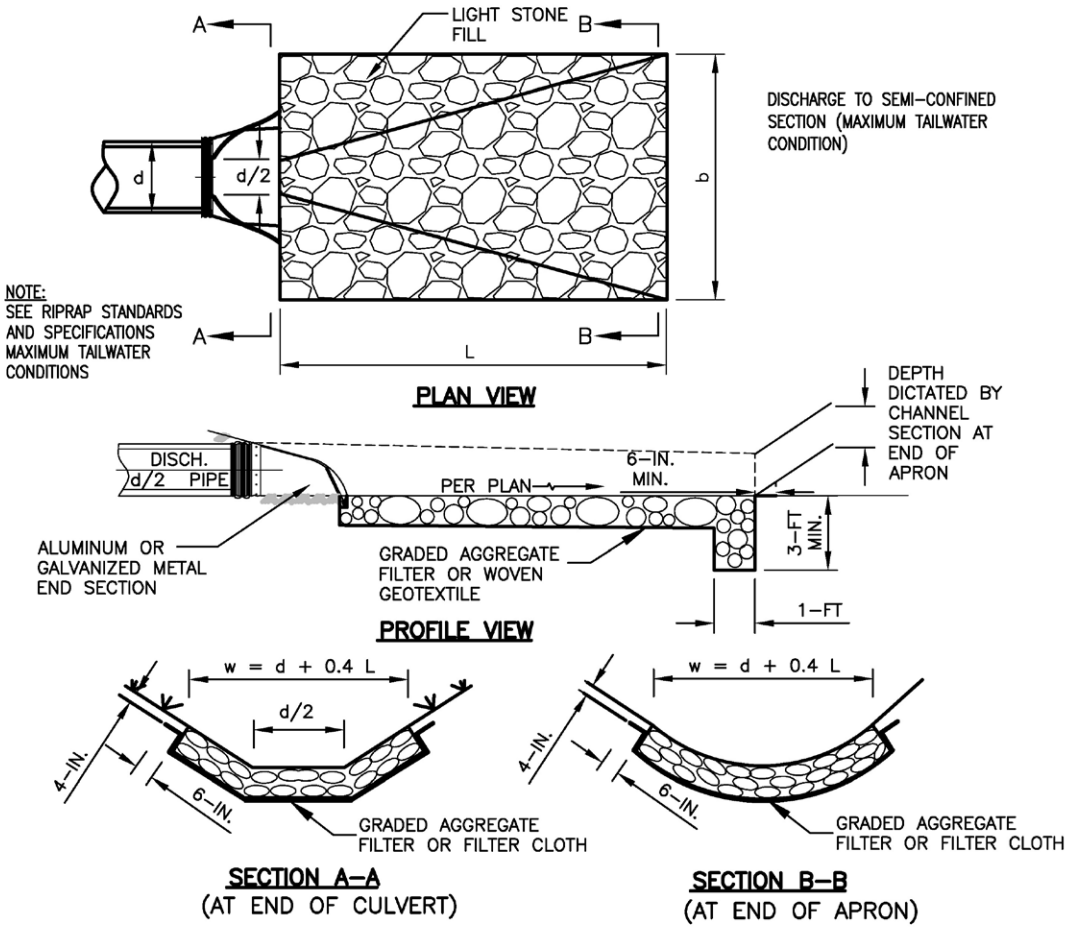
NOTES:

1. EXISTING CULVERT SHALL BE EXTENDED ON THE SIDE OF ROAD RESULTING IN THE LEAST AMOUNT OF WETLAND AND/OR STREAM IMPACTS.
2. TEMPORARY CULVERT SHALL BE INSTALLED NO SOONER THAN 4 WEEKS PRIOR TO THE CRANE CROSSING AND SHALL BE REMOVED WITHIN 5 MONTHS AFTER THE CROSSING.
3. THE CULVERT SHALL EXTEND A MINIMUM OF 1' BEYOND THE TOE OF SLOPE.
4. IN AREAS THAT HAVE LESS THAN 1' OF COVER OVER THE EXISTING CULVERT, A STEEL PLATE MAY BE UTILIZED IN CONJUNCTION WITH THE TEMPORARY CULVERT EXTENSIONS TO SPAN THE CULVERT AND PROVIDE FOR CONSTRUCTION LOADING.
5. THE MINIMUM DIAMETER OF THE TEMPORARY CULVERT SHALL EQUAL THE SIZE OF THE EXISTING CULVERT.

TEMPORARY CULVERT EXTENSION

N.T.S

Source: Fisher Associates



APPLICATION NOTES:

1. ROCK OUTLET PROTECTION SHALL BE PROVIDED AT THE INLETS AND OUTLETS OF ALL CULVERT PIPES TO REDUCE THE DEPTH, VELOCITY, AND ENERGY OF WATER SUCH THAT THE FLOW WILL NOT ERODE THE RECEIVING DOWNSTREAM REACH.

CONSTRUCTION SPECIFICATIONS:

1. SEE GRADING AND STORMWATER POLLUTION PREVENTION PLAN FOR OUTFALL INVERTS AND SURROUNDING GRADES.
2. ANY FILL ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
3. SEE DRAINAGE TABLE FOR PIPE AND OUTFALL LOCATIONS AND PIPE SIZES.
4. FILTER CLOTH SHALL BE PROTECTED FROM PUNCHING, CUTTING, OR TEARING. ANY DAMAGE OTHER THAN THE OCCASIONAL SMALL HOLE SHALL BE REPAIRED BY PLACING ANOTHER PIECE OF CLOTH OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE CLOTH. ALL OVERLAPS, WHETHER FOR REPAIRS OR JOINING TWO PIECES OF CLOTH SHALL BE A MINIMUM OF 1-FT.

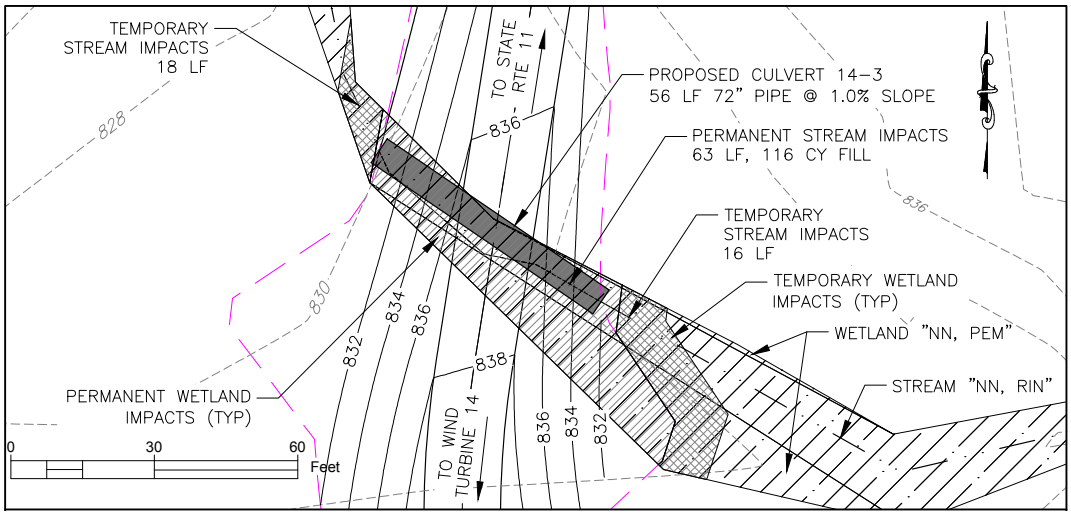
MAINTENANCE NOTES:

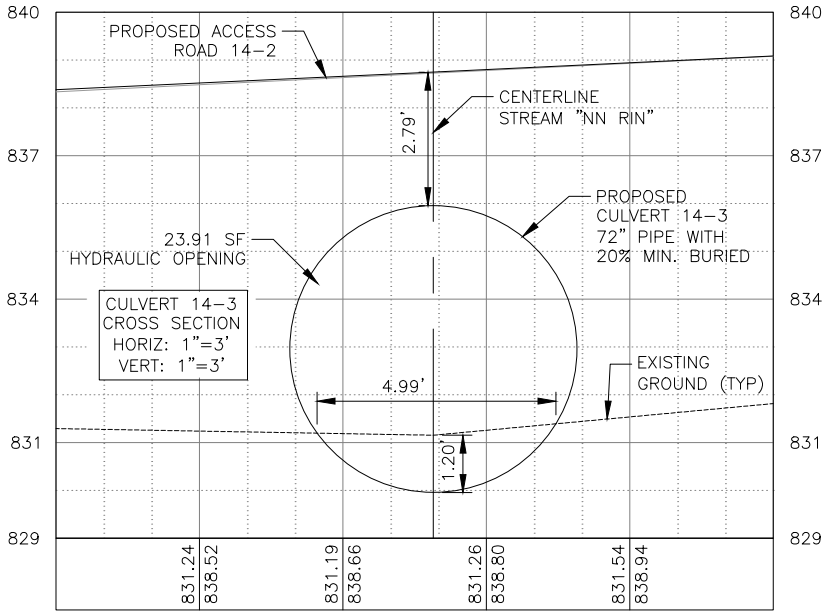
1. INSPECT STRUCTURE AFTER HIGH FLOWS FOR EVIDENCE OF SCOUR BENEATH RIPRAP OR FOR DISLODGED STONES. REPAIRS SHOULD BE MADE IMMEDIATELY.

TYPICAL CULVERT ROCK OUTLET PROTECTION

N.T.S

Source: Fisher Associates

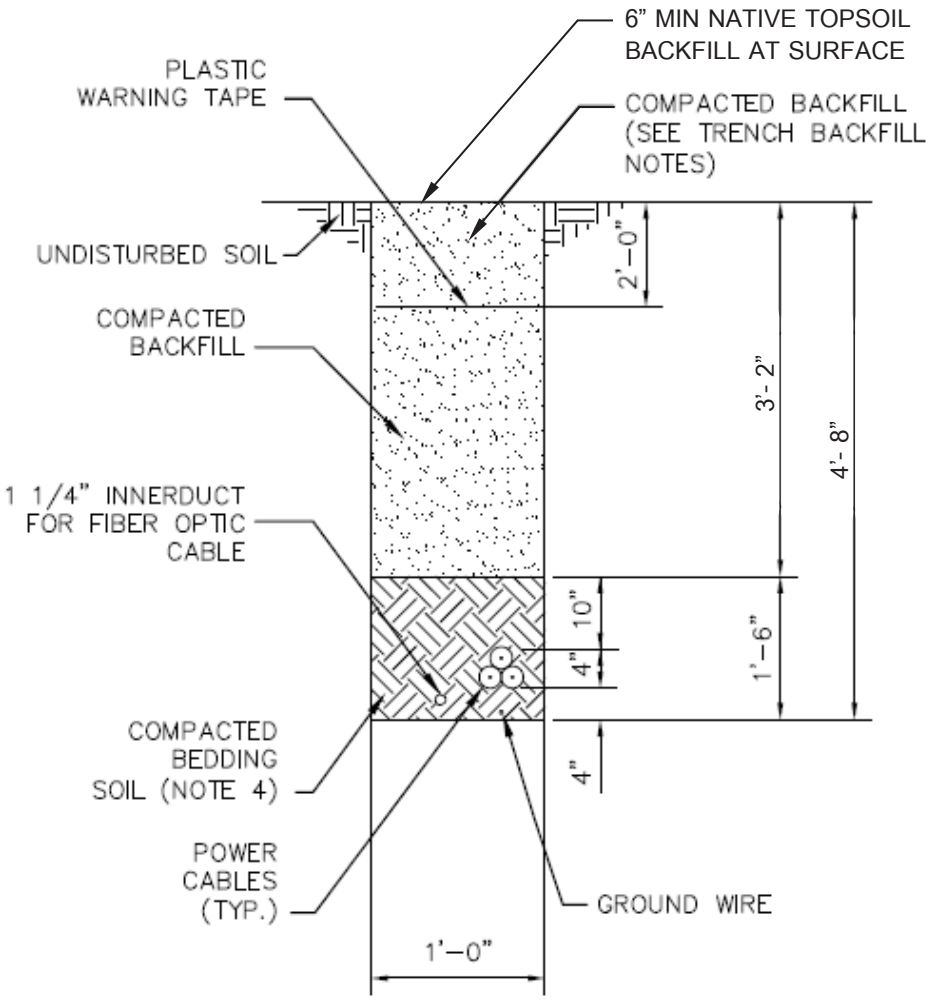




PERMANENT CULVERT PLAN AND CROSS SECTION

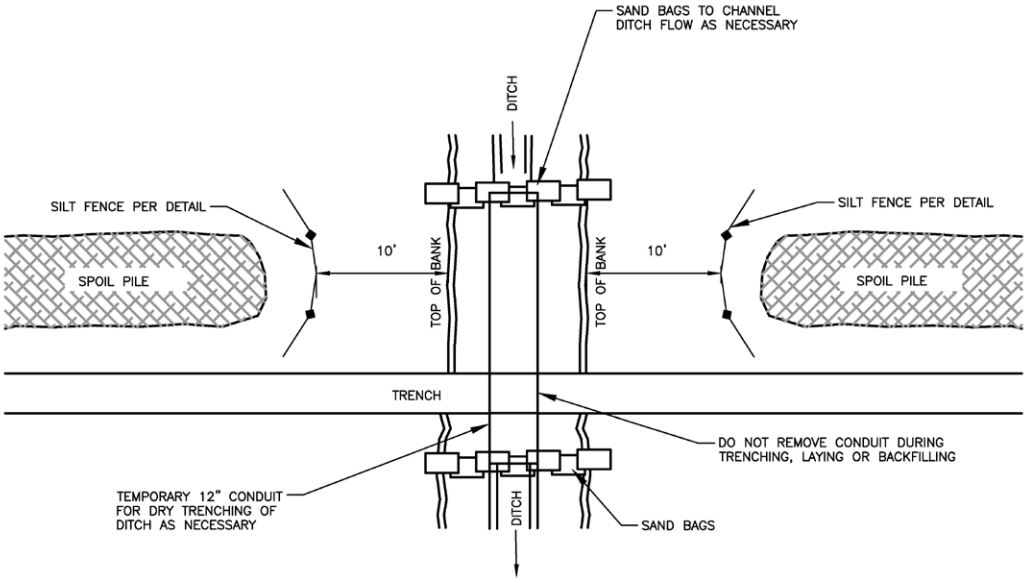
N.T.S

Source: Fisher Associates

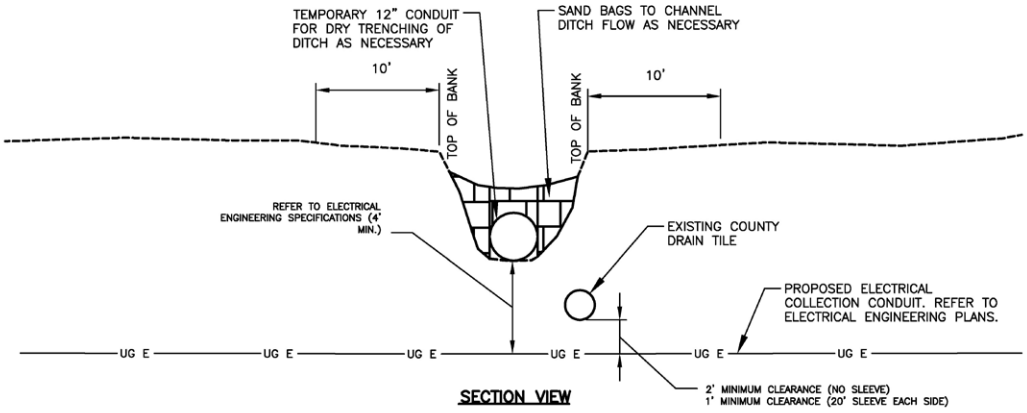


STANDARD TRENCH/ONE CIRCUIT (ST-1)

SCALE: NONE



PLAN VIEW



SECTION VIEW

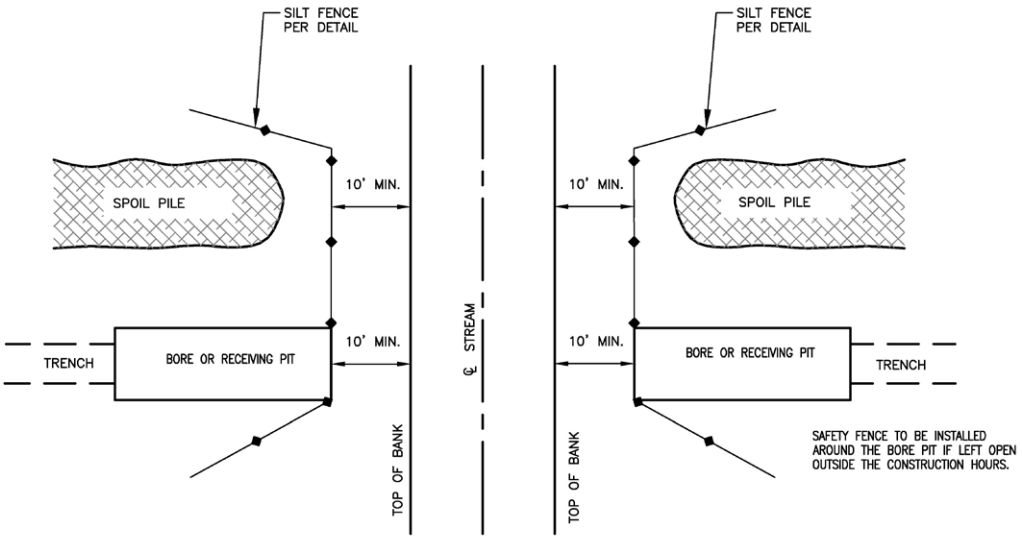
NOTES:

1. TEMPORARY SAND BAGS AND CONDUIT ARE TO BE INSTALLED PRIOR TO ANY CONSTRUCTION WITHIN THE LIMITS OF THE DITCH. IN THE EVENT THAT THE DITCH IS DRYING DURING CONSTRUCTION, SAND BAGS AND CONDUIT ARE NOT NECESSARY.
2. EXCAVATED TRENCH MATERIAL SHALL BE STOCKPILED ADJACENT TO THE TRENCH, NO CLOSER THAN 25' FROM THE TOP OF BANK OF THE DITCH.
3. SILT FENCE SHALL BE INSTALLED BETWEEN THE STOCKPILED MATERIAL AND THE TOP OF BANK OF THE DITCH.
4. IMMEDIATELY AFTER CONSTRUCTION IS COMPLETE, PERMANENT STABILIZATION MEASURES SHALL BE APPLIED.
5. REFER TO ELECTRICAL DESIGN FOR CONDUIT DEPTH AND TRENCH DETAILS.

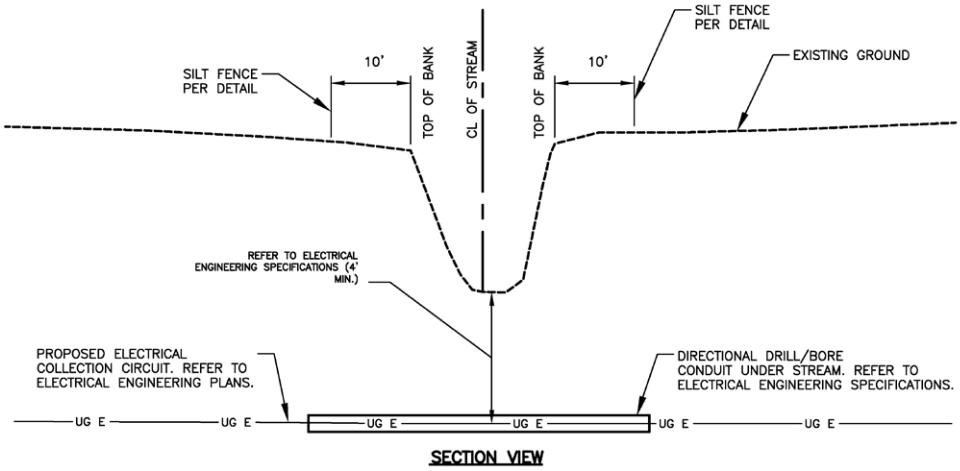
TYPICAL EROSION CONTROL & CLEARENCE DETAIL FOR COLLECTION LINE OPEN CUT DITCH/TILE CROSSING

N.T.S

Source: Fisher Associates



PLAN VIEW



SECTION VIEW

NOTES:

1. EXCAVATED TRENCH AND BORE/RECIEVING PIT MATERIAL SHALL BE STOCKPILED ADJACENT TO THE TRENCH, NO CLOSER THAN 10' FROM THE TOP OF BANK OF THE DITCH.
2. SILT FENCE SHALL BE INSTALLED BETWEEN THE STOCKPILED MATERIAL AND BORE/RECIEVEING PIT AND THE TOP OF BANK ON BOTH SIDES OF THE STREAM.
3. IMMEDIATELY AFTER CONSTRUCTION IS COMPLETE, PERMANENT STABILIZATION MEASURES SHALL BE APPLIED.
4. THERE SHALL BE NO DISTURBANCE TO THE STREAM DURING CONSTRUCTION.
5. REFER TO ELECTRICAL DESIGN FOR CONDUIT DEPTH AND TRENCH DETAILS.

TYPICAL EROSION CONTROL & CLEARENCE DETAIL FOR COLLECTION LINE TRENCHLESS STREAM CROSSING

N.T.S

Source: Fisher Associates

APPENDIX A
Wetland Delineation Report

Wetland Delineation Report

Jericho Rise Wind Farm

Towns of Chateaugay and Bellmont

Franklin County, New York

Prepared for:

EDP Renewables North America, LLC
808 Travis St, Ste 700
Houston, TX 77002
P. (713) 265-0350
E. info@edpr.com

Prepared by:

Environmental Design & Research, Landscape Architecture,
Engineering & Environmental Services, D.P.C.
217 Montgomery Street, Suite 1000
Syracuse, New York 13202
P. 315.471.0688
F. 315.471.1061
E. syr@edrdpc.com

November 2015

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ATTACHMENTS

1.0 INTRODUCTION

1.1 PROJECT DESCRIPTION

Jericho Rise Wind Farm LLC (the Applicant), a wholly owned subsidiary of EDP Renewables (EDPR), is proposing to construct a wind energy generation facility (and associated necessary Project infrastructure) in the Towns of Chateaugay and Bellmont in Franklin County, New York (see Figure 1). The Project will consist of up to 37 turbines; each with a nameplate capacity of 2.1 megawatts (MW), for a total anticipated nameplate generating capacity of approximately 78 MW. However, to allow for flexibility on final site selection, the Applicant is evaluating 43 turbine sites. The wind turbine proposed for the Project is the Gamesa G-114 or equivalent model.

In addition to the turbines, the Project will include construction and operation of a single permanent meteorological tower, a system of gravel access roads, electrical collection and communication cables and a substation. Along with the permanent components of the Project, construction of the Project will also require a temporary construction staging area to store Project components (laydown yard), accommodate construction trailers, and provide parking for construction vehicles.

At the request of the Applicant, EDR investigated portions of approximately 5,895 acres of leased private land, or land that is currently under negotiation to lease. The land, hereafter referred to as the Project site, is roughly bound by State Route 11 to the north, the Chateaugay River to the east, County Route 24 to the south, and the Burke/Chateaugay town boundary to the west (see Figure 2).

EDR was retained to identify all wetlands and streams within the anticipated limit of disturbance associated with all Project components described above (hereafter referred to as the "Study Area"). Specifically, the Study Area includes a 100 foot corridor for proposed access roads, a 75-foot corridor for collection lines, a 250-foot radius around each turbine, and the meteorological tower, along with those areas that include the substation, laydown yard, and temporary public road/turning radii improvements. All wetland and stream delineations took place there during the growing season of 2015, from early June through September. The accuracy of delineated wetland and stream boundaries was confirmed during a jurisdictional determination site visit conducted on October 27 and 28, 2015.

1.2 PURPOSE

The purpose of this study was to delineate and describe all on-site wetlands and streams that may fall under state or federal jurisdiction. Specific tasks performed for this study included 1) review of background resource data/mapping, 2) field delineation and flagging of all potential state and federal jurisdictional wetlands and streams, 3) subsequent Global Positioning System (GPS) survey of on-site delineated wetlands and streams, 4) quantification of the area of on-site wetlands and streams, and 5) a detailed description of potentially jurisdictional areas based on hydrology, vegetation, and soils data collected in the field.

This report describes the results of the on-site wetland and stream delineations conducted by EDR, including a description of the wetlands and other waters that were identified and their likely jurisdictional status. This document is intended to provide all of the information necessary to identify on-site jurisdictional areas and support a permit application that is to be submitted to the United States Army Corps of Engineers (USACE) and the New York State

Department of Environmental Conservation (NYSDEC), and other impact evaluations conducted in support of the State Environmental Quality Review Act (SEQRA).

1.3 RESOURCES

Materials and literature supporting this investigation have been derived from a number of sources including USGS topographic mapping (Brainardsville, Burke, and Chateaugay NY 7.5 minute quadrangles), United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping, NYSDEC freshwater wetlands mapping, Natural Resources Conservation Service (NRCS) Web Soil Survey (Soil Survey Staff, 2015), the NRCS List of Hydric Soils of the State of New York (NRCS, 2014), and recent aerial photography.

Vascular plant names follow nomenclature found in the New York Flora Atlas (Weldy et al., 2015), and wetland indicator status for vegetative species was determined by reference to the National Wetland Plant List (Lichvar et al., 2014). Jurisdictional areas were characterized according to the wetlands and deepwater habitats classification system used in NWI mapping (Cowardin, 1979).

1.4 QUALIFICATIONS

Wetland and stream delineations were conducted by EDR field ecologists Connor Liddell, Emma Freeland, and John Wojcikiewcz, under the supervision of EDR senior ecologist John Hecklau.

Mr. Liddell is an Environmental Analyst/Field Biologist with over five years' experience in the environmental field. He received a Bachelor of Science and Graduate Certificate in Natural Resource Management from James Cook University, Townsville, Australia through direct program affiliations with the State university of New York (SUNY) at Buffalo Honors College. Mr. Liddell's experience includes wetland and stream delineation, wetland/coastal mitigation design and monitoring, wildlife management, habitat restoration, ecological surveys, invasive species management, environmental impact analysis, and geographic information system (GIS) data analysis.

Ms. Freeland is an Ecological Resources Specialist with over six years of experience. She holds a Bachelor's degree in Biology from Hamilton College and a Master's degree in Botany from the University of Wyoming. Ms. Freeland's experience includes wetland and stream delineation, botanical and ecological surveys, rare species investigations, environmental impact analysis, and GIS data analysis. Prior to joining EDR, she conducted botanical surveys and vegetation assessments for federal agencies in Colorado, Montana, Nevada, and Wyoming. Other experience includes floristic inventories, GPS survey and mapping, GIS mapping, and a variety of wildlife surveys.

Mr. Wojcikiewicz is an Environmental Analyst/Field Biologist with more than three years of experience in the natural resources field. He received a Bachelor of Science in Biology from Clarkson University and a Master's Degree in Biology from Virginia Commonwealth University. Mr. Wojcikiewicz's experience includes wetland and stream delineations, wetland permitting, ecological surveys, ecological research, invasive species management, environmental impact analysis, and GIS data analysis.

Mr. Hecklau serves as principal-in-charge of many of EDR's environmental inventory, management, and permitting projects. He received a Bachelor's degree in Biology from Middlebury College and a Master's degree in Environmental

and Forest Biology from the State University of New York (SUNY) College of Environmental Science and Forestry. He has over 30 years of experience in the environmental field, including wetland delineation and permitting, ecological surveys, natural resource management planning, habitat assessments, and environmental impact analysis.

2.0 REGULATORY AUTHORITIES AND PERMITS

2.1 WATERS OF THE UNITED STATES

In accordance with the Section 404 of the Clean Water Act, the USACE has regulatory jurisdiction over Waters of the Unites States. As defined by the USACE, Waters of the United States include all lakes, ponds, streams (intermittent and perennial), and wetlands. Jurisdictional wetlands are defined as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (EPA, 2001). Such areas are indicated by the presence of three criteria: hydrophytic vegetation, hydric soils, and evidence of wetland hydrology during the growing season (Environmental Laboratory, 1987). However, as a result of the Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers Supreme Court case (No. 99-1178; January 9, 2001), it has been determined that the USACE does not have jurisdictional authority over waters that are "nonnavigable, isolated, and intrastate" (USEPA, 2001). The jurisdictional status of all on-site waters can only be determined following official documentation provided by the USACE, which typically includes a field visit.

More recently, the Supreme Court decided *U.S. v. Rapanos*, (547 U.S., June 19, 2006), in which it held in two consolidated cases (*Rapanos* and *Carabell*) that the USACE misinterpreted the Clean Water Act in determining its jurisdiction over wetland protection. On June 5, 2007 the Environmental Protection Agency (EPA) and the Department of Army (DOA) issued Clean Water Act jurisdiction guidance following the Supreme Court's decision in *Rapanos* and *Carabell*. A summary of this guidance is as follows:

The agencies will assert jurisdiction over the following waters:

- Traditional navigable waters;
- Wetlands adjacent to traditional navigable waters;
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months); and
- Wetlands that directly abut such tributaries.

The agencies will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have significant nexus with a traditional navigable water:

- Non-navigable tributaries that are not relatively permanent;
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent; and
- Wetlands adjacent to, but that do not directly abut, a relatively permanent non-navigable tributary.

The agencies generally will not assert jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow); and

- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

The agencies will apply the significant nexus standard as follows:

- A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters; and
- Significant nexus includes consideration of hydrologic and ecologic factors.

Section 10 of the Rivers and Harbor Act (33 U.S.C. 401 et seq.) requires a permit from the USACE to construct any structure in or over any navigable water of the United States, as well as any proposed action that would alter or disturb (such as excavation/dredging or deposition of materials) these waters. If the proposed structure or activity affects the course, location, condition, or capacity of the navigable water, even if the proposed activity is outside the boundaries of the water body, a permit from the USACE is required.

2.2 NEW YORK STATE FRESHWATER WETLANDS AND PROTECTED STREAMS

The Freshwater Wetlands Act (Article 24 and Title 23 of Article 71 of the Environmental Conservation Law) gives the NYSDEC jurisdiction over state-protected wetlands and adjacent areas (100-foot upland buffer). The Freshwater Wetlands Act requires the NYSDEC to map all state-protected wetlands to allow landowners and other interested parties a means of determining where state jurisdictional wetlands exist. To implement the policy established by this Act, regulations were promulgated by the state under 6 NYCRR Parts 663 and 664. Part 664 of the regulations designates wetlands into four class ratings, with Class I being the highest or best quality wetland and Class IV being the lowest. In general, wetlands regulated by the state are those 12.4 acres in size or larger. Smaller wetlands can also be regulated if they are considered of unusual local importance. A 100-foot adjacent area around the delineated boundary of any state-regulated wetland is also under NYSDEC jurisdiction. An Article 24 permit is required from the NYSDEC for any disturbance to a state-protected wetland or an adjacent area, including removing vegetation.

Under Article 15 of the Environmental Conservation Law (Protection of Waters), the NYSDEC has regulatory jurisdiction over any activity that disturbs the bed or banks of protected streams. In addition, small lakes and ponds with a surface area of 10 acres or less, located within the course of a protected stream, are considered to be part of a stream and are subject to regulation under the stream protection category of Article 15. Protected stream means any stream, or particular portion of a stream, that has been assigned by the NYSDEC any of the following classifications or standards: AA, A, B, or C(T) or C(TS) (6 NYCRR Part 701). A classification of AA or A indicates that the best use of the stream is as a source of water supply for drinking, culinary or food processing purposes, primary and secondary contact recreation, and fishing. The best usages of Class B waters are primary and secondary contact recreation and fishing. The best usage of Class C waters is fishing. Streams designated (T) indicate that they support trout, while those designated (TS) support trout spawning. State water quality classifications of unprotected watercourses include Class C and Class D streams. Waters with a classification of D are suitable for fishing and non-contact recreation. An Article 15 permit is required from the NYSDEC for any disturbance to a stream classified C(T) or higher.

3.0 PHYSICAL CHARACTERISTICS AND RESOURCES

3.1 PHYSIOGRAPHY AND SOILS

The Study Area is located on the southern edge of the St. Lawrence Hills sub-region located within the St. Lawrence-Champlain Lowlands physiographic province. This area occurs south of the St. Lawrence Marine Plain sub-region and north of the foothills to the Adirondack Mountains. This range can be described as gently rolling countryside underlain by sandstones and limestones and scattered with glacial drift comprising of large to moderate boulders and cobblestones. Numerous drumlins or drumlin-like hills furnish much of the local upland relief while long, shallow concave depressions scattered throughout the region carry and direct most of the hydrological flows to major streams or rivers. Elevations within the Study Area range from approximately 980 feet to approximately 1,370 feet above mean sea level (Figure 3).

The Franklin County soil surveys have mapped general soil associations and soil types within the Study Area. The soil surveys indicate that eight (8) soil associations and 39 soil map units from 20 different soil series are present within the Study Area (Figure 4). Of these, Westbury is the most dominant soil series, covering over 513 acres, or 44 percent, of the Study Area. Other prominent soil series include Empeyville and Tughill soil series. Soil drainage in the Study Area is variable, with approximately 52 percent somewhat poorly drained, 27 percent moderately well drained, 15 percent very poorly drained, and around six (6) percent well drained. Table 1 lists the soil map units within the Study Area and their characteristics. "Hydric" and "Potentially Hydric" designations were based on information obtained on the USDA Web Soil Survey (Soil Survey Staff, 2015). Although soil series may be generally classified as hydric or potentially hydric on the online databases, this is for general use and does not supersede specific conditions found in the field.

Table 1. Study Area Soils

Mapping Unit	Series	Slope (%)	Drainage[1]	Hydric[2]	Potentially Hydric[3]
Abd	Adams and Colton soils, severely eroded	8-25	SED	No	No
Ace	Adams and Colton soils	25-60	SED	No	No
Bea	Brayton stony loam	0-3	SPD	No	Yes
Beb	Brayton stony loam	3-8	SPD	No	Yes
Bfb	Brayton very stony loam	0-8	SPD	No	Yes
Caa	Colton and Constable gravelly loamy sands	0-3	ED	No	No
Cab	Colton and Constable gravelly loamy sands	3-8	ED	No	No
Cbb	Colton and Constable cobbly loamy sands	3-8	ED	No	No
Ccc	Colton and Constable gravelly and cobbly loamy sands	8-15	ED	No	No
Ccd	Colton and Constable gravelly and cobbly loamy sands	15-25	ED	No	No
Daa	Duane gravelly sandy loam	0-3	MWD	No	No
Eaa	Empeyville stony very fine sandy loam	0-3	MWD	No	No
Eab	Empeyville stony very fine sandy loam	3-8	MWD	No	No

Mapping Unit	Series	Slope (%)	Drainage[1]	Hydric[2]	Potentially Hydric[3]
Eac	Empeyville stony very fine sandy loam	8-15	MWD	No	No
Ebb	Empeyville very stony very fine sandy loam	0-8	MWD	No	No
Ecd	Empeyville and Moira stony very fine sandy loams	15-25	MWD	No	No
Edc	Empeyville and Moira very stony very fine sandy loams	8-25	MWD	No	No
Mea	Moira stony loam	0-3	MWD	No	No
Meb	Moira stony loam	3-8	MWD	No	No
Mec	Moira stony loam	8-15	MWD	No	No
Saa	Saco and Sloan soils	0-2	VPD	Yes	No
Sea	Scarboro fine sandy loam	0-3	VPD	Yes	No
Sh	Stony land, Hermon and Becket soils	3-60	SED	No	No
Sk	Stony land, Worth and Parishville soils	3-60	WD	No	No
Sma	Sun stony loam	0-5	VPD	Yes	No
Sna	Sun very stony loam	0-3	VPD	Yes	No
Tab	Trout River gravelly loamy sand	3-8	ED	No	No
Tca	Tughill and Dannemora stony very fine sandy loams	0-3	VPD	Yes	No
Tda	Tughill and Dannemora very stony very fine sandy loams	0-3	VPD	Yes	No
W	Water	-	-	-	-
Wca	Walpole sandy loam	0-6	PD	Yes	No
Wma	Westbury and Dannemora stony very fine sandy loams	0-3	SPD	No	Yes
Wmb	Westbury and Dannemora stony very fine sandy loams	3-8	SPD	No	Yes
Wna	Westbury and Dannemora very stony fine sandy loams	0-8	SPD	No	Yes
Woc	Westbury and Brayton very stony very fine sandy loams	8-15	SPD	No	Yes
Wqb	Worth stony fine sandy loam	3-8	WD	No	No
Wsb	Worth very stony fine sandy loam	3-8	WD	No	No
Wsd	Worth very stony fine sandy loam	8-25	WD	No	No
Wte	Worth and Parishville soils	25-60	WD	No	No

[1] Soil drainage is represented by the following abbreviations: “ED” = excessively drained, “SED” = somewhat excessively drained, "WD" = well drained, "MWD" = moderately well drained, "SPD" = somewhat poorly drained, “PD” = poorly drained, and "VPD" = very poorly drained.

[2] "Yes" indicates this soil is listed as containing 66% or more hydric components within the map unit as listed on the USDA Web Soil Survey.

[3]"Yes" indicates this soil is listed as containing 1% to 65% hydric components within the map unit as listed on the USDA Web Soil Survey.

3.2 HYDROLOGY

The Project Study Area is located in the English-Salmon drainage basin (USGS Hydrologic Unit 04150307) of the St. Lawrence watershed (USGS, 2014). The majority of surface hydrology on the Study Area is generated by precipitation and surface water run-off from adjacent land. Total annual precipitation (from 1971 to 2000) averaged 38.86 inches in nearby Malone, New York (NOAA, 2015). Mapped surface water resources within the Project Area are described below and illustrated in Figure 5.

The largest surface water body in the area is the Chateaugay River, a perennial stream about 50-90 feet wide, located along the eastern edge of the Project site. It drains north, crossing into Canada approximately six miles north of the Project site. High Falls, with an approximately 120-foot drop, is a tourist attraction on the Chateaugay River about one half a mile east of the Project site boundary.

Allen Brook originates in the Project site and flows north, draining into the Chateaugay River approximately three miles north of the Project site. Within the Project site, Allen Brook is up to approximately 12 feet wide and generally runs through forested communities.

The Little Trout River originates south of the Project site, and flows northwest through the southwest portion of the Project site. Its width ranges from about 10 to 40 feet through the Project site, and it has a moderate gradient. Alder Brook is a named tributary of the Little Trout River. Alder Brook originates in the Project site and drains northwest to the Little Trout River about seven miles northwest of the Project site. Collins Brook is a named tributary of the Trout River. It is about 10 to 30 feet wide through the Project site, with a moderate gradient.

Other streams in the Study Area are primarily low-gradient drainage features that meander through wetlands, forests, agricultural fields, hedgerows, and pastures. Most of these streams are less than 10 feet wide with variable substrates, and vegetative cover characteristics. Some Project Area streams have well-defined and abrupt banks, while the banks of others transition gradually into adjacent wetland vegetation. There are also a few small farm ponds/open water areas interspersed throughout the area. Generally, these are found in farm settings, adjacent to houses and barns, or within wetlands. Water depths in these ponds, although not verified, are anticipated to be four feet or more. They may be used as a source of water for livestock or for fishing and aesthetic purposes.

3.3 FEDERAL AND STATE MAPPED WETLANDS AND STREAMS

National Wetland Inventory (NWI) mapping covers the entire Study Area, and indicates that 12 wetlands, totaling approximately 15 acres fall within the Study Area. NWI mapping separates wetlands based on the vegetative community, so for NWI purposes, a single wetland with two community types is mapped as two different wetlands. Field reconnaissance indicates that a number of additional wetlands that are likely to be under federal jurisdictional also occur in the Study Area. The NWI data indicate that scrub-shrub wetlands are the dominant mapped wetland community in the Study Area, totaling approximately 6.6 acres. Other NWI-mapped wetland communities include forested wetlands (3.4 acres), scrub-shrub and emergent complexes (3.7 acres), and forested and scrub-shrub complexes (1.6 acres).

Review of NYSDEC mapping indicates that just one freshwater wetland that is regulated under Article 24 of the Environmental Conservation Law (CG-6), occurs near the Study Area (Figure 5). This Class III wetland is located near the northern portion of the Project site, on the north and south sides of Jerdon Road, and extends via a stream to the west side of Willis Road. Although parts of this wetland occur on property included within the Project site, it does not overlap the Study Area. Table 2 provides a summary of State-regulated wetlands in the vicinity of the Project site.

Table 2. State-Regulated Wetlands in the Vicinity of the Project Site

Wetland	Class[1]	Total Size (Acres)	Size Within Study Area (Acres)
CG-6	III	20.39	0

[1] NYS classification system provides four separate classes that rank wetlands according to their ability to provide functions and values (Class I having the highest rank, descending through Class IV).

There are six streams that flow through the Project site that are protected by the NYSDEC under the Protection of Waters Act, all of which have the designation of C(T): Alder Brook, an unnamed tributary of Alder Brook, Allen Brook, Chateaugay River, Collins Brook, and the Little Trout River. Five of these protected streams occur within the Study Area, as indicated in Table 3. All other mapped streams within the Project site and Study Area are classified by the NYSDEC as class D streams and are therefore not subject to Protection of Waters regulations. However, all perennial and intermittent streams in the Study Area will likely be considered jurisdictional by the USACE under Section 404 of the Clean Water Act. There are no streams regulated by Section 10 of the Rivers and Harbors Act of 1899 (navigable waters) within the Project site. In addition, based on the definition set forth at 6 NYCRR 608.1(u) of the Environmental Conservation Law, and site-specific investigations, it is not anticipated that any waters identified within the Project site would meet the New York State definition of "navigable".

Table 3. State-Mapped Streams Within the Study Area

Stream Name	NYSDEC Class	Linear Feet Within Study Area
Alder Brook	C(T)	1321
Alder Brook (trib)	D	434
Alder Brook (trib)	C(T)	2418
Alder Brook (trib)	D	921
Alder Brook (trib)	C(T)	864
Allen Brook (trib)	D	781
Allen Brook (trib)	D	1280
Allen Brook (trib)	C(T)	1505
Little Trout River (trib)	D	833
Little Trout River	C(T)	666
Little Trout River (trib)	D	679
Little Trout River (trib)	D	480

4.0 WETLAND AND STREAM IDENTIFICATION

4.1 METHODOLOGY

A preliminary desktop analysis of the Project site was conducted by EDR prior to performing on-site wetland delineation. The desktop analysis was performed using NYSDEC Freshwater Wetland Mapping, NWI Wetland Mapping, USGS topographic mapping, and recent aerial photography. From these mapped resources, EDR identified areas likely to contain wetland and stream resources within the Study Area in order to assist with wetland impact avoidance during the preliminary siting of Project components.

The entire Study Area was investigated, and all wetlands and streams were delineated during the spring and summer of 2015. The determination of wetland boundaries was made by EDR personnel according to the three-parameter methodology described in the *USACE Wetland Delineation Manual* (hereafter referred to as the 1987 Manual) (Environmental Laboratory, 1987). Determination of wetland boundaries was also guided by the *Interim Regional Supplement to the USACE Wetland Delineation Manual*: North central and Northeastern Region (hereafter referred to as the Regional Supplement) (USACE, 2012). Attention was also given to the identification of potential hydrologic connections between wetland areas that could influence their jurisdictional status. Wetland boundaries were defined in the field with sequentially numbered pink surveyor's flagging.

Data were collected from one or more sample plots in each delineated wetland (depending on the size and diversity of ecological communities of the delineated area), and recorded on USACE Routine Wetland Determination forms (Attachment B). Data collected for each of the wetlands delineated by EDR personnel included dominant vegetation, hydrology indicators, and soil characteristics. Data collected for streams included information on channel width, water depth, substrate material, bank condition and gradient.

The vegetative data collection process focused on dominant plant species in four categories: trees (>3" diameter at breast height), saplings/shrubs (<3.0" diameter at breast height and >3.2' tall), herbs (<3.2' tall), and woody vines. Dominance was measured by visually estimating those species having the largest relative basal area (trees), greatest height (saplings/shrubs), greatest number of stems (woody vines), and greatest percentage of aerial coverage (herbaceous) by species. Dominant species for each stratum in the plant community were identified for all delineated wetlands on the site. The dominant species from each category are defined as those plants with the highest ranking which, when cumulatively totaled, exceeds 50 percent of the total dominance measure for that category, plus any additional plant species comprising 20 percent or more of the total dominance measure for the category. The species were rank ordered for each category by decreasing value of dominance.

Soils data at each sampling location were collected by EDR personnel subsequent to digging a soil pit with a tiling spade. Information concerning soil name, drainage classification, texture, matrix and redoximorphic feature color was obtained for each delineated wetland by reviewing the County Soil Surveys and through field sampling. Soil colors were determined using Munsell Soil Charts (K. I. Corporations, 2000). These data were used to determine whether the soils displayed hydric characteristics. Hydric soils are those that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part of the soil layer. Hydric soils are poorly drained, and their presence is indicative of the likely occurrence of wetlands (Environmental Laboratory, 1987).

The Regional Supplement lists the following indicators as evidence of wetland hydrology (in order of decreasing reliability): (A1) surface water, (A2) high water table, (A3) saturation, (B1) water marks, (B2) sediment deposits, (B3) drift deposits, (B4) algal mat or crust, (B5) iron deposits, (B7) inundation visible on aerial imagery, (B8) sparsely vegetated concave surface, (B9) water-stained leaves, (B13) aquatic fauna, (B15) marl deposits, (C1) hydrogen sulfide odor, (C3) oxidized rhizospheres on living roots, (C4) presence of reduced iron, (C6) recent iron reduction in tilled soils, and (C7) thick muck surface. Hydrologic characteristics (inundation and soil saturation) were visually assessed to a

depth of 12 inches. The hydrology indicators described above are considered "primary indicators," and any one of these indicators is sufficient evidence that wetland hydrology is present. In addition, “secondary indicators” used by EDR personnel included: (B6) surface soil cracks, (B10) drainage patterns, (B16) moss trim lines, (C2) dry-season water table, (C8) crayfish burrows, (C9) saturation visible on aerial imagery, (D1) saturation visible on aerial imagery, (D2) geomorphic position, (D3) shallow aquitard, (D4) microtopographic relief, and (D5) fac-neutral test. Any two of these also indicate the presence of wetland hydrology. Wetland hydrology, when combined with a dominant hydrophytic plant community and hydric soils, indicate the presence of a wetland.

Photographs were taken of all wetlands and streams delineated within the Study Area. Photographs representative of the delineated wetlands and streams are included in Attachment C.

4.2 RESULTS

EDR delineated 58 wetlands and 17 streams within the Study Area, totaling approximately 95.8 acres. Information pertaining to individual wetlands and streams is summarized in Table 4 below and in the Aquatic Resources spreadsheet included as Attachment D. Wetlands and streams were categorized as one or more of the following community types: emergent wetland (PEM), scrub-shrub wetland (PSS), forested wetland (PFO), open water (OW), riverine upper perennial (RUP), and riverine intermittent (RI). All delineated wetlands and streams in the vicinity of Project components are depicted in Figure 6. Large scale maps depicting the locations of all wetland flags are included in Figure 7. The accuracy of delineated wetland and stream boundaries was confirmed during a jurisdictional determination site visit conducted by a representative of the New York District of the USACE on October 27 and 28, 2015.

Table 4. Delineated Wetlands and Streams

Delineation ID	Wetland Present	Wetland Type[1]	Wetland Acreage Within Study Area	Stream Present?	Stream Type[2]	Linear Feet of Stream Within Study Area[3]	NYSDEC Stream Class	Stream Name	Federal Jurisdiction[4]	State Jurisdiction[5]	Appen. A, Figure 7, Sheet #
A	Yes	PFO/PEM	0.146	--	--	--	--	--	Yes	--	105, 106
B	Yes	PFO	2.757	--	--	--	--	--	Yes	--	105, 106, 107, 108
C	Yes	PFO	0.28	--	--	--	--	--	Yes	--	82
D	Yes	PFO	2.433	--	--	--	--	--	Yes	--	82, 83, 84
E	Yes	PSS	2.321	--	--	--	--	--	Yes	--	85, 86
F	Yes	PEM	0.39	Yes	RUP	1870	--	Unnamed Tributary of Chateaugay River	Yes	--	65, 87, 88
G	Yes	PFO/PEM	3.109	--	--	--	--	--	Yes	--	89, 90, 91, 92
H	Yes	PFO/PSS/PEM	3.671	Yes	RIN		--	--	Yes	--	89, 91, 93, 94
I	Yes	PEM	0.39	Yes	RUP	1870	--	Unnamed Tributary of Chateaugay River	Yes	--	65, 87, 88
J	Yes	PFO	0.412	--	--	--	--	--	--	--	64
K	Yes	PFO	0.356	--	--	--	--	--	Yes	--	63
L	Yes	PFO/PEM	0.147	--		--	--	--	Yes	--	61
M	Yes	PFO/PEM	8.247			--	--	--	Yes	--	54, 55, 59, 60
N	Yes	PSS/PEM	3.67	Yes	RIN	600	--	Unnamed Tributary of Chateaugay River	Yes	--	56, 57, 58
O	Yes	PFO	1.519	--	--	--	--		Yes	--	48, 49
P	Yes	PSS/PEM	3.67	Yes	RIN	581	--	Unnamed Tributary of Alder Brook	Yes	--	39, 46, 47, 50, 51
Q	Yes	PEM/OW	2.66	--	--	--	--	--	Yes	--	38, 39
R	Yes	PFO	0.954	--	--	--	--	--	Yes	--	27, 28, 29
S	Yes	PSS/PEM	0.774	--	--	--	--	--	Yes	--	23, 24
T	Yes	PFO	1.079	--	--	--	--	--	Yes	--	118, 119
U	Yes	PFO	1.959	--	--	--	--	--	Yes	--	14, 15, 16

Delineation ID	Wetland Present	Wetland Type[1]	Wetland Acreage Within Study Area	Stream Present?	Stream Type[2]	Linear Feet of Stream Within Study Area[3]	NYSDEC Stream Class	Stream Name	Federal Jurisdiction[4]	State Jurisdiction[5]	Appen. A, Figure 7, Sheet #
V	Yes	PSS/PEM/OW	0.45	--	--	--	--	--	Yes	--	8,9
W	Yes	PFO	1.945	--	--	--	--	--	Yes	--	74, 75, 76, 77
X	Yes	PSS/PEM	1.243	--	--	--	--	--	Yes	--	68, 69
Y	Yes	PFO	0.778	Yes	RUP	581	D	Unnamed Tributary of Little Trout River	Yes	--	66, 67
Z	Yes	PSS	0.408	--	--	--	--	--	--	--	41
AA	Yes	PFO/PEM	5.419	--	--	--	--	--	Yes	--	40, 41, 42, 43, 44
BB	Yes	PFO	2.053	--	--	--	--	--	Yes	--	70, 71
CC	Yes	PFO/PEM	1.466	--	--	--	--	--	Yes	--	72, 73
DD	Yes	PSS/PEM	1.463	--	--	--	--	--	Yes	--	79, 80, 81
EE	Yes	PFO/PEM/OW	7.764	Yes	RUP	2,345	C(T), D	Alder Brook	Yes	--	30, 31, 32, 33, 34
FF	Yes	PFO	1.072	Yes	RIN	704	--	Unnamed Tributary of Alder Brook	Yes	--	35, 36
GG	Yes	PSS/PEM	1.027	--	--	--	D	--	Yes	--	25, 26
HH	Yes	PFO/PSS	2.713	--	--	--	--	--	Yes	--	20, 21, 22
II	Yes	PSS	0.262	--	--	--	--	--	Yes	--	19
JJ	Yes	PFO	1.713	Yes	RUP	788	C(T)	Allen Brook	Yes	--	12, 13
KK	Yes	PEM	0.247	Yes	RIN	380	D	Unnamed Tributary of Allen Brook	Yes	--	10, 11
LL	Yes	PEM[6]	1.64	--	--	--	--	--	Yes	--	17, 18, 19
NN	Yes	PEM	0.733	Yes	RIN	1,318	D	Unnamed Tributary of Allen Brook	Yes	--	3, 4, 5
OO	Yes	OW	0.144	--	--	--	--	--	--	--	18
PP	Yes	PSS/PEM	2.942	Yes	RUP	966	--	Unnamed Tributary of Little Trout River	Yes	--	101, 102, 103, 104
QQ	Yes	PEM	0.825	--	--	--	--	--	Yes	--	99, 100
RR	Yes	PFO	0.326	--	--	--	--	--	Yes	--	45
SS	Yes	PFO	1.353	Yes	RIN	341	--	Unnamed Tributary of Little Trout River	Yes	--	97, 98
TT	Yes	PFO	0.813	--	--	--	--	--	Yes	--	115
UU	Yes	PFO	1.127	--	--	--	--	--	Yes	--	117

Delineation ID	Wetland Present	Wetland Type[1]	Wetland Acreage Within Study Area	Stream Present?	Stream Type[2]	Linear Feet of Stream Within Study Area[3]	NYSDEC Stream Class	Stream Name	Federal Jurisdiction[4]	State Jurisdiction[5]	Appen. A, Figure 7, Sheet #
VV	--	--	--	Yes	RUP	431	D	Unnamed Tributary of Little Trout River	Yes	--	116
WW	Yes	PFO/PSS	6.025	Yes	RUP	981	C(T)	Little Trout River	Yes	--	110, 111, 112, 113, 114
XX	Yes	PSS	0.694	--	--	--	--	--	Yes	--	1, 2
YY	Yes	PFO/PSS	1.172	--	--	--	--	--	Yes	--	109, 110
ZZ	Yes	PEM/OW	0.064	--	--	--	--	--	--	--	95
AAA	Yes	PSS	0.542	--	--	--	--	--	Yes	--	96
BBB	Yes	PFO	0.205	--	--	--	--	--	Yes	--	40
CCC	Yes	PSS	0.234	Yes	RIN	190	C(T)	Alder Brook	Yes	--	37
DDD	Yes	PSS/PEM	0.645	--	--	--	--	--	Yes	--	53
EEE	Yes	PFO/PEM	0.611	--	--	--	--	--	Yes	--	51, 52
FFF	Yes	PSS/PEM	1.642	--	--	--	--	--	Yes	--	6
GGG	--	--	--	Yes	RIN	281	--	Unnamed Tributary of Chateaugay River	Yes	--	62
HHH	Yes	PEM	0.093	--	--	--	--	--	Yes	--	7
III	Yes	PSS/PEM	0.636	--	--	--	--	--	Yes	--	78
Total Wetlands: 58				Total Streams: 17							

[1]Wetland community types are based upon the Cowardin et al. (1979) classification system: PSS = Palustrine Scrub-Shrub, PEM = Palustrine Emergent, PFO = Palustrine Forested, OW = Open Water.

[2]Stream types are based upon the Cowardin et al. (1979) classification system: RIN = Riverine Intermittent Stream, RUP = Riverine Perennial Stream.

[3]Linear feet of stream does not include distance where streams run through culverts.

[4]Based on visual observation of hydrologic connectivity in the field and review of available spatial data. Final jurisdictional determination to be made by USACE.

[5]Based on existing NYSDEC mapping of freshwater wetlands.

[6] Wetland was forested at the time of delineation. It has subsequently been clear-cut and was devoid of woody vegetation at the time of the jurisdictional determination on October 27, 2015.

4.2.1 Wetlands

Descriptions of each wetland community type delineated within the Study Area are presented below. Many wetlands within the Study Area include more than one community type.

Forested wetland (PFO) – A total of 32 wetlands delineated within the Study Area contained forested wetland communities. These communities are dominated by trees that are 20 feet or taller, but also typically include an understory of shrubs and herbaceous species. Overstory vegetation is generally dominated by red maple (Acer rubrum) and green ash (*Fraxinus pennsylvanica*), with occasional American elm (*Ulmus americana*), speckled alder (*Alnus incana*), and gray birch (*Betula populifolia*). Understory vegetation typically included saplings of the above mentioned species, or shrub species such as dogwoods (*Cornus* spp.) or willows (*Salix* spp.). Herbaceous species in forested wetlands included bladder sedge (Carex intumescens), fringed sedge (*Carex crinita*), sensitive fern (*Onoclea sensibilis*), manna grasses (*Glyceria spp*.), spotted jewelweed (*Impatiens capensis*), cinnamon fern (*Osmunda cinnamomea*), and marsh marigold (*Caltha palustris*). Evidence of wetland hydrology in the forested wetlands identified within the Study Area included water-stained leaves, water marks, moss trim lines, drainage patterns, saturated soils, microtopographic relief, and saturation visible on aerial imagery (see Photos 1-10 in Attachment C).

Scrub-shrub wetlands (PSS) – A total of 22 wetlands delineated within the Study Area contained scrub-shrub vegetation communities. Scrub-shrub wetlands within the Study Area are characterized by dense stands of shrub species less than 20 feet tall, including willows (*Salix spp*.), speckled alder, meadow-sweet (*Spiraea alba*), steeplebush (*Spiraea tomentosa*), red raspberry (*Rubus idaeaus*), and dogwoods. Herbaceous vegetation in these areas includes sensitive fern, tearthumb (*Persicaria arifolia*), field horsetail (*Equisetum arvense*), and various sedges. Evidence of wetland hydrology in the scrub-shrub wetlands identified within the Study Area included water-stained leaves, saturated soils, microtopographic relief, and (see Photos 11-18 in Attachment C).

Emergent wetlands (PEM) – A total of 34 wetlands within the Study Area contained emergent vegetation communities. These wetlands are dominated by herbaceous vegetation, and generally characterized by soils that remain saturated or inundated throughout the year. Although the Cowardin classification was used to classify wetlands, some of the emergent wetlands in this category could be best described according to the Reschke definition as wet meadow (Reschke, 1990). Wet meadow wetlands may resemble grasslands and are typically drier than emergent marshes, except during periods of seasonal high water. They generally lack standing water for most of the year, though snow melt, storm water runoff, and/or a high water table allows the soil to remain saturated for a significant portion of the growing season. Emergent wetlands and wet meadows identified in the Study Area are typically dominated by plants such as broadleaf cattail (*Typha latifolia*), sedges (*Carex spp*.), rushes (*Juncus spp*.), darkgreen bulrush (*Scirpus atrovirens*), reed canary grass (*Phalaris arundinacea*), late goldenrod (*Solidago gigantea*), wool grass (*Scirpus cyperinus*), Joe-pye weed (*Eutrochium maculatum*), white turtlehead (*Chelone glabra*), rice cutgrass (*Leersia oryzoides*), and boneset (*Eupatorium perfoliatum*). Evidence of wetland hydrology in the emergent wetlands identified within the Study Area included inundation, drainage patterns, saturated soils, microtopographic relief, and saturation visible on aerial imagery (see Photos 19-25 in Attachment C).

Open Water (OW) – Five open water areas were delineated in the Study Area. These included small farm ponds, recreation ponds, and beaver ponds. These ponds occur in a variety of settings, including open fields, scrub-shrub, and forested environments, or adjacent to houses and barns. With the exception of the beaver ponds, these ponds are excavated or diked, with well-defined banks. Surrounding the small ponds, emergent wetland vegetation tends to be limited or lacking in the open field settings while substantial within the scrub shrub or forested habitats. Although not verified, water depths are expected to be consistent with excavated ponds that are used as a source of water for livestock as well as for fishing and aesthetic purposes. Such ponds are typically a minimum of four feet deep (see Photos 26-29 in Attachment C).

Streams – Streams within the Study Area are mostly located within forests, and generally have a gentle to moderate gradient (0-5%). Most of the identified streams are intermittent, with a rocky substrate, and lack well defined and established floodplains typical of larger, perennial stream/river systems. Observed water depths within the stream channels was generally in the range of 2-10 inches (see Photos 30-36 in Attachment C).

The functions provided by most of these wetlands and streams appear to include maintaining surface water flows, recharging groundwater supplies, storm water detention, flood abatement, water quality improvement, wildlife habitat, and nutrient cycling. Most of the delineated wetlands within the Study Area were in relatively undisturbed habitats and represent resources that are ecologically valuable in terms of size, structural diversity, wildlife habitat, and hydrological functions.

5.0 CONCLUSIONS

EDR delineated 58 wetlands and 17 streams within the Study Area, totaling approximately 95.8 acres. Wetlands within the Study Area were identified based on the presence of hydrophytic vegetation, hydric soils, and wetland hydrology. The delineated areas included small ponds, perennial and intermittent stream and emergent, scrub-shrub, and forested wetland cover types. The primary functions provided by these wetlands appear to include storm water detention, ground water recharge, water quality improvement, and wildlife habitat.

The majority of the delineated wetlands did not display characteristics that suggest they could support listed threatened or endangered species. However, some forested wetlands on-site have the potential to provide roosting habitat for northern long-eared bat (*Myotis septentrionalis*). Northern long-eared bat presence is being determined through northern long-eared bat surveys conducted during the summer of 2015. Because the delineated wetlands are on private land, they offer little or no opportunities for public recreational use, education, or research. Most of the wetlands (54 out of 58) appear to have surface water connections to other waters of the United States, and therefore are likely to be considered jurisdictional by the USACE under Section 404 of the Clean Water Act. Four of the wetlands appear to be isolated. However, the Applicant is requesting a preliminary Jurisdictional Determination from the USACE, and therefore accepting that all wetlands and streams within the Study Area are under federal jurisdiction. None of the delineated wetlands fall under state jurisdiction pursuant to Article 24 of the ECL. However, four protected streams (all Class C(T) streams) within the Study Area are under state jurisdiction pursuant to Article 15.

6.0 REFERENCES

Cowardin, L.M., V. Carter, F.C. Goblet and E.T. LaRoae. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Fish and Wildlife Service, OBS-79/31, Washington, D.C.

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

K. I. Corporations, (2000). *Munsell soil color charts*. Kollmorgen Instruments Corporation, New Windsor, NY.

Lichvar, R.W., M. Butterwick, N.C. Melvin, and W.N. Kirchner. 2014. *The National Wetland Plant List: 2014 Update of Wetland Ratings.* Phytoneuron 2014-41: 1-42. https://wetland_plants.usace.army.mil. (Accessed August 2015).

National Oceanic and Atmospheric Administration (NOAA). 2015. *Malone New York Climatology*. Available at http://www.erh.noaa.gov/btv/climo/stations/malone.shtml (Accessed August, 2015).

NRCS. 2014. *New York Portion of the 2014 National Hydric Soil List*. Available at: http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/ (Accessed August, 2015).

Reschke, C. 1990. *Ecological Communities of New York State*. New York Natural Heritage Program, New York State Department of Environmental Conservation, Latham, NY.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. 2015. *Web Soil Survey*. Available online at http://websoilsurvey.nrcs.usda.gov/. (Accessed August, 2015).

United States Army Corps of Engineers (USACE). 2012. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region*. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

USGS. 2014. *Hydrologic Unit Maps*. Available at: http://water.usgs.gov/GIS/huc.html (Accessed August 2015).

United States Environmental Protection Agency (EPA). 2001. *Interagency Memorandum from Gary S. Guzy (General Counsel for the U.S. Environmental Protection Agency) and Robert M. Anderson (Chief Counsel for the U.S. Army Corps of Engineers)*. Memorandum Subject: Supreme Court Ruling Concerning CWA Jurisdiction over Isolated Waters.

Weldy, T., D. Werier, and A. Nelson. 2015. *New York Flora Atlas*. [S. M. Landry and K. N. Campbell (original application development), USF Water Institute. University of South Florida]. New York Flora Association, Albany, NY. Available at http://newyork.plantatlas.usf.edu/. (Accessed August 2015).

APPENDIX B
Agency Correspondence

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Fish, Wildlife & Marine Resources
New York Natural Heritage Program
625 Broadway, 5th Floor, Albany, New York 12233-4757
Phone: (518) 402-8935 • **Fax:** (518) 402-8925
Website: www.dec.ny.gov

Joe Martens
Commissioner

May 14, 2015

Connor Liddell
Environmental Analyst
Environmental Design & Research
217 Montgomery Street, Suite 1000
Syracuse, NY 13202

Dear Mr. Liddell:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the proposed Jericho Wind Farm, located in the Towns of Chateaugay and Bellmont, Franklin County.

We have no records of rare or state-listed animals or plants, or of significant natural communities, within the project site or in its immediate vicinity. Enclosed is a report of rare birds documented within 10 miles of the project site, and rare bats documented within 40 miles of the project site, for use in assessing potential impacts of bird and bat collisions. For information on NYSDEC's environmental review of proposed wind energy projects, and for the document *Guidelines for Conducting Bird and Bat Studies at Commercial Wind Energy Projects*, please go to www.dec.ny.gov/energy/66494.html.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our databases. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other resources may be required to fully assess impacts on biological resources.

Our databases are continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

Sincerely,

Nicholas B. Conrad
Information Resources Coordinator
NY Natural Heritage Program

432

The following rare animals have been documented in the general vicinity of the proposed Jericho Wind Farm project.

The impacts of wind turbines on animals include both impacts due to disturbance at the site of the turbines, and impacts due to flying birds and bats colliding with turbine blades. Therefore, when screening proposed wind energy projects for potential impacts on rare species, in addition to reporting rare plants and animals documented at the project site itself, NY Natural Heritage reports species of rare birds documented within 10 miles of the project site, and rare bats documented within 40 miles of the project site. These distances were determined in consultation with the NYSDEC Division of Fish, Wildlife and Marine Resources.

For information on NYSDEC's environmental review of proposed wind energy projects, and for the document Guidelines for Conducting Bird and Bat Studies at Commercial Wind Energy Projects, please go to www.dec.ny.gov/energy/66494.html.

Bats within 40 miles

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*HERITAGE CONSERVATION STATUS**
Eastern Small-footed Myotis *Hibernaculum*	*Myotis leibii*	Special Concern	S2
Northern Long-eared Bat *Hibernaculum*	*Myotis septentrionalis*	Threatened *and Federally Listed as Threatened*	S3S4

Birds within 10 miles

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*HERITAGE CONSERVATION STATUS**
Common Loon *Breeding*	*Gavia immer*	Special Concern	S4
Peregrine Falcon *Breeding*	*Falco peregrinus*	Endangered	S3B
Least Bittern *Breeding*	*Ixobrychus exilis*	Threatened	S3B,S1N
Pied-billed Grebe *Breeding*	*Podilymbus podiceps*	Threatened	S3B,S1N
Upland Sandpiper *Breeding*	*Bartramia longicauda*	Threatened	S3B
Northern Harrier *Breeding*	*Circus cyaneus*	Threatened	S3B,S3N

* Conservation status in NYS as ranked by NY Natural Heritage Program on a 1 to 5 scale:
S1 = Critically imperiled
S2 = Imperiled
S3 = Rare or uncommon
S4 = Abundant and apparently secure
S5 = Demonstrably abundant and secure

B after one of the above ranks indicates the status rank is for breeding populations only.
N after one of the above ranks indicates the status rank is for nonbreeding wintering populations only.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 LUKER ROAD
CORTLAND, NY 13045
PHONE: (607)753-9334 FAX: (607)753-9699
URL: www.fws.gov/northeast/nyfo/es/section7.htm

Consultation Code: 05E1NY00-2015-SLI-0787 April 29, 2015
Event Code: 05E1NY00-2015-E-02225
Project Name: Jericho Rise Wind Farm

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

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). This list can also be used to determine whether listed species may be present for projects without federal agency involvement. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list.

Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list. If listed, proposed, or candidate species were identified as potentially occurring in the project area, coordination with our office is encouraged. Information on the steps involved with assessing potential impacts from projects can be found at: http://www.fws.gov/northeast/nyfo/es/section7.htm

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (

http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the Services wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

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

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

Attachment

United States Department of Interior
Fish and Wildlife Service

Project name: Jericho Rise Wind Farm

Official Species List

Provided by:

New York Ecological Services Field Office
3817 LUKER ROAD
CORTLAND, NY 13045
(607) 753-9334
http://www.fws.gov/northeast/nyfo/es/section7.htm

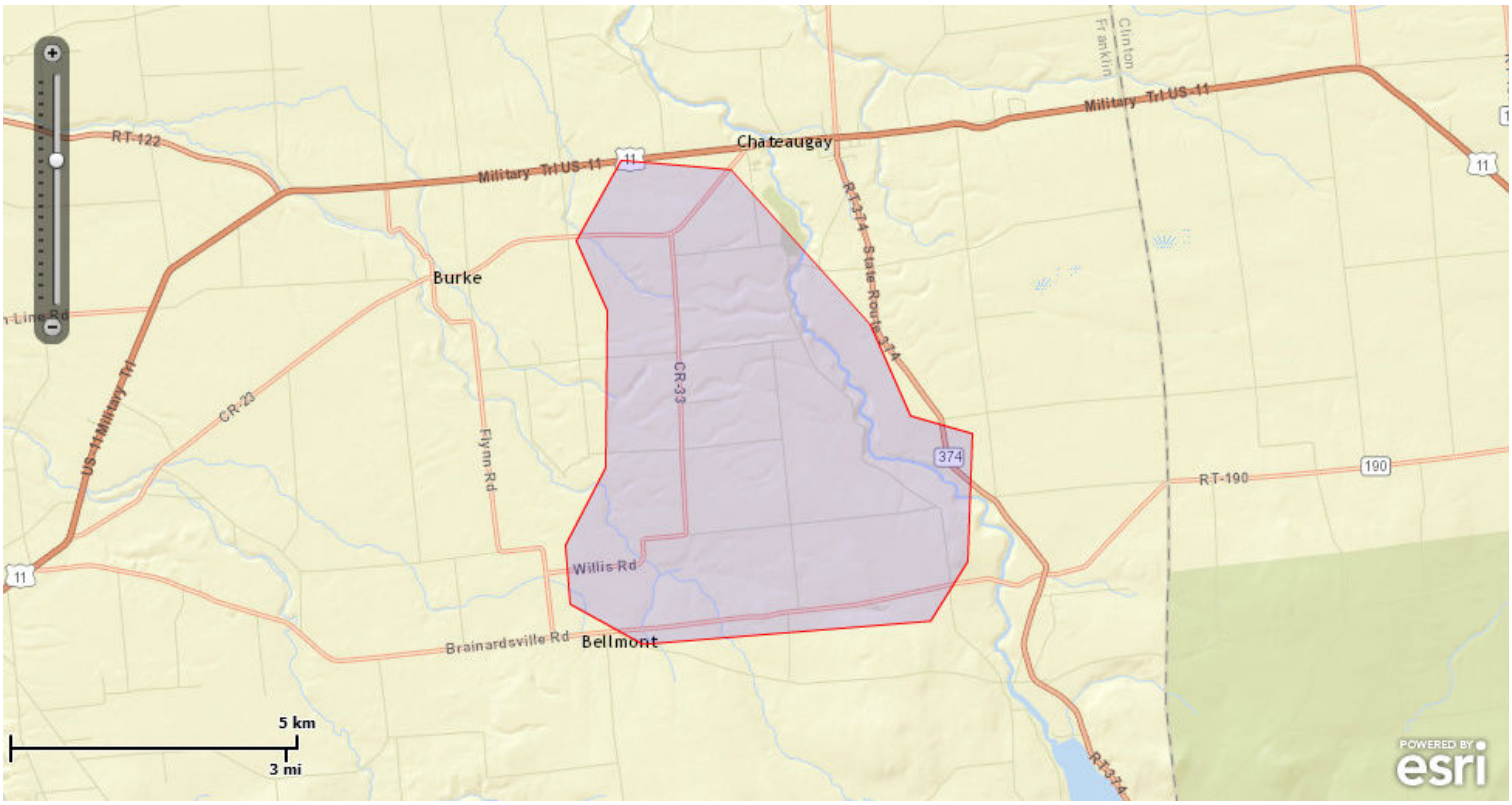
Consultation Code: 05E1NY00-2015-SLI-0787
Event Code: 05E1NY00-2015-E-02225

Project Type: Power Generation

Project Name: Jericho Rise Wind Farm
Project Description: The proposed project is a wind farm with approximately 36 turbines spaced throughout the polygon. The project would include construction of turbines, access roads, and buried electrical interconnect lines.

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-74.0490865 44.8798288, -74.0501164 44.8597552, -74.0583733 44.8503851, -74.1222314 44.846734, -74.1383675 44.8530624, -74.1393803 44.8623104, -74.1304539 44.8744765, -74.1301106 44.8991537, -74.1369771 44.9100964, -74.1270207 44.9227507, -74.1026448 44.9212922, -74.0717458 44.8969771, -74.0628194 44.8826264, -74.0490865 44.8798288)))

Project Counties: Franklin, NY

Endangered Species Act Species List

There are a total of 1 threatened or endangered species on your 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. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Mammals	Status	Has Critical Habitat	Condition(s)
Northern long-eared Bat *(Myotis septentrionalis)*	Threatened		

Critical habitats that lie within your project area

There are no critical habitats within your project area.

NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ROSE HARVEY
Commissioner

August 06, 2015

Mr. Grant Johnson
Cultural Resources Analyst
Environmental Design & Research, D.P.C. (EDR)
217 Montgomery Street
Suite 1000
Syracuse, NY 13202

Re: SEQRA
Jericho Rise Wind Farm
Approximately 5,895 acres of leased private lands in the Towns of Chateaugay and Bellmont; The five-mile-radius study area includes parts of the Towns of Bellmont, Burke, and Chateaugay in Franklin County, and Clinton and Ellenburg in Clinton County.
15PR03895

Dear Mr. Johnson:

The Office of Parks, Recreation and Historic Preservation (OPRHP) has received the documentation you provided on your project. As the state agency responsible for the coordination of the State's historic preservation programs, we offer the following comments.

We appreciate the time spent reviewing existing survey information in this office for various windfarms that had been proposed in the vicinity of the current boundaries of Jericho Rise and the discussion with survey staff as to how to best approach review for the current project. We concur with the approach that edr outlined in your memo dated July 10, 2015 and we are pleased that edr will undertake updating existing information in our CRIS database.

This approach is acceptable for review of above ground resources and we understand that archaeological resource impacts will be reviewed separately

Please refer to the Project Review number (PR) in any future correspondence regarding this project.

Sincerely,

Ruth L. Pierpont
Deputy Commissioner for Historic Preservation

UNITED STATES DEPARTMENT OF COMMERCE
National Telecommunications and Information Administration
Washington, D.C. 20230

APR 01 2015

Mr. Frank O'Brien
COMSEARCH
19700 Janelia Farm Blvd.
Ashburn, VA 20147

Re: Jericho Rise Project: Franklin County, NY

Dear Mr. O'Brien:

In response to your request on January 27, 2015, the National Telecommunications and Information Administration provided to the federal agencies represented in the Interdepartment Radio Advisory Committee (IRAC) the plans for the Jericho Rise Wind Farm, located in Franklin County, New York.

After a 45+ day period of review, no agencies had issues with turbine placement in this area.

While the IRAC agencies did not identify any concerns regarding radio frequency blockage, this does not eliminate the need for the wind energy facilities to meet any other requirements specified by law related to these agencies. For example, this review by the IRAC does not eliminate any need that may exist to coordinate with the Federal Aviation Administration concerning flight obstruction.

Thank you for the opportunity to review these proposals.

Sincerely,

Peter A. Tenhula
Deputy Associate Administrator
Office of Spectrum Management

Environmental Design & Research,
Landscape Architecture, Engineering & Environmental Services, D.P.C.

217 Montgomery Street, Suite 1000, Syracuse, New York 13202
P. 315.471.0688 • F. 315.471.1061 • www.edrdpc.com

memorandum

To:	John Connell, Senior Project Manager US Army Corps of Engineers ATTN: CENAN-OP-RU 1 Buffington St.; Bldg. 10, 3rd Floor North Watervliet, New York 12189	**EDR Project No:**	15033
From:	Patrick Heaton, RPA, John Hecklau		
Date:	November 2, 2015		
Reference:	Jericho Rise Wind Farm – Summary of Cultural Resources Review/Section 106 Compliance		

Comments:

On behalf of Jericho Rise Wind Farm LLC (the Applicant), a wholly owned subsidiary of EDP Renewables (EDPR), below please find a summary of the review conducted to date regarding potential impacts to cultural resources for the Jericho Rise Wind Farm (the Project), located in the Towns of Chateaugay and Bellmont, Franklin County, New York.

The Project's potential impacts on cultural (historic and archaeological) resources were considered in accordance with the New York State Environmental Quality Review Act (SEQRA), with the Towns of Bellmont and Chateaugay acting as SEQRA Co-Lead Agencies. The New York State Office of Parks, Recreation, and Historic Preservation (NYSOPRHP) acted as an interested agency in the coordinated agency review of the Project under SEQRA (per their role as State Historic Preservation Office [SHPO]). NYSOPRHP's review of correspondence related to the Project references review under SEQRA as well as Section 106 of the National Historic Preservation Act. Review was predicated on the assumption that wetland permitting by the USACE and NYSDEC could be necessary. Cultural resources for the Project were therefore conducted by qualified personnel, in accordance with professional standards and methodologies, and in accordance with applicable agency (i.e., SHPO) guidance to ensure that the results and findings of cultural investigations would satisfy not only the SEQRA review of the Project, but also provide necessary information for any additional agency or public consideration of effects on cultural resources under Section 14.09 of the New York State Parks, Recreation, and Historic Preservation Law, Section 106 of the National Historic Preservation Act, and/or the National Environmental Protection Act (NEPA).

To support the review of the Project's effect on cultural resources, the Applicant retained Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR) to conduct cultural resources investigations to investigate the Project's potential effect on archaeological and historic-architectural resources. All cultural resources studies prepared by EDR for the Project were conducted under the direction of personnel who meet the Secretary of the Interior's Standards for Archaeology and/or Architectural History (per 36 CFR Part 61). In addition, EDR's studies were prepared in accordance with the *New York State Historic Preservation Office Guidelines for Wind Farm Development Cultural Resources Survey Work* (the *SHPO Wind Guidelines*; NYSOPRHP, 2006). Furthermore, EDR's archaeological survey was conducted in accordance with the applicable portions of the New York Archaeological

Council's *Standards for Cultural Resources Investigations and the Curation of Archaeological Collections in New York State* (the *NYAC Standards*; NYAC, 1994) and the *New York State Historic Preservation Office Phase 1 Archaeological Report Format Requirements* (the *SHPO Guidelines*; NYSOPRHP, 2005).

A summary of cultural resources studies and consultation with the NYSOPRHP that have been conducted to date is provided below.

Archaeological Resources

The Project's area of potential effect (APE) for archaeological resources is defined as those areas where soil disturbance is proposed to occur during construction. Subsequent to the release of the DEIS, a previous Phase 1B archaeological survey was conducted for an earlier layout of the Project (Tetra Tech, 2008a), which at that time consisted of a total of 47 proposed wind turbines. The Phase 1B survey was conducted subsequent to the completion of the DEIS for the Project, and the survey report was never submitted to NYSOPRHP for review. Based on the proposed Project layout at the time the Phase 1B survey was conducted, Tetra Tech calculated the archaeological area of potential effect (APE) of the SEIS Project Layout to be 211 acres. The 2008 Phase 1B survey was adequate to evaluate 217 acres of potential ground disturbance, and included the excavation of 3,455 shovel test pits and pedestrian surface survey of 0.67 acres. This initial 2008 archaeological survey effort resulted in the identification of five historic-period archaeological sites (NYSOPRHP Sites A03303.000041, A03308.000053, A03308.000054, A03308.000055, and A03308.000056). All of these sites were recommended as not eligible for listing on the National Register of Historic Places (NRHP) and Tetra Tech recommended no additional archaeological investigations of these sites (Tetra Tech, 2008a). Although the layout and archaeological APE for the current Project layout are similar to the Project layout evaluated in the 2008 Phase 1B survey, additional archaeological studies were completed for the SEIS Project layout in 2015, as discussed below.

Because construction of the Project will include ground disturbance, the Project has the potential to result in adverse impacts to archaeological resources. Impacts associated with archaeological resources, which are identified through the Phase 1B survey work, are typically avoided though careful siting of the Project and construction planning. It is worth noting that the previous Phase 1B survey conducted in 2008 (Tetra Tech, 2008a) evaluated a preliminary Project layout that has subsequently been revised. The 2008 survey resulted in the identification of five archaeological sites. The current SEIS Project layout has been sited to avoid impacts to those sites.

The Applicant's cultural resources consultant (EDR) prepared a comparison of the SEIS Project layout with the earlier Project layout that was evaluated in the 2008 Phase 1B survey (see EDR, 2015). Based on the SEIS Project layout, the archaeological APE for the current Project layout is 383 acres. The archaeological APE for the preliminary layout at the time the Phase 1B survey was conducted was estimated to be 211 acres; however, Tetra Tech (2008a) surveyed a total of 217 acres for the Project. It is worth noting that the Project has not actually increased in size since 2008. Rather, the 2008 Phase 1B survey was based on the level of detail concerning the proposed Project layout at that time.

EDR is currently consulting with NYSORPHP staff to evaluate the SEIS Project Layout's potential effect on archaeological resources. Because the SEIS Project layout is more detailed (and has been revised) since the 2008 Phase 1B survey, an updated archaeological resources survey was determined to be necessary. The supplemental archaeological survey work for the Project was conducted in accordance with the *New York State Historic Preservation*

Office Guidelines for Wind Farm Development Cultural Resources Survey Work (the *SHPO Wind Guidelines*; NYSOPRHP, 2006) and applicable portions of NYSOPRHP's *Phase 1 Archaeological Report Format Requirements* (NYSOPRHP, 2005), which specify an archaeological testing methodology that intensively samples selected areas within the larger Project Area. Per these guidelines, the required amount of archaeological survey work (i.e., the number of shovel tests excavated) was determined based on the total area of anticipated ground disturbance (archaeological APE). The *SHPO Wind Guidelines* are based on the assumption that additional archaeological survey work is not necessary if Project components move around during the Project development process, as long as the total area of ground disturbance for the Project does not increase. Relative to the areas that were evaluated in the 2008 Phase 1B survey, cases, the portion of the archaeological APE for the SEIS Project layout that requires archaeological survey is approximately 166 acres.

A work plan detailing the proposed level of effort and methodology for the Phase 1B archaeological survey was submitted to NYSOPRHP on September 4, 2015. In correspondence dated September 15, 2015, NYSOPRHP concurred with EDR's recommendations for the Phase 1B archaeological survey presented in the Work Plan (Bonafide, 2015). The Phase 1B archaeological survey fieldwork for the SEIS Project layout was conducted between June 2 and August 21, 2015. EDR personnel excavated a total of 1,721 shovel tests and conducted pedestrian survey (of agricultural fields with ground surface greater than 80%) over approximately 623.1 acres during the course of Phase 1B fieldwork. The locations of areas selected for intensive archaeological survey were selected based on the work plan that was submitted to and approved by NYSOPRHP. A detailed Phase 1B archaeological survey report, which describes the methodology and results of the survey in accordance with NYSOPRHP's *Phase 1 Archaeological Report Format Requirements* (NYSOPRHP, 2005), is currently being prepared for submission to NYSOPRHP.

The 2015 Phase 1B survey resulted in the identification of 14 historic-period archaeological sites. No prehistoric (Native American) archaeological sites were identified within the Project site. For the most part, the identified archaeological sites included foundation remains and/or artifacts associated with nineteenth-century farmstead sites, as well as a family plot cemetery, and a portion of the berm or embankment associated with the former Ogdensburg and Lake Champlain Railroad. Following completion of the Phase 1B archaeological survey, minor modifications to the Project layout were made to avoid impacts to archaeological resources.

The archaeological sites identified within the Project site will be avoided during Project construction. The Project layout is currently being reviewed/revised to ensure that minor modifications are made to ensure that impacts to significant archaeological resources are avoided. In the event that a potentially significant archaeological resource is located within the APE, and Project facilities cannot be relocated to avoid impacts to the resource, then a Phase 2 archaeological site investigation (in consultation with NYSOPRHP) will be conducted. However, the Project layout is being intentionally sited to avoid archaeological resources so no Phase 2 site investigations are anticipated to be necessary. The mapped locations of identified archaeological sites will be included on Project construction maps surrounded by a 100-foot (minimum) buffer, identified as "Environmentally Sensitive Areas" or similar, and marked in the field by construction fencing with signs that restrict access. These measures should be adequate to ensure that impacts to archaeological resources are avoided.

In the event that unanticipated archaeological resources are encountered during construction, the environmental monitoring plan will include provisions to stop all work in the vicinity of the archaeological finds until those resources can be evaluated and documented by a Registered Professional Archaeologist.

Historic Architectural Resources

The 2008 historic-architectural resources survey report for the Jericho Rise Wind Farm (Tetra Tech, 2008b) was submitted to NYSOPRHP on March 26, 2008, and included the identification of 90 individual NRHP-eligible historic properties, including a 27-acre portion of the National Historic Landmark Adirondack Park. (Note: the locations of all of these resources were confirmed in the field to determine if due to changes in the Project layout, some of these properties are no longer included in the APE for the Project). In a June 10, 2008 letter from NYSOPRHP to the Public Service Commission (PSC), NYSOPRHP indicated its concurrence with the recommendations of NRHP eligibility contained within the 2008 survey report, and identified three key loci where visual impacts should be carefully assessed: the Chateaugay Village Historic District, Burke village, and the north end of Lower Chateaugay Lake. In addition, NYSOPRHP noted that several rural agrarian properties and other identified historic resources would be located within the viewshed of the proposed wind turbines, and recommended that visual simulations be prepared in the areas identified above, as well as the Adirondack Park (Bonafide, 2008).

On June 17, 2015, the Applicant's cultural resources consultant (EDR) conducted research concerning the previous architectural resources surveys in the vicinity of the Project at NYSOPRHP's office in Waterford, NY. During that research visit, EDR met with NYSOPRHP staff to review and discuss the previous historic architectural surveys, as well as the proposed historic architectural resources survey for the revised Jericho Rise Wind Farm study area. During this discussion, it was agreed upon by NYSOPRHP and EDR that due to the considerable amount of recent historic resources surveys that have occurred within the Project APE, no additional survey of buildings located within the APE would be required as part of the current review of the Jericho Rise Wind Farm. In lieu of an new historic resources survey, a field review of previously identified historic resources was proposed, where previously identified historic resources would be photographed and given updated recommendations of NRHP eligibility (where applicable). The plan for this historic architectural resources survey as discussed by NYSOPRHP and EDR is described in greater detail in a Historic Resources Survey Work Plan that was submitted to NYSOPRHP for review on July 10, 2015. On August 6, 2015, NYSOPRHP staff replied that they concurred with EDR's proposed methodology to re-evaluate historic resources and the potential visual effect of the Project (Pierpont, 2015).

EDR conducted a field review of historic properties within the 5-mile study area between August 12 and August 14, 2015. The historic resources review included site visits to 120 properties. The results of the survey are as follows:

- One property (the Almanzo Wilder Boyhood Home) listed on the NRHP is located within the APE.
- There are 92 properties located within the APE that EDR recommends are NRHP-eligible (note that 86 of these are properties that have been previously determined eligible by NYSOPRHP, two properties were previously included in CRIS but were not formally evaluated for NRHP-eligibility, and four are newly identified by EDR).
- There are 25 additional properties within the APE that were formerly determined NRHP-eligible (or were previously included in CRIS but were not formally evaluated for NRHP-eligibility) that EDR is recommending

are not NRHP-eligible, and two properties that were formerly determined NRHP-eligible that are now demolished.

This information is being provided directly to NYSOPRHP via their Cultural Resources Information System (CRIS) website.

In their review of the 2008 historic resources Survey for the Project (Bonafide, 2008), NYSOPRHP stated that the Project would result in an indirect (visual) adverse effect on historic properties and that mitigation measures need to be considered:

> *OPRHP believes that sufficient information does exist to determine that under Section 14.09, I(c) of New York State Parks and Recreation Law, the undertaking will have an Adverse Impact on cultural resources. The introduction of the sleek, ultramodern, approximately 390 foot tall kinetic wind turbines (up to 53 proposed) throughout this scenic landscape forever alters and changes the rural setting, which itself is a significant element in much of the survey area and serves as the backdrop for the architectural, cultural and scenic tourism heritage of these communities.*
>
> *We would recommend that the applicant utilize the visual analysis as a tool to aid in the exploration of feasible and prudent alternatives that avoid the adverse impact(s). The assessment of potential impact avoidance options may include a reduction in turbine numbers and/or height, relocation of turbine units, and various screening options. We would recommend that only after an assessment of avoidance options has been established should potential mitigation options be discussed. All consultation regarding avoidance options and potential later mitigation options should involve those state/federal agencies directly associated with the permitting/approval process for this project* (Bonafide, 2008).

Relative to the Project layout that was evaluated in the DEIS and presented in the 2008 report to NYSOPRHP, the reduction of the number of proposed turbines and corresponding reduced size of the visual study area does serve to reduce the potential visual impact of the Project. However, the overall visual effect of the Project is not anticipated to be significantly different than that described in the DEIS. As described above, the Applicant is continuing to consult with NYSOPRHP regarding the condition of integrity and condition of historic resources within the study area. In correspondence dated September 15, 2015 (Bonafide, 2015), NYSOPRHP restated their determination of an adverse effect for the current configuration of the Project.

Status of Mitigation

Mitigation options (such as viewshed screening) are limited, given the nature of the Project (tall structures placed at high elevations to access the wind resource and spread out across many acres of land) and constraints on siting locations. Mitigation for impacts to historic properties therefore typically consist of projects that benefit historic properties and/or enhance the public's appreciation of historic resources to offset potential impacts to historic properties resulting from the introduction of wind turbines into their visual setting. Mitigation projects that have been proposed for other wind energy projects in New York State have included activities such as additional historic resources surveys, NRHP nominations, monetary contributions to historic resource preservation and restoration causes, development of

heritage tourism promotional materials, development of educational materials and lesson plans, and development of public history materials, such as roadside markers.

To mitigate the Project's potential adverse effect on historic resources, the Applicant intends to enter into an agreement with the Towns of Bellmont and Chateaugay to fund historic preservation projects that will benefit historic resources within the Project's APE. A preliminary list of potential cultural resources mitigation projects was presented in the 2008 historic resources survey (Tetra Tech, 2008b). These suggested potential mitigation projects included (Tetra Tech, 2008b:20):

Record cultural resources

- *Create GIS based map of cultural resources within the APE*
- *Conduct a thematic survey of architecture within the APE, identifying specific architectural styles and types of buildings, structures and landscapes, e.g. a detailed survey of barns within the APE*
- *Identify, conduct necessary research, and prepare a NRHP nomination form for an appropriate property within the APE*
- *Identify and document a historic resource for recordation in either the Historic American Buildings Survey, Historic American Engineering Record, or Historic American Landscape Survey*
- *Prepare Cultural Resource Management Plans for the Towns of Chateaugay and Bellmont*

Contribute to the preservation of cultural resources

- *Create a fund for the restoration and maintenance of cemeteries within the APE*
- *Create a fund for providing technical assistance to those within the APE who seek to restore historic buildings*
- *Create a fund to support the planning for a Rail to Trail program along stretches of the Ogdensburg and Lake Champlain Rail Road within the APE*

Promote heritage tourism

- *Create audio driving/walking tour highlighting the areas cultural resources*
- *Sponsor a brochure for one of the area's cultural attractions to be placed at rest areas along highways in the area*
- *Create a web page on the Franklin County Tourist Board's web site, adirondacklakes.com, highlighting the heritage tourism opportunities in the area*

Educate people about the area's vibrant history

- *Prepare grade-appropriate local history/archaeology curricula for use by local schools*
- *Create historic markers*
- *Sponsor oral history project*
- *Prepare outdoor signboards to explain the important role of the Ogdensburg and Lake Champlain Rail Road or the Old Military Road in the area*

As noted above, the Applicant will continue to consult with NYSOPRHP and the Lead Agencies to define appropriate mitigation projects that will benefit the local community.

We will provide additional information as our studies are finalized and submitted to NYSOPRHP and/or receive additional correspondence from NYSOPRHP or the SEQRA Lead Agencies. In the meantime, if you have any questions of would like to discuss the cultural resources review of the Project, please contact Patrick Heaton (pheaton@edrdpc.com) or John Hecklau (jhecklau@edrdpc.com) at (315) 471-0688. We look forward to continuing to work with you on this project.

Copies To: Christina Calabrese, Aron Branam, Erin Johnston (EDPR)
Project file

APPENDIX C
Confirmation of Mitigation Credit Availability

DUCKS UNLIMITED

Great Lakes/Atlantic Regional Office
1220 Eisenhower Place
Ann Arbor, MI 48108-3281
(734) 623-2000 fax (734) 623-2035
www.ducks.org

November 16, 2015

Erin Johnston
EDP Renewables, North America
Environmental Affairs
134 N. LaSalle Street, Ste. 2050
Chicago, IL 60602

RE: Wetland Mitigation Credit Availability in the Eastern St. Lawrence River Service Area
Ducks Unlimited New York In-Lieu Fee Program

Dear Ms. Johnston:

This letter is non-binding and for informational purpose only that 2.0 Wetland Mitigation credits are available for purchase as of the date of this letter in the Eastern St. Lawrence River service area.

Ducks Unlimited, Inc. is not responsible for holding, securing, or otherwise guaranteeing that these or any credits will be available to you at any future date. This letter does not constitute any agreement between Ducks Unlimited, Inc. and EDP Renewables for the purchase of said credits or their future availability. The Wetland Mitigation credits are only secured when purchased and the permanent transfer for the mitigation liability to Ducks Unlimited, Inc. is only completed once we have received full payment, verified there are available credits and Ducks Unlimited acknowledges by Credit Sales letter signed in writing by Ducks Unlimited, Inc.

Very Respectfully,

David Brakhage
Director of Operations
Great Lakes/Atlantic Region

CC: Ben Brazell
File

APPENDIX D

Northern Long-Eared Bat take Avoidance Measures

JERICHO RISE WIND FARM
NORTHERN LONG-EARED BAT
TAKE AVOIDANCE MEASURES
FRANKLIN COUNTY, NEW YORK

Prepared by:

EDP Renewables North America

Houston, Texas 77002

December 10, 2015

INTRODUCTION

EDP Renewables North America (EDPR) intends to develop a Habitat Conservation Plan (HCP) for operation of the Jericho Rise Wind Farm (Project) in Franklin County, New York. The HCP will be developed to support an Incidental Take Permit (ITP) application for potential take of the threatened northern long-eared bat (*Myotis septentrionalis*).

In order to ensure that Project development continues during HCP development process, EDPR has developed the following interim measures that will be implemented to avoid potential take of northern long-eared bat during construction and operation of the Project. These measures will be implemented until the ITP is issued, at which time the conservation measures in the HCP will be implemented and the interim measures will be discontinued. At this time, and based on the Project schedule, it is anticipated that these measures will be in place during 2016 (the construction period) and 2017 (the first year of Project operations) while the HCP is being developed.

PROJECT DESCRIPTION

The Project is located in the townships of Bellmont and Chateaugay, New York. The proposed Project would consist of 37 Gamesa G114-2.1 MW wind turbines, along with associated infrastructure (e.g., operations and maintenance [O&M] facility, access roads, underground collector lines, and a substation), with a total capacity of approximately 77.7 megawatts (MW). As proposed, each turbine would have a nameplate rating of 2.1 MW, with tower heights of 94 meters (m; 308 feet [ft]), blade lengths of 56.0 m (184 ft), and a maximum vertical height when a blade is in the vertical position of 150 m (492 ft). Project construction and commissioning is anticipated to occur from approximately February to December 2016.

The Project Area, defined as the area encompassed by a one-kilometer (km) buffer around the proposed turbine locations is approximately 11,000 acres (ac; 17 square miles [mi^2] in size, and is bordered on the east by the Chateaugay River, which runs through a prominent forested ravine. Smaller tributary streams run throughout the Project Area and most occur within wooded corridors. Topographically, the Project Area is variable from broad relatively flat or low sloping fields to rolling hills. The Project Area is a mosaic of open pastures (livestock grazing), some cultivated agriculture (e.g., corn, potatoes), and deciduous or mixed forest. Low elevation areas are either forested, wetland, or both, while higher flatter elevation areas have been converted to agriculture (Figure 1). The average elevation of the Project is 352.5 m (1,156 feet). The Project is located near the intersection of the Western Adirondack Foothills, Western Adirondack Transition, and Champlain Transition ecozones, just south of the Canada border.

Approximately 132 acres (0.53 km^2) of forest clearing will be necessary for construction of the facility. The areas to be cleared are fairly well distributed across the Project site (Figures 2 and 3). Forest clearing will include areas for the Operation and Maintenance (O&M) building, access roads, and turbines pads. Clearing necessary for turbine pads will vary from no clearing required to the maximum clearing of approximately 4.5 acres, the area associated with a 250' radius around the turbine.

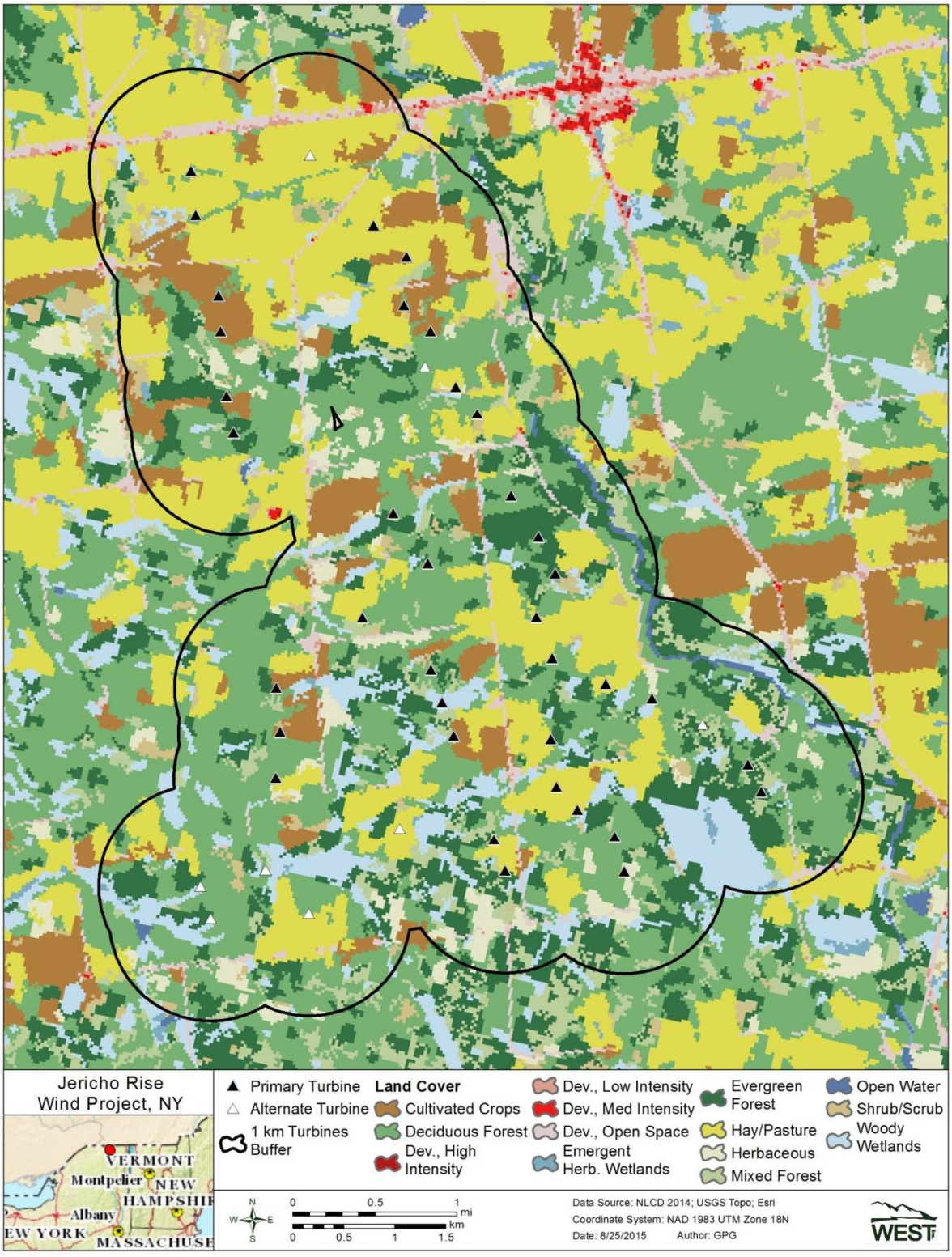


Figure 1. The Jericho Rise Wind Farm vegetation types and landcover map.

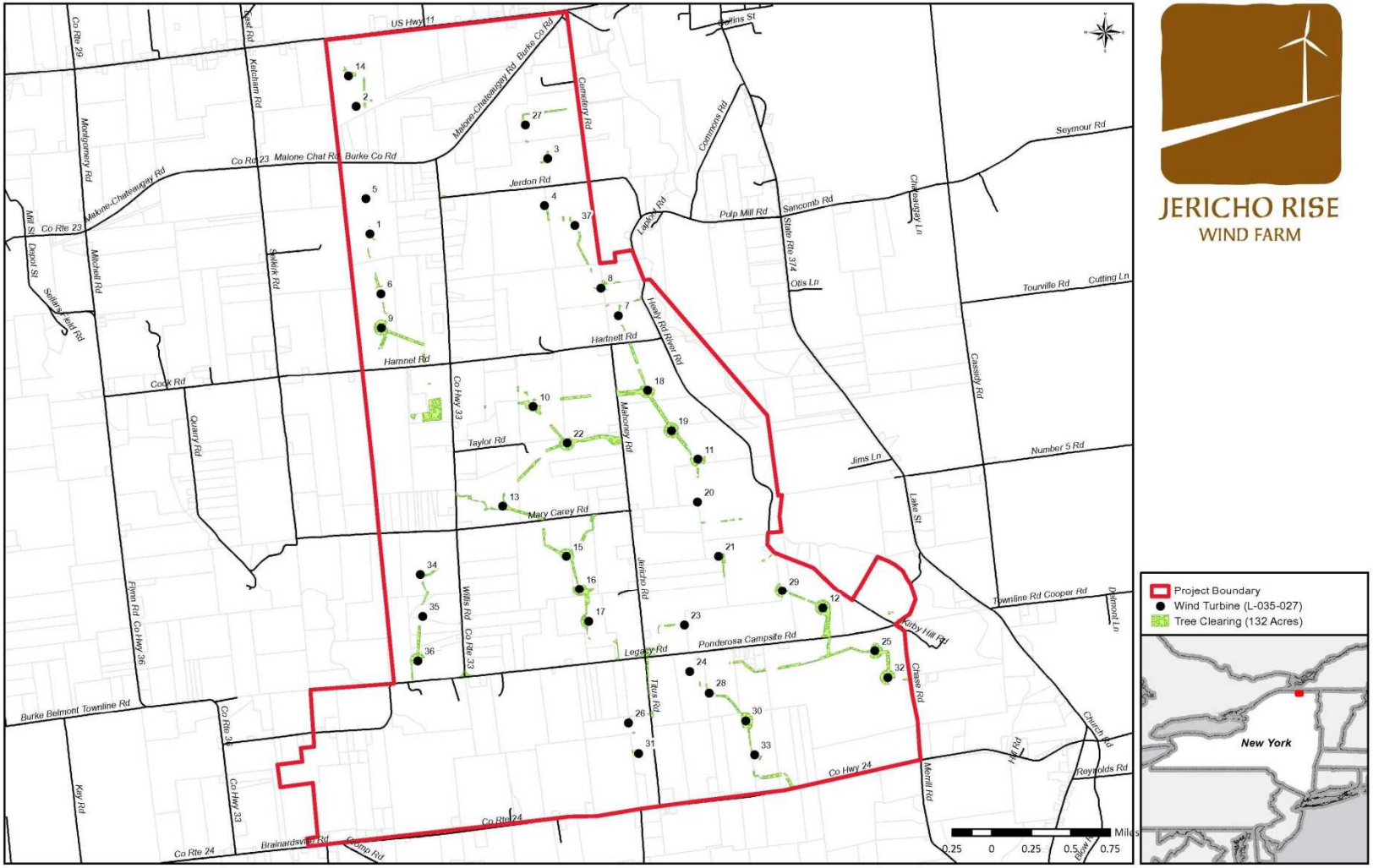


Figure 2. The Jericho Rise Wind Farm required tree clearing.

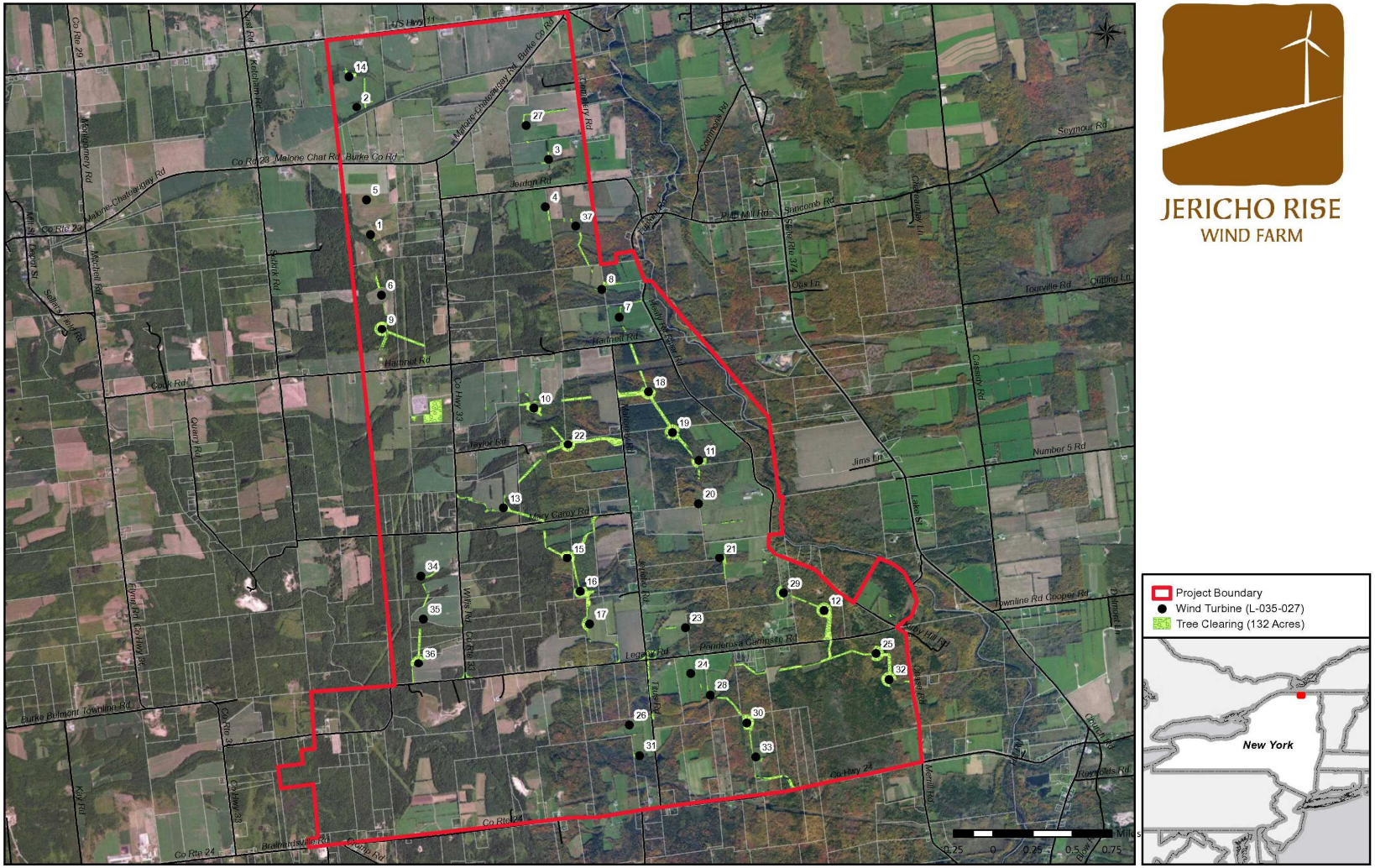


Figure 3. The Jericho Rise Wind Farm required tree clearing, including aerial imagery.

OCCURRENCE BY SEASON

Based on the results of site-specific survey results and the best available scientific literature, occurrence by season of northern long-eared bat at the Project is expected to be as follows:

Winter Hibernation Season (November 1 to March 31)

During this period, northern long-eared bats are expected to be hibernating within caves and abandoned mines. Although northern long-eared bats have occasionally been captured outside hibernacula during the winter and have also been documented to move from one hibernaculum to another during a winter season, the physiological costs of long-distance movements make it unlikely that winter flight in northern long-eared bats involves either long distances or extended periods. Based on the distance of the Project from known hibernacula,[1] any northern long-eared bats occurring outside of the hibernacula during the winter are not expected to occur within the Project.

Spring Migration Season (April 1 to May 15)

The timing of spring bat emergence from hibernacula and migration to summer habitat varies depending on a number of factors such as latitude, elevation, and weather patterns but typically occurs between mid-April and the end of May in northern New York. The New York State Department of Environmental Conservation (NYSDEC) generally conducts emergence surveys in May when night time temperature exceeds 50^{o} F (C. Herzog, NYSDEC, pers. comm.).

Northern long-eared bats occurring as possible summer residents in the central part of the Project (see below) would migrate to the area from hibernacula during the spring season. Though given the fact there were a low number of acoustic positive identifications and none captured during mist netting risk to northern long-eared bats is therefore expected to be low during spring migration at all turbines.

Summer Maternity Season (May 16 to September 30)

On-site presence/probable absence acoustic surveys conducted in 2015 showed positive acoustics identifications for northern long-eared bats at two out of the 48 locations surveyed. Both locations were located in the central part of the Project. No northern long-eared bats were captured during follow-up mist nest surveys at the positive acoustic locations. These results indicate that northern long-eared bats may occur as summer residents though likely in low numbers. All turbines at the Project are within a three-mile (five-kilometer) radius[2] (USFWS 2014) of the northern long-eared bat acoustic positive sites. Northern long-eared bats may therefore occur near all turbines during the summer season, although the foraging behavior of the species (USFWS 2014), which is generally within forests, is likely to limit exposure of the

[1] The nearest known hibernacula with documented northern long-eared bats is located approximately 15 miles [24 kilometers] south of the Project.

[2] In the absence of known roost tree locations, the USFWS considers the possible home range/foraging distance as three miles from positive capture or acoustic locations (USFWS 2014).

species to the rotor-swept area of the turbines. Risk to northern long-eared bats is therefore expected to be low during summer maternity season at the turbines within three miles (five kilometers) of the acoustic positive sites (all turbines within facility).

Fall Migration Season (August 1 to September 30)

Following the summer maternity season, there is a period when northern long-eared bats disperse away from the maternity areas and migrate back to the hibernacula. This period overlaps with the summer season as some bats may stay in summer habitat throughout much of this period. During this period there may be more "relaxed" movements between the maternity areas and the hibernacula and thus northern long-eared bats may be more dispersed on the landscape (e.g., not concentrated around maternity areas). Hibernacula are a destination for northern long-eared bats migrating from their maternity area to wintering areas; the hibernacula (located south of the Project) is expected to be a destination for northern long-eared migrating in the vicinity of the Project, although it is recognized that there are likely other unknown hibernacula in northern New York or outside of New York that could also be winter destinations for bats leaving the Project. Bat populations have been severely reduced due to WNS, indicating that few northern long-eared bats are likely to migrate across the Project. However, risk to northern long-eared bats is expected to be relatively highest during this season based on the migration behavior patterns and because most of the northern long-eared bat carcasses documented to date at wind energy facilities have occurred during this season.

Fall Swarming and Late Fall Season (October 1 to October 31)

When northern long-eared bats arrive at hibernacula in the fall, they engage in swarming (mating) activity in the habitat at the entrance and around the hibernacula. It is generally believed that northern long-eared bats generally occupy the habitat within five miles of hibernacula during the fall swarming period. Based on the distance between any hibernacula and the Project, and the reduced populations of the hibernacula, it is unlikely that fall swarming bats occur within the Project.

MEASURES TO AVOID POTENTIAL TAKE OF THE LISTED BAT SPECIES

Avoidance measures for the construction and operation and maintenance phases of the Project are summarized below in Table 1. These measures are discussed in more detail in the following sections.

Table 1. Summary of Avoidance Measures, by Season, for Northern Long-eared Bats at the Jericho Rise Wind Farm.

Season	Dates	Wind Speed Blades Feathered Below	Tree Removal
Spring Migration	4/1 – 5/15	5.0 m/s	No[1]
Summer Maternity (until Fall overlap)	5/16 – 7/31	6.9 m/s	No[1]
Summer Maternity and Fall Migration	8/1 – 9/30	6.9 m/s	No[1]
Fall Swarming and Late Fall	10/1 – 10/31	3.0 m/s (no feathering)	Yes
Winter Hibernation	11/1 – 3/31	3.0m/s (no feathering)	Yes
Adaptive Management Triggers		NLEB carcass found in Spring, increase cut-in speed to 6.9 m/s	

[1] Emergency tree removal and hazard tree removal will be conducted as needed following the avoidance protocol defined in the text.

Construction:

Tree removal on site will only occur during the period October 1 to March 31, except in the case of emergency tree removal which will be carried out according to the provisions described below. During this period, October 1 to March 31, northern long-eared bats are expected to be engaged in swarming behavior at the hibernacula, roosting and foraging in habitat near the hibernacula, or hibernating over the winter months and therefore not roosting in trees in the Project Area. Tree removal during this period would avoid taking northern long-eared bats because they would not be present in the Project Area.

If any emergency tree removal[3] is necessary it will be conducted as needed. If removal of high-risk[4] hazard trees is necessary from April 1 to September 30 during construction, operations, or maintenance, of the Project, EDPR will notify the USFWS in advance and, if appropriate, have a qualified biologist conduct an emergence survey at the tree(s) requiring removal. If no bats are observed during the emergence survey, the high-risk hazard tree(s) will be promptly removed. This will reduce the risk of removing an undiscovered roost tree. If bats are observed, then EDPR will conduct further consultation with the USFWS to determine the appropriate course of action.

Operation and Maintenance:

Tree removal necessary for regular maintenance on site will only occur during the period October 1 to March 31 (Winter Hibernation Season), except in the case of emergency tree removal which will be carried out according to the provisions described for construction, above.

[3] Emergency tree removal would be for trees that pose an imminent risk to human life or property damage.

[4] Trees that are likely to require removal prior to the next late fall/winter season would be considered high-risk.

During the operation and maintenance phase of the Project, EDPR will adjust turbine operational protocols in a manner designed to avoid take of northern long-eared bats during periods when the bats are at risk (Table 1). The seasonal turbine operational adjustment protocol to be implemented will be as follows:

- April 1 to May 15 (Spring Migration Season): Feather turbine blades when wind speeds are 5.0 m/s or lower between ½ hour before sunset and ½ hour after sunrise at turbines within 3 miles of the northern long-eared bat acoustic positive sites (all turbines within the facility).
- May 16 to July 31 (Summer Maternity Season-until overlapped by Fall Migration Season): Feather turbine blades when wind speeds are 6.9 m/s or lower between ½ hour before sunset and ½ hour after sunrise at the turbines within 3 miles of the northern long-eared bat capture sites (all turbines within the facility).
- August 1 to September 30 (Summer Maternity Season and Fall Migration Season): Feather turbine blades when wind speeds are 6.9 m/s or lower between ½ hour before sunset and ½ hour after sunrise at all turbines.

Based on extrapolation of the results of curtailment studies conducted to-date, curtailing the turbines under 5.0 m/s is expected to achieve between 33% and 82% reduction (with an average of 59%) in all bat mortality. It is currently unclear if operational adjustments will be equally effective at reducing mortality among different species or species groups. Collectively, hoary bats, eastern red bats, and silver-haired bats comprise the vast majority of all bat fatalities documented at wind facilities (e.g., 78% of estimated fatalities 2000-2011, Arnett and Baerwald 2013); consequently, these three species have provided the bulk of the all bat fatality data analyzed in the curtailment studies to-date. It is likely that, based on their morphology and flight behavior, smaller species of bats such as *Myotis* are less active at higher wind speeds compared to larger species of bats that typically forage in more open habitats, and especially in the rotor-swept area of turbines. If this hypothesis is true and *Myotis* species are more active on low wind speed nights and less active as wind speed increases (which is considered plausible given their small size and typical behavior of not foraging in large open areas, where wind speeds are typically greater), then feathering turbine blades to reduce blade movement at low wind speeds would be most effective at reducing *Myotis* mortality.

Northern long-eared bats exhibit flight behaviors that minimize exposure to the rotor-swept area of turbines during periods of higher wind speeds. The lack of northern long-eared bat fatalities at wind energy facilities operating with blades feathered at raised cut-in speeds provides further support for the effectiveness of these measures at reducing risk to the species.

Feathering turbines below 6.9 m/s is the current protocol recommended by the USFWS to avoid take of northern long-eared bats during the fall season and other periods of high risk for listed species (e.g., Indiana bat). Therefore, take of northern long-eared bats under the seasonal turbine operational adjustment protocol outlined above is unlikely.

POST-CONSTRUCTION MORTALITY MONITORING PROGRAM

The objective of the post-construction mortality monitoring during the period when the avoidance measures will be in place (April 1 to September 30) is to provide data that can be used to determine the effectiveness of the above seasonal turbine operational adjustment protocol.

Field Methods and Data Collection

Observers trained in proper search techniques will conduct carcass searches at all 37 turbines once per week from April 1 to September 30. Searches will be conducted in searchable areas out to 60 m from the turbine tower (i.e., a plot of 120 m in diameter); this plot size incorporates the area within which nearly 100% of bat carcasses are expected to fall. Searches will be conducted along transects within each search plot and observers will walk at a rate of approximately 45 to 60 m per minute along each transect, scanning the ground out to 2-3 m either side of the transect for casualties[5]. Transects will be spaced at a maximum of 5-m intervals, allowing for some visual overlap of search area between transects to help maximize casualty detection.

For all casualties found, data recorded will include species, sex and age determination (when possible), turbine identification number, date and time collected, GPS location, condition (e.g., injured, intact, scavenged), and distance from turbine, as well as any comments that may indicate cause of death. For casualties where the cause of death is not apparent, the assumption that the casualty is due to wind turbine collision will be made for the analysis. All casualties located will be photographed as found and plotted on a detailed map of the Project showing the location of the wind turbines and associated facilities. Casualties found outside of standardized searches or by non-study personnel will be coded as incidental discoveries and will be documented in a similar fashion as those found during standard searches. Incidental casualties will be handled following the above protocol as closely as possible.

Old or scavenged bat carcasses will be identified to the extent possible, labeled with a unique number, and then bagged and frozen for future reference and possible species identification testing (e.g., DNA analysis). A copy of the data sheet for each casualty will be maintained, bagged with the carcass, and kept with the carcass at all times.

Appropriate wildlife salvage permits will be obtained from the NYSDEC and USFWS. Dissemination of data (e.g., to the USFWS Special Agent and/or other agency representatives) will be as needed, or according to permit condition. All *Myotis* carcasses will be identified as soon as possible by biologists trained in the identification of *Myotis* species. In order to verify field identifications, all *Myotis* carcasses will be provided to the USFWS and/or NYSDEC for concurrence on species identification. The final disposition of individual casualties will be based on direction from the appropriate salvage permits (as per the NYSDEC and USFWS) and the legal status of individual carcasses. The USFWS and NYSDEC will be notified (by email and/or phone) within 24 hours or the next business day if any eagles or federally listed species casualties are discovered.

[5] A casualty is defined as either a dead or injured bird or bat.

If any northern long-eared bat carcasses are discovered during the spring season (April 1 – May 15) blades of all turbines will be feathered when wind speeds are 6.9 m/s or lower between ½ hour before sunset and ½ hour after sunrise until EDPR coordinates with USFWS to determine the circumstances of the northern long-eared bat fatality and a more precise adjustment to the operational protocol can be determined, as appropriate.

Field Bias Trials

The efficiency rates of observers and removal rates of carcasses (e.g., by scavengers) will be quantified to adjust the observed number of fatalities for detection bias. Bias trials will be conducted throughout the entire monitoring period each year. Frozen or fresh bird and bat carcasses (non-*Myotis* only) may be used for carcass removal trials and searcher efficiency trials, if available and allowed by permit. Commercially available non-native/non-protected species, such as house sparrow (*Passer domesticus*), European starling (*Sturnus vulgaris*), rock dove (*Columba livia*), or hen pheasant (*Phasianus colchicus*), and mice (*Mus musculus*) may be used to supplement carcasses found during searches. Bias trials will consist of approximately 40 large birds, 40 small birds, and 40 bats (or mice if bats are not available) each season of monitoring. Trial carcasses will be spread out as evenly as possible both spatially and temporally over the course of the monitoring period to avoid overseeding the area with carcasses (i.e., introducing a large number of carcasses over a small period of time or over a small area such that it creates a concentration of carcasses in space and time that may influence scavenger activity and therefore result in an inaccurate estimate of carcass removal at the site).

The field crew leader will gather all carcasses and redistribute those that are intact at the predetermined random points within any given turbine's searchable area prior to that day's searches. Data recorded for each trial carcass prior to placement will include date of placement, species, turbine number, and the distance to and the direction from turbine. Small, black zip ties will be placed on the wing or legs of each carcass to distinguish it from other casualties potentially caused by the facility, or if scavengers move the trial carcass away from its original random location. For the removal trial, each trial carcass will be left in place and checked by the field crew leader or an observer not involved with carcass searches for up to 14 days, or until the carcass is removed. To the extent practical, trial carcasses will be checked on days one, two, four, six, eight, 10, 12, and 14.

Trial carcasses will also be used for estimating searcher efficiency bias. Observers conducting carcass searches will not know when, where, or how many carcasses will be placed for the trials. When a carcass is found, the observer will inspect the carcass to determine if a trial carcass had been found. If so, the observer will contact the field crew leader and the carcass will be left in place for the carcass removal trial as described above.

Fatality Estimation

The estimates of total bird and bat fatalities will be calculated based on:

- Observed number of bird and bat casualties found during standardized searches during the monitoring period;
- Carcass persistence rates, expressed as the estimated average probability a bird or bat carcass is expected to remain in search areas and be available for detection based on the carcass removal trials;
- Searcher efficiency, expressed as the proportion of planted carcasses found by searchers during searcher efficiency trials, and
- An area adjustment factor for non-searchable areas or casualties potentially falling in non-searched areas around the turbine.

Upon completion of each monitoring year, data will be examined to determine the most appropriate methods for calculating bird and bat mortality (casualty rate). It is anticipated that the most appropriate statistical method will be the Huso estimator (Huso 2010; Huso and Dalthorp 2014); however, other estimators developed in the future may be considered, as appropriate.

The species composition method (as defined below) will be used to estimate if take of northern long-eared bats may have occurred. If the northern long-eared bat estimate calculated through the species composition method is less than 0.5 bat for the study period, then it will be determined that no take occurred. That is, we would predict less than 0.5 bat, rounded down to 0 individuals, over the study period.

The species composition method is based directly on fatality records of the covered species and assumes the fatality records from post-construction monitoring studies available for review are generally representative of the species composition of bat mortality in general and at the Project. The species composition method consists of two steps: (1) determine the all-bat fatality rate estimate for the Project and (2) determine the proportion of the all-bat fatality rate that may be attributable to northern long-eared bats. The second step will be achieved by using regional data available for review (i.e., public post-construction monitoring data from other wind energy facilities in regions biologically relevant to the Project), because there will be no prior post-construction bat mortality data from the site.

LITERATURE CITED

Arnett, E. B. and E. F. Baerwald. 2013. Impacts of Wind Energy Development on Bats: Implications for Conservation. Chapter 21. Pp. 435-456. In: R. A. Adams and S. C. Pederson, eds. Bat Ecology, Evolution and Conservation. Springer Science Press, New York.

ESRI. 2014. Geographic Information System (GIS) Online Topographic Base Map. ESRI, producers of ArcGIS software. Redlands, California.

Huso, M. 2010. An Estimator of Wildlife Fatality from Observed Carcasses. Environmetrics 22(3): 318-329. doi: 10.1002/env.1052.

Huso, M.M. and D. Dalthorp. 2014. Accounting for Unsearched Areas in Estimating Wind Turbine-Caused Fatality. Journal of Wildlife Management 78(2): 347-358. doi: 10.1002/jwmg.663.

North American Datum (NAD). 1983. NAD83 Geodetic Datum.

U.S. Fish and Wildlife Service (USFWS). 2014. Northern Long-Eared Bat Interim Conference and Planning Guidance. USFWS Regions 2, 3, 4, 5, and 6. January 6, 2014. Available online at: http://www.fws.gov/northeast/virginiafield/pdf/NLEBinterimGuidance6Jan2014.pdf

US Geological Survey (USGS). 2014. The National Map/US Topo. Last updated January 5, 2014. Homepage available at: http://nationalmap.gov/ustopo/index.html

US Geological Survey (USGS) National Land Cover Data (NLCD). 2011. National Land Cover Database NLCD, Muti-Resolution Land Characteristics Consortium (MRLC). USGS Earth Resources Observation and Science (EROS) Center, Sioux Falls, South Dakota. Information available online at: http://www.mrlc.gov/nlcd11_leg.php

APPENDIX E
SEQRA Lead Agency Determination

STATE ENVIRONMENTAL QUALITY REVIEW ACT

NOTICE OF INTENT TO ACT AS SEQRA CO-LEAD AGENCIES

Dated: August 8, 2007

This notice is issued pursuant to 6 NYCRR Part 617, implementing Article 8 of the Environmental Conservation Law, together known as the State Environmental Quality Review Act ("SEQRA").

The Town Boards of the Town of Bellmont and Chateuagay (the "Town Boards") have determined that the action described below is subject to SEQRA and may involve one or more other involved or interested agencies. The Town Boards wish to serve as co-lead agencies for the review of the action. To expedite their designation as co-lead agencies, the Town Boards have enclosed a stamped, self addressed envelope for your prompt reply. If you consent to the designation of the Town Boards as co-lead agencies, please sign the enclosed copy of this notice and return it to the Town Boards at the address listed below on or before **September 10, 2007.** In the absence of written objections from your agency or other involved agencies within thirty (30) days from the date of this notice, the Town Boards will assume the lead agency role for this action pursuant to 6 NYCRR §617.6(b)(3)(i).

The Town Boards have made a preliminary determination that this is a Type I action in accordance with 6 NYCRR §617.6(a)(1)(iv). The application, plans and full Environmental Assessment Form are attached for your information. The project sponsor has also indicated that it plans to prepare a Draft Environmental Impact Statement ("DEIS") to examine all significant adverse environmental impacts that might arise from its proposed Project and has supplied a draft scoping outline for the review and comment of the lead and involved agencies and the public. A copy of the draft scoping outline is also attached for your information. All written comments must be received no later than **September 10, 2007.**

Name of Action:

Jericho Rise Wind Farm LLC

SEQRA Status:

Type I Action

Description of Action:

Construction, operation and maintenance of an up to 87.45 MW wind energy facility containing up to 53 1.65 MW wind turbines, associated infrastructure including but not limited to access roads, collection and transmission lines, and substation(s). Of the 53 turbines, 34 will be located in the Town of Chateaugay and 19 in the Town of Bellmont. Each turbine will be approximately 397 feet tall when the blade is at its highest point.

Location:

The Project is located in portions of the Towns of Chateaugay and Bellmont, Franklin County, New York The Project area is located approximately five miles south of the Canadian border, approximately one mile southwest of the Village of Chateaugay, and two miles east of the Village of Burke. The Project area is roughly bordered by Flynn Road to the west, State Highway 374 to the east, the Malone Chateaugay Road to the north and Brainardsville Road to the south.

Other Agencies:

Involved and/or Interested:	Chateaugay Town Board Bellmont Town Board New York State Department of Environmental Conservation New York State Public Service Commission New York State Department of Transportation Franklin County Health Department Franklin County Highway Department Franklin County Industrial Development Agency New York State Office of Parks, Recreation and Historic Preservation New York State Department of Agriculture and Markets Town Highway Dept. Bellmont and Chateaugay F. A. A. U. S. Army Corps of Engineers.

For Further Information:

Contact Person:	C. J. Madonna, Special Counsel Town of Bellmont and Chateaugay
Address:	10 Oak Street Plattsburgh, New York 12901

Date of Mailing: August 9, 2007

CONSENT TO LEAD AGENCY DESIGNATION

_____, as an involved agency in this action, hereby consents to the designation of the Town Board as lead agency for Project described herein.

Dated: _____

_____
(AGENCY)

By: _____
Name: _____
Title: _____

NOTICE OF AVAILABILITY OF DRAFT SCOPE FOR THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE JERICO RISE WIND FARM, LLC FOR THE TOWNS of CHATEAUGAY and BELLMONT

Dated: August 8, 2007

This notice is issued pursuant to 6 NYCRR Part 617 of the regulations, implementing Article 8 of the Environmental Conservation Law, together known as the State Environmental Quality Review Act ("SEQRA").

The Town Boards of the Towns of Bellmont and Chateaugay (the "Town Boards") made a preliminary determination that the Jericho Rise Wind Farm LLC for the Towns of Chateaugay and Bellmont (collectively, the "Project") is a Type I action and declared their intent to act as SEQRA co-lead agencies. The Project is located in portions of the Towns of Chateaugay and Bellmont, Franklin County, New York. The Project calls for the construction, operation and maintenance of an 87.45 MW wind energy facility containing 53 1.65 MW wind turbines, associated infrastructure including but not limited to access roads, collection and transmission lines, and substation(s). Of the 53 turbines 34 will be located in the Town of Chateaugay and 19 in the Town of Bellmont. Each turbine will be approximately 397 feet tall when the blade is at its highest point. Jericho Rise Wind Farm LLC, the project sponsor, has indicated that it intends to prepare a Draft Environmental Impact Statement ("DEIS") to examine all significant adverse environmental impacts that might arise from the proposed Project, and has supplied a draft scoping outline for the review and comment of the lead and involved agen-

STATE OF NEW YORK,

SS:

Franklin County

Betsy J. McGivney

being duly sworn, says that she is Business Manager of The Malone Telegram, a daily newspaper of general circulation published in Malone, in said county, and that notice, of which a true copy cut from said newspaper, is hereunto annexed, was published in said newspaper ~~once a week~~

for One day weeks ~~consecutively, the first publication~~

~~being on the ___ day of _____, 20___, and the last publication~~

being on the 21 day of Aug, 20 07

Subsc[illegible]efore me, this 21

day of Aug 20 07

Betsy J. McGivney

GEORGE McVEIGH
Notary Public, State of New York
Franklin County No. 4751734
My Commission Expires March 30 2011

Notary Public

cies and the public. The Town Boards are making that draft scope available for public comment. The draft scope the Project is available for public inspection at the following locations:
1. the Town of Bellmont Town Offices located at County Route 24, Brainardsville, New York,
2. the Town of Chateaugay Town Hall located at 191 East Main Street, Chateaugay, New York,
3. the Jericho Rise Wind Farm LLC office located at 3 Columbia Place, Albany, New York 12901, and
4. on the Jericho Rise Website (www.jerichorisewind.com).

All comments must be written and received no later than **September 14, 2007** at the office of C.J. Madonna, Esq., Special Counsel to the Towns of Chateaugay and Bellmont or in the Town Clerks' offices for either the Town of Chateaugay or Bellmont at the addresses listed below. **For Further Information:**

Contact Person(s):
Town of Chateaugay
Hon. Donald Bilow, Town Supervisor Chateaugay Town Hall 191 East Main Street, Chateaugay, New York 12920 (518) 497-3126
Town of Bellmont
Hon. Kip Cassavaw, Town Supervisor
Bellmont Town Offices
County Route 24
Brainardsville, New York 12915 (518) 425-3461
C.J. Madonna, Esq.
10 Oak Street, Plattsburgh, New York 12901
(518) 561-6800

Town of Bellmont
Town of Chateaugay
Town Board Special Joint Meeting
December 2015

Resolution No. 64 of 2015 Town of Bellmont
Resolution No. 51 of 2015 Town of Chateaugay

Resolution for Notice of Completion of SEIS and Scheduling Public Hearings on SEIS, Applications and Waiver Requests

Motion by: Ann Carey

WHEREAS, the predecessor to JERICHO RISE WIND FARM, LLC (the applicant) had heretofore filed, on or about March 21, 2007, an application and a State Environmental Quality Review Act ("SEQRA") Environmental Assessment Form ("EAF") for a Wind Energy Permit for the Jericho Rise Wind Farm ("Project"); and

WHEREAS, the Towns desired to be co-lead agencies for SEQRA review purposes and notified the potential involved agencies;

WHEREAS, none of the involved agencies objected to the Towns proceeding as SEQRA lead agencies;

WHEREAS, on or about September 18, 2007, the Towns issued a positive declaration for the Project requiring the preparation of a Draft Environmental Impact Statement ("DEIS");

WHEREAS, the DEIS was deemed complete by the lead agencies on or about October 29, 2007, and two public hearings and a public comment period were held on the DEIS;

WHEREAS, the Project presented in the DEIS included up to 53 wind turbine locations and assessed the potential impacts of the Vestas V-82 or equivalent turbine, which assumed a rotor diameter of 82 meters (269 feet) and a hub height of 80 meters (262 feet) with a maximum height of 397 feet;

WHEREAS, the applicant (now Jericho Rise Wind Farm LLC) filed a revised application for its Project to consist of a review of up to 43 turbine locations (37 wind turbine generators (WTG) to be constructed) each having a nameplate capacity of 2.1 megawatts (MW) for a total anticipated nameplate generating capacity of 77.7 MW and with a proposed rotor diameter of 114 meters (374 feet) and a hub height of 93 meters (305 feet) with a maximum height of 492 feet within the Towns of Bellmont and Town of Chateaugay (Project), and

WHEREAS, in accordance with the Towns Wind Energy Local Laws the joint application was referred to and reviewed by the town consultant GHD for completeness, and

WHEREAS, on November 12, 2015 the Towns' consultant GHD provided its recommendation to the Town Boards of Bellmont and Chateaugay to accept the application as complete, and

WHEREAS, the applicant's revised application requests a variance from Section 12.A.13 of the local wind law to waive the existing 400 feet maximum height limit for any wind turbine, and request for a variance from Section 12.A.14 of the local wind law to waive the hours of 7 a.m. to 7 p.m. for construction of WECS to allow for construction of WECS between 5:30 a.m. and 10 p.m.

WHEREAS, heretofore the Town Board accepted the application as complete and received and placed on file a proposed Supplemental Environmental Impact Statement and distributed it to Town Board members for review, and scheduled a Joint Meeting to address the SEIS,

WHEREAS, the Town's consultant GHD provided its recommendation to the Town Board of Bellmont and Chateaugay to accept the SEIS as complete, and

NOW, THEREFORE, BE IT RESOLVED the Town Boards of the Town of Bellmont and Town of Chateaugay as joint lead agencies under SEQRA, agree, as follows:

a. To accept the SEIS as complete and adequate for public review pursuant to 6 NYCRR 617.9, and
b. To send the SEIS to all involved and interested agencies and any other persons who has requested a copy as identified in the SEIS , and to publish acceptance of the SEIS as complete in the Environmental Notice Bulletin as law requires, and
c. The Town Boards shall hold a joint public hearing on December , 2015 at _:00 p.m. at the Chateaugay Town Hall, 91 E. Main Street, Chateaugay NY The public hearing shall be on the following and noticed as such:

    1. For public comments on the Applicant's SEIS for the Jericho Rise Wind Project;
    2. the Joint Applications for Wind Energy Permits;
    3. the Applicant's request for a waiver from Section 12.A.13 of the local wind law to waive the existing 400 feet maximum height limit for any wind turbine;
    4. the Applicant's request for a waiver from Section 12.A.14 of the local wind law to waive the hours of 7 a.m. to 7 p.m. for construction of WECS to allow for construction of WECS between 5:30 am to 10:00 pm.
    5. This resolution shall be effective immediately.

FURTHER RESOLVED the Town Clerks of each Town coordinate to post notice and provide notice for such meeting for the public, and of

Seconded by: Fredrick Cook

Voting for Town of Bellmont:

Roll Call Vote	Yes	No	Abstain	Absent
Councilmember Ann Perry	✓			
Councilemmber Gregory Langdon	✓			
Councilmember Wayne Rogers	✓			
Councilmember Harley Titus				✓
Supervisor H. Bruce Russell	✓			

Signed and Recorded by Town Clerk : Judylane Mason

Dated: ~~November~~ Dec. 7, 2015.

Voting for the Town of Chateaugay

Roll Call Vote	Yes	No	Abstain	Absent
Councilmember William Trombly	✓			
Councilemmber Gregory Janisewski	✓			
Councilmember Frederick Cook	✓			
Councilmember Arthur McCormick	✓			
Supervisor Donald Bilow	✓			

APPENDIX F

Consolidated USACE Spreadsheet

(see Enclosed CD)

APPENDIX G

Storm Water Pollution Protection Plan

(see Enclosed CD)