V-6.0 WATER RESOURCES

V-6.1 Surface Water and Floodplain Resources

V-6.1.1 Existing Resources

The 115 kV transmission line ROW is located in the upper reaches of the Dead River watershed. The subwatersheds that make up this area include the headwaters of Spencer Stream, tributaries to Jim Pond, and tributaries to Flagstaff Lake. The latter include the North Branch of the Dead River and tributaries, the South Branch of the Dead River and tributaries, and Stratton Brook (see Figure V-6-1).

The 115 kV transmission corridor from Milepost 0.0 to 3.0 drains to Kibby Stream, which is in the Spencer Stream watershed. Milepost 3.0 to 14.7 of the 115 kV transmission line ROW lies within the watershed of the North Branch of the Dead River. The tributaries in this watershed are made up of small and moderate sized streams. Some of the larger streams include Northwest Inlet (a tributary to Jim Pond), Alder Stream and Tim Brook. Portions of the ROW from Milepost 14.7 to 20.5 drain into the South Branch of the Dead River. Both the North Branch and South Branch of the Dead River flow into Flagstaff Lake. Lastly, areas from Milepost 20.5 to 27.7 generally drain into Stratton Brook, which also drains into Flagstaff Lake. Most areas of the 115 kV transmission line ROW have from two to five streams per mile, which is generally typical of the region. One stretch, however, has only a sparse occurrence of streams, with just five channels between Mileposts 9.3 and 15.7.

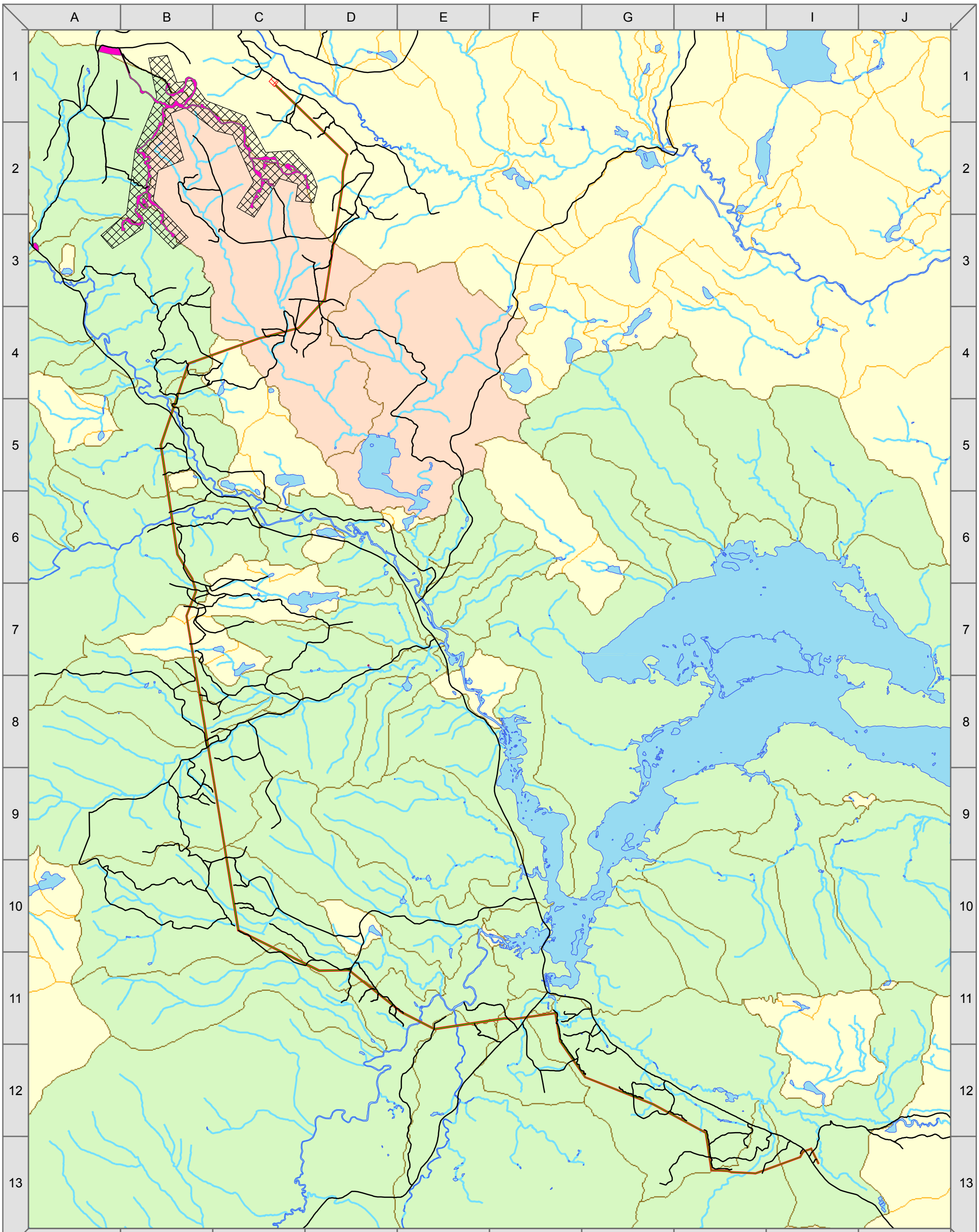
Most of the streams in the area have rocky substrates and are relatively shallow, with moderate to relatively flat topographic relief, and include both intermittent and perennial flows. The larger streams and rivers have deep pools, and are characterized by a variety of wetland and riverine communities. There are no ponds within the ROW; however, the 115 kV transmission line is within the watershed of some small and medium-sized ponds. These include Jim Pond, Viles Pond, and Little Barnard Pond.

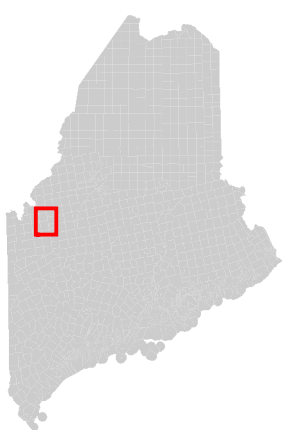
Most of the vicinity of the 115 kV transmission line ROW is made up of unincorporated townships. The extent of floodplain areas has, therefore, not been mapped. Floodplains in the towns of Eustis and Carrabassett Valley have been mapped. No mapped floodplain areas are located within the ROW in either of these towns.

Most of the waterbodies and watercourses in this area do not have significant floodplains associated with them. Detailed descriptions of stream characteristics for each stream within the ROW are included in Table V-6-5, provided in Section V-6.5.

V-6.1.2 Anticipated Construction Impact

Direct impacts to surface waters will be limited to temporary construction access that will be required for initial clearing and construction within the proposed transmission corridor. Access up and down the ROW will utilize equipment mat crossings of first and second order streams





Legend

- Access_Roads
- Series A Road Alignment
- Series B Road Alignment
- Turbine Construction Area
- Area to be Rezoned
- Proposed Transmission Line Corridor
- Proposed Kibby Substation
- Lakes and Ponds
- Jim Pond Watershed
- Flagstaff Watershed

Notes: Watershed data and hydrography courtesy of Maine OGIS.
Jim Pond watershed derived from Maine OGIS hydrography,
Maine DEMs and USGS 24k topographic map.

N

3

Miles

Figure V-6-1

Kibby Wind Project

Proposed Transmission Line
Flagstaff Lake
and Jim Pond Watersheds

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(i.e., small headwaters streams that drain very small localized watersheds). Construction access planning has included avoiding impacts to larger streams (such as Tim Brook and Alder Stream) and rivers by accessing each side of the streams and rivers via existing logging roads. Approaching these watercourses from each side will eliminate the need to cross them with construction equipment. Temporary measures, such as equipment mats, will be used to span smaller streams during construction (as addressed in greater detail in Section V-6.5 and Appendix V-A). In areas of channelized flow, construction will include installation of temporary bridges that will allow for the continued unimpeded movement of water through these channels. No floodplain areas will be affected by construction in a manner that could increase the potential for downstream flooding. Few structures associated with the 115 kV transmission line will be placed in proximity to stream channels or within waterbody buffers, and the limited size of each structure would result in limited potential for flood displacement even if some structures were to be placed within floodplain areas.

Direct and indirect effects to surface waters will be minimized through the use of erosion and sedimentation control measures. These measures, generally described below and specifically addressed in Appendix V-A, will help prevent siltation of stream channels and will ensure that ground conditions remain stable throughout the construction effort. Vehicle use and construction activities will be limited to a pre-defined work area. Each construction vehicle will include spill kits for immediate response in the event of an unanticipated spill. The potential for effect to surface water bodies is low.

V-6.1.3 Anticipated Operational Impact

Once construction is complete, no impact to surface water bodies or floodplains is anticipated. Permanent drainage features, stormwater management, or ground stabilization will not be required for operation of the 115 kV transmission line.

V-6.2 Groundwater Resources

V-6.2.1 Existing Resources

Groundwater resources in the area of the proposed transmission line were mapped by Tolman and Lanctot (1981). A sand and gravel aquifer yielding up to 30 gallons per minute (gpm) is mapped coincident with an esker segment which runs alongside the North Branch of the Dead River in Eustis. Outwash sands, which partially buried the esker segment and lie both east and west of the North Branch of the Dead River channel along its length and course within Eustis, are also characterized as a sand and gravel aquifer, though are not as significant.

In other areas that have not been mapped, glacial outwash sand and gravel deposits, and esker deposits, which lie in the bottoms of the existing major stream valleys, are most likely sand and gravel aquifers. Other sand and gravel deposits in the area, such as kames, kame terraces and kame deltas, are unlikely sources of significant sources of groundwater, and these deposits are limited in area extent and are mostly isolated deposits. Where these areas are in contact with

alluvial deposits and esker deposits occurring at the base of the valleys, they are likely recharge areas to these aquifers.

Groundwater resources occur well below the ground surface and should not be affected by development of the 115 kV transmission line ROW.

V-6.2.2 Anticipated Construction Impact

Development of the proposed ROW will not impact groundwater and/or geological resources. The only subsurface construction required for the transmission line is minor excavation for placement of poles. Groundwater recharge will not be altered due to the minimal soil excavation associated with pole placement. Sand and gravel resources that contribute to groundwater aquifers will not be modified or altered. Groundwater will not be pumped for use as it is not required for any of the ROW development activities. Every effort has been made to avoid placing poles in areas with high groundwater tables, such as wetlands. In the limited areas where structures must be placed within wetland, construction will be prioritized to occur during winter, frozen-ground conditions to avoid rutting and compaction of the wetland soils. Restricted construction in these areas will help to avoid impacts to wetland hydrology. Clearing of vegetation required for development and maintenance of the ROW areas does not require excavation and/or any soil alteration. Indirect impact potential for groundwater due to unanticipated spills will be limited as discussed in Section V-6.2.4.

V-6.2.3 Anticipated Operational Impact

Use of groundwater for development, operation, and maintenance of the proposed ROW is not required. Therefore, operational impacts are not anticipated. Long-term maintenance of the proposed ROW does not require soil disturbance, as only woody vegetation will be trimmed or removed (see Appendix V-B). This will result in little or no potential for adverse groundwater impacts due to long-term vegetation maintenance. Herbaceous, shrub, and sapling vegetation will be allowed to reestablish throughout the proposed ROW in accordance with standard practice for transmission line development and maintenance. Tree growth will be controlled through periodic mechanized cutting; a basal stem herbicide may be used to prevent re-sprouting of cut hardwood stems. Only herbicides that are registered with United States Environmental Protection Agency (U.S. EPA) and the Maine Pesticide Control Board and approved for this use will be utilized. All herbicide applications will be carried out by licensed applicators in accordance with approved procedures. In general, the use of herbicides for long-term vegetation management will be kept to a minimum for this transmission line.

Development of the 115 kV transmission line will not alter existing surface water drainage characteristics, as discussed in Section V-6.6. Groundwater recharge characteristics will not be affected by the development, operation, and maintenance of the proposed transmission line. To ensure that the use of petroleum and hydrocarbon products during construction and operation will not impact groundwater quality, a detailed spill prevention control and countermeasures (SPCC) plan will be developed and implemented, as discussed in Section V-6.2.4. Accordingly,

neither construction nor operation and maintenance of the 115 kV transmission line are expected to adversely affect groundwater resources.

V-6.2.4 Spill Prevention Control and Countermeasures

During the construction phase, potential sources of contamination include fuel, and hydraulic and lubricating oils used in the operation of vehicles, construction equipment, and timber harvesting machinery. Construction activities within the proposed ROW are essentially the same as those associated with timber harvesting. Harvesting and transportation equipment require engine oils and lubricants, as well as fuel (gasoline or kerosene); none of these substances are used in substantial quantities. Storage of petroleum products, pesticides, and fertilizers will be only in designated areas, with proper containment and spill prevention measures. There will be no long term storage of petroleum products, pesticides, or fertilizers on site.

Procedures for handling these substances and preventing spills will be addressed in a project-specific protocol to be provided to the contractor prior to beginning construction. These plans will be provided with the final development approval application, and will include descriptive procedures for safe storage and handling of materials in order to prevent spills. These plans will also describe protocols used to address the event of a spill, including reporting procedures, emergency contact phone numbers (including state and federal agencies), and oil spill cleanup guidelines. Employees will be trained to promptly contain, report, and clean up spills in accordance with these procedures. In addition, as a standard operating procedure, all operational vehicles will carry an oil spill kit that contains materials for conducting initial containment and clean up of spills. In the unlikely event of a spill, it would be anticipated to be small, of short duration, and generally limited to individual equipment. When properly cleaned up, such spills would not pose any risk to groundwater quality.

Routine operation and maintenance of the 115 kV transmission line requires minimal use of petroleum products for operation of handheld cutting equipment. These chemicals are only used during maintenance efforts which are periodic, separated by several years, as needed. Refueling is required on a regular basis. Given that minimal quantities of chemicals are needed, storage of containerized chemical products will be required only for equipment that remains onsite, such as timber harvesting equipment. All chemical storage, refueling, and maintenance will be completed outside wetlands and buffers.

V-6.3 Water Supply

V-6.3.1 Project Water Needs

Activities undertaken during the construction, operation, and maintenance of the 115 kV transmission line ROW do not require the use of water. Therefore, a source of water is not needed.

V-6.3.2 Impact Evaluation

No surface water supply or groundwater wells are needed for the 115 kV transmission line; therefore, impacts to local water supplies will not occur.

V-6.4 Wastewater

V-6.4.1 Characterization of Project Wastewater

Clearing for construction of the proposed transmission line will not generate any wastewater. Portable latrine facilities will be available at the Kibby Wind Power Project construction control center, as described in Volume 1, Section 2.4.3.8. Portable latrine facilities will also be located at several of the 115 kV transmission line access points, at the option of the contractor. Operation and maintenance activities associated with the 115 kV transmission line will not require subsurface wastewater disposal as sewage and other wastes will not be produced on-site.

V-6.4.2 Impact Evaluation

It is expected that any generation of wastewater associated with the 115 kV transmission line will not be disposed of on-site and would only occur during the construction period. Wastewater quantities produced at the site will not be significant to the aquifers or surface waters in the vicinity of the proposed transmission line.

V-6.5 Wetlands/Vernal Pools

V-6.5.1 Delineation and Functional Assessment

V-6.5.1.1 Vernal Pools

During the spring of 2006, vernal pool field surveys were conducted. The specific purposes of the vernal pool surveys were to: 1) identify natural pools within the proposed transmission line area; 2) determine if pools were being used by breeding amphibians; and 3) determine if any of the pools meet the necessary criteria for designation as Significant Vernal Pools in accordance with the DEP Chapter 335 and/or USACE guidance.

A draft protocol for this effort was prepared and distributed for agency review. Information and procedures utilized for this protocol were consistent with current agency consensus, and all comments received on the draft protocol were incorporated into the final version. Consistent with protocol requirements, all vernal pool field surveys were conducted between May 3, 2006 and May 19, 2006, and within appropriate conditions for such survey efforts. A report outlining the findings of these surveys is provided in Appendix 8-A.

The following definitions were applied to base the jurisdictional determination and assessment of significant habitat:

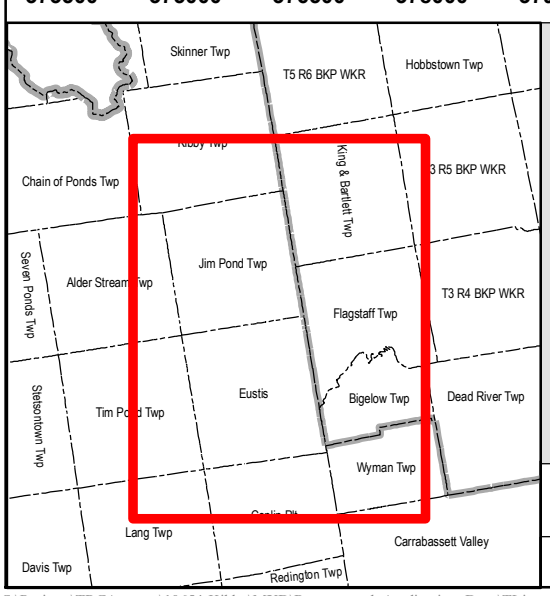
- USACE Programmatic General Permit

  Temporary to permanent bodies of water occurring in shallow depressions that fill during the spring and fall and may dry during the summer. Vernal pools have no permanent or viable populations of predatory fish. Vernal pools provide the primary breeding habitat for wood frogs, spotted salamanders, blue-spotted salamanders, and fairy shrimp, and provide habitat for other wildlife including several endangered and threatened species.

- Maine NRPA Chapter 335

  A vernal pool, also referred to as a seasonal forest pool, is a natural, temporary to semi-permanent body of water occurring in a shallow depression that typically fills during the spring or fall and may dry during the summer. Vernal pools have no permanent inlet and no viable populations of predatory fish. A vernal pool may provide the primary breeding habitat for wood frogs (Rana sylvatica), spotted salamander (Ambystoma maculatum), blue-spotted salamanders (Ambystoma laterale) and fairy shrimp (Eubranchipus sp.*), as well as valuable habitat for other plants and wildlife including several rare, threatened, and endangered species. A vernal pool intentionally created for the purposes of compensatory mitigation is included in this definition.*

Using existing information and the sampling methodology described in the protocol, a total of nine areas were identified within the 115 kV transmission line ROW as potential state and federal vernal pools. These areas were evaluated to determine if they functioned as vernal pools (listed in Table V-6-1 and shown in Figure V-6-2). Of the nine areas that were evaluated, six within the 115 kV transmission line ROW were vernal pools based on the federal definition. In addition, one of these vernal pools, pool A14 (shown in Figure V-6-3), was determined to be a "significant vernal pool" based on the presence of 28 spotted salamander egg masses (pursuant to the NRPA Chapter 335 definition of significant wildlife habitat). Of the nine potential vernal pools identified, three within the proposed transmission line ROW were determined not to be vernal pools (Table V-6-2) because they were man-made rather than natural pools. Most of these man-made areas were ruts made by skidders or other forest harvesting equipment, and ditches next to logging roads. See Figure V-6-4 for a photo of a typical man-made pool found along the proposed transmission line ROW. Of these three non-vernal pools, one contained wood frog and spotted salamander egg masses, one contained wood frog tadpoles and spotted salamander egg masses, and one contained only spotted salamander egg masses.



Legend

- (#) Mile Markers
- Proposed Turbine Construction Area
- Proposed Collector Line
- Existing Roads
- Proposed Substation
- Proposed Transmission Line Corridor

Survey Results

- Non-Vernal Pools
- Vernal Pool
- Significant Vernal Pool
- Vernal Pool (USACE Only)

Notes: *Base map: USGS 100k Topographic Map.*
Coordinate Grid: NAD83 UTM Zone 19N, Meters

N

2

Miles

Figure V-6-2

Kibby Wind Power Project

Vernal Pools Along Proposed Transmission Line

Figure V-6-3: Significant Vernal Pool A14

Figure V-6-4: Typical man-made pools

Table V-6-1: Natural, Functional Vernal Pools in the 115 kV Transmission Line ROW

I.D. Label[1]	Setting (Isolated Upland, Wetland Complex[2], Beaver Dam, Floodplain)	Size (in feet)	Forested Buffer[3]	Milepost	Significant Vernal Pool (Chapter 335)
A14	Wetland B06-112	20' x 10'	Moderate (100%)	9.3	Yes, contained 28 spotted salamander egg masses
A20	Wetland B06-108	6' x 4'	Dense (100%)	9.9	No
A21	Wetland B06-108	20' x 5'	No, clear cut	9.9	No
A23	Wetland B06-97	30' x 12'	No, clear cut	12.6	No
C2	Wetland A06-159	15' x 10'	Dense (80%)	17.9	No
C3	Wetland A06-157	60' x 45'	Dense (90%)	18.0	No

[1]All vernal pools listed here only meet the Army Corps of Engineers definition, except A14 which also meets the Maine NRPA Chapter 335 definition.

[2]When a vernal pool is associated with a wetland complex, the wetland identifier is listed.

[3]When present, forested buffer is given as a percent of the total critical upland/wetland habitat around the assessed area.

Table V-6-2. Non-Vernal Pools in the 115 kV Transmission Line ROW

I.D. Label[1]	Setting	How Created (if man-made)	Forested Buffer[2]	Located on Ridgeline or Transmission Line	Milepost
A10	Man-made	Skidder ruts	Dense (90%)	Transmission	8.3
A16	Man-made	Skidder ruts	Moderate (40%)	Transmission	9.8
C1	Natural, Beaver Flowage		Moderate (30%)	Transmission	17.4

[1]All vernal pools listed here meet the Army Corps of Engineers definition, but not the Maine NRPA Chapter 335 definition.
[2]When present, forested buffer is given as a percent of the total critical upland/wetland habitat around the assessed area.

During vernal pool and wetland delineation field surveys, biologists looked for wildlife species that serve as indicators of significant vernal pools. These included:

- Ringed boghaunter (dragonfly) – state-listed endangered

- Spotted turtle – state-listed threatened
- Blanding's turtle – state-listed endangered
- Ribbon snake – state-listed special concern
- Wood turtle – state-listed special concern

None of these species were observed during vernal pool surveys, however wood turtles were observed near Alder Stream (in the vicinity of mile post 9) during wetland delineation efforts and incidentally during other tasks. For more information on vernal pool surveys and results, see the Kibby Wind Power Project vernal pool report located in Appendix 8-A of this application.

V-6.5.1.2 Wetlands

Overview and Methodology

Wetland and stream delineation and mapping surveys were conducted during the summer and fall of 2006 within a 300-foot wide survey corridor. The 115 kV transmission line ROW is 27.7 miles (44.6 km) long and extends from the proposed Kibby Substation (Milepost 0.0) at the base of the Kibby Range in Kibby Township to the existing Bigelow Substation (Milepost 27.7) located just east of Route 27 in Carrabassett Valley. The proposed ROW is composed of two segments. The first segment, a new transmission line corridor, extends from Milepost 0.0 to Milepost 21.7. The second segment is approximately 6.0 miles (9.7 km) long and parallels an existing 115 kV electric transmission line ROW along this segment. The majority of the proposed ROW is located in working forest.

The specific objectives of wetland and stream resource surveys were to: 1) identify, delineate, and map wetlands and streams located within the 115 kV transmission line ROW; and 2) determine the federal and state jurisdictional status of each identified area. This information has also been used to analyze alternatives to avoid and minimize impacts to wetlands and streams to the maximum extent practicable.

In preparation for field surveys a desktop review of several references was performed. References included NWI maps prepared by the USFWS; United States Geological Survey (USGS) topographic maps; and available Soil Survey maps produced by the NRCS. In addition, data collected during spring vernal pool surveys (May 2006) were reviewed to determine the potential presence of wetlands. After evaluating the available data and the nature of the work associated with a transmission line corridor, the "Routine On-Site Determination Method" described in the USACE Wetland Delineation Manual (USACE 1987) was selected as the most appropriate wetland delineation technique.

Following the review of background information, wetland and soil scientists performed wetland field studies to determine the types and extent of wetlands located within the proposed project area. The delineation procedure began with general reconnaissance to identify topographical features and obvious vegetation patterns that would indicate the potential presence of

jurisdictional wetlands. Once a potential wetland area was identified, field crews thoroughly examined and assessed soils, vegetation, and hydrology indicators to determine if they were indicative of wetland conditions. All wetlands were classified in the field using the USFWS classification system (Cowardin et al. 1979). Wetlands found in the project area are classified as Palustrine Scrub-shrub (PSS), Palustrine Forested (PFO), and Palustrine Emergent (PEM). The majority of the delineation work was conducted during June, July, and August 2006. In addition to the wetland delineation and mapping work, a quality assurance/quality control review was performed in the fall of 2006. This review involved conducting field inspections of randomly selected wetlands that had been mapped during the summer of 2006 to ensure that these areas had been correctly delineated and characterized. All of the wetlands within the proposed 115 kV transmission line area were mapped to facilitate access planning and ensure that potential impacts could be avoided and minimized to the maximum extent during the engineering design.

Specific methods for characterizing and evaluating soils, vegetation, and hydrology within each wetland were as follows:

- **Soils** – At each sampling location, a soil auger or tile spade was used to extract a sample to examine the soil for evidence of hydric indicators. Soils were characterized by determining texture, structure, and color. Soil matrix colors were identified by using a Munsell Soil Color Chart (Munsell Color 1993), and hydric indicators such as a depleted matrix, redoximorphic features, gleying, organic matter accumulation, drainage class, and oxidized rhizospheres were noted. In addition, hydric soil criteria were assigned in accordance with the Manual of Field Indicators for Identifying Hydric Soils in New England – Version 3 (NEIWPCC 2004).
- **Vegetation** – Dominant plant species in each major vegetation stratum (tree, sapling/shrub, and herbaceous) within the study area were identified and listed. Each plant's wetland indicator status (e.g., OBL, FACW, FAC, FACU, and UPL) was assigned using the USFWS National List of Plant Species that Occur in Wetlands, Region 1 (Reed 1988) to determine if there was a dominance of hydrophytic vegetation at the site.
- **Hydrology** – Each sampling location was examined for evidence of wetland hydrology. Indicators of wetland hydrology generally include the presence of hummocks, watermarks on vegetation, drift lines, sediment deposits, standing water, soil saturation within 12 inches of the mineral soil surface, and drainage patterns within the wetland.

Surveys were performed by four, three-person field crews that each consisted of two wetland scientists and one environmental technician/global positioning system (GPS) operator. Following analysis of soils, hydrology, and vegetation at each potential wetland, a determination was made as to whether or not the site met the criteria for designation as a wetland. Through observation of these three parameters, the approximate wetland boundary was identified and flagged. Streams were identified using the definition of a "river, stream, or brook" as described in the NRPA Statute, 38 MRSA §480-B. All stream channels were marked with glo-yellow flagging. For streams with bank-to-bank widths greater than 10 feet (3 m), flags were placed on vegetation at the top of each bank. For streams with bank-to-bank widths less than 10 feet (3

m), flags were installed on overhanging vegetation to mark the approximate centerline. In general, flags were installed at each bend in the stream channel. Best professional judgment was used to determine if each stream was perennial or intermittent. Wetland boundaries and streams were recorded using GPS units. All GPS data were corrected using commercial base station control points to ensure a high level of mapping accuracy.

Delineation methodologies and selected boundaries were confirmed by agency staff from the LURC, USACE, the Maine State Soil Scientist and DEP.

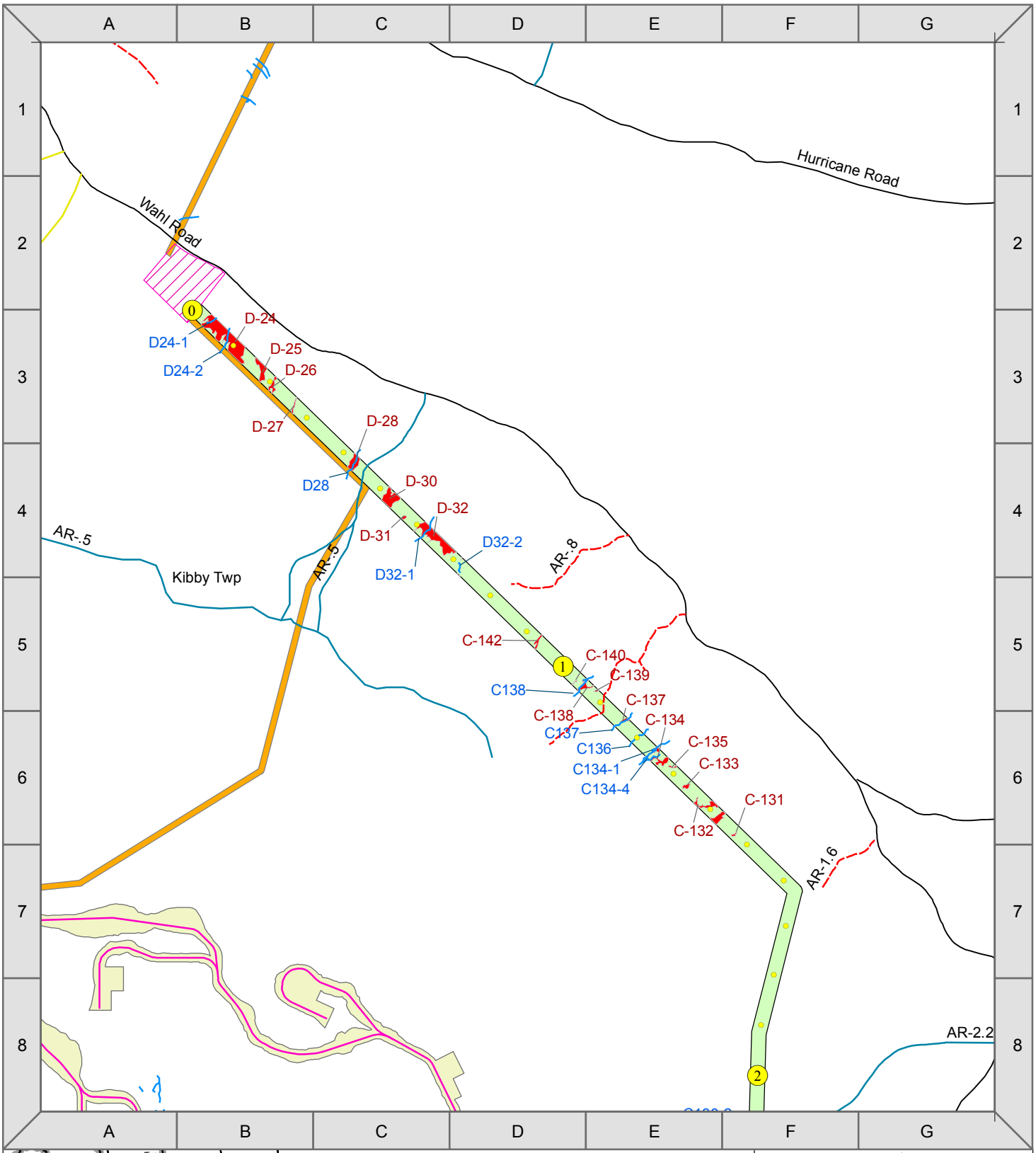
Wetlands in LURC territory are designated by LURC as Wetland Protection Subdistricts (P-WL) in accordance with the Land Use Districts and Standards, Chapter 10 of the LURC rules and standards. These subdistricts are:

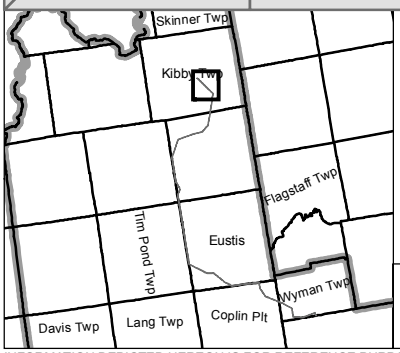
- P-WL1 (wetlands of special significance), which include: wetlands within the high-water mark of flowing waters, stream channels, and bodies of standing water (except constructed ponds less than 10 acres that are not fed or drained by flowing waters); coastal wetlands; freshwater wetlands within 250 feet (76.2 m) of a coastal wetland or great pond; freshwater wetlands that contain at least 20,000 square feet of aquatic vegetation, emergent marsh vegetation, or open water; wetlands within a 100-year floodplain; wetlands containing significant wildlife habitat; peatlands; and freshwater wetlands within 25 feet (7.6 m) of a stream channel.
- P-WL2, which include scrub-shrub and other non-forested wetlands, excluding those that are P-WL1.
- P-WL3, which include forested wetlands, excluding those that are P-WL1.

Results of Delineation Efforts

During the delineation effort, a total of 214 palustrine wetlands were identified, delineated, and mapped in the 300-foot (91.5-m) wide survey corridor. During the design phase, it was determined that the portion of the proposed ROW not adjacent to an existing transmission line would required a width of 150 feet (45.7 m) in order to accommodate the 115 kV transmission line. The portion adjacent to existing ROW would require that the existing ROW be widened by an additional 125 feet (38.1 m). As a result, the number of palustrine wetlands that occur within the proposed ROW was reduced to 156 (Table V-6-3). Of this total, 89 wetlands are located within LURC jurisdiction and 67 are in DEP jurisdiction. Of the 89 located in LURC jurisdiction, 32 were identified as containing P-WL1 subdistricts (wetlands of special significance as defined in the LURC Land Use Districts and Standards-Chapter 10); these are identified in Table V-6-4.

Wetlands and streams are depicted on Figures V-6-5 through V-6-18. Each of these resources is identified by an alpha-numeric code specific to each wetland delineation field team, followed by the sequence that each wetland and stream was encountered during the delineation effort. For example, Wetland D-32 was the 32nd wetland encountered and mapped by field team D. Each of these wetlands is listed by wetland class. Specific characteristics of each wetland, its





SKIDDER TRAIL
DORMANT LOGGING RD
ATV ACCESS
Road
CONFIRMED ACCESS
UNCONFIRMED ACCESS
Series A Road Alignment
Series B Road Alignment
X## Wetland ID
X## Stream ID
1/10 Mile Marker
Mile Posts
Streams
Wetlands
Proposed Substation
Transmission Line
Collector Line
Turbines
Surveyed Town Line
Town Boundary

Notes: *Political and road data courtesy of Maine OGIS*

250
Meters

Figure V-6-5

Kibby Wind Power Project

Transmission Line and Natural Resources

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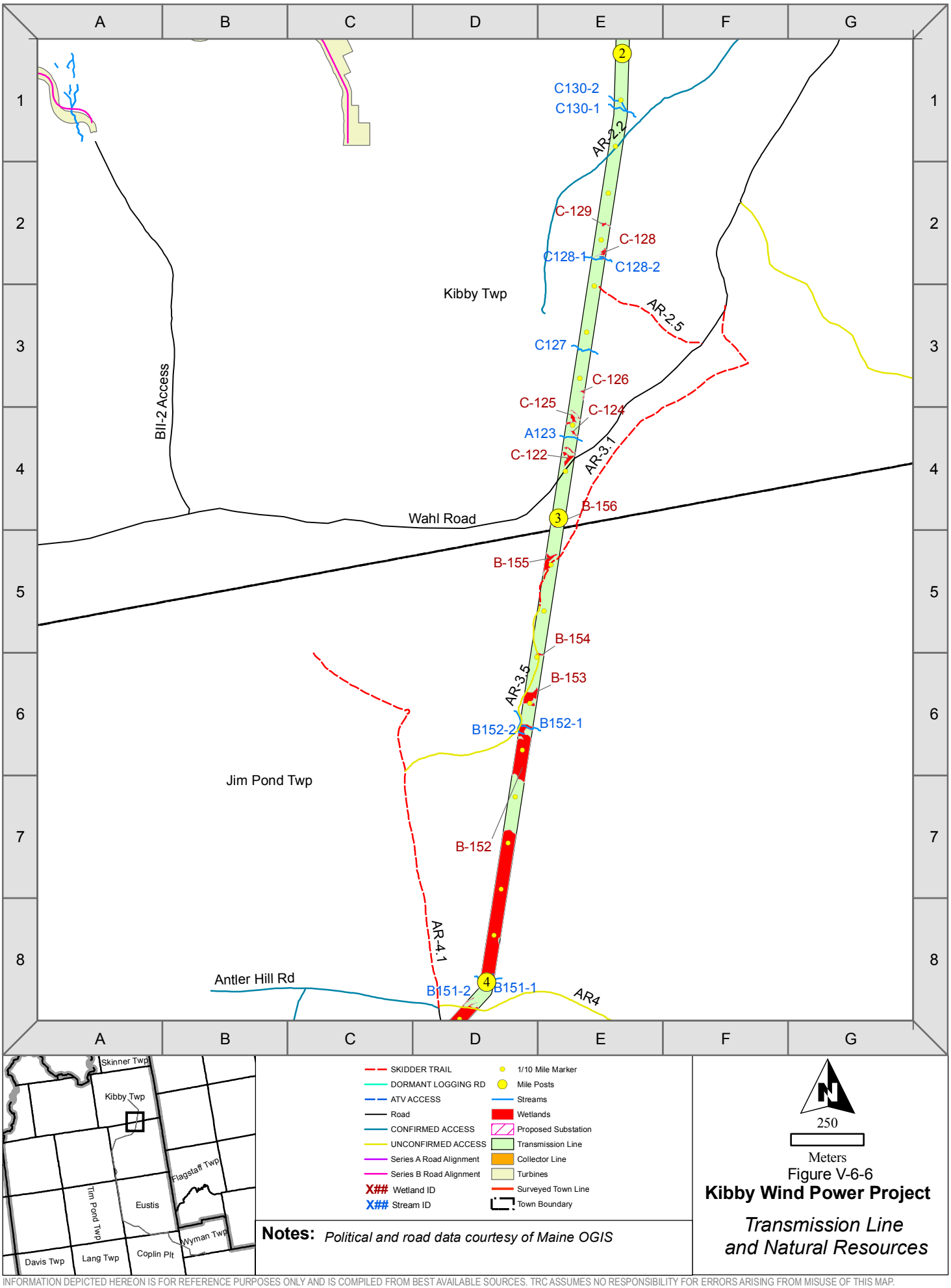

Notes: *Political and road data courtesy of Maine OGIS*

Figure V-6-6

Kibby Wind Power Project

Transmission Line and Natural Resources

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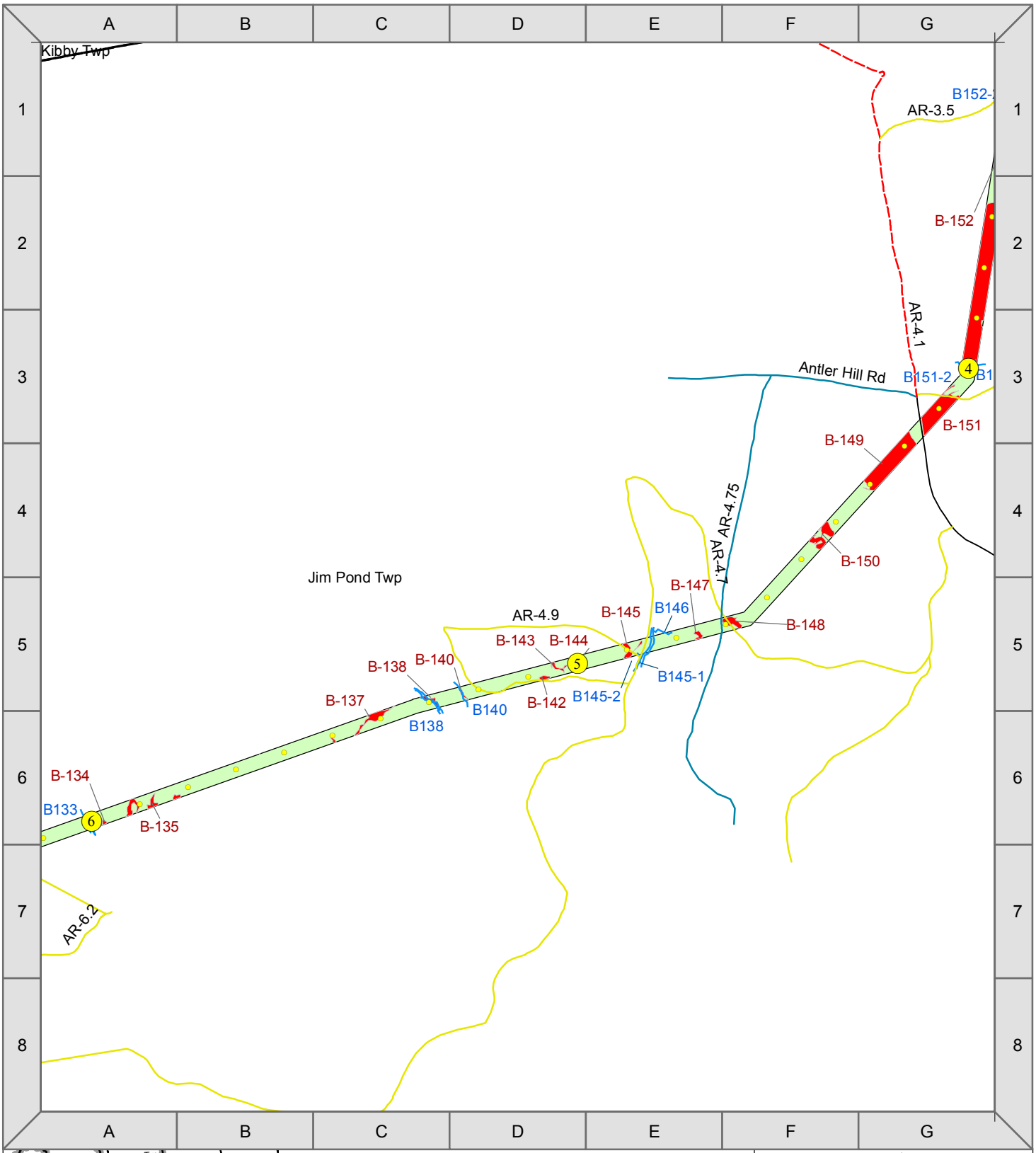

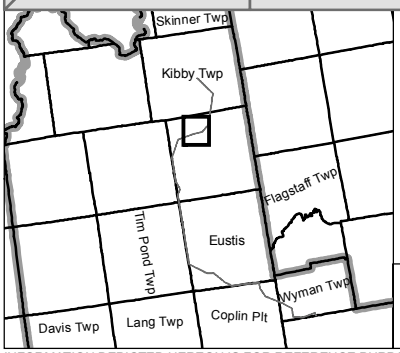

SKIDDER TRAIL
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X## Stream ID
1/10 Mile Marker
Mile Posts
Streams
Wetlands
Proposed Substation
Transmission Line
Collector Line
Turbines
Surveyed Town Line
Town Boundary

Notes: *Political and road data courtesy of Maine OGIS*

250
Meters

Figure V-6-7
Kibby Wind Power Project
Transmission Line and Natural Resources

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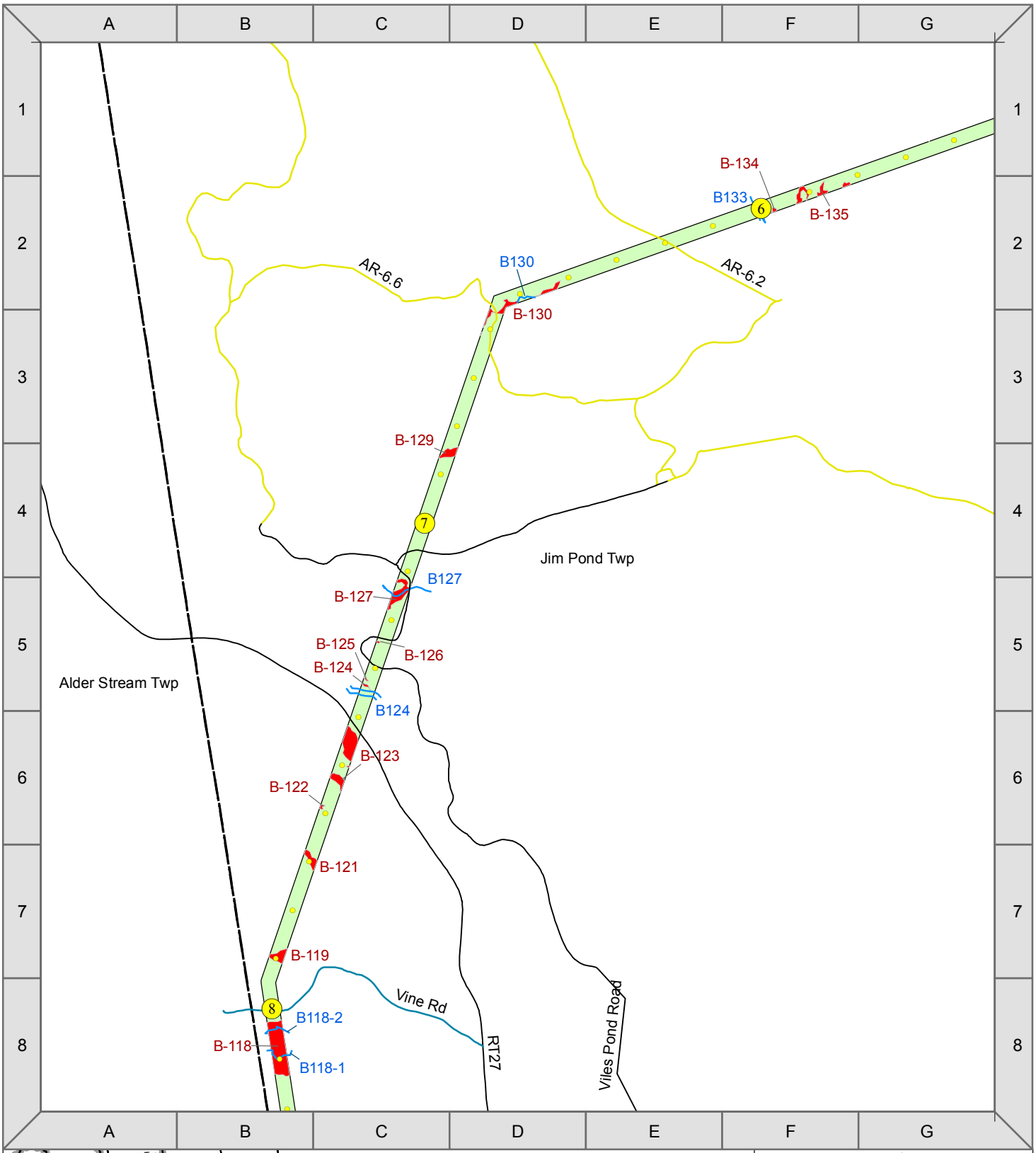
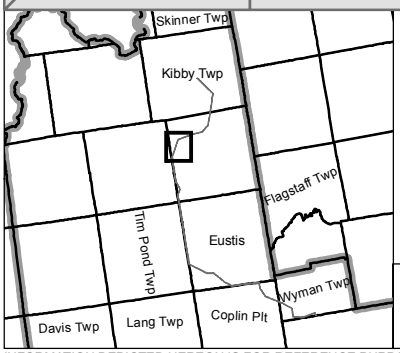


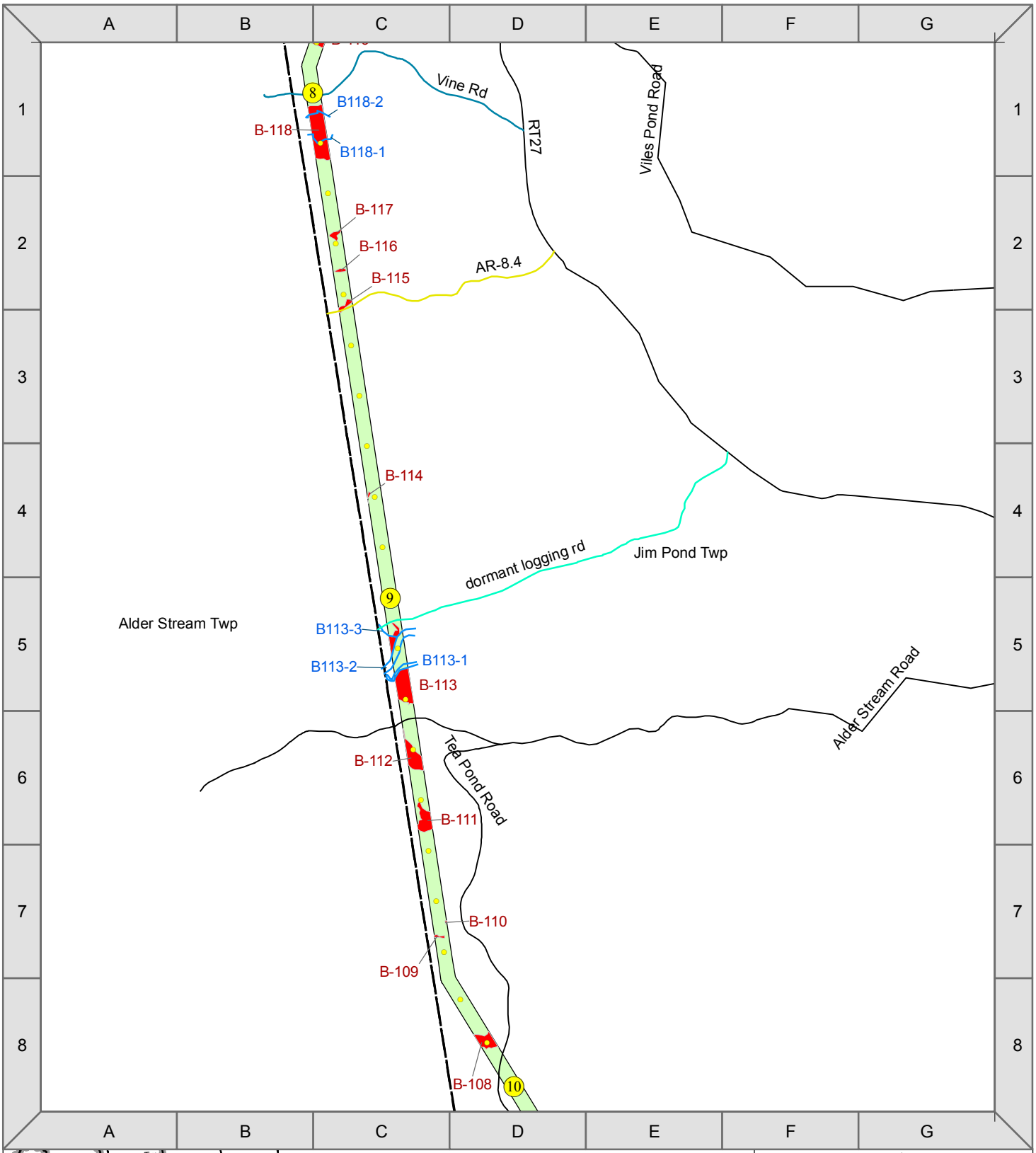


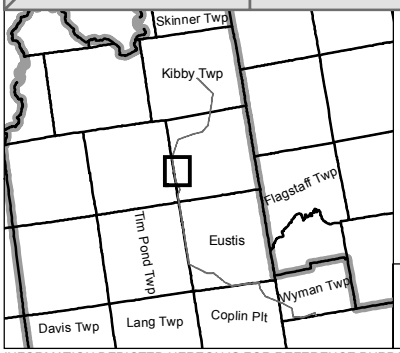
SKIDDER TRAIL
DORMANT LOGGING RD
ATV ACCESS
Road
CONFIRMED ACCESS
UNCONFIRMED ACCESS
Series A Road Alignment
Series B Road Alignment
X## Wetland ID
X## Stream ID
1/10 Mile Marker
Mile Posts
Streams
Wetlands
Proposed Substation
Transmission Line
Collector Line
Turbines
Surveyed Town Line
Town Boundary

Notes: *Political and road data courtesy of Maine OGIS*

250
Meters

Figure V-6-8
Kibby Wind Power Project
Transmission Line and Natural Resources





SKIDDER TRAIL
DORMANT LOGGING RD
ATV ACCESS
Road
CONFIRMED ACCESS
UNCONFIRMED ACCESS
Series A Road Alignment
Series B Road Alignment
X## Wetland ID
X## Stream ID
1/10 Mile Marker
Mile Posts
Streams
Wetlands
Proposed Substation
Transmission Line
Collector Line
Turbines
Surveyed Town Line
Town Boundary

Notes: *Political and road data courtesy of Maine OGIS*

N

250

Meters

Figure V-6-9

Kibby Wind Power Project

Transmission Line and Natural Resources

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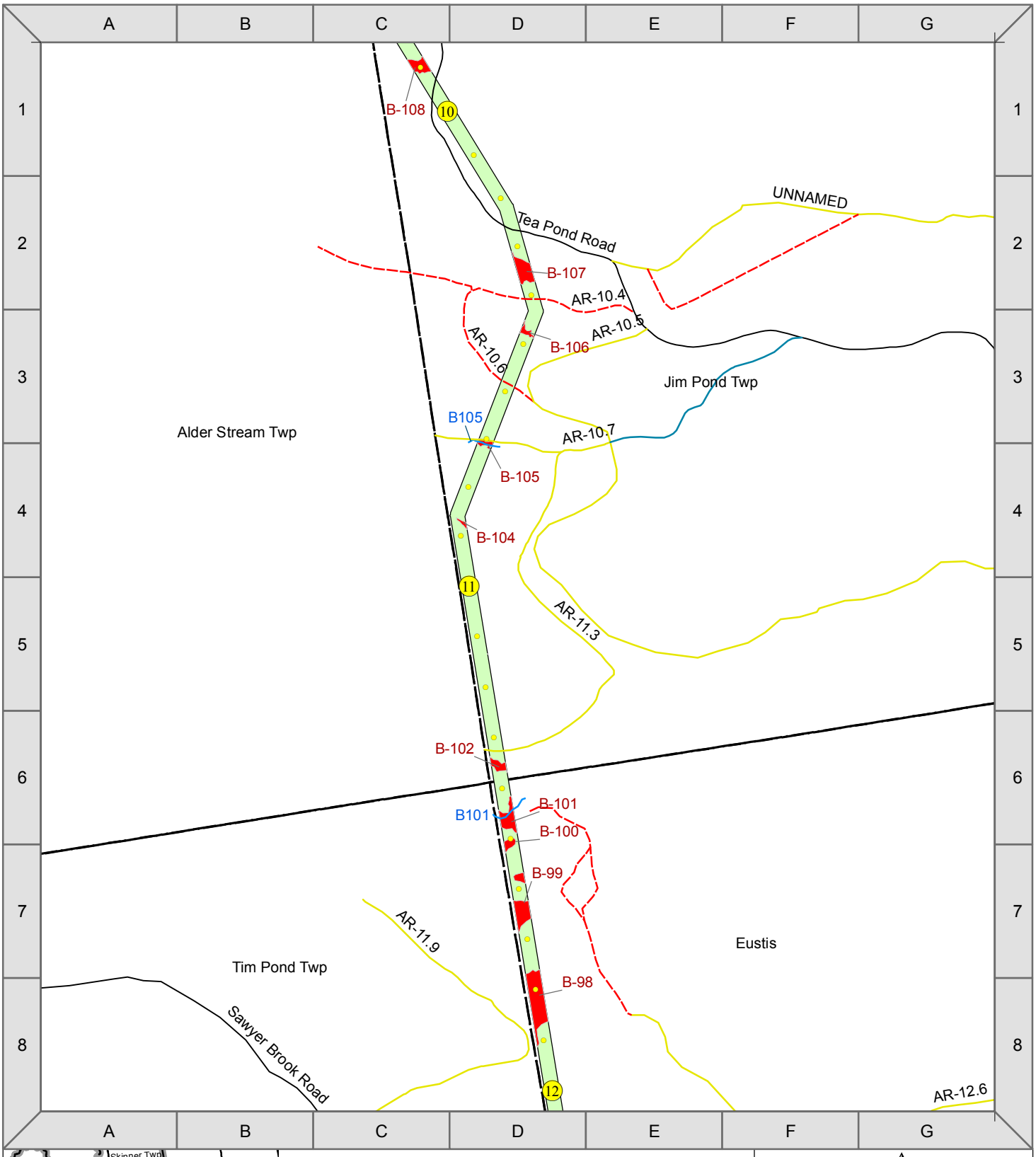
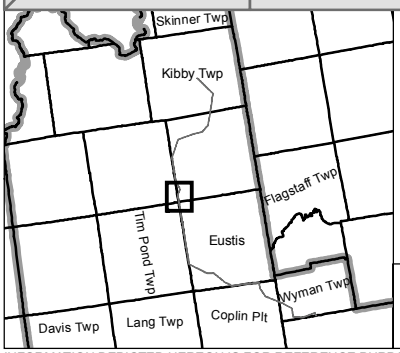




SKIDDER TRAIL
DORMANT LOGGING RD
ATV ACCESS
Road
CONFIRMED ACCESS
UNCONFIRMED ACCESS
Series A Road Alignment
Series B Road Alignment
X## Wetland ID
X## Stream ID
1/10 Mile Marker
Mile Posts
Streams
Wetlands
Proposed Substation
Transmission Line
Collector Line
Turbines
Surveyed Town Line
Town Boundary

Notes: *Political and road data courtesy of Maine OGIS*

N

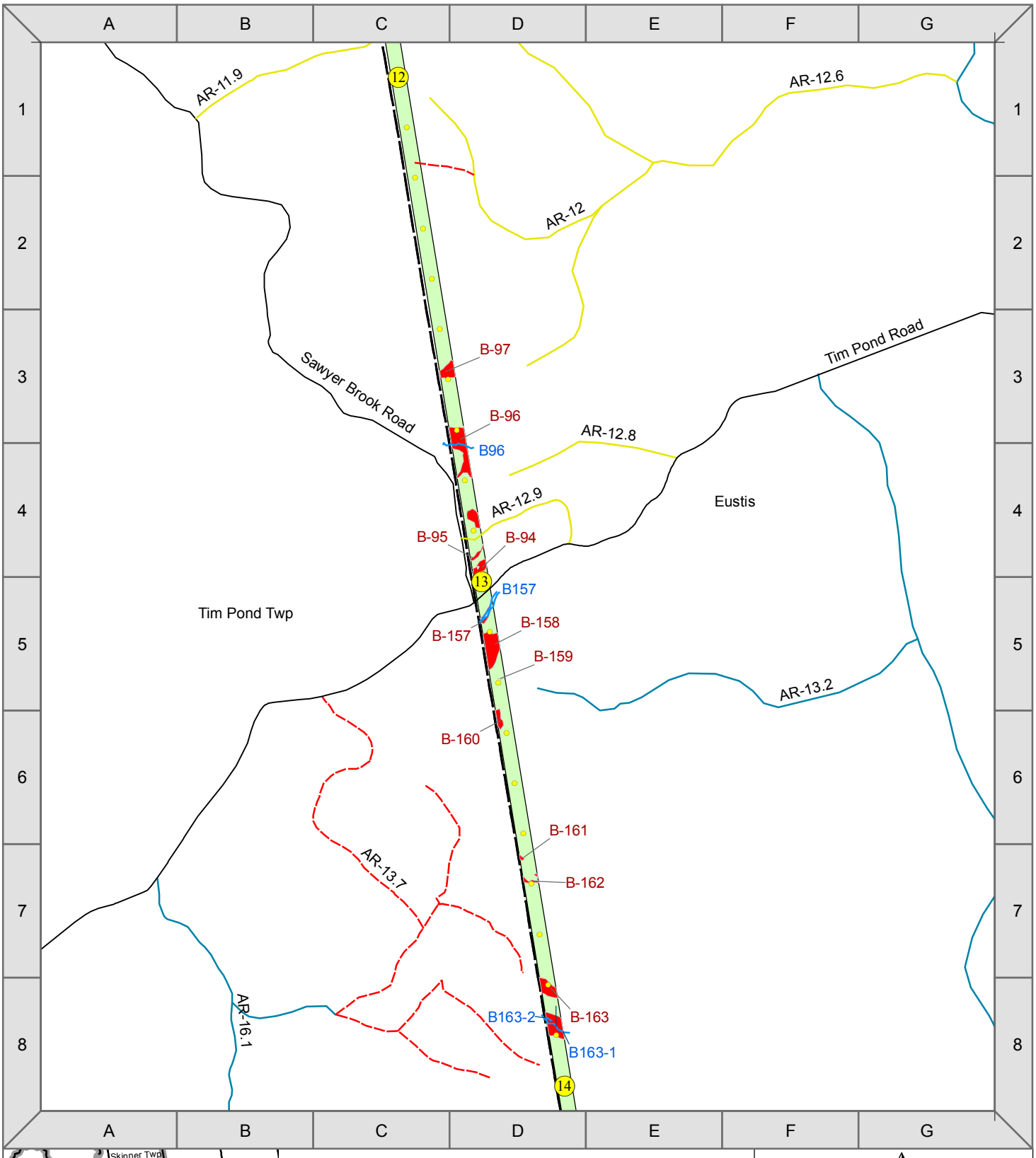
250

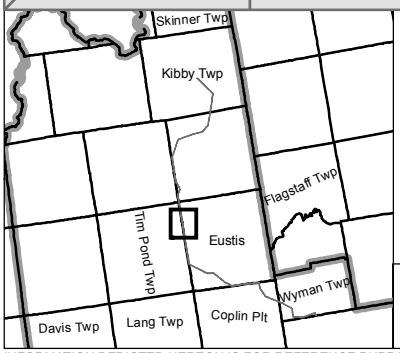
Meters

Figure V-6-10

Kibby Wind Power Project

Transmission Line and Natural Resources





SKIDDER TRAIL
DORMANT LOGGING RD
ATV ACCESS
Road
CONFIRMED ACCESS
UNCONFIRMED ACCESS
Series A Road Alignment
Series B Road Alignment
X## Wetland ID
X## Stream ID
1/10 Mile Marker
Mile Posts
Streams
Wetlands
Proposed Substation
Transmission Line
Collector Line
Turbines
Surveyed Town Line
Town Boundary

Notes: *Political and road data courtesy of Maine OGIS*

N

250

Meters

Figure V-6-11

Kibby Wind Power Project

Transmission Line and Natural Resources

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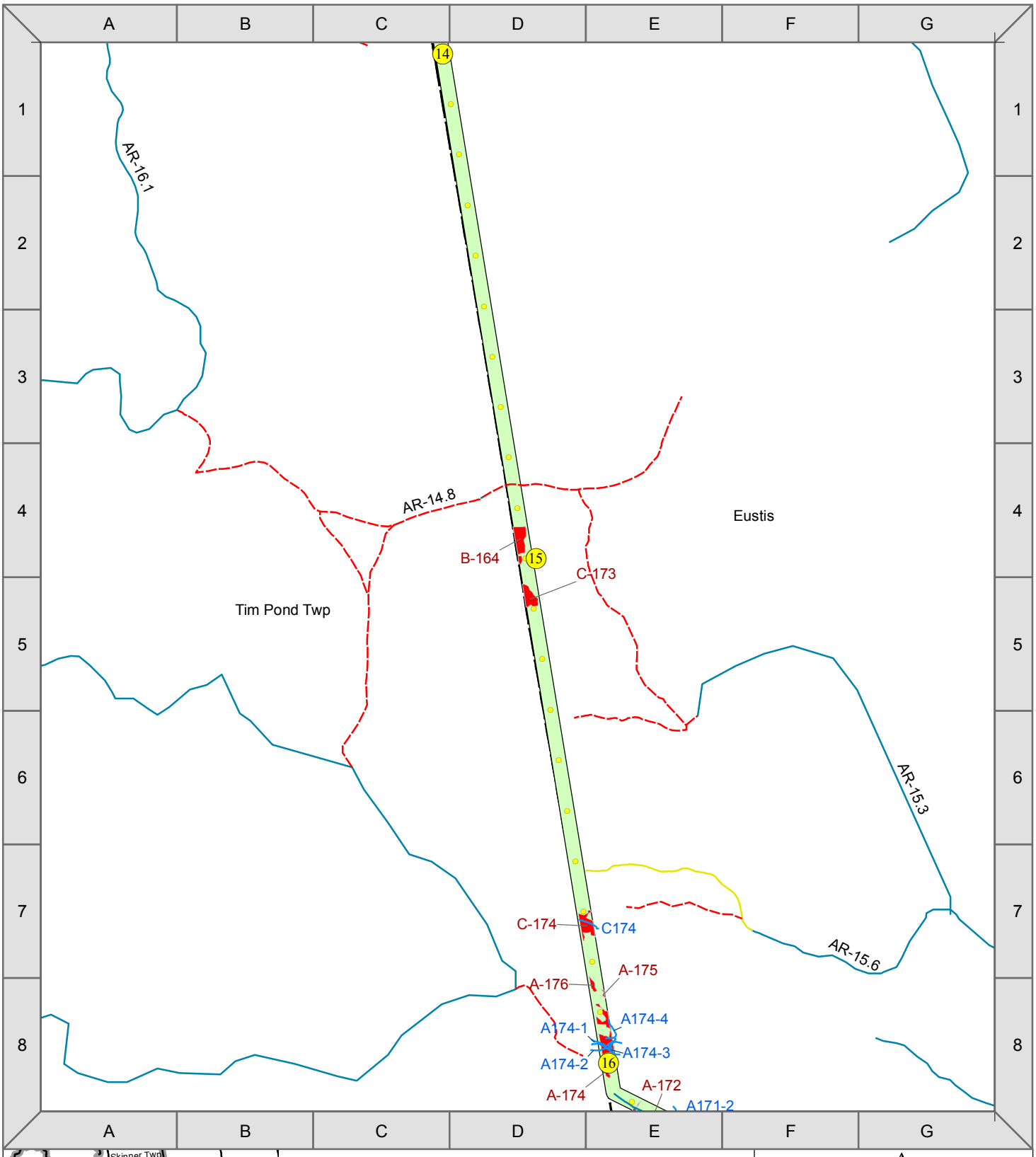
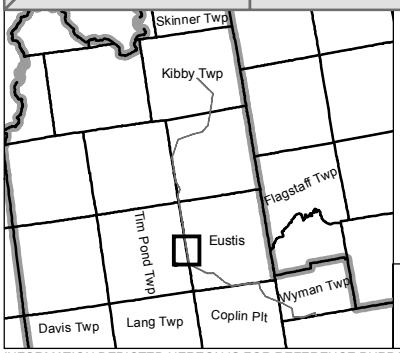




SKIDDER TRAIL
DORMANT LOGGING RD
ATV ACCESS
Road
CONFIRMED ACCESS
UNCONFIRMED ACCESS
Series A Road Alignment
Series B Road Alignment
X## Wetland ID
X## Stream ID
1/10 Mile Marker
Mile Posts
Streams
Wetlands
Proposed Substation
Transmission Line
Collector Line
Turbines
Surveyed Town Line
Town Boundary

Notes: *Political and road data courtesy of Maine OGIS*

N

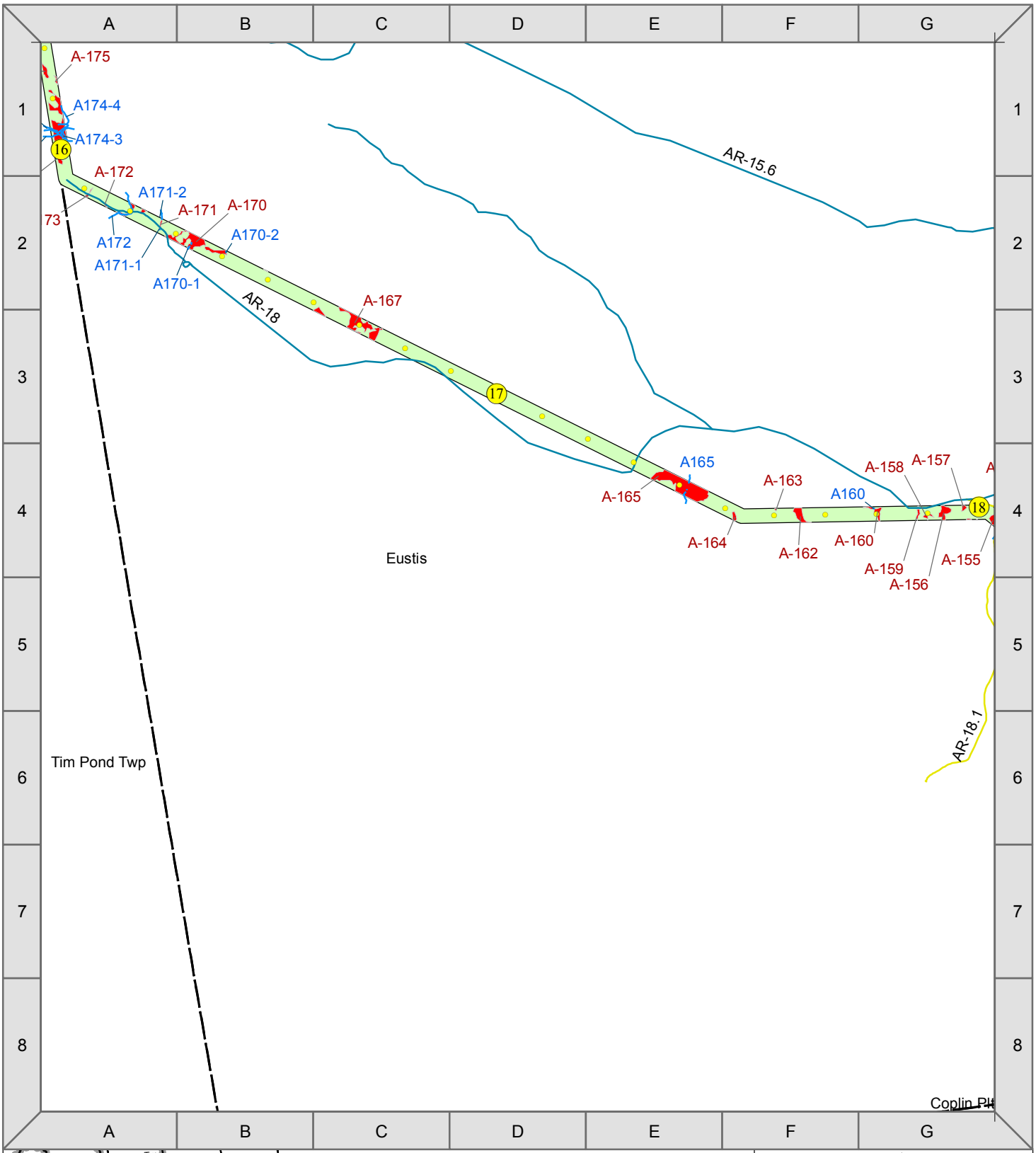
250

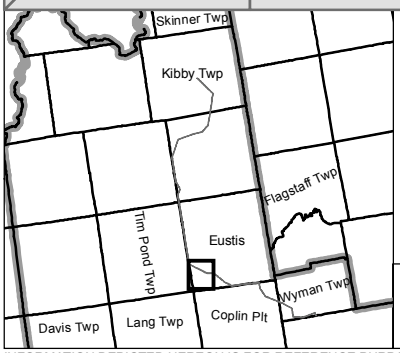
Meters

Figure V-6-12

Kibby Wind Power Project

Transmission Line and Natural Resources



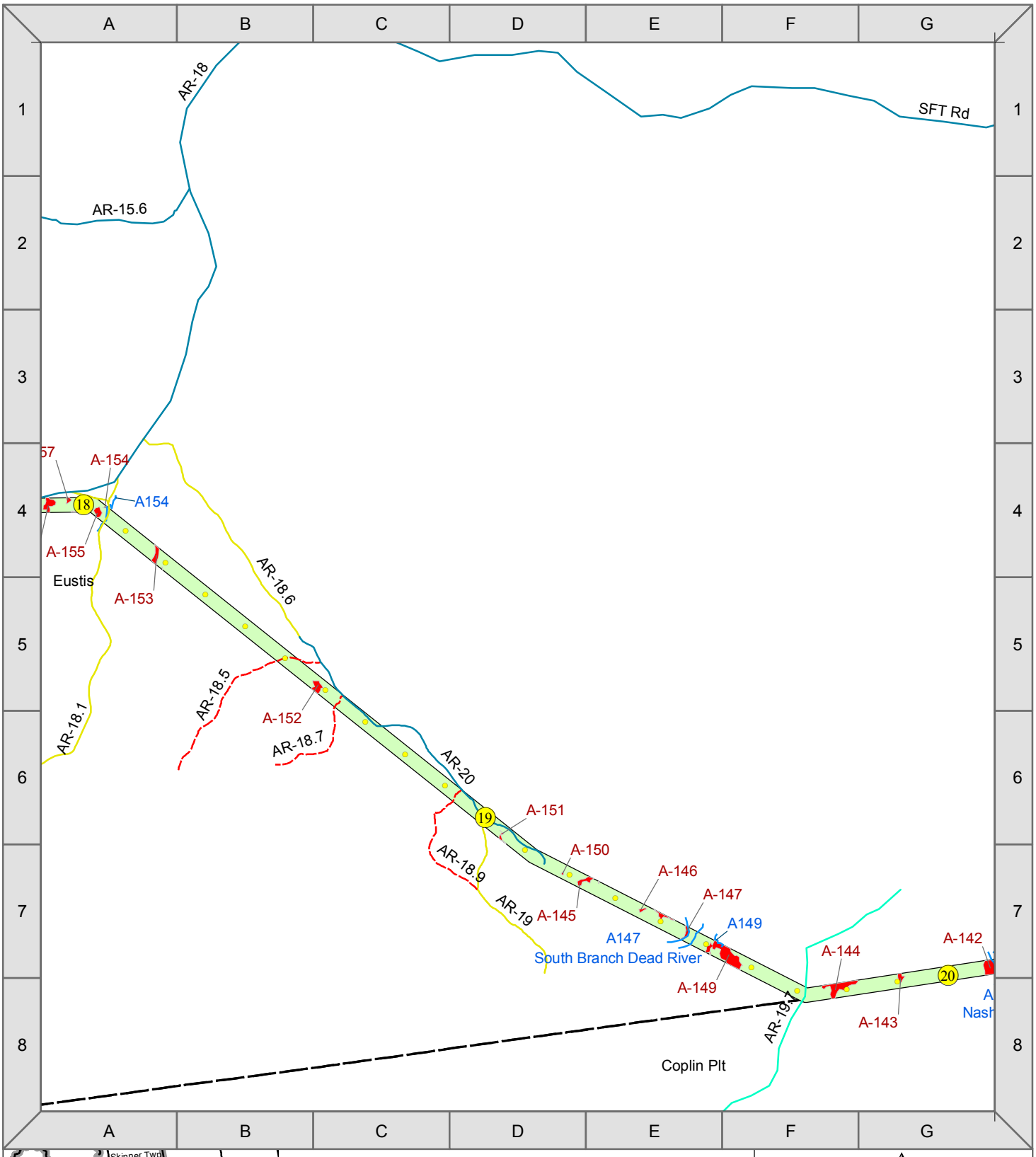


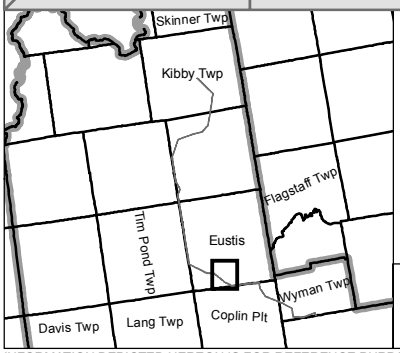
SKIDDER TRAIL
DORMANT LOGGING RD
ATV ACCESS
Road
CONFIRMED ACCESS
UNCONFIRMED ACCESS
Series A Road Alignment
Series B Road Alignment
X## Wetland ID
X## Stream ID
1/10 Mile Marker
Mile Posts
Streams
Wetlands
Proposed Substation
Transmission Line
Collector Line
Turbines
Surveyed Town Line
Town Boundary

Notes: *Political and road data courtesy of Maine OGIS*

250
Meters

Figure V-6-13
Kibby Wind Power Project
Transmission Line and Natural Resources



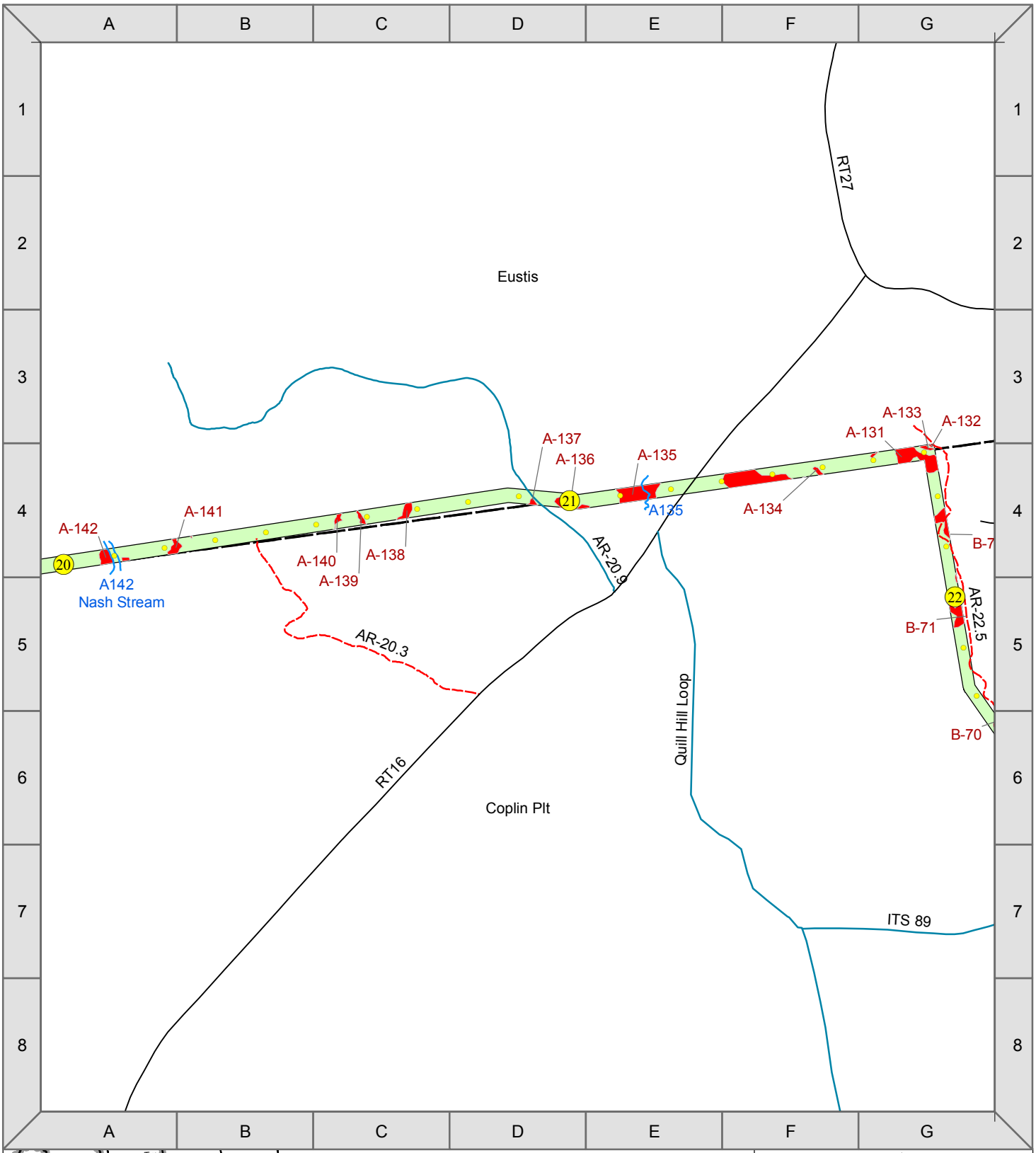


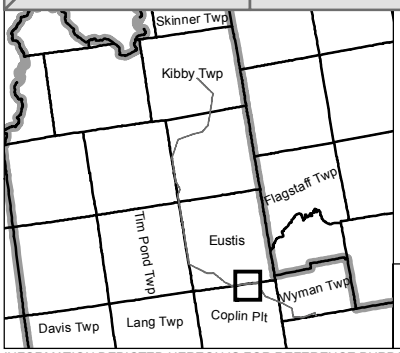
SKIDDER TRAIL
DORMANT LOGGING RD
ATV ACCESS
Road
CONFIRMED ACCESS
UNCONFIRMED ACCESS
Series A Road Alignment
Series B Road Alignment
X## Wetland ID
X## Stream ID
1/10 Mile Marker
Mile Posts
Streams
Wetlands
Proposed Substation
Transmission Line
Collector Line
Turbines
Surveyed Town Line
Town Boundary

Notes: *Political and road data courtesy of Maine OGIS*

250
Meters

Figure V-6-14
Kibby Wind Power Project
Transmission Line and Natural Resources



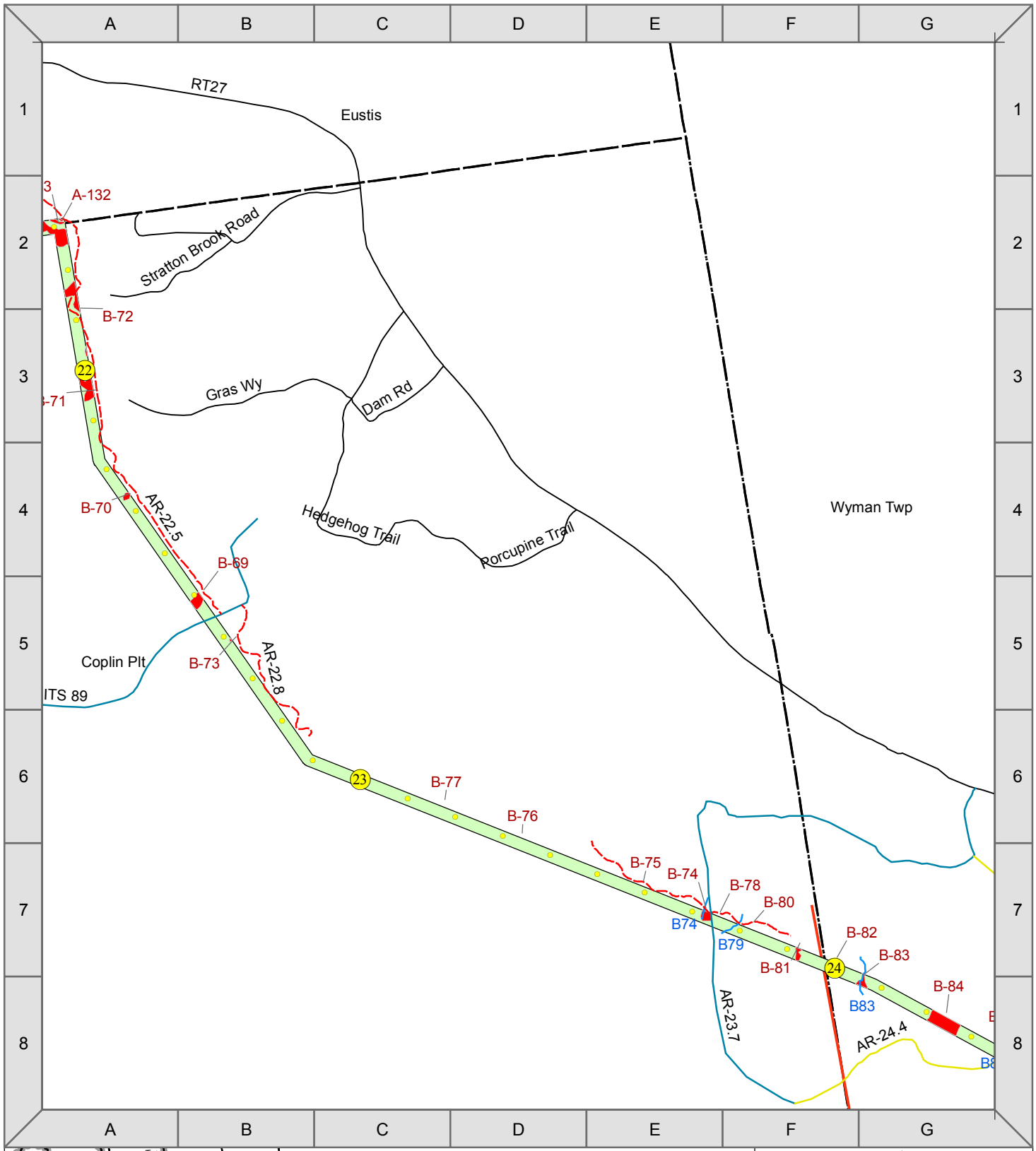


SKIDDER TRAIL
DORMANT LOGGING RD
ATV ACCESS
Road
CONFIRMED ACCESS
UNCONFIRMED ACCESS
Series A Road Alignment
Series B Road Alignment
X## Wetland ID
X## Stream ID
1/10 Mile Marker
Mile Posts
Streams
Wetlands
Proposed Substation
Transmission Line
Collector Line
Turbines
Surveyed Town Line
Town Boundary

Notes: *Political and road data courtesy of Maine OGIS*

250
Meters

Figure V-6-15
Kibby Wind Power Project
Transmission Line and Natural Resources



Notes: *Political and road data courtesy of Maine OGIS*

Figure V-6-16

Kibby Wind Power Project

Transmission Line and Natural Resources

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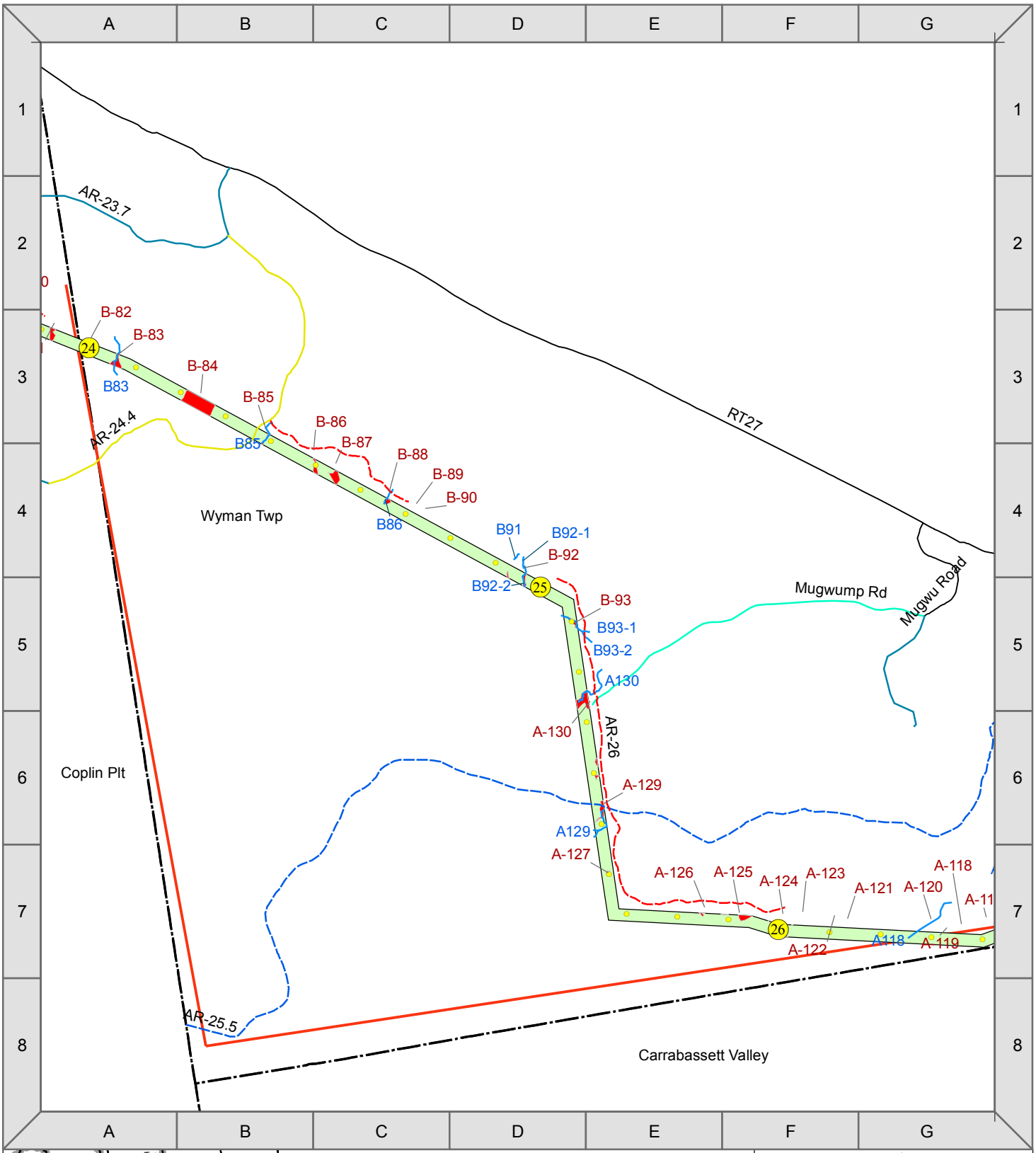
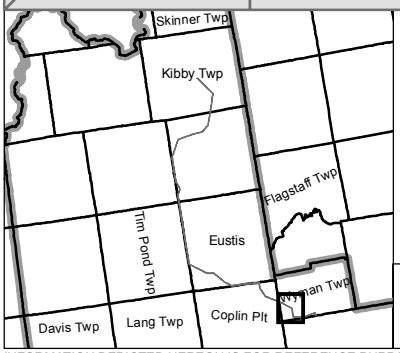


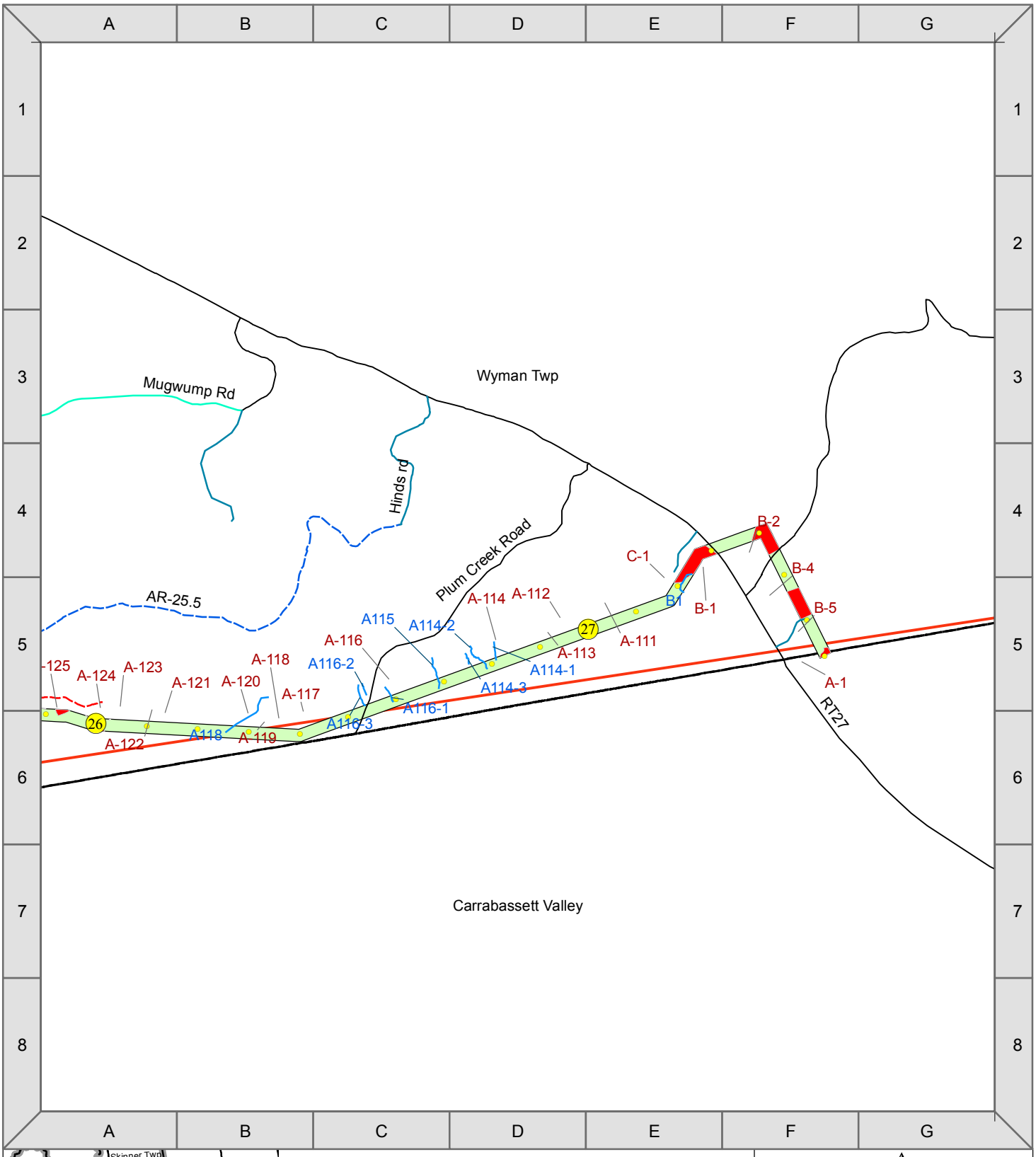


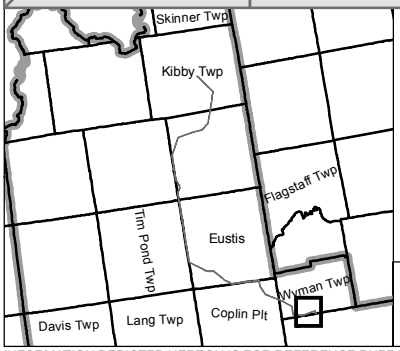
SKIDDER TRAIL
DORMANT LOGGING RD
ATV ACCESS
Road
CONFIRMED ACCESS
UNCONFIRMED ACCESS
Series A Road Alignment
Series B Road Alignment
X## Wetland ID
X## Stream ID
1/10 Mile Marker
Mile Posts
Streams
Wetlands
Proposed Substation
Transmission Line
Collector Line
Turbines
Surveyed Town Line
Town Boundary

Notes: *Political and road data courtesy of Maine OGIS*

250
Meters

Figure V-6-17
Kibby Wind Power Project
Transmission Line and Natural Resources





SKIDDER TRAIL
DORMANT LOGGING RD
ATV ACCESS
Road
CONFIRMED ACCESS
UNCONFIRMED ACCESS
Series A Road Alignment
Series B Road Alignment
X## Wetland ID
X## Stream ID
1/10 Mile Marker
Mile Posts
Streams
Wetlands
Proposed Substation
Transmission Line
Collector Line
Turbines
Surveyed Town Line
Town Boundary

Notes: *Political and road data courtesy of Maine OGIS*

250
Meters

Figure V-6-18
Kibby Wind Power Project
Transmission Line and Natural Resources

location in the ROW, a brief description, and its LURC subdistrict designation are presented in Table V-6-3. Streams are described based on parameters recorded during the delineation effort and are summarized in Table V-6-5. Table V-6-6 is a summary of the total estimated impacts to wetlands within LURC jurisdiction.

Areas Not Delineated

During design of the 115 kV transmission line in late 2006 and early 2007, part of the proposed transmission route was adjusted at the point of interconnect to the electrical grid, in the vicinity of the Bigelow Substation. The revised section of proposed ROW crosses the existing 115 kV ROW from the south side to the north side about 0.1 mile (0.2 km) west of the Route 27 crossing and crosses Route 27. The route continues parallel with the existing 115 kV ROW, but on the north side, into the Bigelow Substation. This revised section is approximately 0.5 mile (0.8 km) long. Due to winter conditions, wetland delineations have not been performed in this section of ROW. For determining wetland impact, TransCanada is making the assumption that the two dead-end structures (angle points), Structures 220 and 221, will be in wetland, so the summary of wetland impacts in Table V-6-6 include these impacts. TransCanada will survey this adjusted section of transmission line ROW as weather conditions permit, and will revise the wetland impact area estimates accordingly.

Wetlands in DEP Jurisdiction

The proposed transmission line traversed both LURC and DEP jurisdictions. Those wetlands under DEP jurisdiction are in Eustis and Carrabassett Valley. Potential impacts from the 115 kV transmission line in these towns will be addressed separately under a Site Location of Development Act and NRPA permit application. However, to ensure LURC has an understanding of the full extent of potential project impacts, these wetlands and streams have been included in this application. These resources are listed by location and township in the tables.

One area of the proposed transmission line ROW straddles the Eustis/Coplin Township line, and the same wetlands are found on either side of this municipal boundary. These wetlands and streams are listed in the Table V-6-3 and Table V-6-5, respectively, by their occurrence in each town with appropriate wetland area and type by township. The wetlands included in this area include A-144, A-142, A-141, A-137, A-136, A-135, A-134, A-133, and A-131. The streams are Nash Stream and stream A-135.

Table 6-3: Wetland Descriptions for Wetlands Within the 115 kV Transmission Line ROW

Mile Post	Wetland ID	Wetland Type	LURC Subdistrict	Total Area in ROW (Acres)	Comments
Kibby Township					
0.0	D-24	PEM 1	P-WL1; P-WL2	P-WL1: 0.28; P-WL2: 1.34	Includes some area that is Wetland of Special Significance (P-WL1). Two intermittent streams drain a seepage wetland that was cleared by logging activity. Wetland has some shrub regeneration.
0.2	D-25	PFO 1	P-WL3	0.29	Seepage wetland with hydrology altered by skidder trails.
0.2	D-26	PSS 1	P-WL2	0.13	Small seepage wetland with many boulders scattered throughout.
0.3	D-27	PSS 1	P-WL2	0.05	Small seepage and drainage wetland with many boulders and skidder trails.
0.4	D-28	PSS 1	P-WL1; P-WL2	P-WL1:0.19 P-WL2: 0.09	A Wetland of Special Significance due to proximity to a perennial stream with steep banks and a small waterfall. Wetland shrubs line the banks. No floodplain areas associated with the stream.
0.5	D-30	PSS 1	P-WL2	0.47	Seepage and drainage wetland with a skidder trail traversing longitudinally.
0.5	D-31	PEM 1	P-WL2	0.03	Small isolated seepage wetland within the existing ROW. Wetland has been impacted by skidder trail.
0.6	D-32	PFO 1	P-WL1; P-WL3	P-WL1: 0.15; P-WL3: 0.72	A Wetland of Special Significance due to adjacency to a stream. A perennial stream drains a large wetland of mixed forested and emergent areas. The emergent areas are the result of clearcutting.
0.9	C-142	PEM 1	P-WL2	0.09	A seepage wetland logged and impacted by a skidder trail traversing longitudinally.
1.0	C-140	PSS 1	P-WL2	0.01	Small seasonally flooded wetland that drains off ROW.
1.0	C-138	PFO 1	P-WL1; P-WL3	P-WL1: 0.12; P-WL3: 0.05	A Wetland of Special Significance due to adjacency to streams. Two intermittent streams drain this forested wetland. Portions of the wetland receive floodwater from these streams.
1.1	C-137	PFO 1	P-WL1;	0.07	A Wetland of Special Significance due to adjacency to stream. A perennial stream with a narrow forested floodplain wetland on either side.

Mile Post	Wetland ID	Wetland Type	LURC Subdistrict	Total Area in ROW (Acres)	Comments
1.1	C-139	PFO 1	P-WL3	0.02	Small isolated seepage wetland.
1.2	C-134	PSS 1	P-WL1; P-WL2	P-WL1: 0.14 P-WL2: 0.15	A Wetland of Special Significance due to adjacency to two intermittent streams drain a seepage wetland previously cleared by logging activity. The wetland is adjacent to a logging road.
1.3	C-135	PFO 1	P-WL3	0.03	A small seepage wetland adjacent to a skidder trail.
1.3	C-133	PEM 2	P-WL2	0.06	A small isolated wetland cleared by logging activity and skidder trails.
1.4	C-132	PEM 2	P-WL2	0.4	Seepage wetland that was cleared by logging activity. The wetland drains off ROW and eventually drains through streams under Wahl Road.
1.5	C-131	PFO 1	P-WL3	0.03	Cleared by logging with some canopy species remaining. A small isolated wetland.
2.4	C-129	PEM 2	P-WL2	0.05	A small seepage wetland that was cleared by logging activity.
2.4	C-128	PFO 1	P-WL1; P-WL3	P-WL1: 0.08; P-WL3: 0.09	A Wetland of Special Significance due to proximity to streams. Two perennial streams drain a forested seepage wetland and connect downstream through culverts beneath Wahl Road.
2.6	C-126	PSS 1	P-WL2	0.05	Seepage wetland that has been cleared by logging and has regenerated into hardwood saplings.
2.7	C-125	PSS 1	P-WL2	0.16	Seepage wetland that has been cleared by logging and has regenerated into hardwood saplings.
2.9	C-122	PSS 1	P-WL2	0.24	Seepage wetland cleared by logging activity. The wetland drains into a roadside ditch.
3.0	B-156	PSS 4	P-WL2	0.23	A seepage wetland previously cleared by logging activity.
Jim Pond Township					
3.1	B-155	PFO 4	P-WL3	0.27	A seepage wetland. A small portion of the wetland is divided by the skidder trail.

Mile Post	Wetland ID	Wetland Type	LURC Subdistrict	Total Area in ROW (Acres)	Comments
3.3	B-154	PFO 1	P-WL3	0.05	A small seepage wetland divided by a skidder trail and heavily impacted by the trail.
3.4	B-152	PFO 1/4	P-WL1; P-WL3	P-WL1: 0.27; P-WL3: 1.68	A Wetland of Special Significance due to adjacency to streams. One perennial and one intermittent stream drain a large seepage wetland. A skidder trail bisects the wetland. Road side ditches alter some of the surface and seepage hydrology.
3.4	B-153	PFO 1/4	P-WL3	0.44	A seepage wetland on a moderate hillside bisected by a skidder trail.
3.7	B-151	PSS 1	P-WL1; P-WL2	P-WL1: 0.36 P-WL2: 7.29	A Wetland of Special Significance due to adjacency to two intermittent streams. Wetland is a large seepage wetland impacted by skidder trails and is adjacent to a gravel logging road.
3.7	C-124	PEM 2	P-WL1; P-WL2	P-WL1: 0.002; P-WL2: 0.05	Includes a small area of Wetland of Special Significance (P-WL1). Wetland is a small seepage wetland that drains the adjacent hillside.
4.2	B-149	PSS 4	P-WL2	2.34	A logging trail bisects the wetland. Evidence of seasonal flooding and seepage. Wetland extends off ROW.
4.4	B-150	PSS 4	P-WL2	0.61	A seepage wetland with many boulders and has been impacted by skidder trails.
4.7	B-147	PSS 4	P-WL2	0.11	A seepage wetland that has been impacted by logging. Wetland is adjacent to a gravel logging road.
4.7	B-148	PEM 1	P-WL2	0.31	A seepage wetland impacted by a roadside ditch as the wetland drains into the ditch and also drains underneath a gravel logging road. The wetland has been clearcut.
4.9	B-145	PFO 1	P-WL3	0.22	The adjacent slopes are steep and the wetland is at the base of a steep slope.
5.0	B-143	PFO 1	P-WL3	0.10	A seepage wetland that serves as a headwater to an intermittent stream off ROW.
5.0	B-144	PFO 1	P-WL3	0.03	A small seepage wetland that drains off ROW.
5.1	B-142	PFO 1/4	P-WL3	0.09	A small seepage wetland that drains off ROW.
5.2	B-140	PFO 1	P-WL1; P-WL3	P-WL1: 0.05 P-WL3: 0.01	A Wetland of Special Significance due to adjacency to streams. Intermittent stream drains through a seepage wetland to areas off ROW.
5.3	B-138	PSS 1	P-WL1; P-WL2	P-WL1: 0.12 P-WL2: 0.01	A Wetland of Special Significance due to adjacency to a perennial stream.

Mile Post	Wetland ID	Wetland Type	LURC Subdistrict	Total Area in ROW (Acres)	Comments
5.4	B-137	PFO 1	P-WL1; P-WL3	P-WL1: .13 P-WL3: 0.43	A Wetland of Special Significance due to adjacency to an intermittent stream that drains into Jim Pond. The seepage wetland is at the base of a steep slope and drains into the stream. The wetland has been logged.
5.8	B-135	PEM 1	P-WL2	0.48	A large seepage wetland complex that drains off ROW. The wetland appears to be in a headwaters position at the base of a cliff. Wetland has been impacted by skidder trails.
6.0	B-134	PFO 1	P-WL3	0.04	A small seepage wetland that has been impacted by skidder trails.
6.4	B-130	PFO 1/4	P-WL1; P-WL3	P-WL1: .02 P-WL3: 0.50	A Wetland of Special Significance due to proximity to an intermittent stream. A headwater seepage wetland at the base of a cliff that drains through the stream to areas off ROW. The wetland is crossed by a skidder trail.
6.8	B-129	PEM 1	P-WL1	0.30	A Wetland of Special Significance, based on the extent of emergent marsh vegetation. A bog like wetland with open emergent vegetation that is dense with scattered black spruce and balsam fir. Likely provides habitat for small mammals and raptors.
7.1	B-127	PSS 1	P-WL1; P-WL2	P-WL1: 0.23; P-WL2: 0.38	A Wetland of Special Significance due to adjacency to perennial stream. A large and diverse wetland complex that drains directly to the North Branch of Dead River. A portion is shrub wetland that has been impounded by a beaver dam. This area has potential as waterfowl habitat. Mapped IWWH UMO-9184, ranked low value.
7.2	B-126	PSS1	P-WL2	0.02	A small isolated wetland adjacent to Airport Road.
7.3	B-124	PSS 1	P-WL1, P-WL2; P-UA;	P-WL1: 0.01; P-WL2: 0.04	A Wetland of Special Significance due to adjacency to North Branch of Dead River. *Listera auriculata* found in wetland. Small seepage that drains into the North Branch of the Dead River, possibly a relic floodplain. Some evidence of beaver activity.
7.3	B-125	PFO 4	P-WL3	0.02	A small isolated wetland adjacent to a gravel logging road.
7.4	B-123	PFO 1/4	P-WL3	1.15	A seepage wetland that extends off ROW and drains to a larger wetland and drains to the North Branch of Dead River. The canopy is cedar. The wetland borders on Route 27.

Mile Post	Wetland ID	Wetland Type	LURC Subdistrict	Total Area in ROW (Acres)	Comments
7.6	B-121	PSS 1	P-WL2	0.29	Wetland is a seepage wetland that extends off ROW and has been crossed by skidder trails.
7.6	B-122	PSS 1	P-WL2	0.04	Small isolated wetland impacted by skidder trails.
7.9	B-119	PFO 1/4	P-WL3	0.35	A seasonally flooded wetland that extends off ROW and is crossed by numerous skidder trails.
8.0	B-118	PFO 4	P-WL1; P-WL3	P-WL1: 0.46 P-WL3: 1.47	A Wetland of Special Significance due to adjacency to two perennial streams. A dense canopy of cedar with deep organic soils. Beaver activity was observed in both streams. Mapped IWWH UMO-9279, ranked low value.
8.3	B-117	PFO 1/4	P-WL3	0.15	Vernal pool A10 located within a skidder trail. The wetland seeps to an off ROW area.
8.3	B-116	PEM 1	P-WL2	0.07	A small isolated wetland within a clearcut area.
8.4	B-115	PFO 1/4	P-WL3	0.17	A seepage wetland that drains to an off ROW wetland. The wetland has been logged.
8.8	B-114	PFO 1/4	P-WL3	0.03	A small isolated wetland.
9.1	B-113	PFO 1/4	P-WL1; P-WL3	P-WL1: 0.30; P-WL3: 1.17	A Wetland of Special Significance due to adjacency to two streams: one is Alder Stream and one is an intermittent stream. Vernal pool A36 is also within this forested wetland, which is a large wetland complex that drains into the Alder Stream. The wetland also includes a relic channel of Alder Stream that may provide habitat for waterfowl and aquatic mammals. Mapped IWWH UMO-8635, ranked low value.
9.3	B-112	PFO 1/4	P-WL3	0.83	A significant vernal pool based on the number of spotted salamander egg masses is found on edge of wetland (Vernal pool A14). The wetland is comprised of forested wetland surrounding a shrub wetland. The shrub area was harvested and is impacted by skidder trails and crossed by a gravel logging road.
9.4	B-111	PSS 1	P-WL2	0.69	Wetland is heavily impacted by skidder trails and has plentiful upland species on the ridges of the skidder trails.
9.6	B-110	PSS 1	P-WL2	0.01	A small seasonally wet to saturated wetland crossed by skidder trails.
9.6	B-109	PFO 1/4	P-WL3	0.05	A seepage wetland that is heavily rutted by skidder trails.

Mile Post	Wetland ID	Wetland Type	LURC Subdistrict	Total Area in ROW (Acres)	Comments
9.8	B-108	PFO 1	P-WL3	0.54	Several vernal pools (A20 & A21) are found in this wetland: none are significant. The wetland is divided by a gravel logging road and the south portion is heavily impacted by adjacent logging.
10.3	B-107	PFO 4	P-WL1	0.86	Wetland of Special Significance based on the extent of open water habitat. Beaver impoundment with a shrub wetland surrounded by a cedar wetland. This wetland includes the MDIFW mapped IWWH UMO-9568, ranked high value.
10.4	B-106	PFO 1/4	P-WL3	0.19	Small seepage drainage that extends off ROW.
10.7	B-105	PSS 1	P-WL1; P-WL2	P-WL1: 0.15; P-WL2: 0.06	A Wetland of Special Significance due adjacency to a perennial stream.
10.9	B-104	PSS 4	P-WL2	0.08	Small seepage wetland that extends off ROW and is impacted by skidder trails.
11.4	B-101	PFO 4	P-WL1; P-WL3	P-WL1: 0.19 P-WL3: 0.56	A Wetland of Special Significance due to adjacency to perennial stream. Wetland is a seepage wetland that drains into the stream and extends off ROW.
11.4	B-102	PFO 1/4	P-WL3	0.34	Wetland is a small seepage wetland that extends off ROW.
Eustis					
11.5	B-100	PSS 1	NA	0.24	Shrub wetland surrounded by forested wetland with surface flow that extends off ROW.
11.6	B-99	PFO 4	NA	1.03	Seepage wetland with one-half within the existing ROW.
11.8	B-98	PFO 4	NA	2.03	Seepage wetland with one-half within the existing ROW.
12.6	B-97	PFO 4	NA	0.44	Wetland includes vernal pool A23. Skidder trails cross the wetland. A seepage wetland.
12.7	B-96	PFO 1/4	NA	WOSS: 0.19; Other: 1.09	A Wetland of Special Significance due to adjacency to perennial stream. A seasonally inundated floodplain. One-half of the wetland is impacted by a skidder trail.
12.9	B-94	PFO 1	NA	0.30	A seepage wetland.
12.9	B-95	PSS 1	NA	0.49	Wetland is a seepage wetland bisected by a road.

Mile Post	Wetland ID	Wetland Type	LURC Subdistrict	Total Area in ROW (Acres)	Comments
13.0	B-157	PSS 1	NA	WOSS: 0.15; Other: 0.01	A Wetland of Special Significance due to adjacency to a perennial stream, Tim Brook. *Pyrola minor* and *Listera auriculata* were found along Tim Brook. The shrub wetland serves as a floodplain for the perennial stream.
13.1	B-158	PSS 1	NA	1.04	A seepage wetland previously cleared by logging activity. Seepage eventually drains to Tim Brook.
13.2	B-159	PSS 1	NA	0.01	A small isolated wetland cleared by logging activity.
13.3	B-160	PSS 1	NA	0.23	A small isolated wetland cleared by logging activity.
13.5	B-161	PFO 4	NA	0.04	A small seepage wetland that extends into a clearcut and has been altered by previous clearing.
13.6	B-162	PFO 4	NA	0.11	A seepage wetland that is bisected by a road and extends off ROW into a clearcut.
13.8	B-163	PFO 1/4	NA	WOSS: 0.32; Other: 1.02	A Wetland of Special Significance due to adjacency to two intermittent streams that receive drainage from the adjacent forested seepage wetland. The streams flow off ROW into a clear cut.
14.9	B-164	PFO 1/4	NA	0.72	A seepage wetland that has been partially cleared by logging and drains off ROW.
15.0	C-173	PSS 1	NA	0.51	A small seepage wetland previously logged and regenerating with upland shrubs and saplings.
15.7	C-174	PSS 1	NA	WOSS: 0.18; Other: 0.45	A Wetland of Special Significance due to adjacency to perennial stream with a shrub floodplain interspersed with emergent vegetation.
15.8	A-176	PFO 4	NA	0.12	Small seepage drainage that extends off ROW.
15.9	A-174	PFO 1/4	NA	WOSS: 0.48; Other: 0.73	A Wetland of Special Significance due to adjacency to two perennial streams and three intermittent streams. A large wetland and stream complex in a valley bottom that receives drainage from expansive upland ridges.
15.9	A-175	PFO 1/4	NA	0.03	Small seepage drainage that extends off ROW.
16.1	A-173	PFO 1	NA	0.04	Small saturated wetland that extends off ROW.
16.2	A-172	PFO 1/4	NA	WOSS: 0.13 Other: 0.03	A Wetland of Special Significance due to adjacency to intermittent stream. Wetland is a seepage wetland that drains into the stream.
16.2	A-171	PSS 1	NA	WOSS: 0.02; Other: 0.05	A Wetland of Special Significance due to adjacency to two intermittent streams. A flooded and seepage wetland draining into the streams.

Mile Post	Wetland ID	Wetland Type	LURC Subdistrict	Total Area in ROW (Acres)	Comments
16.3	A-170	PFO 1/4	NA	WOSS: 0.13 Other: 0.71	A Wetland of Special Significance due to adjacency to two intermittent streams. Large flooded and seepage wetland that drains off ROW to a larger wetland, apparently as part of A-167.
16.5	A-169	PFO 4	NA	0.003	Small seepage wetland along the edge of the ROW
16.6	A-167	PFO 4	NA	0.94	Large seepage wetland that drains off ROW to a larger wetland, apparently as part of A-170.
17.3	A-165	PSS 1	NA	WOSS: 0.16; Other: 1.52	A Wetland of Special Significance due to adjacency to three perennial streams. Wetland includes non-vernal pool C1. A portion of the wetland is an open water beaver pond which is permanently flooded. Other portions drain into the streams. The wetland likely provides waterfowl and aquatic mammal habitat.
17.5	A-163	PFO 1	NA	0.01	Small seepage wetland with a skidder trail extending through.
17.5	A-164	PFO 1	NA	0.07	Small seepage wetland that drains to a larger wetland off ROW.
17.6	A-162	PFO 1/4	NA	0.26	Pit and mound wetland with seepage that drains off ROW as part of a larger wetland.
17.8	A-160	PFO 1/4	NA	WOSS: 0.03; Other: 0.14	A Wetland of Special Significance due to adjacency to intermittent stream. A seepage wetland that drains into the stream and extends off ROW.
17.9	A-158	PFO 1	NA	0.07	Wetland includes vernal pool C2. A small isolated wetland.
17.9	A-159	PFO 1/4	NA	0.05	A seepage wetland that drains off ROW and is bisected by a gravel road.
17.9	A-156	PFO 1/4	NA	0.27	A seepage wetland with some surface drainage extending off ROW. A gravel road bisects the wetland.
18.0	A-154	PFO 1	NA	WOSS: 0.01	A Wetland of Special Significance due to adjacency to intermittent stream. Wetland seeps and has surface drainage to the stream. Wetland has been impact by a series of gravel roads. A ditch lines one of the roads contributes to drainage of the wetland.
18.0	A-155	PFO 1	NA	0.14	A small isolated wetland.

Mile Post	Wetland ID	Wetland Type	LURC Subdistrict	Total Area in ROW (Acres)	Comments
18.0	A-157	PFO 1	NA	0.05	Wetland includes vernal pool C3. Wetland is a small isolated wetland adjacent to a gravel road.
18.2	A-153	PFO 1/4	NA	0.19	Wetland seeps, also has some surface drainage, to a larger wetland system off ROW.
18.6	A-152	PFO 4	NA	0.22	Wetland seeps to a larger wetland system off ROW.
19.0	A-151	PFO 4	NA	0.04	Pit and mound wetland that seeps to a larger wetland system off ROW.
19.2	A-150	PFO 4	NA	0.01	A very small isolated wetland
19.2	A-145	PSS 1	NA	0.16	Seepage wetland that drains off ROW as part of a larger wetland.
19.4	A-146	PSS 4	NA	0.05	Very small isolated wetland.
19.4	A-147	PFO 4	NA	WOSS: 0.09; Other: 0.12	A Wetland of Special Significance due to adjacency to the South Branch of the Dead River. Seepage wetland that drains into an intermittent stream and into the river. This wetland may provide waterfowl and aquatic mammal habitat.
19.6	A-149	PFO 5	NA	WOSS: 0.10 Other: 0.81	A Wetland of Special Significance due to adjacency to intermittent stream. Wetland surface water and seepage drains into the South Branch of the Dead River. This wetland may provide waterfowl and aquatic mammal habitat.
19.8	A-144	PFO 1/4	NA	0.53	Large seepage wetland that appears to drains into a larger system.
19.9	A-143	PFO 1	NA	0.1	Small seepage wetland.
20.1	A-142	PFO 4	NA	WOSS: 0.09; Other: 0.33	A Wetland of Special Significance due to adjacency to a perennial stream (Nash Stream). Wetland saturation seeps into the stream. Mixed community of forest and shrubs. Also included in this wetland is mapped DWA 060027.
20.2	A-141	PFO 4	NA	0.30	A seepage wetland that connects to a larger system off ROW. Dense shrub and regeneration cover.
20.5	A-140	PFO 4	NA	0.14	Small seepage wetland that connects to a larger system off ROW.
20.6	A-139	PFO 4	NA	0.15	Small seepage wetland.
20.7	A-138	PFO 1	NA	0.33	Small drainage wetland that connects to a larger system off ROW.
20.9	A-137	PSS 1	NA	0.08	Area previously disturbed by logging activity, possibly as a staging area. It is adjacent to a gravel road. A ditch drains the wetland along the road.

Mile Post	Wetland ID	Wetland Type	LURC Subdistrict	Total Area in ROW (Acres)	Comments
21.0	A-136	PFO 1	NA	0.08	Small seepage wetland. Wetland includes a mapped DWA 060027 in Eustis.
21.1	A-135	PSS 1	NA	0.42	A Wetland of Special Significance due to adjacency to a perennial stream with some over-bank flooding and a mapped IWWH, MDIFW ID UMO-10487, ranked high value. Large shrub wetland that may provide some waterfowl and aquatic mammal habitat.
21.3	A-134	PFO1	NA	0.36	A small portion of the ROW overlaps a single-pole transmission line. A portion receives salt runoff from a local sand/salt storage area and is heavily traversed by moose.
21.6	A-133	PFO 1/3	NA	0.09	
21.6	A-132	PFO 1/4	NA	0.02	Small disturbed wetland with some adjacent fill impacts.
21.7	A-131	PFO 1/4	NA	0.31	Wetland is near Stratton Brook, although a hydrologic connection is not apparent. Part of this wetland may provide some suitable waterfowl and beaver habitat. Wetland is impacted by a road and a portion is cleared ROW.
Coplin Plantation					
19.8	A-144	PFO 1/4	P-WL3	0.04	Large seepage wetland that appears to drains into a larger system.
20.1	A-142	PFO 4	P-WL1; P-WL3	P-WL1: 0.01; P-WL3: 0.04	A Wetland of Special Significance due to adjacency to a perennial stream. Wetland saturation seeps into the stream. Mixed community of forest and shrubs. Also mapped DWA 060027 in Eustis.
20.2	A-141	PFO 4	P-WL3	0.01	A seepage wetland that connects to a larger system off ROW. Dense shrub and regeneration cover.
20.9	A-137	PSS 1	P-WL2	0.01	Area previously disturbed by logging activity, possibly as a staging area. It is adjacent to a gravel road. A ditch drains the wetland along the road.
21.0	A-136	PFO 1	P-WL3	0.46	Small seepage wetland. Mapped DWA 060027 in Eustis.
21.1	A-135	PSS 1	P-WL1	0.972	A Wetland of Special Significance due to adjacency to a perennial stream with some over-bank flooding and a mapped IWWH, MDIFW ID UMO-10487, ranked high value. Large shrub wetland that may provide some waterfowl and aquatic mammal habitat.
21.3	A-134	PFO1	P-WL3	1.47	A small portion of the ROW overlaps a single-pole transmission line. A portion receives salt runoff from a local sand/salt storage area and is heavily traversed by moose.
21.6	A-133	PFO 1/3	P-WL3	0.004	
21.7	A-131	PFO 1/4	P-WL3	1.06	Wetland is near Stratton Brook, although a hydrologic connection is not apparent. Part of this wetland may provide some suitable waterfowl and beaver habitat. Wetland is impacted by a road and a portion is cleared ROW.

Mile Post	Wetland ID	Wetland Type	LURC Subdistrict	Total Area in ROW (Acres)	Comments
21.9	B-72	PSS 1	P-WL2	0.51	The wetland is bisected by a road and one-half of area is within the existing ROW. Remaining is adjacent to existing ROW.
22.1	B-71	PEM 1	P-WL2	0.55	Seepage wetland traversed by a field road with ¾ within the existing ROW. Remaining is adjacent to existing ROW.
22.3	B-70	PEM 1	P-WL2	0.10	Seepage wetland with ¼ within the existing ROW and bisected by an ATV trail. Remaining is adjacent to existing ROW.
22.5	B-69	PSS 1	P-WL2	0.32	Wetland includes vernal pool B1. This seepage wetland is traversed by a road. One-half of the wetland area is within the existing ROW. Remaining is adjacent to existing ROW.
22.6	B-73	PEM 1	P-WL2	0.02	A narrow seepage wetland bisected by a field road and ¾ exists within the existing ROW. Remaining is adjacent to existing ROW.
23.7	B-74	PSS 1	P-WL1; P-WL2;	P-WL1: .09; P-WL2: 0.22	A Wetland of Special Significance due to adjacency to intermittent stream that drains this seepage wetland. Approximately one half of wetland area is within the existing ROW. Remaining is adjacent to existing ROW.
23.9	B-81	PSS 1	P-WL2	0.15	Seepage wetland with ¾ of area within the existing ROW. Remaining is adjacent to existing ROW.
Wyman Township					
24.0	B-82	PFO 1/4	P-WL3	0.08	Seepage wetland with ¾ of area within the existing ROW and impacted by a skidder trail. Remaining is adjacent to existing ROW.
24.1	B-83	PFO 1/4	P-WL1; P-WL3	P-WL1: 0.12 P-WL2: 0.07	A Wetland of Special Significance due to adjacency to a perennial stream that drains a seepage wetland. Approximately ¼ of the wetland in the existing ROW. Remaining is adjacent to existing ROW.
24.2	B-84	PFO 1/4	P-WL3	0.96	Wetland includes vernal pool B2. Seepage wetland with one-half area within the existing ROW. Remaining is adjacent to existing ROW.
24.5	B-86	PFO 4	P-WL3	0.11	Narrow seepage with one-half within the existing ROW. Remaining is adjacent to existing ROW.
24.5	B-85	PSS 1	P-WL1	0.05	A Wetland of Special Significance due to adjacency to a perennial stream. A narrow seepage wetland with one-half of area within the existing ROW. Remaining is adjacent to existing ROW.
24.5	B-87	PSS 1	P-WL2	0.22	Seepage wetland with ¼ of area within the existing ROW. Remaining is adjacent to existing ROW.
24.6	B-88	PSS 1	P-WL1; P-WL2	P-WL1: 0.05 P-WL2: 0.03	A Wetland of Special Significance due to adjacency to an intermittent stream. A seepage wetland. Wetland is adjacent to the existing ROW.
25.0	B-92	PFO 1	P-WL1; P-WL3	P-WL1: 0.08	A Wetland of Special Significance due to adjacency to a perennial stream. A

Mile Post	Wetland ID	Wetland Type	LURC Subdistrict	Total Area in ROW (Acres)	Comments
				P-WL3: 0.02	portion of the wetland is disturbed with some fill impacts. This wetland is located within the existing ROW and adjacent to the ROW.
25.1	B-93	PSS 1	P-WL1	0.09	A Wetland of Special Significance due to adjacency to three intermittent streams with narrow shrub banks. Wetland has been impacted by previous construction activity. Wetland is adjacent to the existing ROW.
25.3	A-130	PFO 1	P-WL1; P-WL3	P-WL1: 0.18; P-WL3: 0.15	A Wetland of Special Significance due to adjacency to a perennial stream. One-quarter of wetland is within the existing ROW. Remaining is adjacent to existing ROW.
25.4	A-129	PSS 1	P-WL1; P-WL2	P-WL1: 0.09; P-WL2: 0.13	A Wetland of Special Significance due to adjacency to an intermittent stream. Wetland includes vernal pool B3. Wetland is adjacent to the existing ROW.
25.6	A-127	PFO 1	P-WL3	0.02	Small seepage wetland entirely within the forested area adjacent to existing ROW.
25.8	A-126	PEM 1	P-WL2	0.02	Small isolated wetland that extends into the existing ROW. Remaining is adjacent to existing ROW.
25.9	A-125	PSS 1	P-WL2	0.13	A seepage wetland. Wetland is adjacent to the existing ROW.
26.0	A-123	PSS 1	P-WL2	0.002	Wetland includes vernal pool B4. A seepage wetland. Wetland is adjacent to the existing ROW.
26.0	A-124	PSS 1	P-WL2	0.11	A seepage wetland adjacent to the existing ROW which drains into the existing ROW.
27.2	B-1	PFO 4	P-WL1; P-WL3	P-WL1: 0.17 P-WL3: 1.15	A Wetland of Special Significance due to adjacency to an intermittent stream. Wetland includes vernal pool B5. Over ¾ of the wetland within the existing ROW. Remaining is adjacent to existing ROW.
27.3	B-2	PEM 1	P-WL2	1.02	A seepage wetland that extends into the existing ROW. Remaining is adjacent to existing ROW.
27.5	B-5	PEM 1	P-WL2	0.90	Seepage wetland with one-half within the existing ROW and bisected by an ATV trail. Remaining is adjacent to existing ROW.
Carrabassett Valley					
27.6	A-1	PEM 1	NA	0.14	The wetland is completely cleared and adjacent to existing ROW. The wetland is also adjacent to Route 27.
Total Project				**66.72 acres of wetland in ROW**	

The majority of the P-WL1 subdistricts were associated with streams, with each P-WL1 occurring within 25 feet (7.6 m) of the streams (Table V-6-4). Other P-WL1 subdistricts found within the ROW included three wetlands that contained >20,000 square feet of open water or emergent marsh habitat. One of these, three were also associated with streams. One vernal pool (A-14) was located within Wetland B-112 and was determined to be a significant vernal pool. For clarification, it should be noted that significant vernal pools are not considered Significant Wildlife Habitat under the LURC standards or current NRPA rules.

Table 6-4. A Summary of P-WL1 Subdistricts: Wetlands of Special Significance

Wetland ID	P-WL1 Subdistrict Criteria		
	Within 25-feet of stream	***Significant Wildlife Habitat***	***>20,000 square feet of emergent marsh or open water habitat.***
A-129	X		
A-130	X		
A-135	X	IWWH	
A-142	X		
B-1	X		
B-74	X		
B-83	X		
B-85	X		
B-88	X		
B-92	X		
B-93	X		
B-101	X		
B-105	X		
B-107		IWWH	X
B-113	X		
B-124	X		
B-118	X		
B-127	X		
B-129			X
B-130	X		
B-137	X		
B-140	X		
B-151	X		
B-152	X		
C-124	X		
C-128	X		
C-134	X		
C-137	X		
C-138	X		
D-24	X		
D-28	X		
D-32	X		

Table 6-5: Streams Crossed by the Proposed Transmission Line ROW

MILEPOST	WATERBODY	ASSOCIATED WETLAND	CROSSING WIDTH (FEET)	STREAM TYPE (perennial or intermittent)	SUBSTRATE	COMMENTS	LURC SUBDISTRICT
Kibby Township							
0.04	D24-1	D-24	3	Intermittent	peat-muck, silt-mud, sand	forestry activities diverted streams	P-SL2
0.09	D24-2	D-24	2	Intermittent	silt-mud, sand	forestry activities diverted streams	P-SL2
0.43	D28	D-28	5	Perennial	gravel/cobble, boulder	several waterfalls, steep valley cut	P-SL2
0.63	D32-1	D-32	2	Perennial	sand, gravel/cobble		P-SL2
1.06	C138	C-138	2	Intermittent	silt-mud, sand, gravel/cobble, boulder		P-SL2
1.16	C137	C-137	5	Perennial	gravel/cobble		P-SL2
1.20	C136	N/A	3	Intermittent	gravel/cobble		P-SL2
1.25	C134-1	C-134	2	Intermittent	gravel/cobble		P-SL2
1.26	C134-4	C-134	1.5	Intermittent	sand		P-SL2
2.11	C130-2	N/A	1	Intermittent	gravel/cobble		P-SL2
2.12	C130-1	N/A	4	Perennial	bedrock		P-SL2
2.44	C128-1	C-128	3	Perennial	sand, gravel/cobble	braided stream channels	P-SL2
2.45	C128-2	C-128	3	Perennial	sand, gravel/cobble	braided stream channels	P-SL2
2.64	C127	N/A	2	Intermittent	sand		P-SL2
2.83	A123	C-123	1.5	Intermittent	sand		P-SL2
Jim Pond Township							
3.45	B152-1	B152	1	Perennial	sand, boulder		P-SL2
3.47	B152-2	B152	1	Intermittent	sand, boulder		P-SL2
3.99	B151-2	B151	1	Intermittent	peat-muck, silt-mud		P-SL2
4.00	B151-1	B151	1	Intermittent	sand, boulder	stream ends in grassy pool	P-SL2
4.86	B145-1	B145	20	Perennial	gravel/cobble, boulder	possibly mink present and probable trout stream	P-SL2
4.89	B145-2	B145	10	Intermittent	gravel/cobble, boulder	overflow channel	P-SL2
5.24	B140	B140	1	Intermittent	peat-muck, gravel/cobble, boulder		P-SL2

MILEPOST	WATERBODY	ASSOCIATED WETLAND	CROSSING WIDTH (FEET)	STREAM TYPE (perennial or intermittent)	SUBSTRATE	COMMENTS	LURC SUBDISTRICT
5.29	Northwest Inlet B138	B138	30	Perennial	boulder	waterfall downstream	P-SL2
6.01	B133	B133	3	Intermittent	boulder	braided channel	P-SL2
6.50	B130	B130	3.5	Intermittent	silt-mud		P-SL2
7.15	Viles Brook B127	B127	7	Perennial	sand, gravel/cobble	old beaver activity	P-SL2
7.35	North Branch Dead River B124	B124	55	Perennial	gravel/cobble, boulder	*Listera auriculata* on s. bank; beaver activity, trout stream	P-SL1; P-UA
8.04	B118-2	B118	3.5	Perennial	silt-mud, sand	beaver activity	P-SL2
8.10	B118-1	B118	7-10	Perennial	sand, gravel/cobble		P-SL2
9.08	B113-3	B113	4	Intermittent	sand, gravel/cobble	int. tributary	P-SL2
9.11	Alder Stream B113-2	B113	70	Perennial	sand, gravel/cobble		P-SL2
9.14	B113-1	B113	15	Perennial	gravel/cobble	oxbow not connected to Alder Stream	P-SL2
10.71	B105	B105	3	Perennial	silt-mud	wading bird present	P-SL2
Eustis							
11.46	Barnard Brook B101	B101	5	Perennial	silt-mud, gravel/cobble	fish present	NA
12.73	Sawyer Brook B96-1	B96	8	Perennial	silt-mud	tadpoles, frogs, and fish present	NA
13.07	Tim Brook B157	B157	30	Perennial	gravel/cobble, boulder	*Listera auriculata; Pyrola minor*	NA
13.87	B163-2	B163	2	Intermittent	peat-muck, silt-mud, sand		NA
13.88	B163-1	B163	4	Intermittent	sand, gravel/cobble	meandering stream, several possible routes at peak flow	NA
15.72	Lutton Brook C174	C174	5	Perennial	sand		NA
15.96	A174-4	A174	4	Perennial	sand, gravel/cobble	flows into channel A174-8, some area had no flow	NA
15.97	A174-1	A174	8-12	Perennial	sand, gravel/cobble, boulder		NA
15.97	A174-2	A174	5-10	Perennial	sand, gravel/cobble, boulder	flows into channel A174-1	NA
15.97	A174-3	A174	2.5	Intermittent	sand, gravel/cobble	flows into channel A174-2	NA
16.21	A172	A172	2.5	Intermittent	sand, gravel/cobble		NA
16.27	A171-1	A171	1	Intermittent	gravel/cobble		NA

MILEPOST	WATERBODY	ASSOCIATED WETLAND	CROSSING WIDTH (FEET)	STREAM TYPE (perennial or intermittent)	SUBSTRATE	COMMENTS	LURC SUBDISTRICT
16.27	A171-2	A171	2	Intermittent	gravel/cobble		NA
16.34	A170-1	A170	2	Intermittent	gravel/cobble		NA
16.41	A170-2	A170	1	Intermittent	silt-mud, gravel/cobble		NA
17.42	A165	A165	30	Perennial	peat-muck, silt-mud	flows out of wetland, venal pool, beaver activity	NA
17.80	A160	A160	1.5	Intermittent	sand, gravel/cobble		NA
18.06	A154	A154	15	Intermittent	silt-mud, sand, gravel/cobble	stream appears to have been widened	NA
19.46	South Branch Dead River A147-1	A147	100	Perennial	gravel/cobble, boulder	with int. tributary flowing out of wetland	NA
19.54	A149	A149	15	Intermittent	silt-mud	beaver activity	NA
20.10	Nash Stream A142-1	A142	20	Perennial	gravel/cobble	fish present	NA
21.16	A135	A135	5.5	Perennial	silt-mud, gravel/cobble	beaver activity	NA
Coplin Plantation							
20.10	Nash Stream A142-1	A142	20	Perennial	gravel/cobble	fish present	P-SL2
21.16	A135	A135	5.5	Perennial	silt-mud, gravel/cobble	beaver activity	P-SL2
21.8	B72-1	B72	1	Perennial	silt-mud/sand		P-SL2
23.73	B74	B74	1	Intermittent	sand, gravel/cobble		P-SL2
23.81	B79	N/A	2	Perennial	gravel/cobble	frogs present	P-SL2
Wyman Township							
24.07	B83-1	B83	7	Perennial	boulder	trout present	P-SL2
24.39	B85	B85	3.5	Perennial	silt-mud, sand	wood frog present	P-SL2
24.67	B88	B88	2	Intermittent	silt-mud, sand		P-SL2
24.94	B91	B91	1.5	Intermittent	silt-mud		P-SL2
24.97	B92-1	B92	4	Perennial	sand, gravel/cobble, boulder		P-SL2
24.97	B92-2	B92	5	Perennial	sand, gravel/cobble, boulder	trout present	P-SL2
25.15	B93-1	B93	1.5	Intermittent	sand, gravel/cobble		P-SL2
25.15	B93-2	B93	4	Intermittent	sand, gravel/cobble		P-SL2

MILEPOST	WATERBODY	ASSOCIATED WETLAND	CROSSING WIDTH (FEET)	STREAM TYPE (perennial or intermittent)	SUBSTRATE	COMMENTS	LURC SUBDISTRICT
25.27	A130	A130	2-6	Perennial	silt-mud, gravel/cobble, boulder		P-SL2
25.51	A129	A129	3	Intermittent	gravel/cobble		P-SL2
26.00	A124	A124	3	Intermittent	gravel/cobble/boulder		P-SL2
26.30	Stoney Brook A118	A118	35-40	Perennial	gravel/cobble, boulder		P-SL2
26.55	A116-2	A116	6	Intermittent	gravel/cobble		P-SL2
26.58	A116-1	A116	1	Intermittent	sand, boulder		P-SL2
26.69	A115	N/A	4	Perennial	gravel/cobble	insect larvae present	P-SL2
26.76	A114-3	A114	10	Intermittent	gravel/cobble, boulder		P-SL2
26.77	A114-2	A114	10	Intermittent	gravel/cobble, boulder		P-SL2
26.81	A114-1	A114	9	Intermittent	gravel/cobble, boulder		P-SL2
27.21	B1	B1	1	Intermittent	sand	wood frog present	P-SL2

The following sections discuss the general characteristics of the wetlands and streams that were delineated within the proposed transmission line ROW. In general, wetlands within each cover type (i.e., PSS, PFO, and PEM) were very similar. Therefore, this section provides a general description of the major wetland cover types that occur in the proposed project area, and more specific descriptions of the plant, hydrological, and soil conditions of wetlands representative of most of the wetland types encountered during the wetland mapping effort.

It is important to note that many of the wetlands and some of the streams that were observed and mapped within the proposed project area have been previously impacted by human activities, primarily by ATV traffic on existing ROW and by wood harvesting and associated access roads in proposed ROW areas (see Figures V-6-19 and V-6-20).

Figure V-6-19: Example of Human Impacts (ATV Ruts) in a Wetland

Figure V-6-20: Example of Human Impacts (Skidder Ruts) in a Wetland

V-6.5.1.3 General Wetland Cover Type Descriptions

Forested Wetlands

Forested wetlands are characterized by woody vegetation that is at least 20 feet (6 m) tall (Cowardin et al. 1979). Forested wetlands are the most common wetland type found within the proposed transmission line ROW, comprising 57 percent of the total number of wetlands identified. Most of these are classified as broad-leaved deciduous and/or needle-leaved evergreen forested wetlands.

Scrub-Shrub Wetlands

Scrub-shrub wetlands are characterized by woody vegetation less than 20 feet (6 m) tall (Cowardin et al. 1979). These areas are typically dominated by shrubs and young trees, but may also include a sparse number of older trees that are stunted due to environmental conditions. Scrub-shrub wetlands within the proposed project area occur as four general types, including: scrub-shrub wetlands associated with small streams; scrub-shrub wetlands associated with large streams; scrub-shrub wetlands that are in early-successional stages due to recent tree harvesting or are managed as shrub systems (within electrical ROWs) and; early successional habitat surrounded by upland and wetland forests. Approximately 35 percent of the total number of wetlands identified within the proposed transmission line ROW consist of the scrub-shrub wetland cover type, with the majority being within the existing ROW. Scrub-shrub wetlands are structurally similar to other early successional habitats. However, they generally have a greater diversity and abundance of wildlife species due to the seasonal presence of water and abundance of early successional vegetation.

Emergent Wetlands

Emergent wetlands are characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens (Cowardin et al. 1979). Emergent wetlands include areas commonly referred to as marshes and wet meadows, although most of the emergent wetlands in the ROW areas are wet meadow communities. Also, beaver activity has created some areas of extensive emergent wetlands and open water that form in flooded areas. The 115 kV transmission line ROW crosses very few areas that could be classified solely as emergent wetlands because they are often integrated with scrub-shrub wetlands. Approximately 8 percent of the total number of wetlands within the proposed transmission line ROW consist of emergent wetlands, and are found mostly within the existing ROW. Many of these emergent areas have been created by management of the ROW and from logging activity.

Representative Wetland Descriptions

The following are descriptions of the plant species, hydrology, and soil conditions of three representative, forested, scrub-shrub, and emergent wetlands found within the two distinct areas described above.

Wetland B-163

This wetland is located in Eustis and is a good example of a typical Wetland of Special Significance that is a palustrine forested broad-leaved deciduous and evergreen coniferous mix (PFO1/4) wetland with a saturated water regime that is drained by two perennial streams. See Figure V-6-21 for a photo of this wetland. Yellow birch (*Betula alleghaniensis*), red maple (*Acer rubrum*), balsam fir (*Abies balsamea*), northern cedar (*Thuja occidentalis*), red spruce (*Picea rubens*), striped maple (*Acer pensylvanicum*), trembling aspen (*Populus tremuloides*), and speckled alder (*Alnus rugosa*) comprise the midcanopy layer. Dominant herbaceous species included New York fern (*Thelypteris noveboracensis*), interrupted fern (*Osmunda claytoniana*), balsam fir, and wild strawberry (*Fragaria virginiana*). Forested wetlands were the most abundant wetland type within this portion of the proposed ROW.

Figure V-6-21: Wetland B-163, Facing Northeast

Field investigation of the soils revealed an Oe horizon from two to zero inches, a dark A horizon from 0 to 3 inches, and a B horizon from 3 to 12+ inches. The A1 horizon consisted of a dark (10YR 3/3) sandy loam with redoximorphic features (10YR 4/2). The B horizon consisted of a dark grayish brown (10YR 4/2) sandy loam with many gray (10YR 5/2) redoximorphic features. Based on field observations, the New England Indicator status for this soil is VI.

At the time of the field survey, indicators of wetland hydrology, primarily soil saturation, included water-stained leaves, drainage patterns, and surface scouring.

This wetland was associated with a stream that had two connecting channels and is, therefore, a “wetland of special significance” as described in the Maine DEP’s Chapter 310 – Wetlands and Waterbodies Protection Rules.

Wetland B-121

Wetland B-121 is located in Jim Pond Township and represents a good example of a P-WL2 palustrine scrub-shrub broad-leaved deciduous (PSS1) wetland with a seasonally saturated water regime. See Figure V-6-22 for a photo of this wetland. The dominant shrub species were saplings and shrubs including speckled alder, green ash (*Fraxinus pennsylvanica*), balsam fir, trembling aspen (*Populus tremuloides*). Dominant herbaceous species included mannagrass (*Glyceria* spp)., black-girdled wool-grass (*Scirpus atrocinctus*), and drooping sedge (*Carex crinita*).

Field investigation of the soils revealed an Oa horizon from 0 to 5 inches, and a Bg horizon from 5 to 12 inches. The Oa horizon consisted of a black well decomposed organic layer and the Bg horizon consisted of a dark grayish blue (5GY 5/1) silt loam. Based on field observations, the New England Indicator status for this soil is V.

Figure V-6-22: Wetland B-121, Facing East

At the time of the field survey, indicators of wetland hydrology included water stained leaves throughout the wetland with groundwater at the surface.

Wetland C-133

Wetland C-133 is located in Kibby Township and represents a good example of a P-WL2 palustrine emergent persistent (PEM1) wetland with a saturated water regime. See Figure V-6-23 for a photo of this wetland. Dominant herbaceous species included interrupted fern, rattlesnake mannagrass (*Glyceria Canadensis*), northeastern mannagrass (*Glyceria melicaria*), spotted touch-me-not, common boneset (*Eupatorium perfoliatum*), northern bog sedge (*Carex gynocrates*), lady fern (*Athyrium filix-femina*), and hairy willow-herb (*Epilobium ciliatum*).

Field investigation of the soils revealed an Oi horizon from eight to five inches, and Oa horizon from 0 to 5 inches, a Bg horizon from 0 to 6 inches, and a Cd horizon from 6 to 8 inches. Dense basal till was encountered at about eight inches and further samples were not available below that depth. The Oi horizon consisted of a very dark brown (7.5YR 2.5/2) organic layer, the Oa horizon consisted of very dark brown (7.5YR 2.5/2) sapric organic layer. The Bg horizon consisted of a grayish brown (2.5Y 5/2) loam, and the Cd horizon consisted of light olive brown (2.5Y 5/3) silty loam with many grayish brown (2.5Y 5/2) redoximorphic features. Based on field observations, the New England Indicator status for this soil is V.

At the time of the field survey, indicators of wetland hydrology included drainage patterns throughout the wetland.

This wetland was not a “wetland of special significance” as described in Chapter 10 of the LURC’s Land Use Districts and Standards, and the Maine DEP’s Chapter 310 – Wetlands and Waterbodies Protection Rules. This wetland was highly impacted by forestry activities and contained many ruts created by log-skidders.

Figure V-6-23: Wetland C-133, Facing Southeast

V-6.5.1.4 Rare Plant Locations

Two state-listed rare plant species occur along the 115 kV transmission line ROW, auricled twayblade (*Listeria auriculata*), and lesser wintergreen (*Pyrola minor*). For additional information about these plants, please see Section V-5.2.1 and Appendix 7-C.

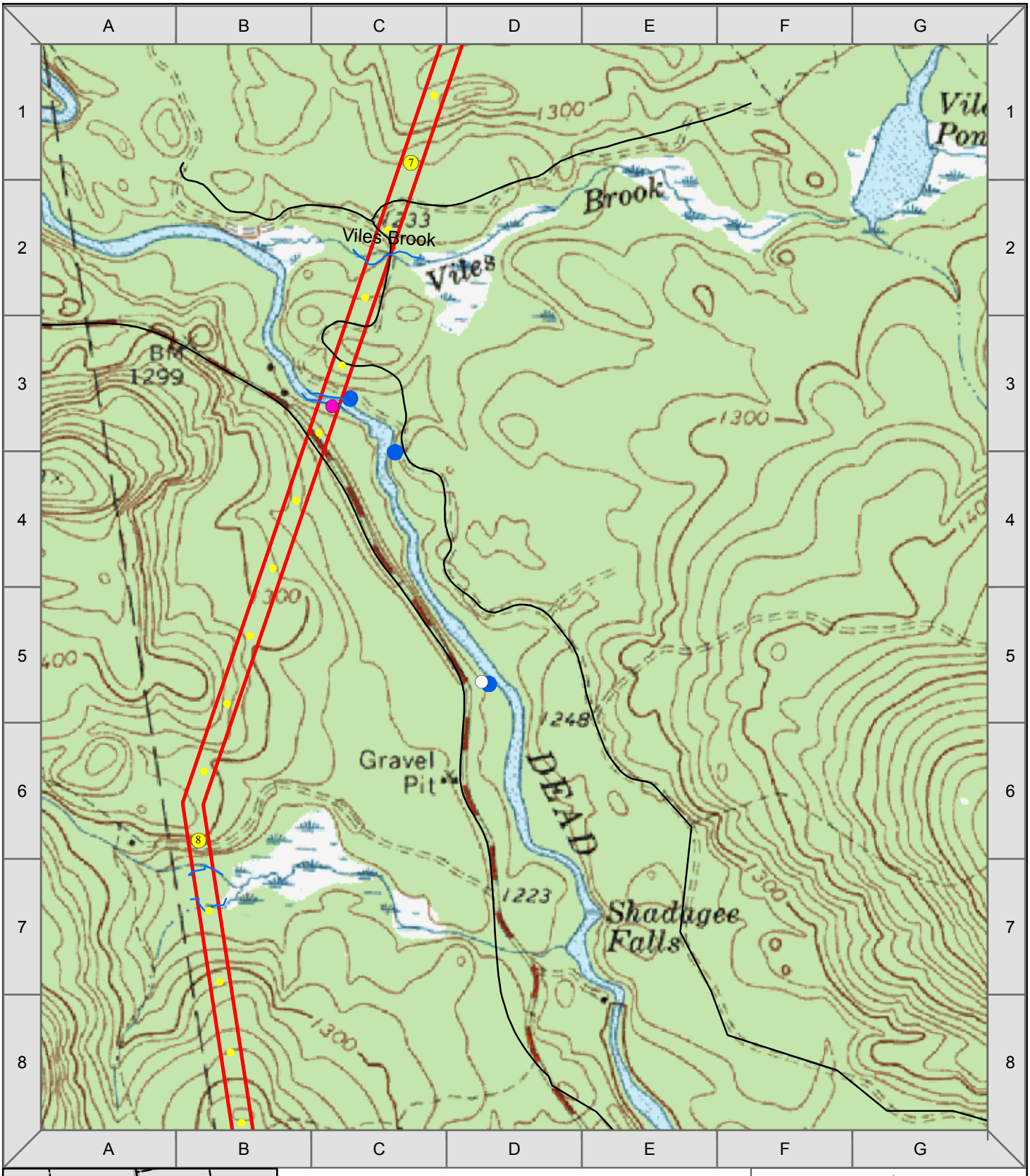
Auricled twayblade, an S2 state threatened species, was observed in two locations. The first is on the banks of the North Branch of the Dead River, where the 115 kV transmission line will cross this stream. This site is in Jim Pond Township at approximately Milepost 7.3 of the 115 kV transmission line ROW (Figure V-6-24). It is located on both sides of the stream, although more commonly on the southerly side near the area of the crossing. The second population, with only one plant observed at the time of the survey, is on the north (left) bank of Tim Brook at approximately Milepost 13 of the 115 kV transmission line ROW (see Figure V-6-25).

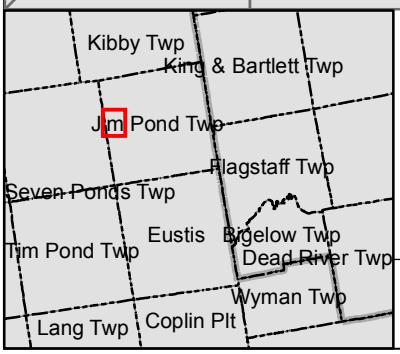
Lesser wintergreen, an S2 state species of special concern, was observed in one location along the transmission line corridor, with very small numbers present. The species was found along Tim Brook near the site of the second population of auricled twayblade (see Figure V-6-25). In that location, it grows on the steep south (right) bank, close to the water's edge, associated with various mosses and other pyrolids (e.g., shinleaf, *Pyrola elliptica*). Five plants were observed in this location (one was collected for a voucher specimen).

V-6.5.2 Unavoidable Impacts to Vernal Pools, Wetlands Streams and Rare Plants

Impacts to protected resources described below should be considered in the context of the type of impact. Direct, permanent impacts include fill impacts from pole placement within any wetland and conversion impacts to PFO wetlands. Spanning PSS, PEM, and streams does not create direct impacts, although some long-tern maintenance may require minor trimming of woody vegetation (Appendix V-B). Temporary impacts could occur within all wetland communities from construction vehicles traversing each area. Many of these impacts will be avoided and minimized by choosing upland travel routes or crossing wetlands at their narrowest location. Indirect impacts can occur to wetlands through the alteration of adjacent uplands and interconnected wetlands. Indirect impacts to streams will be minimized by establishing buffers with restricted clearing and maintenance activities that maintain habitat values and sedimentation control.

All of the 156 wetlands and 77 stream channels that occur within the ROW have the potential to be impacted by construction without proper protective measures. Forested wetlands within the proposed ROW will be converted to shrub and/or emergent communities. Shrub and emergent wetlands will be spanned by transmission cables and will possibly need trimming or other maintenance in the future. Results of the vernal pool, wetland, and stream surveys described above were used to modify preliminary layout to avoid or minimize impacts to these resource areas wherever practicable. Significant focus has been placed on adjusting layout during early stages of design to avoid vernal pool, wetland, and stream impacts where possible. Additional planning and use of BMPs outlined in the Erosion and Sedimentation Control Plan (Appendix V-





Legend

- Mile Marker
- Observed Listera auriculata
- MNAP Listera auriculata
- Streams
- Road
- Proposed Transmission Line

Notes: *Base map: USGS 24k Topographic Map.*
Coordinate Grid: NAD83 UTM Zone 19N, Meters.

N

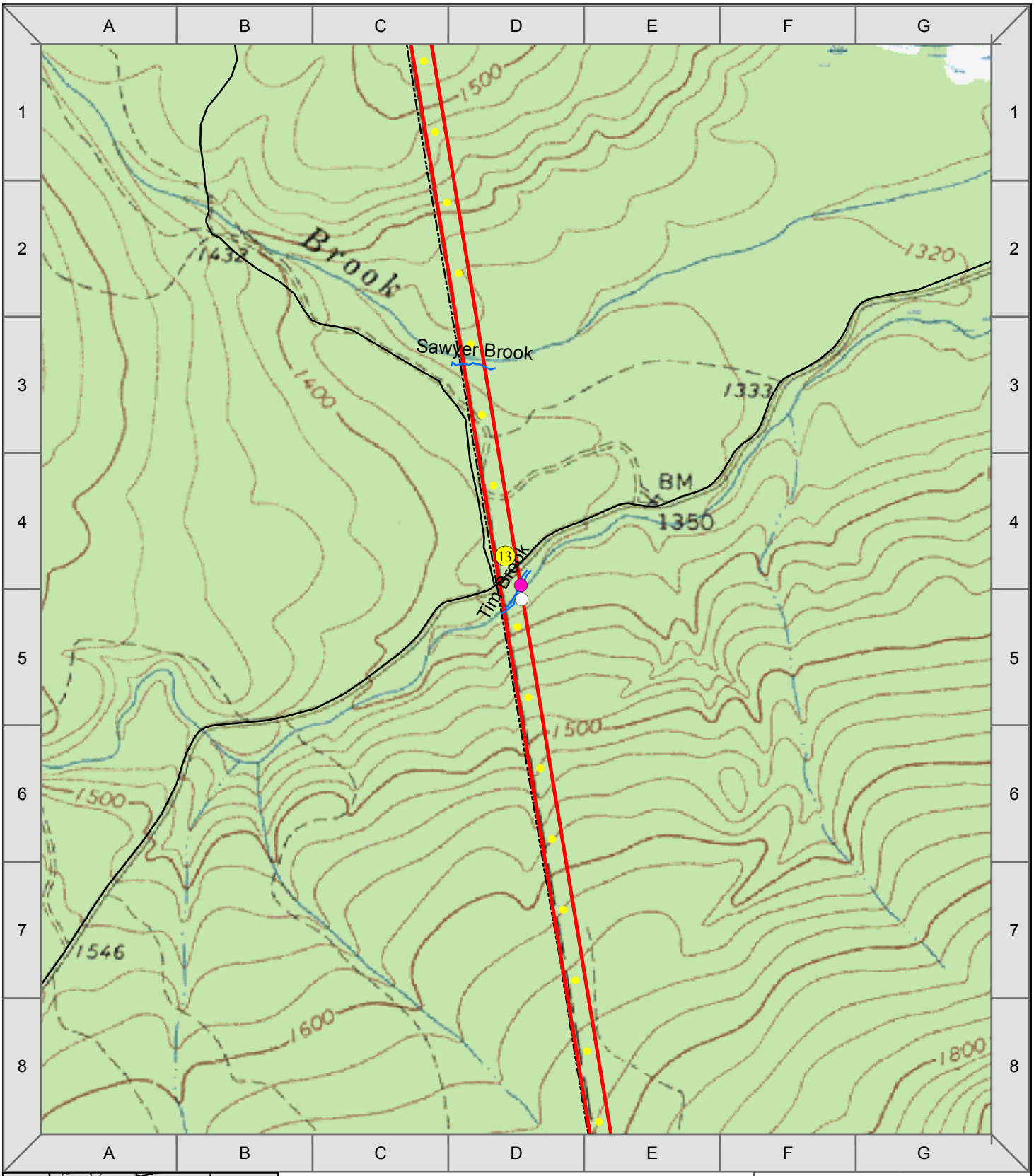
1,000

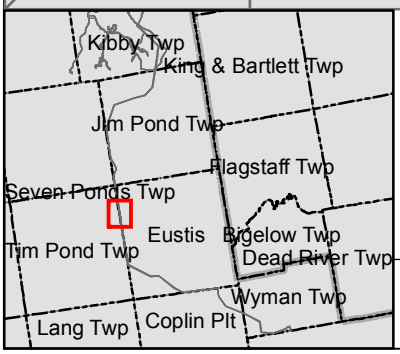
Feet

Figure V-6-24

Kibby Wind Power Project

Listera auriculata at North Branch of Dead River





Legend

- Mile Marker
- Observed Pyrola minor
- Observed Listera auriculata
- MNAP Pyrola minor
- MNAP Listera auriculata
- Streams
- Road
- Proposed Transmission Line

Notes: *Base map: USGS 24k Topographic Map.*

N

1,000

Feet

Figure V-6-25

Kibby Wind Power Project

Listera auriculata and Pyrola minor at Tim Brook

A) and the Vegetation Management Plan (Appendix V-B) will help ensure that proper care is taken to avoid impacts to these resources.

V-6.5.2.1 Vernal Pools

No direct impacts to vernal pools will result from construction of the 115 kV transmission line. Equipment crossings and filling of vernal pools will be avoided completely and no structures will be located within any vernal pools. Some vernal pools will be spanned by electric conductors and there is the potential for indirect impacts through conversion of adjacent forested uplands and wetlands. The potential for these indirect impacts is minimal since the ROW will be maintained in a well vegetated state, and only a small proportion of the forested area around any of these pools will be removed for the proposed transmission line ROW. TransCanada will also maintain a 100-foot (30.5 m) no herbicide buffer around the one significant vernal pool.

V-6.5.2.2 Wetlands

A total of 156 wetlands occur within the proposed transmission line corridor; the impact of each wetland can be classified according to the following categories:

- Permanent fill in wetlands from placement of structures and guy anchors;
- Permanent conversion of PFO communities to PSS and PEM communities;
- Temporary fill associated with the use equipment mats during construction (needed for equipment travel through wetland and to construct safe, temporary work pads) and stabilizing travel lanes using clean gravel fill underlain with geotechnical fabric; and
- Temporary clearing of narrow widths of PSS wetland to create equipment travel lanes in order to access pole structure locations.

Impacts from structures has been avoided and minimized as much as possible during design of the transmission line. Two pole tangent structures require excavation and impact approximately 160 square feet of wetland per structure. Three pole dead end structures impact approximately 240 square feet of area. A total of four structures will be located in wetlands, two are tangents (two pole) and two are dead ends (three pole). Wetland impact from these structures will be approximately 1,040 square feet. A total of 46 guy anchors, supporting five structures, will impact approximately 2,760 square feet of wetland. Total permanent fill impacts to wetlands from installation of the transmission line is approximately 3,560 square feet, or 0.08 acre of wetland. Most of this impact is in LURC jurisdiction. See Table V-6 for a summary of wetland fill impacts for structures and anchors.

Table V-6-6 Summary of Wetland Impacts from Structures and Anchors

Location	Type of Impact	Wetland ID	LURC Zone	Impact Area
Structure 31	Structure placement in wetland	B-151	P-WL2	160 square feet
Structure 32	Structure placement in wetland	B-151	P-WL2	160 square feet
Structure 220	Structure placement in wetland	B-1	P-WL3	240 square feet
Structure 221	Structure placement in wetland	B-2	P-WL2	240 square feet
Subtotal Structure Impact				**800 square feet**
Structure 145	Anchors (2)	A-155	NA	120 square feet
Structure 166	Anchors (5)	A-136	P-WL3	300 square feet
Structure 172	Anchors (9)	A-131	P-WL2	540 square feet
Structure 220	Anchors (14)	B-1	P-WL3	840 square feet
Structure 221	Anchors (14)	B-2	P-WL2	840 square feet
Structure 223	Anchors (2)	A-1	NA	120 square feet
Subtotal Anchor Impact				**2,760 square feet**
				Total DEP Jurisdiction Impacts: 240 square feet
				Total P-WL2 Impacts: 1,940 square feet
				Total P-WL3 Impacts: 1,380 square feet
				TOTAL LURC IMPACTS: 3,320 square feet or 0.08 acres

Table V-6-7 provides a summary of the conversion and spanning by type and location, either the working forest (virgin) ROW or adjacent to the existing ROW. Canopy trees within forested wetlands will be permanently removed and these wetlands converted to shrub or emergent wetland communities (conversion). Minor trimming of trees as they regenerate will be required in these areas to meet power line safety requirements.

Temporary impacts from construction vehicles crossing the wetlands will occur in some wetlands. Wetland areas altered by this activity will be restored and should continue to function in a preconstruction condition. Furthermore, these impacts will be avoided and minimized as much as possible by selecting upland routes and crossing at the narrowest portion of the wetland. These impacts will be assessed upon final project planning.

Wetland functions and values relating to hydrology and recreation will not be altered by the construction of the transmission line. Habitat values will be modified when forested wetlands are converted to shrub and/or emergent communities. Habitat for avian species that use a forested canopy will lose that portion of their habitat. Conversely, those species that use early successional habitats will benefit. The potential effects of this habitat conversion are addressed in Section V-5.1.2.

Adverse impacts to shrub wetlands are not anticipated as most of the shrub heights are below the necessary minimum clearance height. During construction, shrubs that exceed clearance heights will be trimmed, although only a minimal amount of wetlands fit these characteristics. Saplings and shrubs that grow above the minimum clearance height will be trimmed or removed. These activities will have minimal impact on habitat values and other wetland functions. Spanning emergent wetlands will have no impact on habitat values and other wetland functions. Should extensive shrub or tree growth occur in emergent wetlands maintenance to trim individual plants would be required.

Table 6-7 Summary of Wetland Conversion and Spanning

ROW	Type	Acreage
Working Forest	Spanning PEM	5.19
Working Forest	Conversion of PFO to PEM and PSS	38.17
Working Forest	Spanning PSS	23.34
	TOTAL	**66.70 acres**

V-6.5.2.3 Streams

A total of 77 streams occur within the 115 kV transmission line ROW. Details of the location and characteristics of each are provided in Table V-6-5. Each stream will be spanned by the proposed transmission line conductor and there will be no permanent impacts. Some indirect impacts may occur as a result from clearing adjacent forested wetlands and/or uplands. However, stream buffers will be established where vegetation removal will be minimal and future maintenance limited. The buffers restrict clearing and help maintain habitat and water quality values. Canopy trees within forested buffers will be cleared, but saplings and shrubs below minimal safety thresholds will remain. Shrubs within buffers will remain and maintenance trimming will not extend below the safety thresholds. All poles will be located outside of the streams and, as such, there will be no fill impacts. Small streams (see Figure V-6-26) may be crossed using construction mats creating minor temporary impacts, but will be avoided as much as possible. Construction during the winter will further avoid and minimize temporary crossing impacts. Crossing of larger streams and rivers will not occur as these areas will be approached from both banks.

Figure V-6-26: Example of a Stream, Located in a Forested Portion of the Proposed ROW

V6.5.2.4 Rare Plant Locations

To ensure that the rare plant species found in the vicinity of the 115 kV transmission line ROW are not adversely impacted TransCanada is proposing several BMPs are implemented where the species occur.

TransCanada proposes the following measures to protect auricled twayblade:

- Structures are not placed in the habitat for this species but are located on either side of the stream to maximize conductor height above the streambanks, which will allow continued growth of alders and other shrubs up to 15 feet, to provide shade for this species.
- Mark sites with “Sensitive Resource Area” signs during construction.
- Take care in clearing and stringing lines to minimize foot traffic at streambank.
- No clearing of shrubs or small trees less than15 feet tall along streambank.
- No stacking of brush from clearing at streambank or on first terrace (generally, not within 15 feet of the top of bank), or in any manner that brush would be washed into or become lodged on the stream terrace.
- Add a notation on the site plans and add identification of this area to long-term vegetation management plans so that impacts will not occur in future.
- Monitor for 3 years after construction, with the final report making recommendations with regard to future vegetation management.

In order to avoid impacts to lesser wintergreen, TransCanada proposes the following measures to protect this species in the location where it has been identified:

- Flag the small area where this species occurs, and mark the site with “sensitive resource area” signs, in order to avoid during clearing.
- Minimize clearing of shrubby vegetation in the immediate vicinity to maintain shade.
- Exercise care in clearing to minimize foot traffic at streambank.
- Add notation on the site plans and add to long-term vegetation management plans so that impacts will not occur in future.
- Monitor for 3 years after construction, with final report to make recommendations in regard to future vegetation management.

Given these measures, no impacts to state-listed plant species are expected as a result of the 115 kV transmission line.

V-6.6 Stormwater Management

The proposed transmission line corridor does not cross any lake, coastal wetland, or stream watersheds listed in Chapter 502 of DEP Regulations as “Most at Risk from Development”. With the exception of transmission line structures (poles), there will be no permanent conversion of vegetated areas to impervious surfaces along the corridor. Establishment of the corridor requires the removal of trees and other woody species to ensure adequate clearance between vegetation and the conductors. Since the corridor will remain vegetated, there will be no significant change in stormwater runoff characteristics, including quantity and quality. Utility corridors are not required to meet the General Standards of Chapter 500 of DEP Stormwater Rules as long as: (i) the project or portion of the project does not include impervious area; (ii) disturbed areas are restored to pre-construction contours and revegetated following construction; (iii) mowing of the revegetated ROW occurs no more than once during any 12-month period; and (iv) a vegetation management plan for the project has been reviewed and approved by DEP (Chapter 500 (4)(B)(3)(d).

The primary concerns from stormwater runoff will be during construction, which will be addressed in an Erosion and Sedimentation Control Plan.

V-6.6.1 Proposed Construction BMPs

TransCanada has developed a comprehensive E&S Plan for use by contractors during the construction of the Project. As detailed in the E&S Plan, stabilization during construction, to the extent practicable, will meet the basic stabilization standard of Chapter 500, Section 4.A.(2)(d), thereby further ensuring adequate control of stormwater quality (see Appendix V-A).

V-6.6.2 Post-Construction Stormwater Management

Since the transmission line construction does not require the creation of significant impervious surfaces and the ROW will remain vegetated, post-construction stormwater management measures do not apply. BMPs will be used to stabilize disturbed soil during construction to prevent and minimize potential post-construction stormwater impacts.

V-6.7 References

Cowardin et al. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, Office of Biological Services, Biological Report 79 (31). Washington, D.C. 131 pp.

Maine Department of Environmental Protection. 1996. Natural Resources Protection Act: Wetland Protection Rules. 14 pp.

Munsell Color. 1994. Munsell Soil Color Charts. MacBeth Division of Kollmorgen Instruments Corporation. Baltimore, Maryland.

New England Hydric Soils Technical Committee. 2004. Field Indicators For Identifying Hydric Soils in New England, Version 3. New England Interstate Water Pollution Control Commission. Wilmington, Massachusetts. 76 pp.

Reed, P.B. 1988. National List of Plant Species That Occur in Wetlands: Northeast Region 1. U.S. Fish and Wildlife Service, Biological Report 88 (26.1). 111 pp.

Tolman, A.L., and E.M. Lanctot. 1981. Sand and Gravel Aquifers of Portions of Franklin and Somerset Counties, Map #36, Maine Geol. Survey, Augusta, Maine.

United States Army Corps of Engineers (USACE). 1987. Corps of Engineers Wetland Delineation Manual. Washington, DC. 100 pp.

United States Army Corps of Engineers (USACE). 2005. Department of the Army Programmatic General Permit – State of Maine: NAE-2005-2164. 25 pp.