CONSTRUCTION and MITIGATION PLAN

Badger Coulee 345 kV Transmission Line Project – Segment 6

American Transmission Company LLC, by its corporate manager, ATC Management Inc. (ATC); Dairyland Power Cooperative (DPC); Northern States Power Company, a Wisconsin corporation (NSPW); SMMPA Wisconsin, LLC (SMMPA Wisconsin), and WPPI Energy (WPPI) (the Applicants) were granted a Ch. 30.025 utility permit by the Wisconsin Department of Natural Resources (WDNR) for work in and adjacent to wetlands and waterways for the Badger Coulee 345 kV Transmission Line Project (Permit #IP-WC/SC-2015-N20001 through N20273)(Attachment 3). This permit requires the Applicants prepare a Construction and Mitigation Plan (CMP) for work in wetlands and waterways for WDNR approval prior to beginning work in these features (General Conditions #9 and 11). As the Project Construction Manager, ATC has prepared this CMP for Segment 6, which outlines construction methods and procedures that will be followed to reduce impacts to these features. Segment 6 is located in Monroe and Jackson Counties and is 29.9 miles long.

The components of this CMP follow those outlined in General Condition #11 of the WDNR utility permit.

A. Environmental Access Plan

An Environmental Access Plan (EAP) for Segment 6 is provided in Appendix A. This EAP shows the location of wetlands and waterways, pole locations, temporary clear span bridge (TCSB) crossings, construction access, and other pertinent information.

Field work was conducted in 2012 to delineate wetlands and characterize other natural resource features along Segment 6; however, access to the entire corridor width was not available. The project corridor was re-evaluated during field visits in 2016 after additional access was gained.

The following fifteen new wetlands were identified in 2016:

- N-W52a near structure 137077
- N-W56a near structure 137080
- N-W56b near structure 137081
- N-W57a and N-W57b near structure 137082
- N-W57c near structure137083
- N-W61a near structure 137090
- N-W73a near structure 137115
- N-W79a near structure 137126
- N-W86a between structures 137152-137153
- N-W86b between structures 137152-137153
- N-W87a near structure 137153
- N-W89a between structures 137164-137165
- N-W91a near structure 137169
- N-W101a between structures 137207-137208.

These newly identified wetlands are typically due to field access to the entire corridor, allowing a full evaluation of the entire ROW; or an alignment adjustment that now captures a wetland at the edge of the ROW.

The boundaries of several wetlands were also adjusted during the 2016 field work. For example, several upland areas were identified within wetland N-W68 and this feature was divided into smaller areas and re-labelled as N-W68 through N-W68c. Additionally, several wetlands were merged due to an observed connection within the ROW (Appendix B). The adjusted wetland boundaries are shown on the EAP and a description summarizing the rationale for the boundary adjustments are provided in Appendix B.

As shown on the EAP, forty-one new structures will be placed in wetlands along Segment 6, requiring 0.11 acre of wetland fill. The wetlands where these structures occur and their associated EAP map pages are included in Appendix B. New structure placement in these wetlands was approved in the Joint Application except for one structure in N-W56a which is a newly identified wetland; two structures in N-W59 and one structure in N-W66 due to adjusted wetland boundaries; and one structure in N-W107 due to a slight alignment shift. The placement of 46 structures in wetlands along Segment 6, requiring 0.11 acre of wetland fill, was approved in the utility permit. This reduction in number of structures in wetlands is primarily due to refining wetland boundaries, re-spanning during final design, and because structures occurring within 50 feet of a wetland were conservatively included in wetland fill calculations in the Joint Application.

Up to eight temporary poles will be placed in wetlands to protect road crossings during construction (refer to the EAP for temporary pole locations). These temporary poles are needed from a public safety perspective in case the wires fall during stringing. These poles will be directly embedded into the ground surface which will result in approximately 0.02 acre of temporary wetland fill. The poles will be removed and the area restored to existing grade with topsoil replacement when complete. Revegetation of the disturbed areas will follow the Revegetation and Monitoring Plan (Attachment 2). Attempts to reduce the number of temporary poles in wetlands will be made; however complete avoidance is unlikely due to the position of the wetlands in the transmission line ROW at proposed road crossing locations.

Up to seven TCSBs will be required along Segment 6 (Appendix A). The TCSBs are required over the following waterways:

- N-R34
- N-R35
- N-R37
- N-R41
- N-R42
- N-R44
- N-R45

All of these TCSBs were approved in the WDNR utility permit. The applicants will attempt to gain alternate access from private property owners to eliminate the need for some of these TCSBs; however, at this point it is assumed all of the TCSBs will be required.

Approximately 16.0 acres of permanent forested wetland clearing will be required along Segment 6. This amount of clearing along Segment 6 is slightly greater than the 15.1 acres provided in the Joint Application. This increase is mainly due to the adjustment of wetland boundaries and identification of several new wetlands during the 2016 field evaluations. In addition, approximately 1.54 acres of temporary forested wetland clearing will be required for extra work space areas outside of the ROW which was not included in the Joint Application (refer to the following paragraph).

The project ROW width in the northern two-thirds of Segment 6 was reduced to 100 feet from the typical project width of 120 feet. The primary <u>purpose of reason for</u> this is to reduce clearing in adjacent public lands (i.e., Black River State Forest and Jackson County Forest). In this portion of the segment, extra work space outside the project ROW will be required at numerous structure locations where steep road embankments and/or proximity of the structure to the interstate reduce the amount of work area in the project ROW (refer to the EAP for these locations). The required extra work space is typically 200 feet long by 30 feet wide and centered on the proposed structure. Extra work space in each wetland was evaluated and the size was reduced where feasible (typically reduced to 175 feet by 30 feet) and/or shifted to reduce wetland impacts. Despite these measures, complete avoidance of wetlands is not possible due to the extent of wetlands in the project corridor. Wetland impacts within extra work spaces (i.e. forested/shrub conversion and matting) will be temporary as woody wetlands will be allowed to re-establish in these areas.

Construction access along Segment 6 is presented on the EAP (Appendix A). Access through wetlands has been avoided where feasible (e.g., N-W79a, N-W86a, N-W86b, N-W87 and N-W101a), or reduced by crossing only portions of wetlands (e.g., N-W56, N-W67 and N-W98). However, access through other wetlands along this segment is necessary due to equipment access constraints, project alignment and the configuration of these wetlands. (Note: *While most construction equipment will be limited in wetlands where access is not shown, lighter-duty vehicles <u>may still be used for clearing or to pull the conductor through these portions of wetlands</u>).*

Construction matting may be used to facilitate access and reduce impacts in wetlands. The table below identifies the anticipated approximate area of matting in each wetland along the proposed ROW and within extra work space outside of the ROW.

Wetland Identifier	Acreage of mats						
N-W52	0.09	N-W65	0.52	N-W80	0.20	N-W95	0.75
N-W52a	0.11	N-W66	0.33	N-W81	0.92	N-W96	0.69

11/16/2016 Page 3

Wetland	Acreage	Wetland	Acreage	Wetland	Acreage	Wetland	Acreage
Identifier	of mats						
N-W53	0.03	N-W67	0.24	N-W82	0.60	N-W97	0.24
N-W54	0.02	N-W68	0.55	N-W83	0.23	N-W98	0.24
N-W55	0.03	N-W68a	0.82	N-W84	0.03	N-W99	0.04
N-W56	0.17	N-W68b	0.49	N-W85	0.11	N-W100	0.12
N-W56a	0.24	N-W68c	0.63	N-W86	0.04	N-W101	0.14
N-W56b	0.03	N-W69	0.59	N-W87a	0.03	N-W102	0.07
N-W57	0.02	N-W70	1.55	N-W88	0.04	N-W103	0.54
N-W57a	0.01	N-W71	0.08	N-W89	0.57	N-W104	0.40
N-W58	0.05	N-W72	0.98	N-W89a	0.03	N-W105	0.06
N-W59	0.51	N-W73a	0.05	N-W90	0.02	N-W106	1.54
N-W60	0.17	N-W74	0.89	N-W91	0.37	N-W107	0.26
N-W61	0.30	N-W75	1.04	N-W91a	0.13	N-W108	0.07
N-W61a	0.03	N-W77	0.09	N-W92	0.08	N-W109	0.44
N-W63	0.51	N-W78	0.11	N-W93	0.17		
N-W64	1.53	N-W79	0.35	N-W94	1.67	-	

Most off-ROW access paths occur in upland areas; however, several paths cross wetlands (refer to the EAP for these locations). Wetland boundaries in off-ROW areas were determined from aerial photographs, Wisconsin Wetland Inventory, and NRCS soil mapping, although a couple were also viewed during site walk downs. About 1.1 acres of wetland matting may be required for these off-ROW access paths. Two of these off-ROW access paths occur in shrub-carr wetlands (EAP map pages 8 and 9), requiring approximately 0.18 acre of temporary shrub-carr clearing. These off-ROW access paths are generally required due to long stretches of project corridor that do not have access to roadways or to provide an alternate path to the ROW.

In addition, the following off-ROW access paths not identified in the Joint Application will require upland forest clearing:

- Access to structure 137084 (EAP map page 5) clearing approximately 0.22 acre to access the structure;
- Access to structure 137098 (EAP map page 9) clearing approximately 0.16 acre to access the structure;
- Access to structure 137100 (EAP map page 10) clearing approximately 0.07 acre to extend an existing path;
- Access to structure 137147 (EAP map page 24) clearing approximately 0.20 acre to extend an existing path;
- Access to structure 137168 (EAP map page 31) clearing approximately 0.43 acre to widen an existing path;
- Access to structure 137184 (EAP map pages 36-37)
 clearing approximately 0.28 acre to widen an existing path;
- Access to structure 137196 (EAP map page 40) clearing approximately 0.02 acre to access the structure; and
- Access to structure 137219 (EAP map page 47) clearing approximately 0.06 acre to widen an existing access path.

Approximately 5.72 acres of temporary clearing of upland forest will be required for the extra work space areas located outside of the ROW. Additionally, a wire set up area near structure 137071 (EAP map page 1) may also require up to approximately 0.92 acre of upland forest clearing outside of the project ROW.

Attempts will be made to find alternate access that does not impact wetlands or upland forest; however, at this point it is assumed these routes will be required.

Additional measures to reduce wetland and waterway impacts along Segment 6 are outlined in other sections of this CMP (e.g. *Invasive Species Management Plan* and *Wetland Restoration and Revegetation Plan*).

B. Photographs of Pre-Construction Site Conditions (Wetlands and Waterways)

Pre-construction photographs of wetlands and waterways along the Segment 6 ROW are provided in Appendix C.

C. Waterway Impacts

As discussed above, up to seven TCSB crossings will be required along Segment 6. Final plan and crosssectional view drawings for each bridge crossing are provided in Appendix D. As required in General Condition #51 of the utility permit, the TCSBs will incorporate measures to reduce soil reaching the waterways.

The approved route and off-ROW access along Segment 6 cross ten waterways identified in the WDNR 24K hydrology layer that do not have defined bed and banks based on 2016 field observations. These features are shown on the EAP (map pages 1, 9, 21, 29, 38, 40, 41, 43, 45, and 50/51) and labelled as "non-regulated-WDNR confirmed (pending)", and a recent photo is presented in Appendix E. In addition, there are two drainage ditches not identified in the WDNR 24k hydrology layer labelled as "non-regulated drainage feature-WDNR confirmed (pending)" (EAP map pages 4/5 and 37). The feature on EAP map pages 4/5 occurs within wetland N-W57c and appears to have been created when the railroad bed (now a trail) was realigned under the interstate (photo 2, Appendix E). The feature on EAP map page 37, which crosses an off-ROW access route, appears to have been created by storm water flow from the southeast (a culvert is present upslope under the railroad (see photographs 6 and 7, Appendix E). Although both of these features have a defined channel near or within the ROW, the channel does not appear to extend upstream or downstream of the feature. We are requesting WDNR concurrence that these 12 features would not be considered navigable and therefore not subject to provisions of Chapter 30 (Wis. Stats.).

During construction of concrete foundations, water is often pumped into the borehole to maintain the integrity of the excavation. Suitable surface waters adjacent to the ROW may be used as a source of this water. Several waterways along this segment may be utilized for withdrawals; however, a final determination has not been made at this time. If surface water withdrawals are required, they will meet the following conditions outlined in the Utility Structure, Bridge and Wetland General Permit (WDNR-GP3-2013):

- Pump intakes and discharges shall be placed to prevent impacts to fisheries, wildlife, and their habitat; and
- Pump intakes and discharges shall be placed to prevent the disturbance, removal and scour of bed material.

In addition, water withdrawals from public waterways must avoid placement of a structure on the bed of the waterway unless prior authorization under ch. 30.12 (Wis. Stats.) is granted from the WDNR. The WDNR will be notified if surface water withdrawals occur along Segment 6.

Clearance Waiver

General Condition #46 of the WDNR utility permit indicates: *All bridges across navigable waterways shall either maintain a clearance of not less than 5 feet, or comply with requirements of s. NR 320.04 (Wis. Admin. Code).* Wisconsin Admin. Code Chapter NR 320.04(3) indicates the department may allow less than 5 feet of navigation clearance when all of the following apply:

- The waterway is known to have little or no navigation or snowmobile use;
- The waterway is not anticipated to have navigational use by other than lightweight craft;

- The owner provides a portage over or around the bridge or culvert; and
- The reduced clearance would not be detrimental to the public interest.

The Applicants would allow a portage over or around a TCSB if necessary; however, given the waterway dimensions and/or other characteristics (e.g. location adjacent to the interstate) at the seven TCSB crossings, these waterways likely have infrequent or no watercraft use in the project area. The Applicants believe the other conditions specified in Wis. Admin. Code Chapter NR 320.04(3) are met at each waterway crossing and therefore, a five-foot clearance is not required at any of the seven TCSB locations.

Fishery Waiver

General Condition #44 of the WDNR utility permit indicates that: *All bridges must be placed and removed in compliance with timing restrictions, unless authorized by the local DNR fisheries biologist. For trout streams and navigable tributaries to those trout streams, placement and removal is prohibited from September 15 through May 15, annually. On all other waterways, placement and removal of the bridges is prohibited from March 1 through June 15, annually.* As discussed above, TCSBs will be required over seven waterways. Two of the waterways (N-R35 [Coffee Creek] and N-R44 [Mill Creek]) are classified as trout streams while the remaining five waterways (N-R34, N-R37, N-R41, N-R42 and N-R45) are classified as warm water streams. The Applicants requested a waiver of the September 15 through May 15 timing restriction for the two trout streams, and the March 1 through June 15 timing restriction for the other waterways from Mr. Jordan Weeks (Monroe County Fisheries Manager) and Mr. Dan Hatleli (Jackson County Fisheries Manager). Their responses will be provided to the Office of Energy when received and will be included in Appendix F.

D. Endangered Resources Plan

ATC worked with the WDNR to develop a Certified Endangered Resources (ER) Review as part of the Joint Application. The Certified ER Review identified and summarized endangered resources known to occur along each proposed segment. Upon receiving the ordered route, the Certified ER has been amended in coordination with WDNR as construction details have been developed. The amendment table identified which state-listed species have required follow-up actions and the specific areas along Segment 6 where measures are needed to avoid and minimize direct or indirect impacts to state-listed species. Furthermore, the amendment table identified voluntary measures recommended to avoid and minimize impacts to other sensitive state-listed species or resources (e.g. natural communities). The amendment table serves as a communication and coordination tool to be used among the Applicants, WDNR, and construction contractor(s). For federally listed species, the Applicants prepared a Biological Evaluation/Assessment in coordination with the US Fish and Wildlife Service (USFWS) that outlines a determination of affects for federally listed species that may occur along Segment 6, as well as the necessary conservation measures to protect them. Where necessary, specific areas and protection measures will be documented on the EAP for state- and federally listed species known or assumed to be present along the segment.

E. Invasive Species Management Plan

Plant communities and dominant vegetation within the ROW of Segment 6 were documented during field evaluations in 2012, and additional field visits in 2016. The presence (i.e. general location and density) of Restricted and Prohibited species defined in *Wis. Admin Code* Ch. NR 40 within the ROW were identified during these assessments.

Segment 6 extends along I-94 from just north of McNulty Road in Black River Falls to the STH 21/I-94 interchange in Tomah. Along the interstate, this segment crosses adjacent woodland (including portions of Jackson County Forest and Black River State Forest), wetlands, commercial and residential properties, some agricultural land primarily near the southern end of the segment, as well as the Black River and other smaller waterways.

The following summarizes invasive species observed along the Segment 6 project corridor. All species identified below in this section are classified as Restricted unless noted otherwise.

In general, the interstate ROW along Segment 6 is regularly mowed and is commonly dominated by invasive species. Eurasian cool season grasses such as smooth brome (*Bromus inermis*), an invasive species not included in NR 40, are common. A variety of other invasive species included in NR 40 are also present throughout the interstate ROW within areas subject to regular mowing including wild parsnip (*Pastinaca sativa*), Canada thistle (*Cirsium arvense*), spotted knapweed (*Centaurea stoebe*), narrow-leaf cattail (*Typha angustifolia*), crown vetch (*Coronilla varia*), and tansy (*Tanacetum vulgare*). Common woody invasive species observed within the interstate ROW, typically along fence lines, include glossy buckthorn (*Frangula alnus*) and invasive honeysuckle shrubs (*Lonicera* spp.), with some scattered autumn olive (*Elaeagnus umbellata*). A number of other invasive species not included in NR 40 are also present within the interstate ROW including bird's-foot trefoil (*Lotus corniculata*), reed canary grass (*Phalaris arundinacea*), and white and yellow sweet-clover (*Melilotus alba, M. officinalis*).

Extensive woodlands, many of which occur within Jackson County Forest and Black River State Forest lands, are common along Segment 6 and often extend well beyond the Project ROW. Invasive species principally consisting of glossy buckthorn and honeysuckle shrubs were observed along the woodland edges with their abundance ranging from scattered to common.

Agricultural lands consist primarily of corn and soybean row crops, and pasture or hay fields. Invasive species were commonly observed along the boundaries between fields and along the interstate ROW fence line. Invasive species observed along agricultural lands are similar to those observed within the interstate ROW, including species such as glossy buckthorn, honeysuckle shrubs, wild parsnip, spotted knapweed, and Canada thistle.

Wetland communities observed along Segment 6 include wet meadow, hardwood swamp, shrub-carr, alder thicket, shallow marsh, bog and sedge meadow. The majority of wetlands along this segment are extensive with higher quality vegetative communities extending outside of the DOT ROW; however invasive species are commonly present within this ROW. Reed canary grass (not included in NR 40),

glossy buckthorn, and narrow-leaf cattail were commonly observed within many of these wetlands, with glossy buckthorn often a dominant species in wooded wetlands. Honeysuckle shrubs, Canada thistle, and wild parsnip are also scattered in many locations, typically at wetland edges. A small patch of purple loosestrife (*Lythrum salicaria*), was observed within wetland N-W68b.

Location-Specific BMP's

Location-specific BMP's should be applied to the following locations:

- Spotted knapweed and crown vetch are common within the DOT ROW along much of Segment
 To reduce the potential for spreading these species into adjacent wooded areas, all vehicles should be inspected and brushed off prior to clearing upland wooded areas outside the DOT ROW and before conducting other work within these areas (these general areas are identified on the EAP). In addition, a layer of wood chips may be left on the ground after clearing activities which will act as a barrier between vehicles and the ground surface to reduce the spread of these invasive species.
- A small area of tansy is present along the DOT ROW fence line north of structure 137228. If this area cannot be avoided, the vehicles should be inspected and brushed off before leaving the area.
- A small patch of purple loosestrife is present south of structure 137105 in the DOT ROW within wetland N-W68b. If this area cannot be avoided, the vehicles should be inspected and brushed off before leaving the area.

In addition, glossy buckthorn is common to abundant along Segment 6 (individual locations not identified on the EAP due to their abundance). When cleared, glossy buckthorn should be left in the ROW or transported to an approved location.

Location-specific BMPs may be implemented elsewhere within Segment 6 if ATC encounters a localized population of an invasive species other than those discussed above during future field visits.

General BMP's

The following general BMPs will be utilized during construction along Segment 6 to comply with *Wis. Admin Code* Ch. NR 40. The intent of these practices is to limit the spread of invasive species.

- Construction equipment and material
 - Minimize soil disturbance and utilize gravel roads or established equipment access paths to the extent practicable.
 - To the extent practicable, avoid localized populations of invasive species through construction timing and alternate access.
 - When working in areas infested with invasive species, clean mud and plant material from construction matting and equipment.

- Managing soil and vegetative material
 - Avoid movement of invasive material to non-infested areas. If possible, invasive material should be left within the ROW. For example, when clearing areas dominated by honeysuckle or buckthorn shrubs, cut material should be left in generally the same place and not spread off-site or to uninfested areas.
 - If infested soil or vegetative material must be transported from the ROW, transport to a designated area for appropriate disposal. Prior to transporting material, manage the load to limit potential spread to uninfested areas.
 - Manage stockpiles onsite to prevent the spread to adjacent areas.
 - In areas requiring clearing, a layer of wood chips should be left on the ground (if approved by the landowner) to act as a barrier between vehicles and the ground surface.
- Restoration and landscaping
 - Seed mixes have been developed for the Project and will be installed in accordance with the Revegetation and Monitoring plan (Attachment 2).
 - Revegetate disturbed soils as soon as possible with an appropriate temporary cover crop to minimize invasive species establishment. As appropriate, a perennial seed mix shall be installed during the appropriate seeding window.
- Aquatic invasive species
 - Water may be withdrawn from waterways for foundation construction along this segment. All equipment used for withdrawing water (i.e. pumps, hoses, boats, machinery, etc.) will be adequately decontaminated/disinfected for aquatic invasives. Decontamination / disinfection can be accomplished by allowing equipment to dry thoroughly for at least 5 days or by utilizing another appropriate method identified in NR 329.04, prior to being used in non-infested waters of the state.

F. Wetland Compensatory Mitigation Plan

As compensation for impacts to wetlands associated with the Project, the applicants propose wetland compensatory mitigation. Temporary and permanent impacts to wetlands occur within Segment 6, which is located within the Upper Mississippi – Black – Root (UMBR) Bank Service Area (BSA) and the Lower Wisconsin (LW) BSA. The total wetland impacts and proposed compensatory mitigation acres for Segment 6 are identified in the Mitigation Summary Table (Appendix G).

Temporary Impacts

All temporary impacts that require mitigation are located within the UMBR BSA; there are no temporary impacts requiring mitigation in the LW BSA. Temporary wetland impacts along Segment 6 include matting of sedge meadow and bog, which are identified as difficult to replace (DTR) wetland

communities. Additional temporary impacts include clearing of shrub-carr, alder thicket, and hardwood swamp along off-ROW access routes and within extra work space where woody vegetation will be allowed to regenerate. Temporary matting will impact 4.78 acres of sedge meadow and 0.69 acre of bog within the ROW, and 0.51 acre of sedge meadow and 0.26 acre of bog off-ROW. Temporary conversion of shrub and forested wetlands along off-ROW access routes and within extra work space consists of 0.52 acre of shrub-carr, 0.05 acre of alder thicket, and 1.54 acres of hardwood swamp.

Permanent Impacts

Permanent impacts due to structure placement in wetlands have been reduced to a total of 0.11 acre (0.086 acre within the UMBR BSA and 0.019 acre within the LW BSA). The following community types are impacted by structure placement, and acreages of impact by community type are provided in Appendix G: bog, shallow marsh, sedge meadow, wet meadow, shrub-carr, and hardwood swamp.

Permanent conversion of shrub and forested wetland within the project corridor of Segment 6 totals approximately 26.29 acres, which excludes acreage associated with structure impacts within these communities. Specifically, permanent conversion within the UMBR BSA consists of 8.14 acres of shrub-carr, 0.98 acre of alder thicket, and 11.01 acres of hardwood swamp. Permanent conversion within the LW BSA consists of 1.12 acres of shrub-carr and 5.03 acres of hardwood swamp.

Mitigation Credits

The applicants are coordinating with the WDNR Mitigation Coordinator and the US Army Corps of Engineers (USACE) to determine the most appropriate option for wetland mitigation; a combination of Wisconsin Wetland Conservation Trust (in-lieu fee program program) and wetland banking credits are anticipated to be used for Segment 6. Mitigation credits are based on mitigation ratios agreed upon by the WDNR and the USACE and are as follows: 1.45:1 for permanent impacts related to structure placement; 0.5:1 for permanent conversion of shrub-carr, alder thicket, and hardwood swamp; 0.25:1 for temporary matting of sedge meadow and bog; and 0.25:1 for temporary clearing of forest and shrub wetlands. At these ratios, a total of 12.28 credits are required to compensate for the unavoidable wetland impacts to Segment 6 within the UMBR BSA and 3.11 credits within the LW BSA.

G. Wetland Restoration and Revegetation Plan

A general summary of wetland community characteristics within the ROW of Segment 6 is presented in Appendix B. This characterization is based on field observations from 2012 and 2016. In summary, wetland communities present within this segment include wet meadow, hardwood swamp, bog, sedge meadow, shallow marsh, shrub-carr, and alder thicket. Many wetland communities are degraded to a certain degree with typically one or more invasive species present. Construction within wetlands shall comply with the segment-specific Erosion Control Plan (ECP). Revegetation of wetlands is presented in the project-specific Revegetation and Monitoring Plan (Attachment 2). A summary of wetland restoration and revegetation guidelines for Segment 6 is provided below.

Restoration / Revegetation

- Restoration within wetland areas will include removal of all construction-related materials (e.g. timber matting) and the restoration of significant ruts and depressions.
- The ROW will be restored to pre-existing topography as much as practicable.
- Areas with significant rutting in wetlands will be repaired using hand tools, back dragging, or other appropriate means to restore topography while minimizing additional disturbance.
- Wetland areas where disturbance is minimal, as anticipated along matted access routes, will generally be allowed to revegetate naturally. These locations will be monitored to determine if supplemental seeding is necessary.
- A temporary cover crop may be installed over disturbed soils following ground disturbance. A project-specific permanent native wetland seed mix may be installed within disturbed wetland areas that have a native component but are not high-quality wetlands (see Revegetation and Monitoring Plan for seed mixes and installation specifications, Attachment 2).
- Farmed wetlands will not be re-seeded due to their current land use.
- Woody vegetation temporarily impacted in extra work space areas will be allowed to reestablish after construction.

Other /Miscellaneous

- Fertilizers will not be used within 100 feet of wetlands, streams and rivers.
- Cover such as erosion blankets or other weed-free devices may be applied after seeding and final restoration has occurred in wetland areas disturbed by the construction activities. All erosion control measures utilized will conform to WDNR Technical Standards.
- Installed soil erosion and sedimentation control measures will be maintained until the disturbed areas are permanently stabilized.

H. Wooded Riparian and Wetland Management Plan

Approximately 16.0 acres of forested wetlands will be permanently impacted by construction along Segment 6, and an additional 1.54 acres of forested wetlands will be temporarily impacted within extra work spaces outside of the project ROW. These wooded wetlands include hardwood swamps, some of which are associated with smaller waterways. In addition, an upland wooded riparian area (with narrow wetland fringe) occurs along the Black River (N-R33 on EAP map page 4).

In general, the entire ROW width will be cleared for safe construction equipment access in wooded areas. In riparian areas, efforts will be made to retain low-growing vegetation on/near stream banks for erosion control, where it currently exists. In areas where a TCSB will be installed, the amount of clearing will be kept to a minimum, which will reduce the impacts to riparian corridors.

Trees cut in wetland areas will generally be removed from the wetland and windrowed or chipped in upland areas. Some of the woody vegetation that is cleared may remain in the wetland areas. This includes lop and scatter of tree limbs, and thin scatter of wood chips and vegetation fragments resulting 11/16/2016 Page 12

from mowing the shrub and sapling layer. Wood left in the wetland will be scattered in a manner that does not impede vegetation growth, water flow, or alter the bottom elevation of the wetland.

Areas disturbed by construction will be restored as described in the *Wetland Restoration and Re-Vegetation Plan* section. In addition, woody vegetation temporarily impacted in extra work space areas will be allowed to re-establish after construction.

I. Final Sequencing and Scheduling Plan

Clearing along Segment 6 is anticipated to begin in March 2017. The following summarizes the anticipated timing of construction along Segment 6:

- ROW Clearing Feb. 2017 Jun. 2017
- Structure Foundations Dec. 2017 Mar. 2018
- Install Structures Feb. 2018 May 2018
- Install Conductor Mar. 2018 Jun. 2018

ROW cleanup and restoration is scheduled to occur in the summer following completion of construction, although actual dates for restoration will be weather dependent. Permanent restoration within any given area will be properly implemented within 30 days of final construction; however, if restoration is delayed due to weather or soil conditions, the area will be protected until permanent restoration can be completed.

J. Post-Construction Monitoring Plan

Wetland and waterway monitoring will be required for this project. Weekly monitoring will occur during and after construction until disturbed areas are stabilized and annual post-construction monitoring will be conducted as discussed below.

In accordance with Condition #38 of the WDNR utility permit, ATC will conduct frequent monitoring (e.g., weekly and after a significant rainfall event) of erosion and sediment controls during and after construction, which may include areas within and adjacent to wetlands and waterways. This monitoring will occur until the areas are stabilized as defined in Condition #38 of the utility permit.

ATC will also conduct annual post-construction monitoring of the portions of wetlands and waterways impacted by construction, as outlined in Condition #70 of the utility permit. This monitoring shall continue for a minimum of 5 years after construction unless compliance is achieved and documented earlier. Refer to the Revegetation and Monitoring Plan (Attachment 2) for more detail regarding wetland and waterway monitoring, and the associated reporting.

Badger Coulee 345 kV Transmission Line Project

Segment 6 CMP

Appendix A

Environmental Access Plan

Environmental Access Plan – Segment 6

Graphic Index for Badger Coulee Project

SEGMENT HIGHLIGHTS

- 7 Temporary Clear Span Bridges will be required over waterways
- A total of 41 poles will be constructed in the following wetlands (parenthetic value refers to number of structures within the feature):
 - N-W56a(1), N-W59(2), N-W63(1), N-W64(2), N-W65(1), N-W66(1), N-W68(1), N-W68a(2), N-W68b(1), N-W68c(1), N-W69(1), N-W70(2), N-W74(2), N-W75(2), N-W78(1), N-W81(2), N-W82(1), N-W89(1), N-W91(1), N-W93(1), N-W94(3), N-W95(2), N-W96(1), N-W98(1), N-W103(1), N-W104(1), N-W106(3), N-W107(1) and N-W109(1).
- A total of 8 temporary poles will be placed in the following wetlands (2 poles in each wetland):
 - > N-W64, N-W65, N-W66 and N-W103
- Invasive Species Caution: Invasive species locations are identified on pages 11 and 49, and general notes are presented on all pages. Refer to these pages for instructions on how to proceed in these areas.
- Rare Species Caution: Rare species locations are identified on pages 3-5, 9-12, 15, 16, 19, 20, 23-26 and 29-36. Refer to these pages for instructions on how to proceed in these areas.

INDEX TO FEATURES

	FEATUR	ES INDEX		
Wetland Waterway			Map Page	
Identifier	Identifier	Bridge		
N-W52	N-R32		1	
N-W52a	N-R32		2, 3	
N-W53, -W54,				
-W55, -W56			3	
N-W56a			3, 4	
N-W56b,				
-W57, -W57a, -W57b			4	
	N-R33		4	
	N-R34	X	4	
N-W57c			4, 5	
N-W58			5	
N-W59, -W60			6	
N-W61 N-W61a,			6, 7	
-W63			7	
N-W64			7, 8	
-	N-R35	X	7, 8	
N-W65			8, 9	
N-W66			9	
N-W67			10	
N-W68			10, 11 11	
N-W68a N-W68b,				
-W68c			11, 12	
N-W69			12	
	N-R36		12	
N-W70			12, 13	
N-W71, -W72			14	
N-W73a			14, 15	
N-W74	N-R37	X	16, 17 16	
N-W75, -W77	IN-R37	^	17	
N-W78,				
-W79, -W79a			18	
N-W80			21	
N-W81			21, 22	
N-W82, -W83			22	
	N-R38		22	
N-W84 N-W85			23 24	
11-1105	N-R39		24	
N-W86,				
-W86a,			26	
-W86b,			20	
-W87, -W87a	N D 40			
N-W88	N-R40		26 29	
14-4400	N-R41	X	29	
N-W89			29, 30	
N-W89a,				
-W90			30	
N-W91,			31	
-W91a				
N-W92, -W93	N-R42	X	31, 32 32	
N-W94	11-1142	^	32, 33	
N-W95			34, 35	
N-W96			35	
N-W97			35, 36	
N-W98			39, 40	
N-VV90			1	
N-VV90	N-R42a, N-		40	
	N-R42a, N- R42b		40	
N-W99,			40 40	
N-W99, -W100			40	
N-W99, -W100 N-W101,				
N-W99, -W100 N-W101, -W101a N-W102			40	
N-W99, -W100 N-W101, -W101a N-W102 N-W103			40 43 47 47,48	
N-W98 -W100 N-W101, -W101a N-W102 N-W103 N-W104	R42b		40 43 47 47, 48 48, 49	
N-W99, -W100 N-W101, -W101a N-W102 N-W103		X	40 43 47 47,48	



November 2016

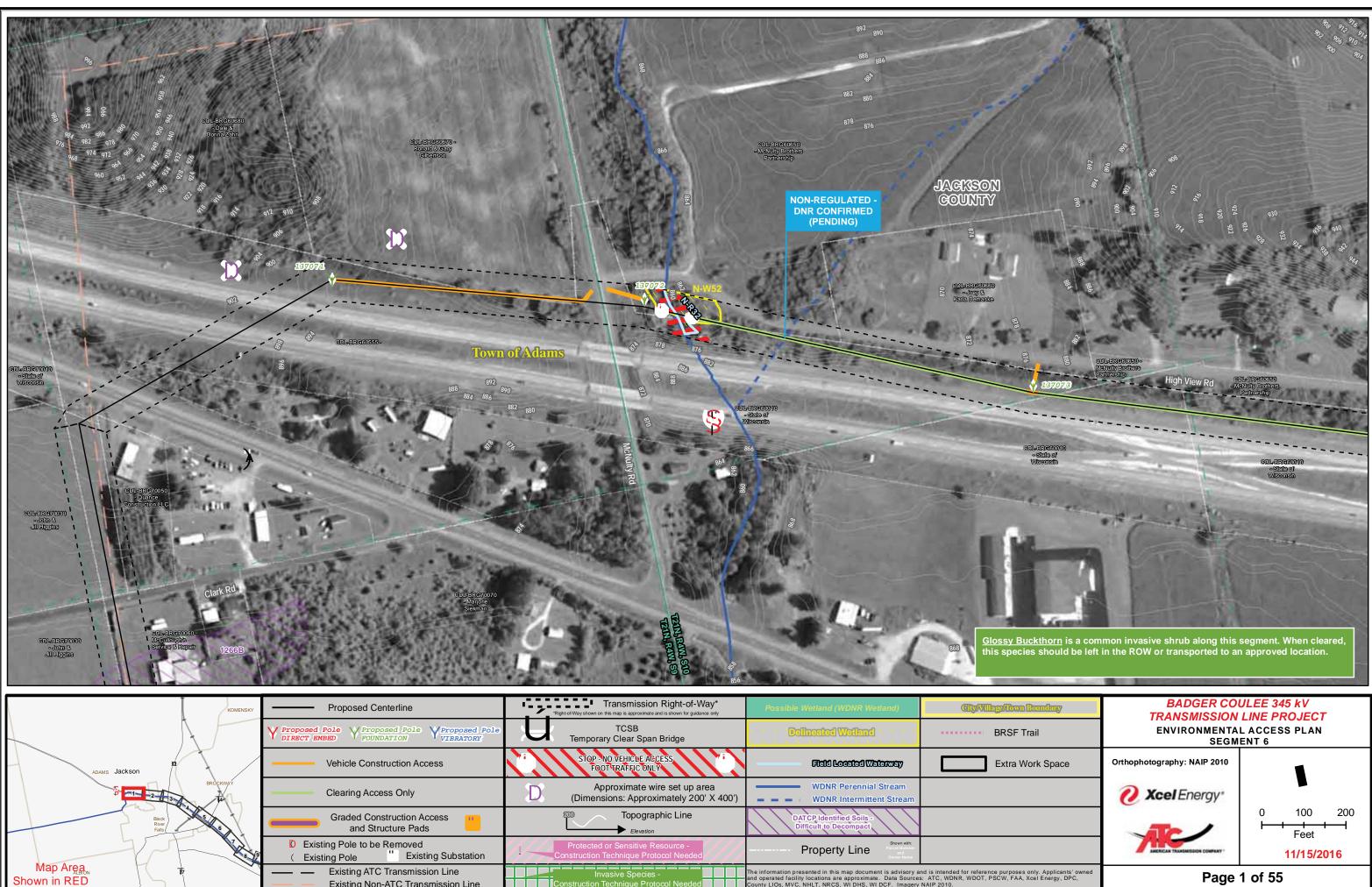
Page 1 of 2

	FEATURE	S INDEX	
Wetland	Wate	Map Page	
Identifier	Identifier	Bridge	
	N-R45	X	52
N-W107			53
N-W108			53, 54
N-W109			54

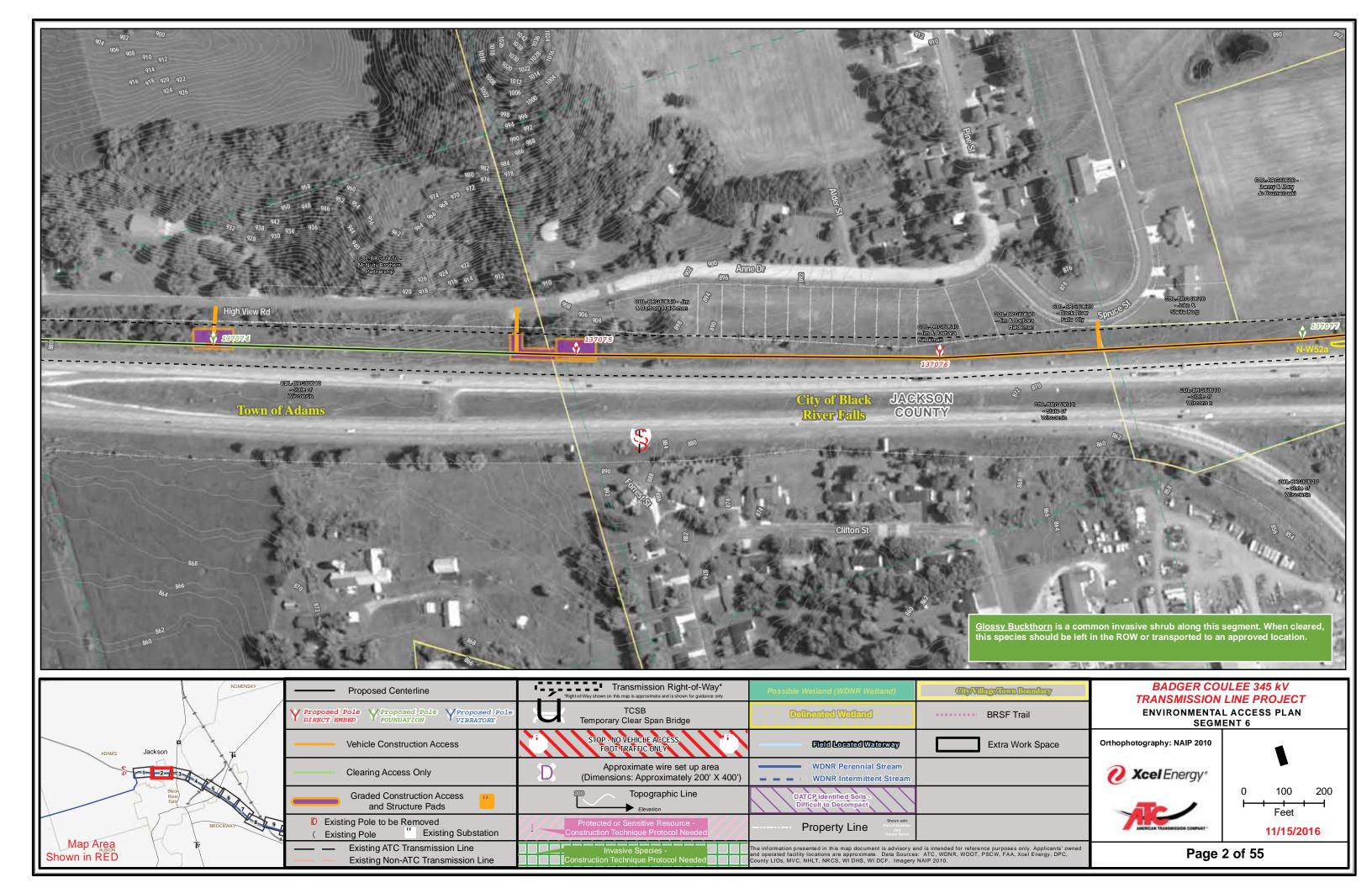


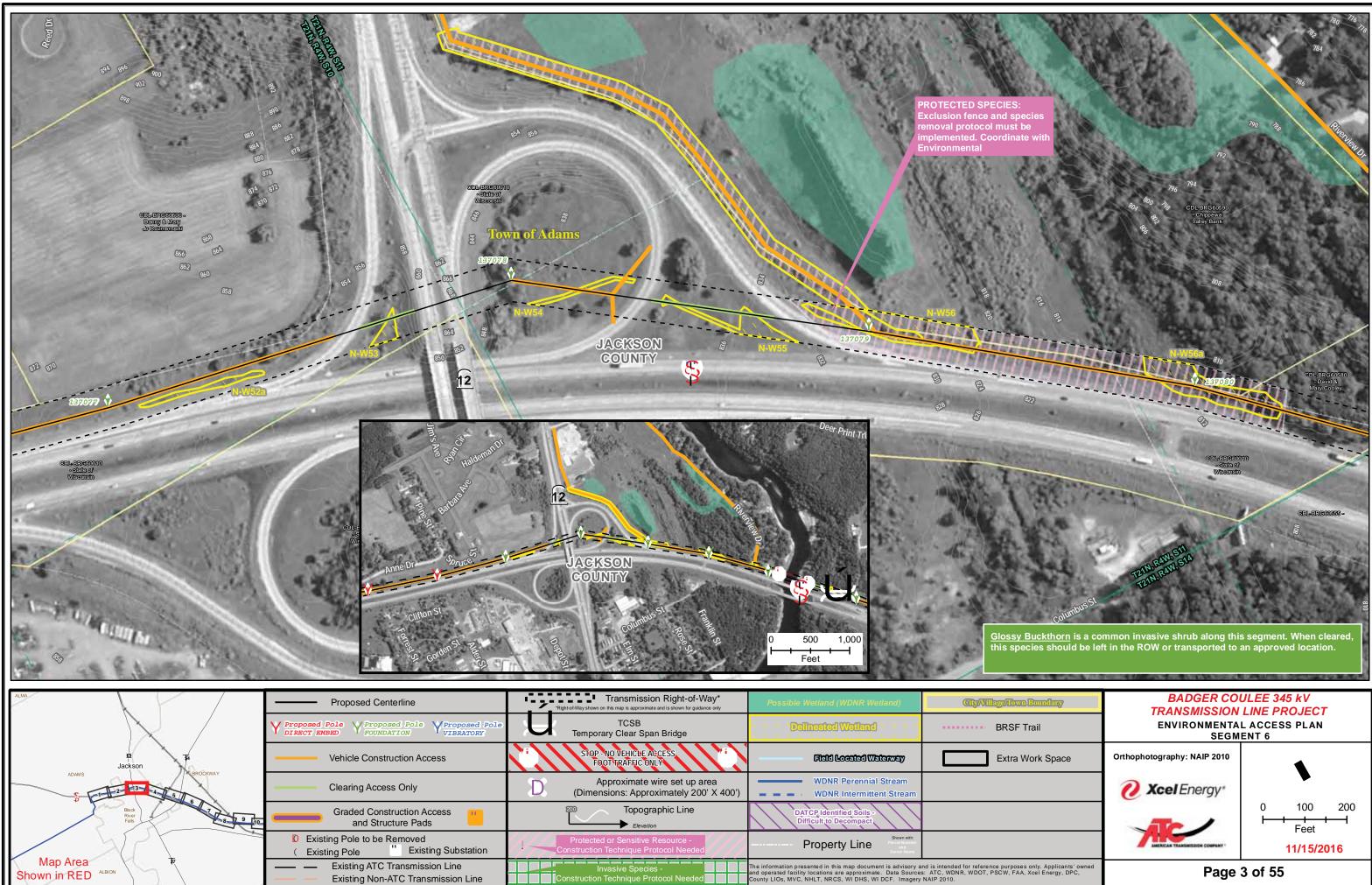
November 2016

Page 2 of 2

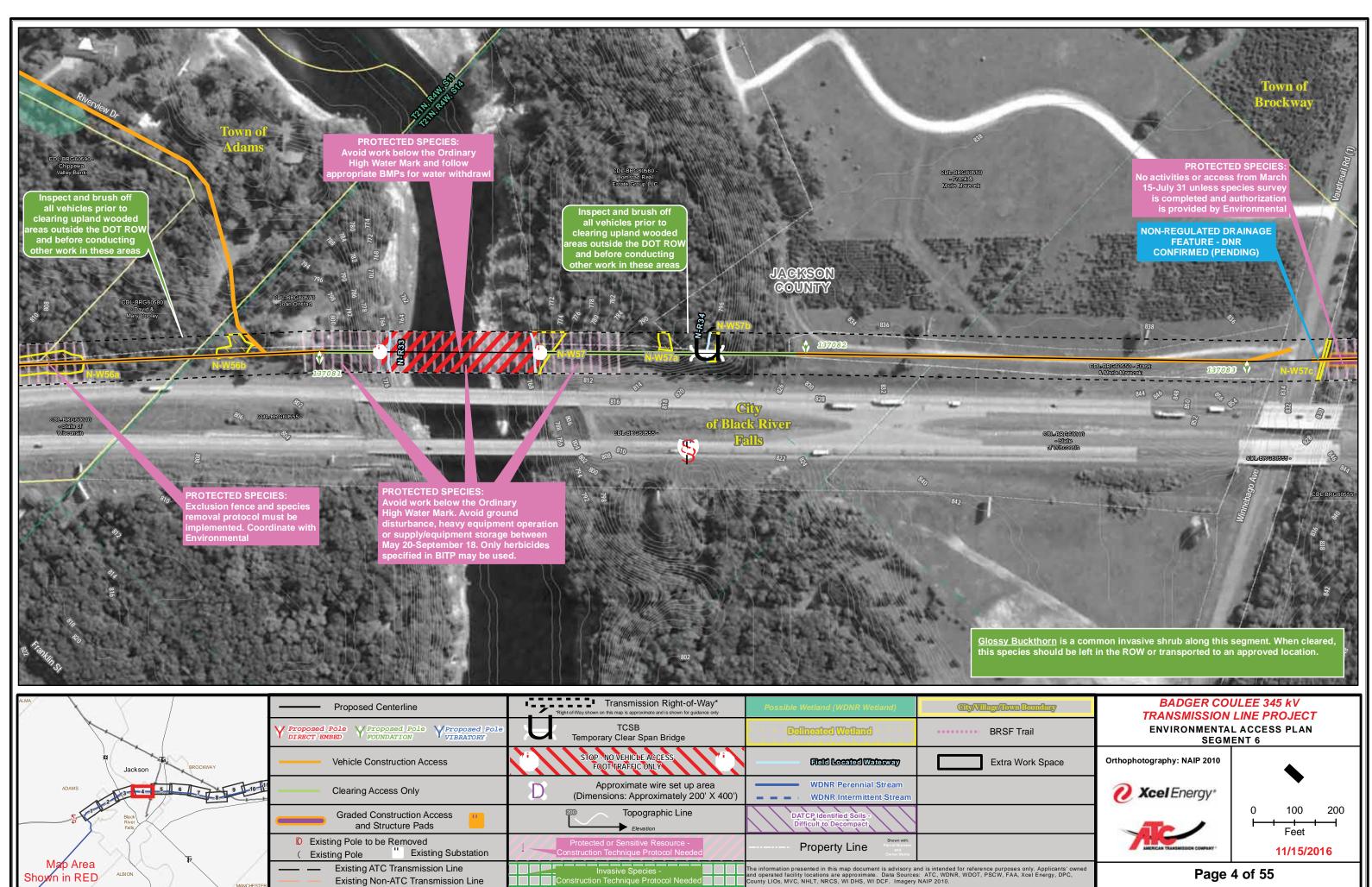


	KOMENSKY	Proposed Centerline	Transmission Right-of-Way* Right-of-Way shown on this map is approximate and is shown for guidance only	Possible Wetland (WDNR Wetland)	City/Village/Iown
		Y Proposed Pole Y Proposed Pole Y Proposed Pole VIBRATORY	TCSB Temporary Clear Span Bridge	Delineated Wetland A A A A	BRSF T
	ADAMS Jackson	Vehicle Construction Access	STOP - NO VEHICLE AGCESS, FOOT TRAFFIC ONLY	Field Located Waterway	Extra W
	Bick River Pals	Clearing Access Only	D Approximate wire set up area (Dimensions: Approximately 200' X 400')	WDNR Perennial Stream WDNR Intermittent Stream	
		Graded Construction Access and Structure Pads		DATCP Identified Soils - Difficult to Decompact	
		 Existing Pole to be Removed Existing Pole Existing Substation 	Protected or Sensitive Resource - Construction Technique Protocol Needed	Property Line Shown with: Parcel Number and Owner Name	
	Map Area Shown in RED	Existing ATC Transmission Line Existing Non-ATC Transmission Line	Invasive Species -	The information presented in this map document is advisory an and operated facility locations are approximate. Data Sources County LIOs, MVC, NHLT, NRCS, WI DHS, WI DCF. Imagery I	s: ATC, WDNR, WDOT, PSCW, FAA, 2

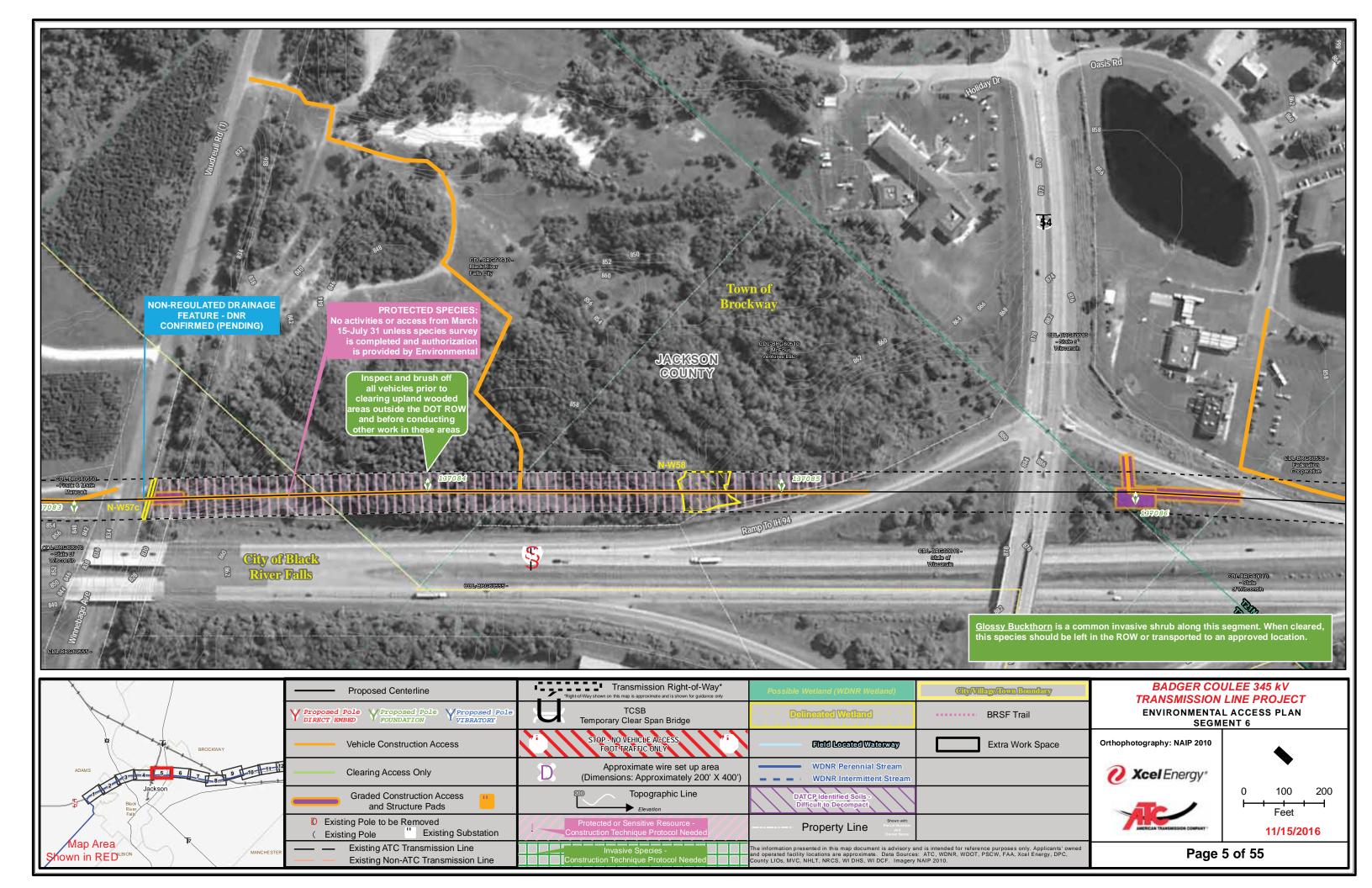


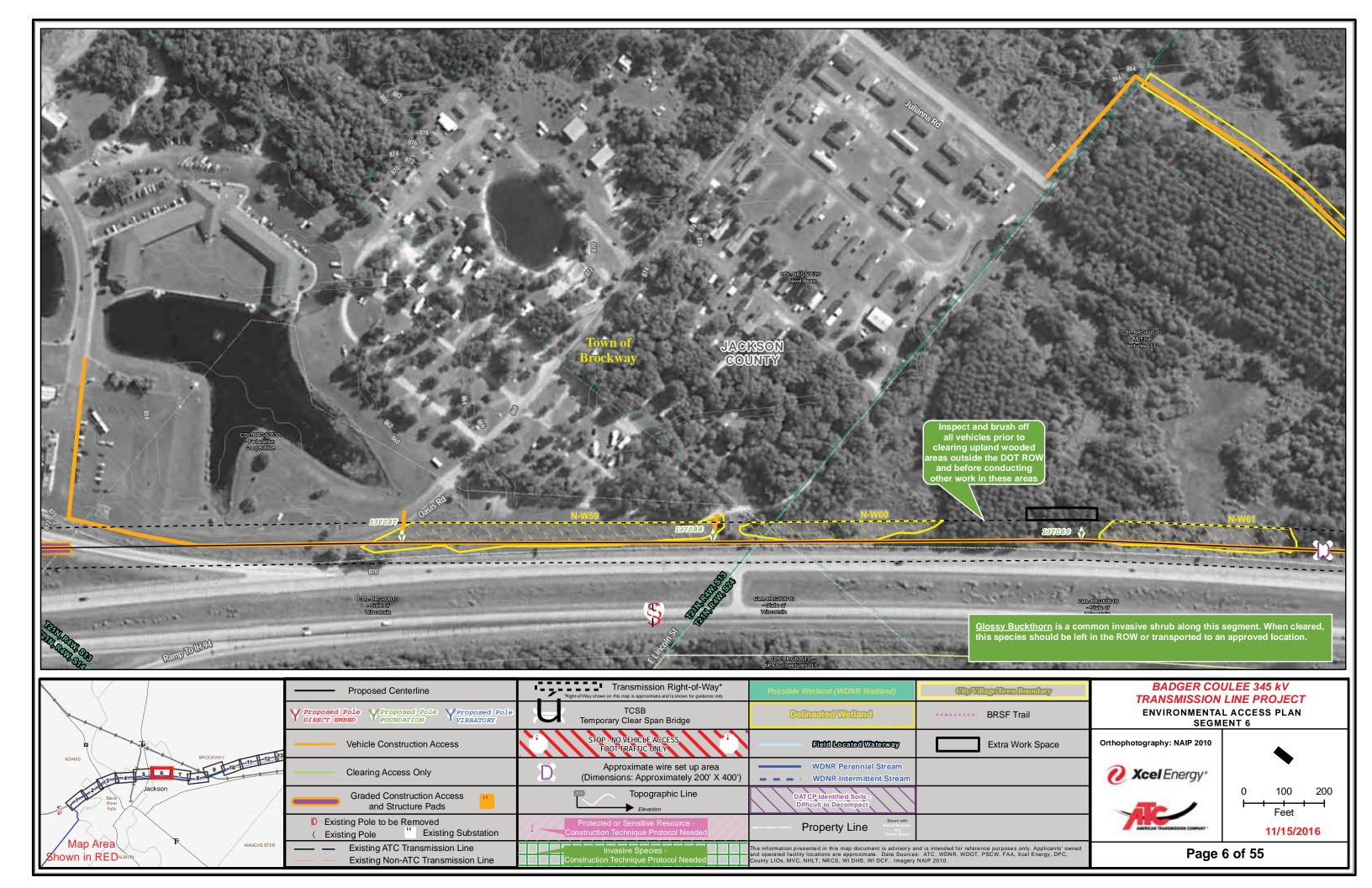


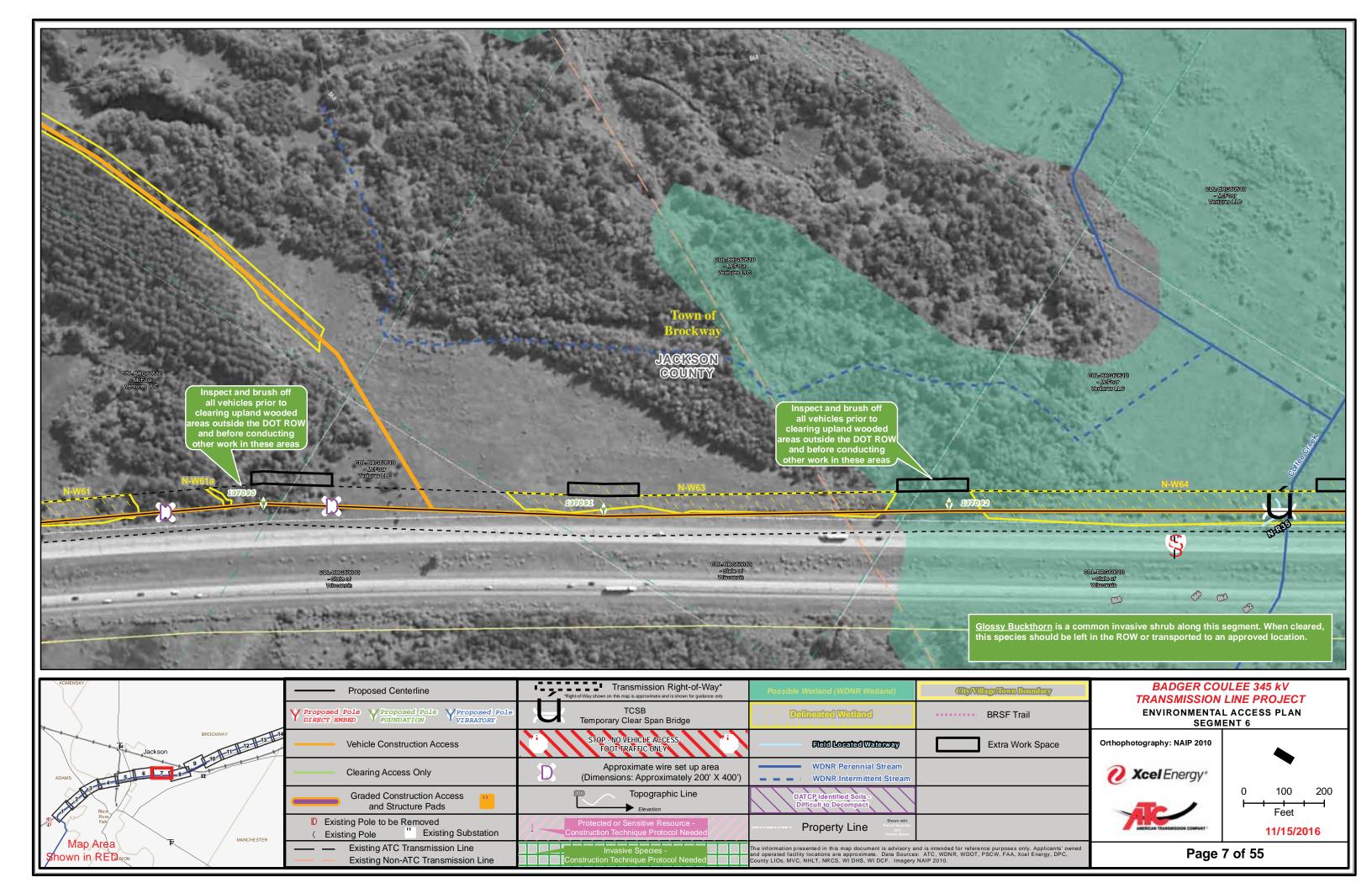
ses	only.	Applica	ints'	owne
AA,	Xcel	Energy,	DPO	С,

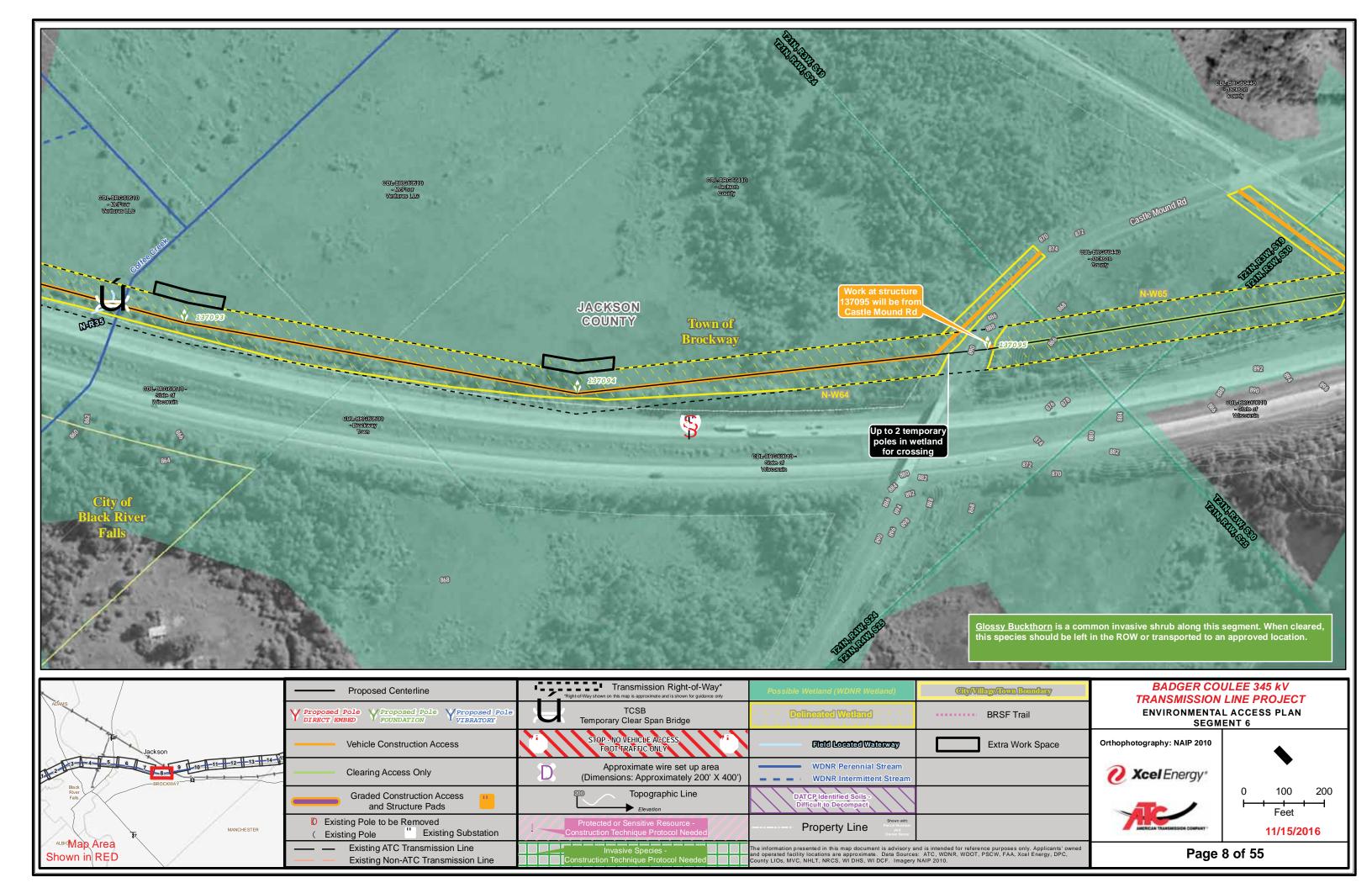


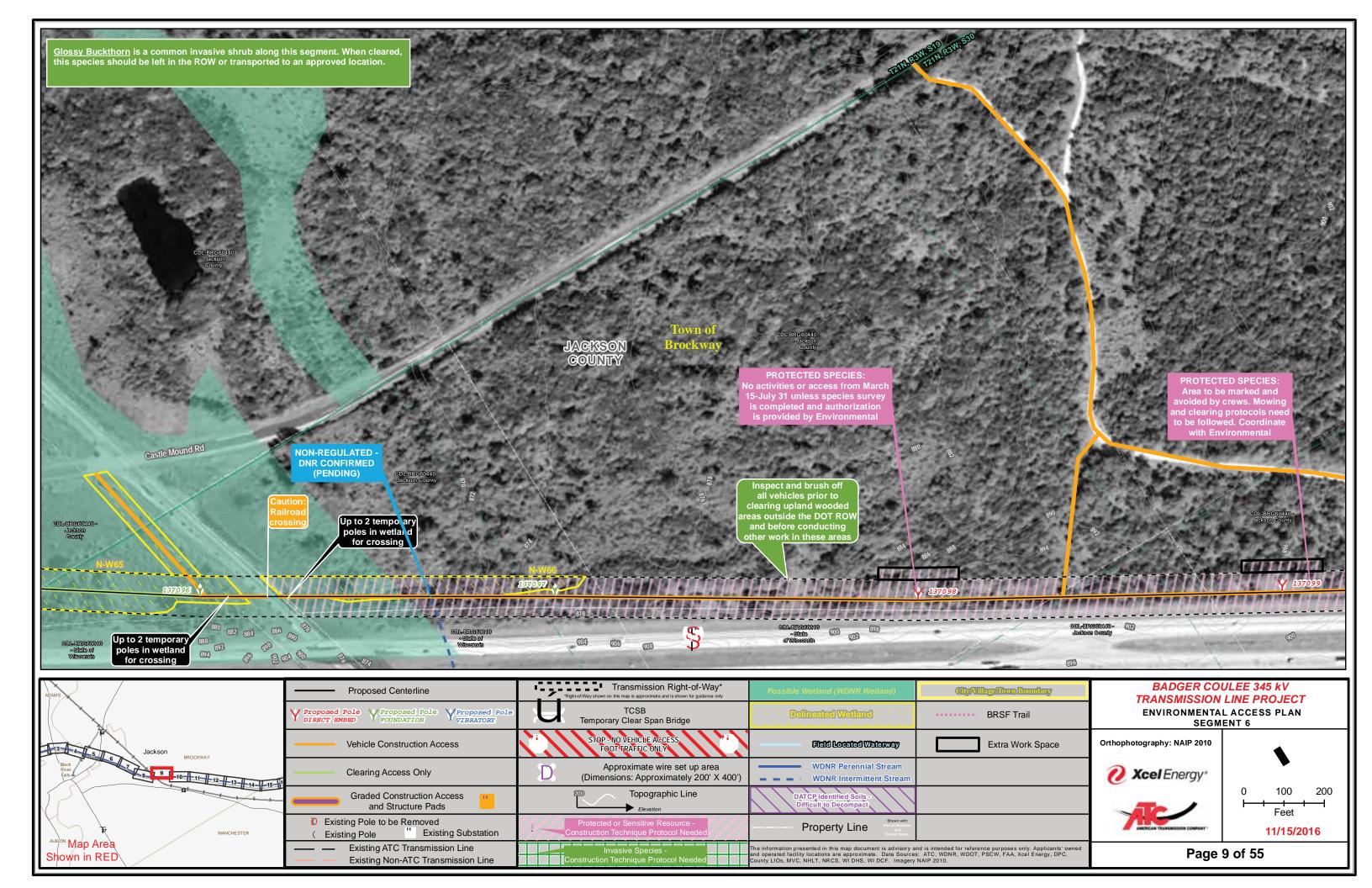
ses	only	Applica	nts'	owne
AA,	Xcel	Energy,	DPO	С,

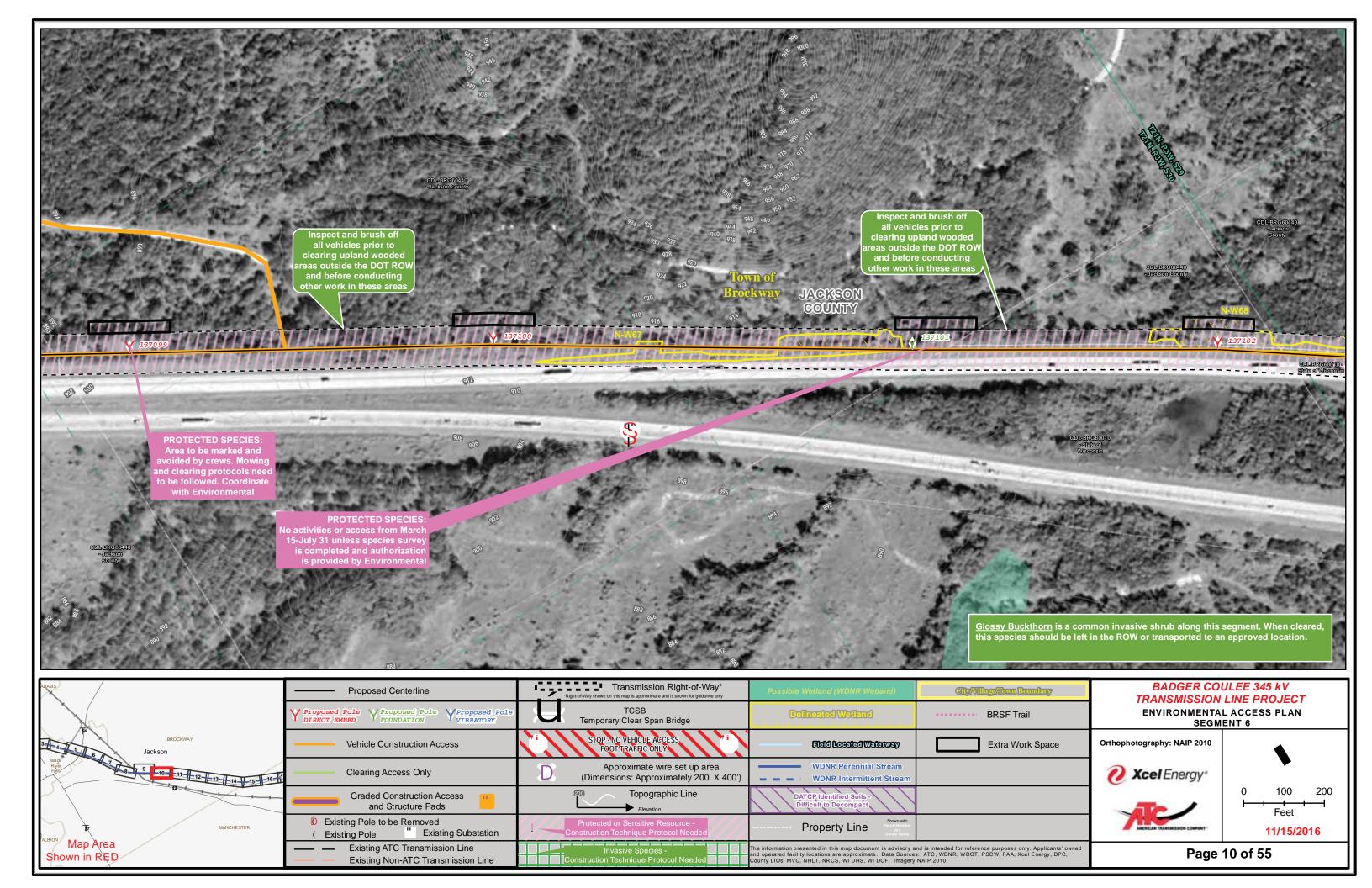


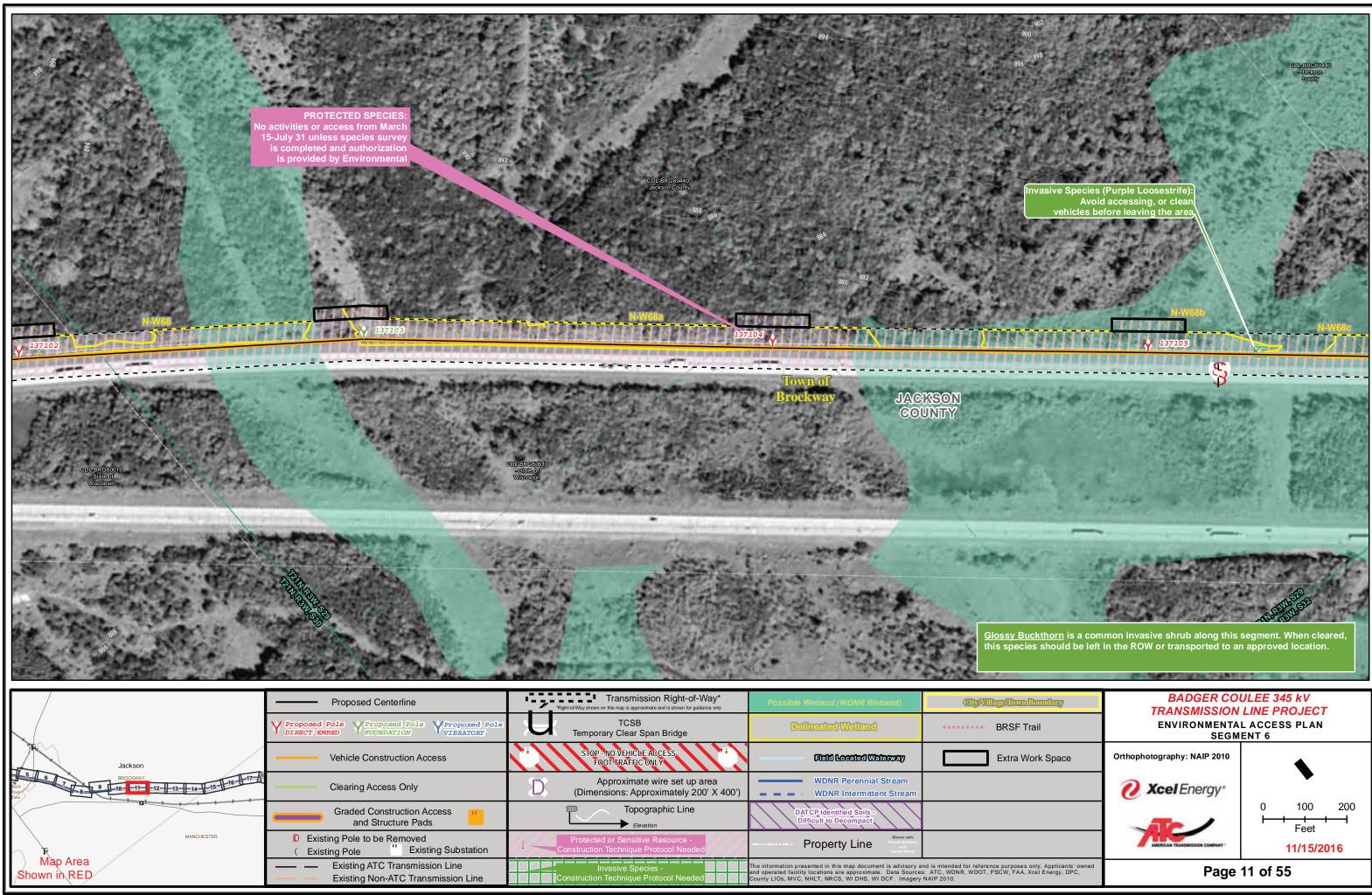




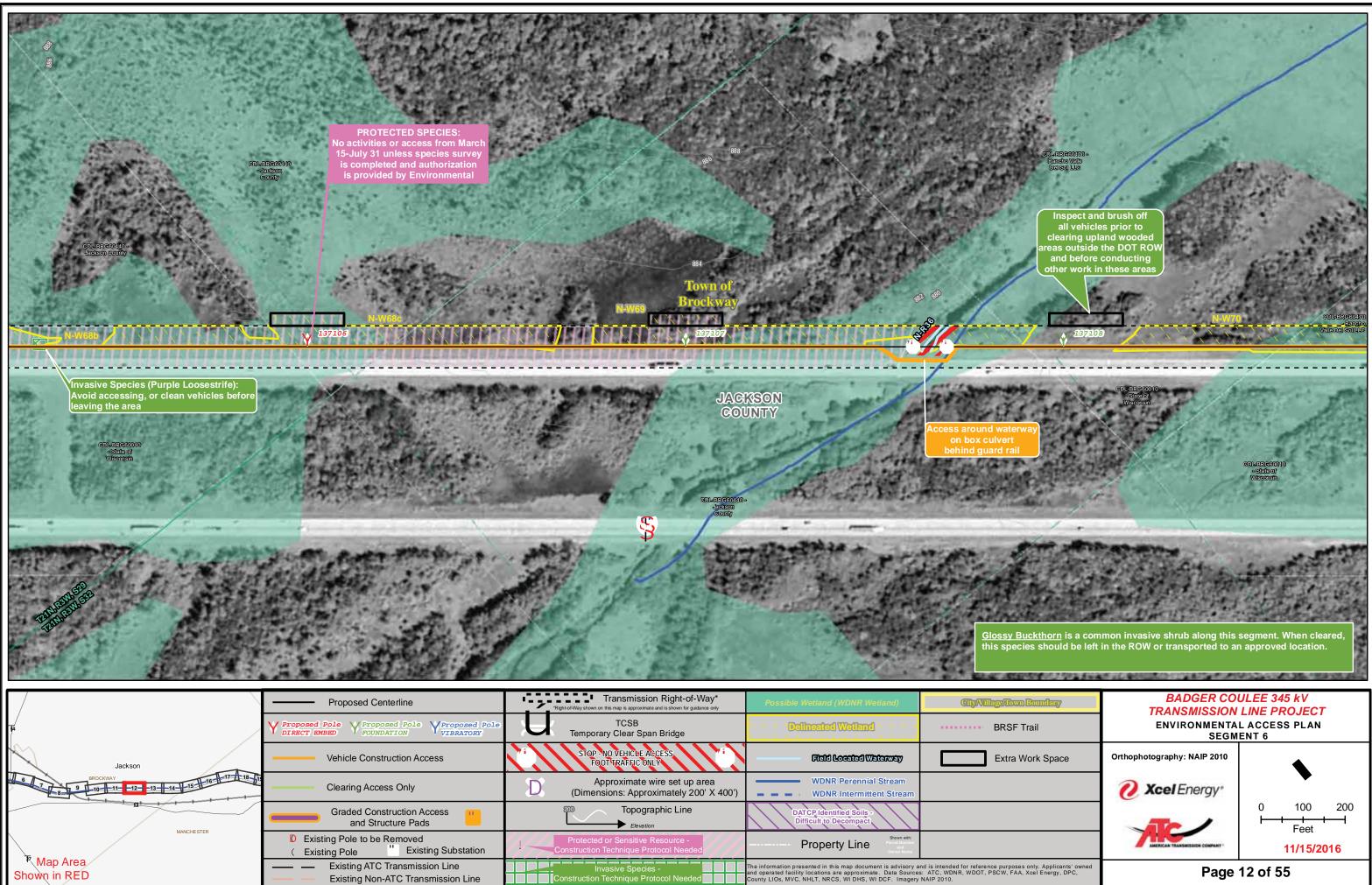




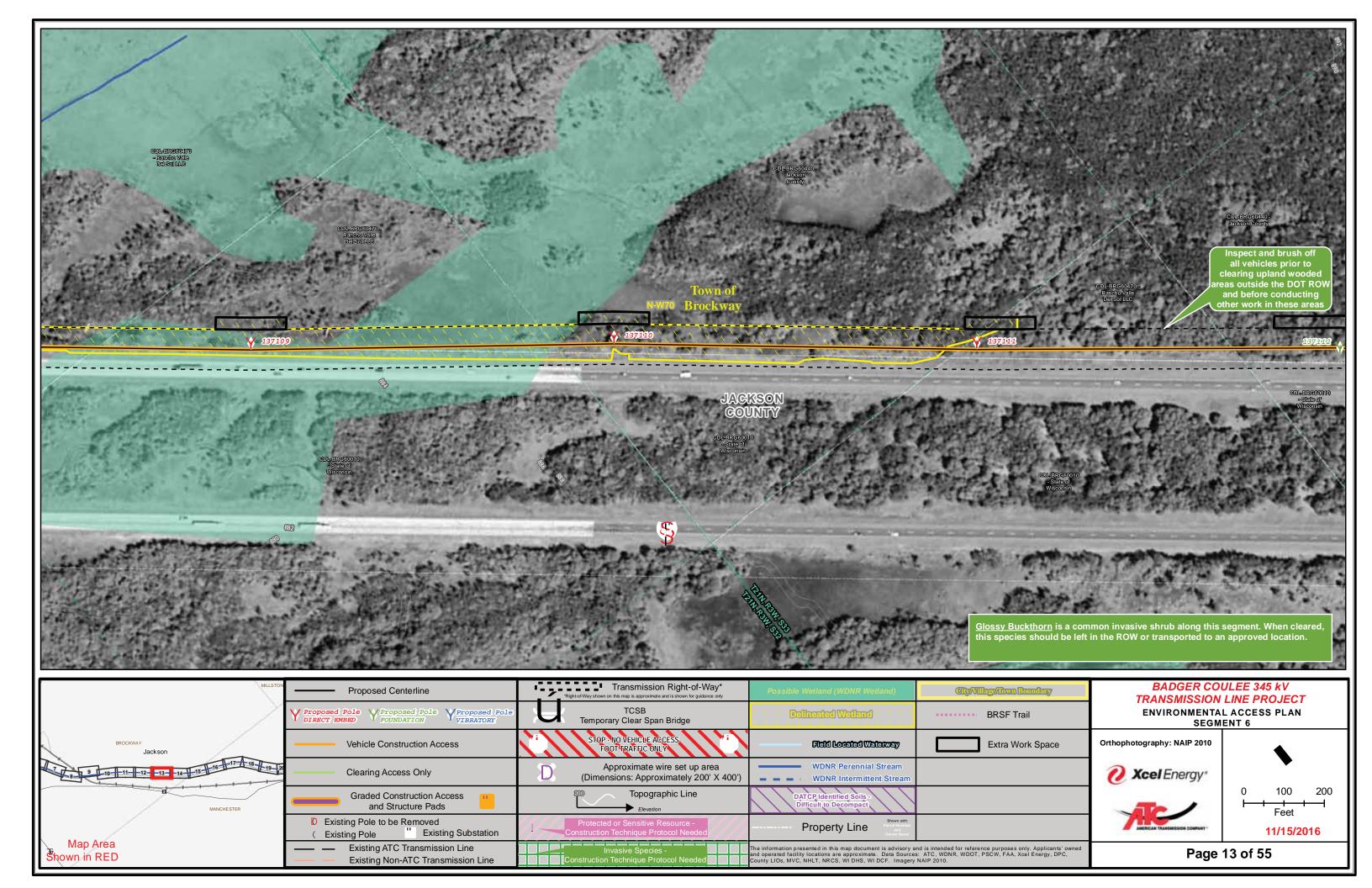




ses	omy.	мррпса	nts	Owne
٩А,	Xcel	Energy,	DP	C,



		Proposed Centerline	Transmission Right-of-Way* "Right-of-Way shown on this map is approximate and is shown for guidance only	Possible Wetland (WDNR Wetland)	City/Village/Iown
	\$ *	Y Proposed Pole Y Proposed Pole Y Proposed Pole VIBRATORY	TCSB Temporary Clear Span Bridge		BRSF T
	Jackson BROCKWAY	Vehicle Construction Access	STOP - NO VEHICLE AGCESS FOOT TRAFFIC ONLY	Field Located Waterway	Extra W
		Clearing Access Only	D Approximate wire set up area (Dimensions: Approximately 200' X 400')	WDNR Perennial Stream WDNR Intermittent Stream	
	2	Graded Construction Access and Structure Pads	Topographic Line Elevation	DATCP Identified Soils - Difficult to Decompact	
	MANCHESTER	 Existing Pole to be Removed Existing Pole Existing Substation 	Protected or Sensitive Resource - Construction Technique Protocol Needed	Property Line Shown with: Para Number or Name Owner Name	
	* Map Area Shown in RED	Existing ATC Transmission Line Existing Non-ATC Transmission Line	Invasive Species -	The information presented in this map document is advisory ar and operated facility locations are approximate. Data Sources County LIOs, MVC, NHLT, NRCS, WI DHS, WI DCF. Imagery	nd is intended for reference purposes : ATC, WDNR, WDOT, PSCW, FAA, NAIP 2010.



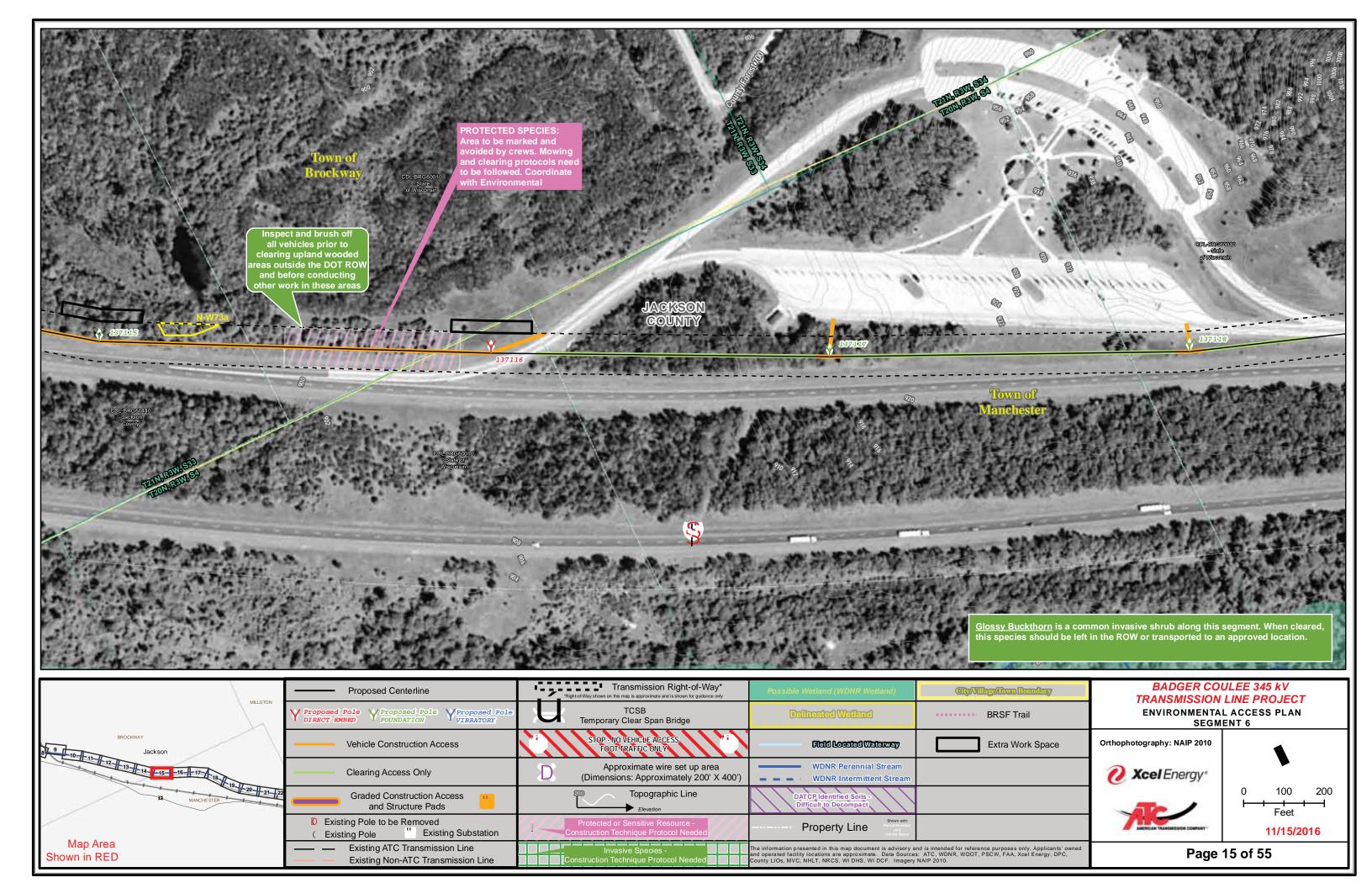


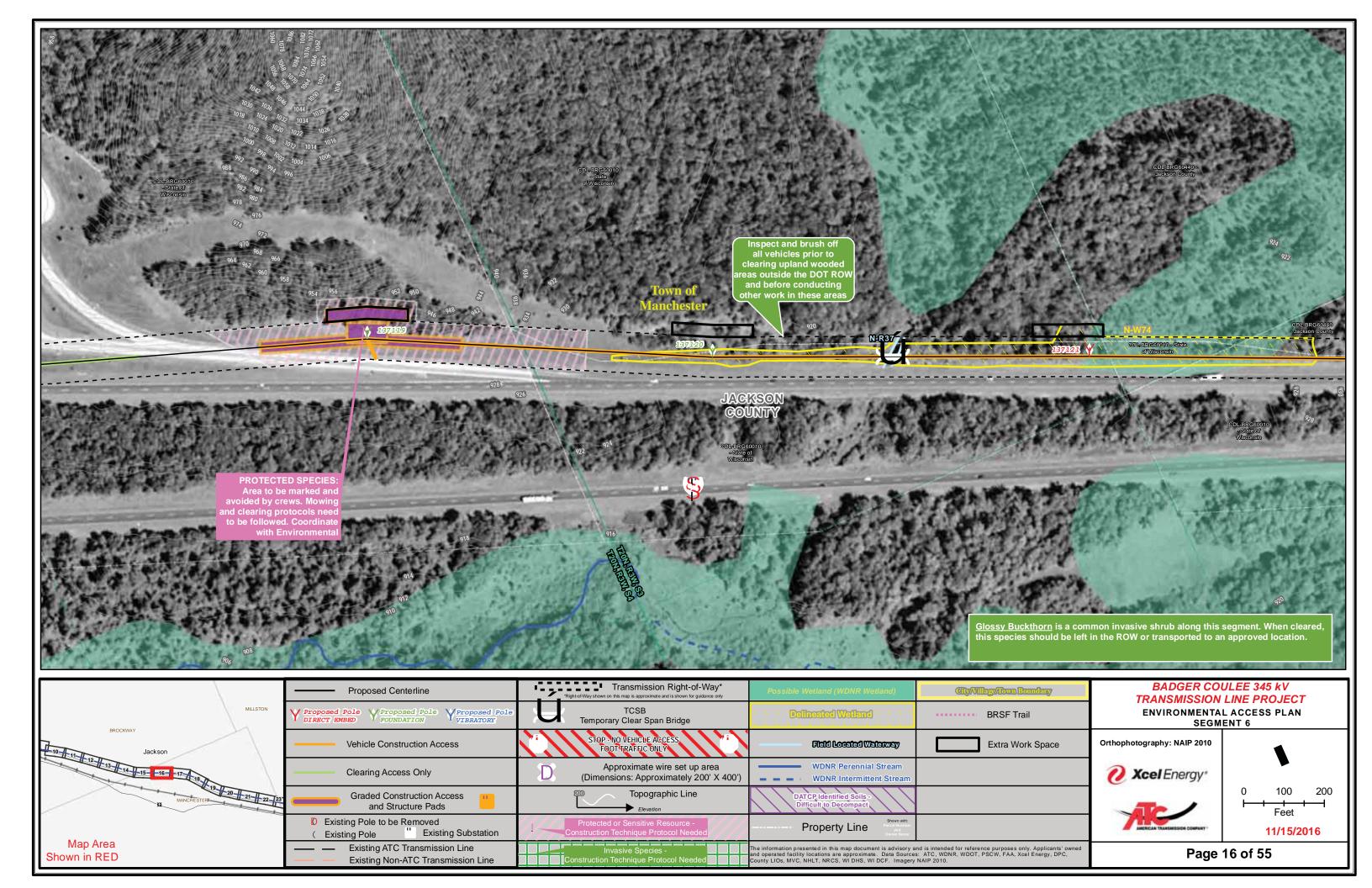
MIL	Proposed Centerline	Transmission Right-of-Way* Right-of-Way shown on this map is approximate and is shown for guidance only	Possible Wetland (WDNR Wetland)	City/Village/Ibwn I
	Y Proposed Pole Y Proposed Pole Y Proposed Pole DIRECT EMBED Y FOUNDATION Y DIRATORY	TCSB Temporary Clear Span Bridge	Delineated Watland	BRSF Tr
BROCKWAY Jackson	Vehicle Construction Access	STOP - NO VEHICLE AGCESS, FOOT TRAFFIC ONLY	Field Located Waterway	Extra Wo
B 9 10 11 12 13 14 15 16 17 18 19 20 27 B MANCHESTER	20-22 Clearing Access Only	D Approximate wire set up area (Dimensions: Approximately 200' X 400')	WDNR Perennial Stream WDNR Intermittent Stream	
	Graded Construction Access and Structure Pads	Topographic Line Elevation	DATCP Identified Soils - Difficult to Decompact	
	 Existing Pole to be Removed Existing Pole Existing Substation 	Protected or Sensitive Resource - Construction Technique Protocol Needed	Property Line Shown with:	
Map Area Shown in RED	Existing ATC Transmission Line Existing Non-ATC Transmission Line	Invasive Species -	The information presented in this map document is advisory a and operated facility locations are approximate. Data Source County LIOs, MVC, NHLT, NRCS, WI DHS, WI DCF. Imagery	and is intended for reference purposes c s: ATC, WDNR, WDOT, PSCW, FAA, X / NAIP 2010.

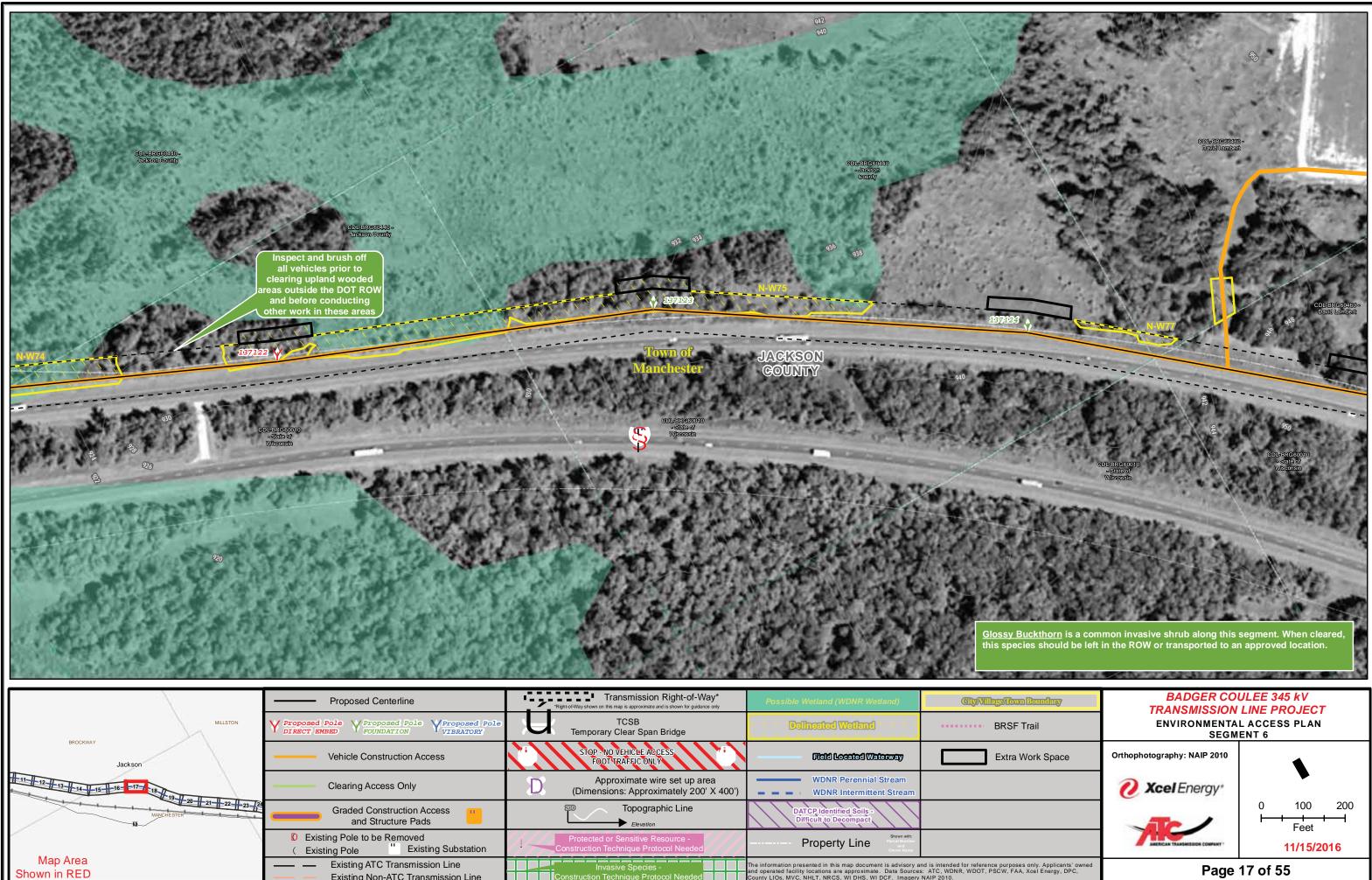
ses	only	Applica	nts'	owne
		Energy,		

Page 14 of 55

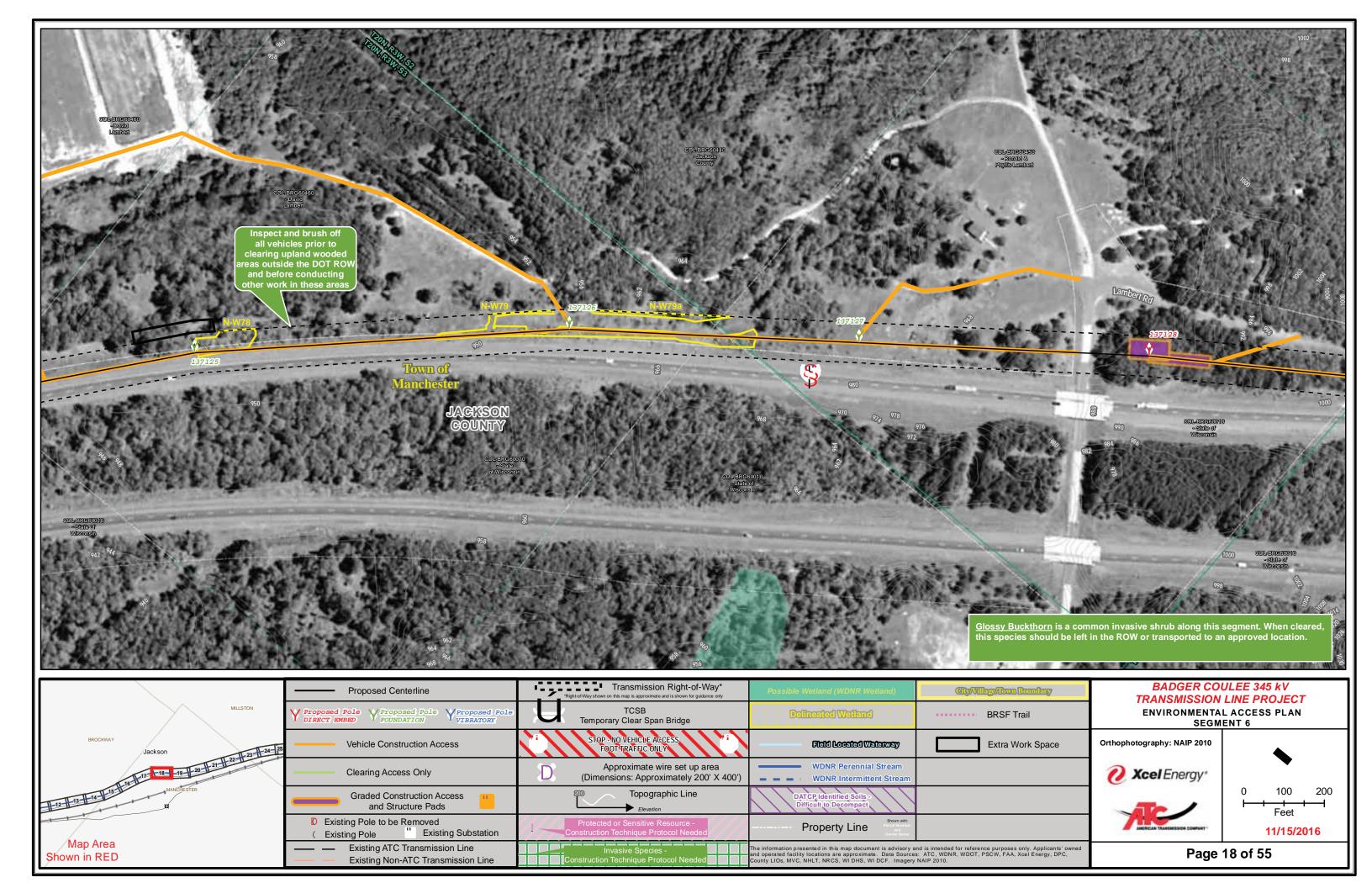
11/15/2016

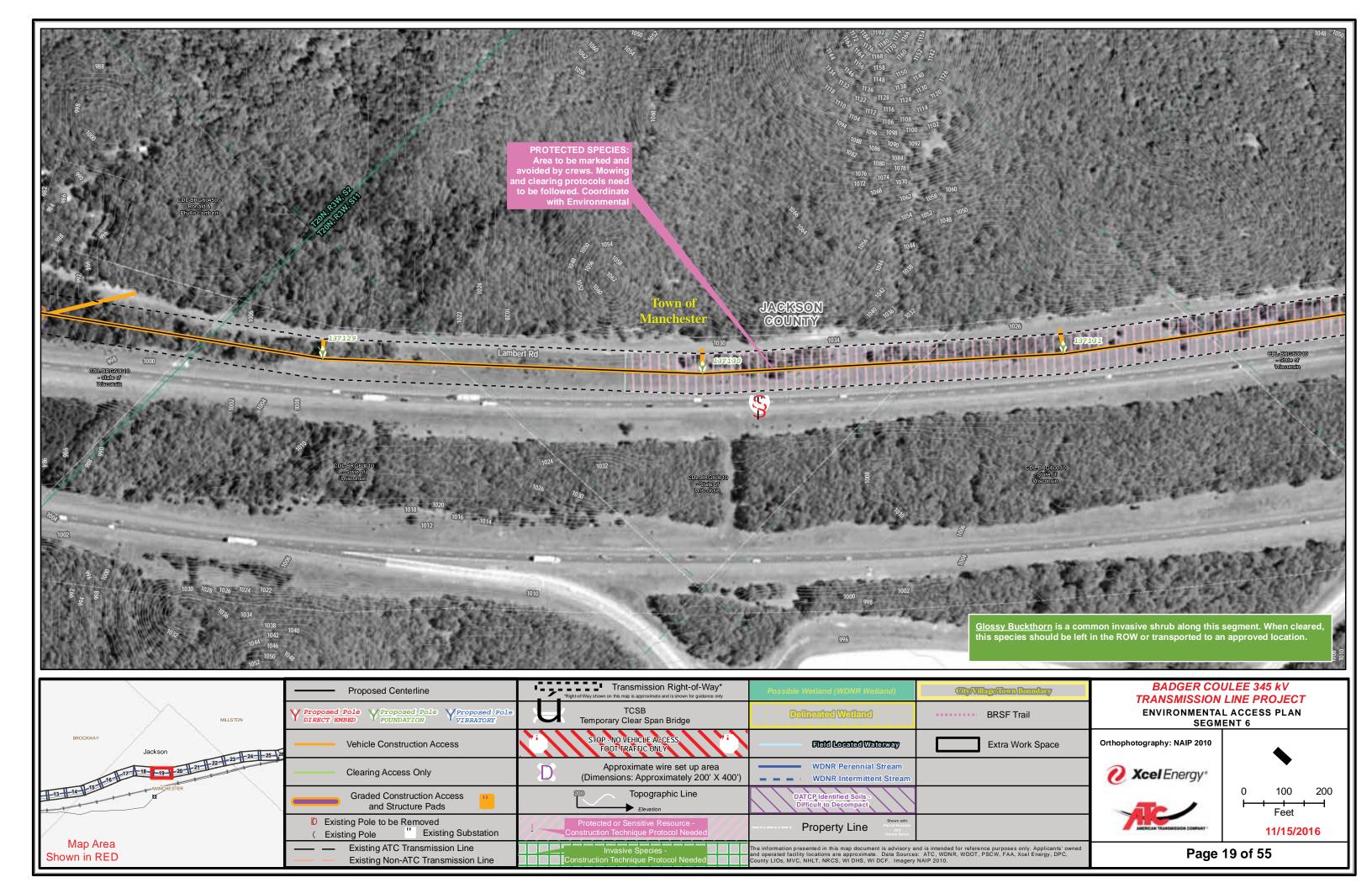


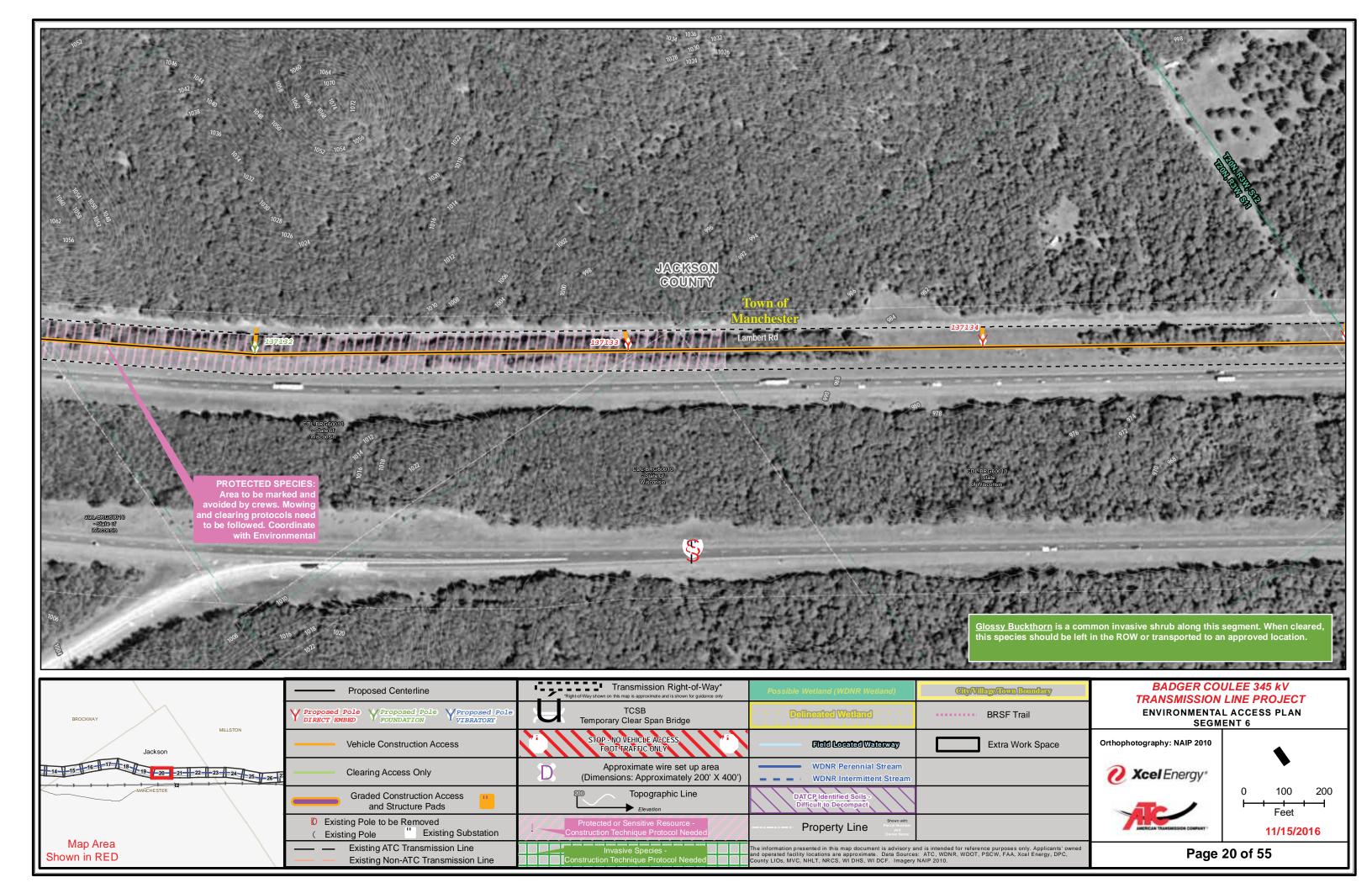


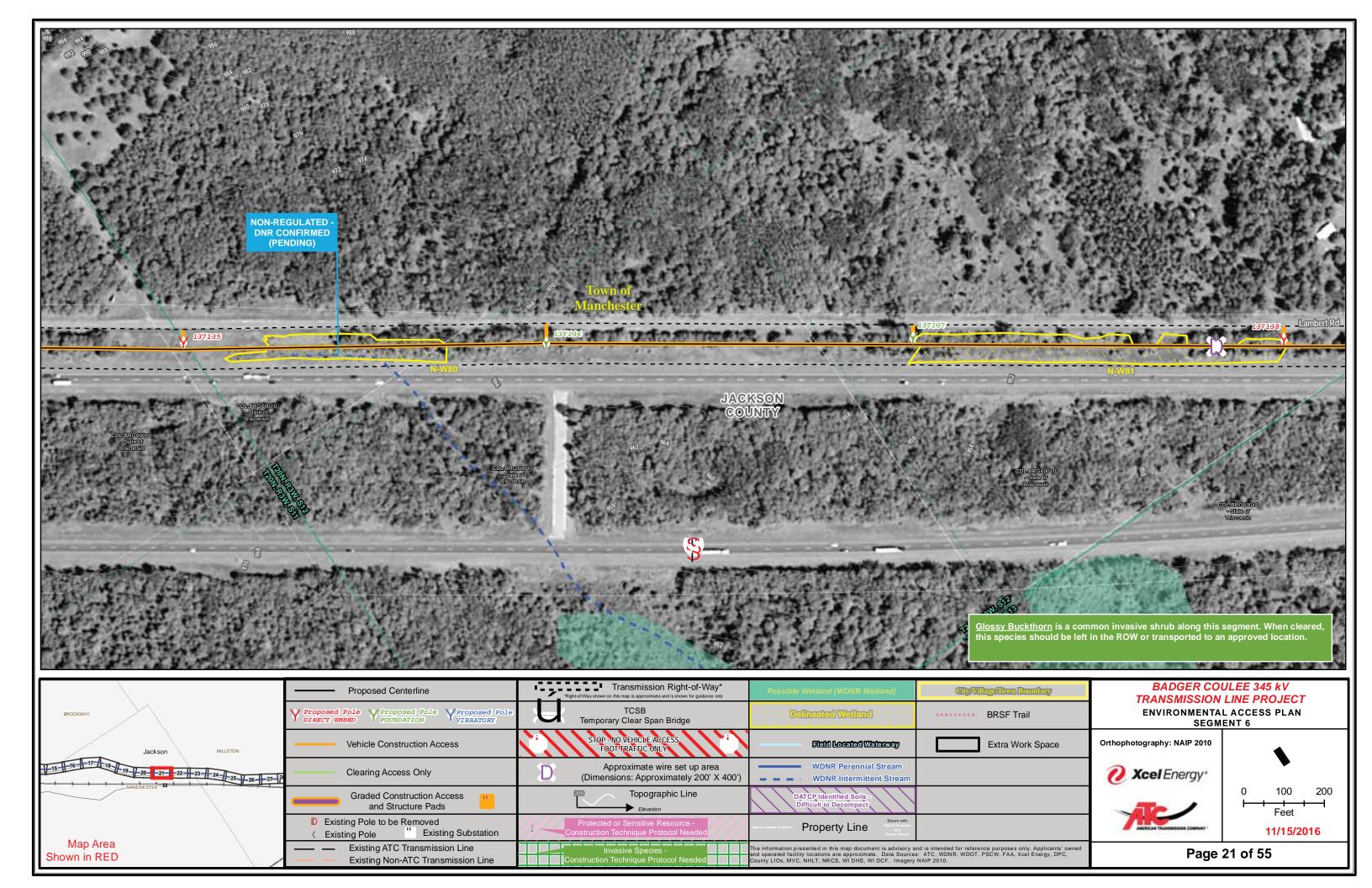


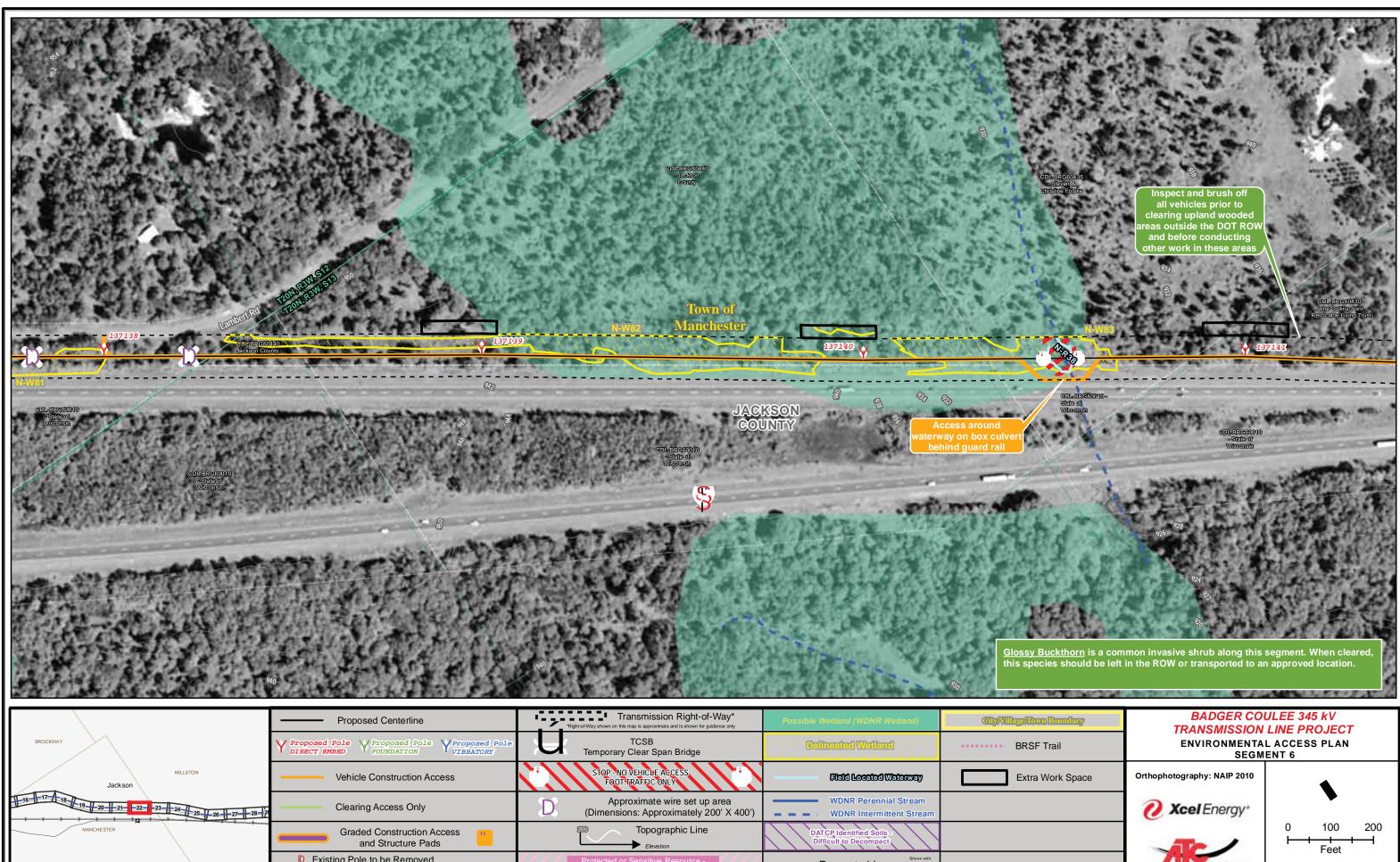
	Clearing Access Only	D Approximate wire set up area (Dimensions: Approximately 200' X 400')	WDNR Perennial Stream WDNR Intermittent Stream
MANCHESTER 121 22 23 24	Graded Construction Access and Structure Pads	Topographic Line Elevation	DATCP Identified Soils - Difficult to Decompact
	 Existing Pole to be Removed Existing Pole Existing Substation 	Protected or Sensitive Resource - Construction Technique Protocol Needed	Property Line Shown with: and Over a Name
Map Area Shown in RED	Existing ATC Transmission Line Existing Non-ATC Transmission Line		The information presented in this map document is advisory and is intended for reference purpose and operated facility locations are approximate. Data Sources: ATC, WDNR, WDOT, PSCW, FAA County LIOs, MVC, NHLT, NRCS, WI DHS, WI DCF. Imagery NAIP 2010.











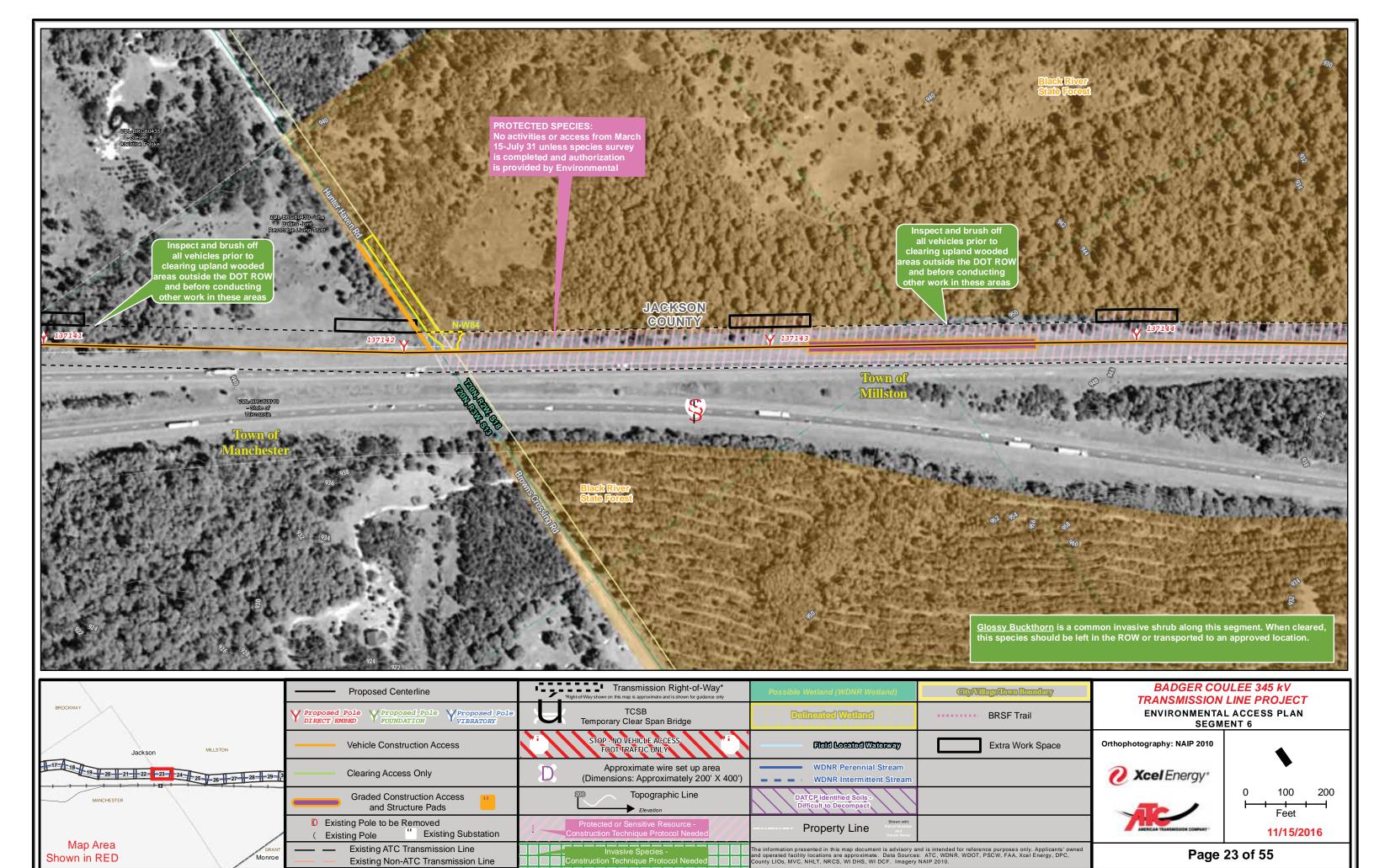
 D
 Existing Pole to be Removed
 Protected or Sensitive Resource -Construction Technique Protocol Needed
 ------ Property Line
 Storm with Protected or Sensitive Resource -Construction Technique Protocol Needed

 Map Area Shown in RED
 ------- Existing ATC Transmission Line
 ------ The information presented in this map document is advisory and is intended for reference purpose and operated facility locations are approximate. Data Sources: ATC, WDNR, WDOT, PSCW, FAA

ses	only	. Applica	nts'	owne
ιА,	Xcel	Energy,	DPO	С,

Page 22 of 55

11/15/2016

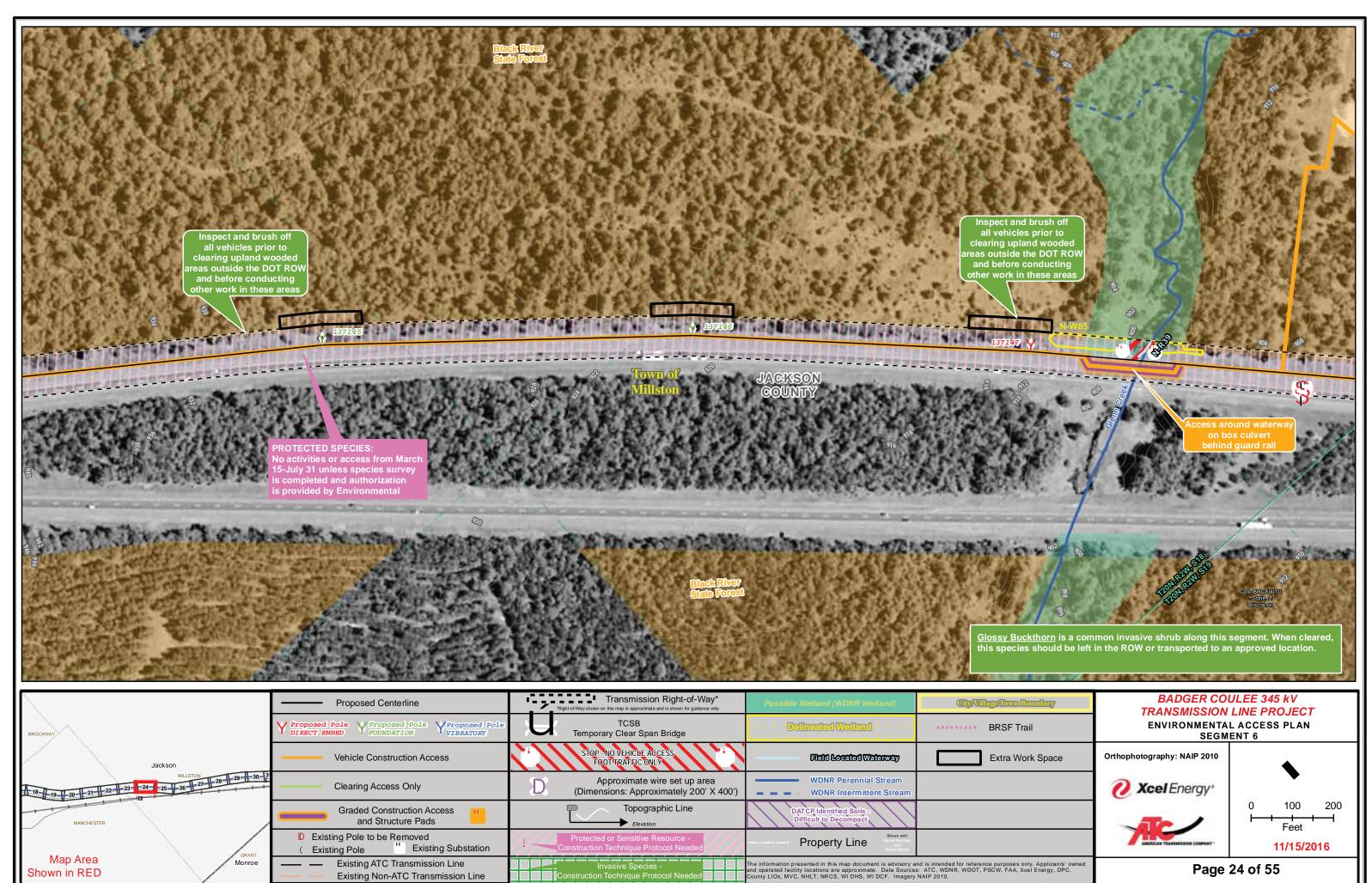


Shown in RED

Existing Non-ATC Transmission Line

ses	only.	Applica	ants'	owne
A A	Xcel	Energy.	DPO	2
·/·,	ACCI	Energy,	DI	σ,

Page 23 of 55

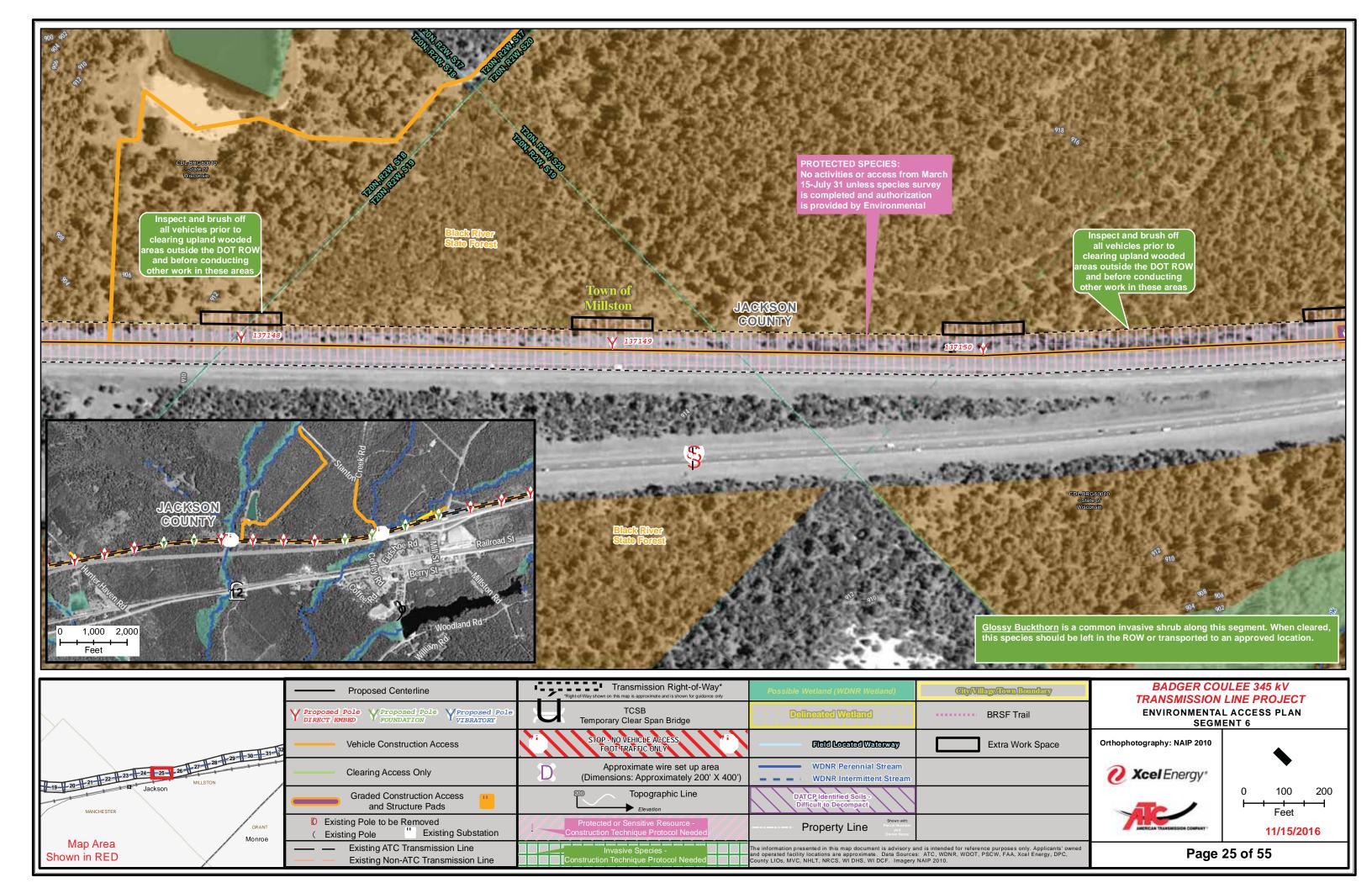


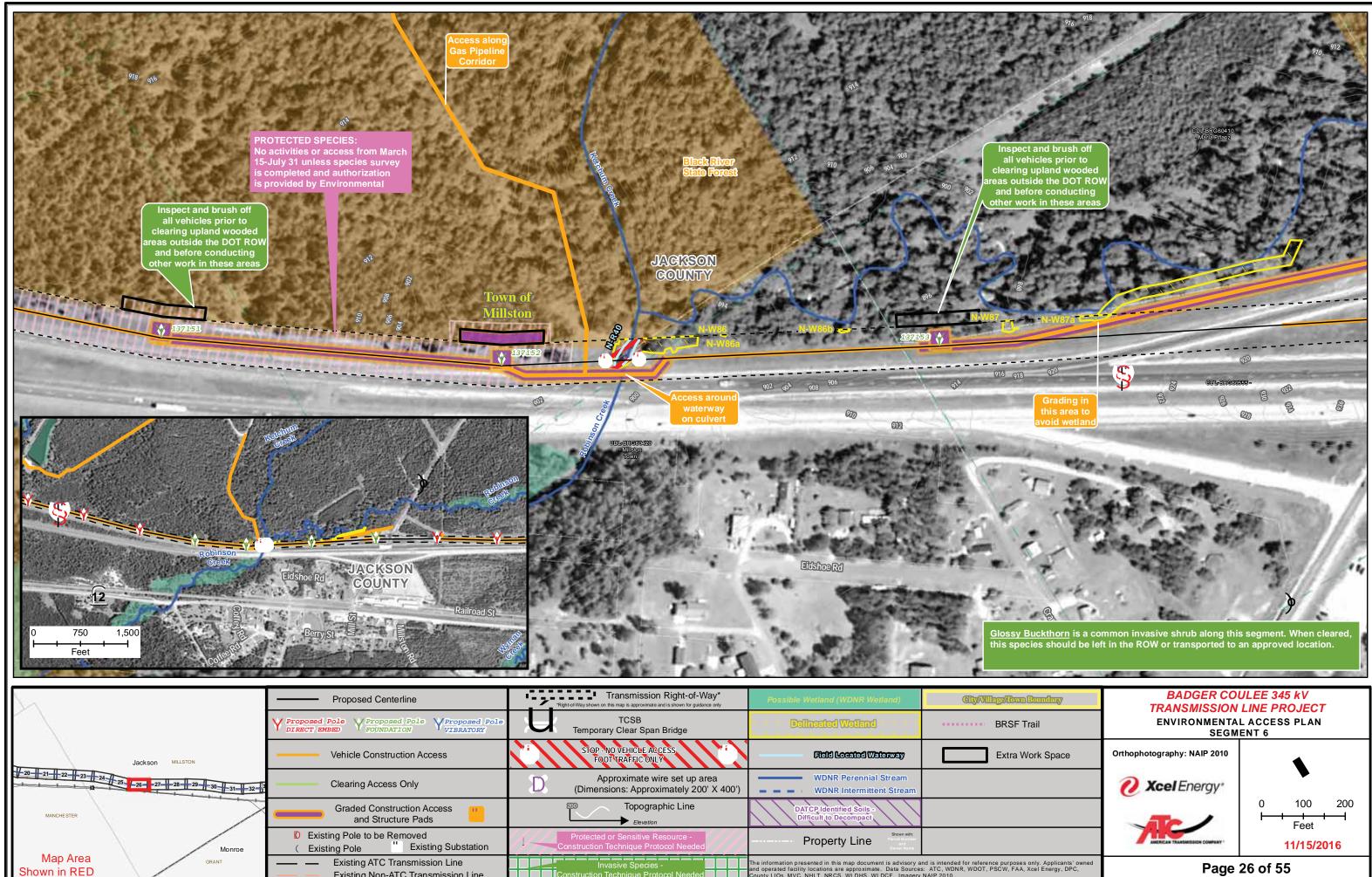
Shown in RED

Existing Non-ATC Transmission Line

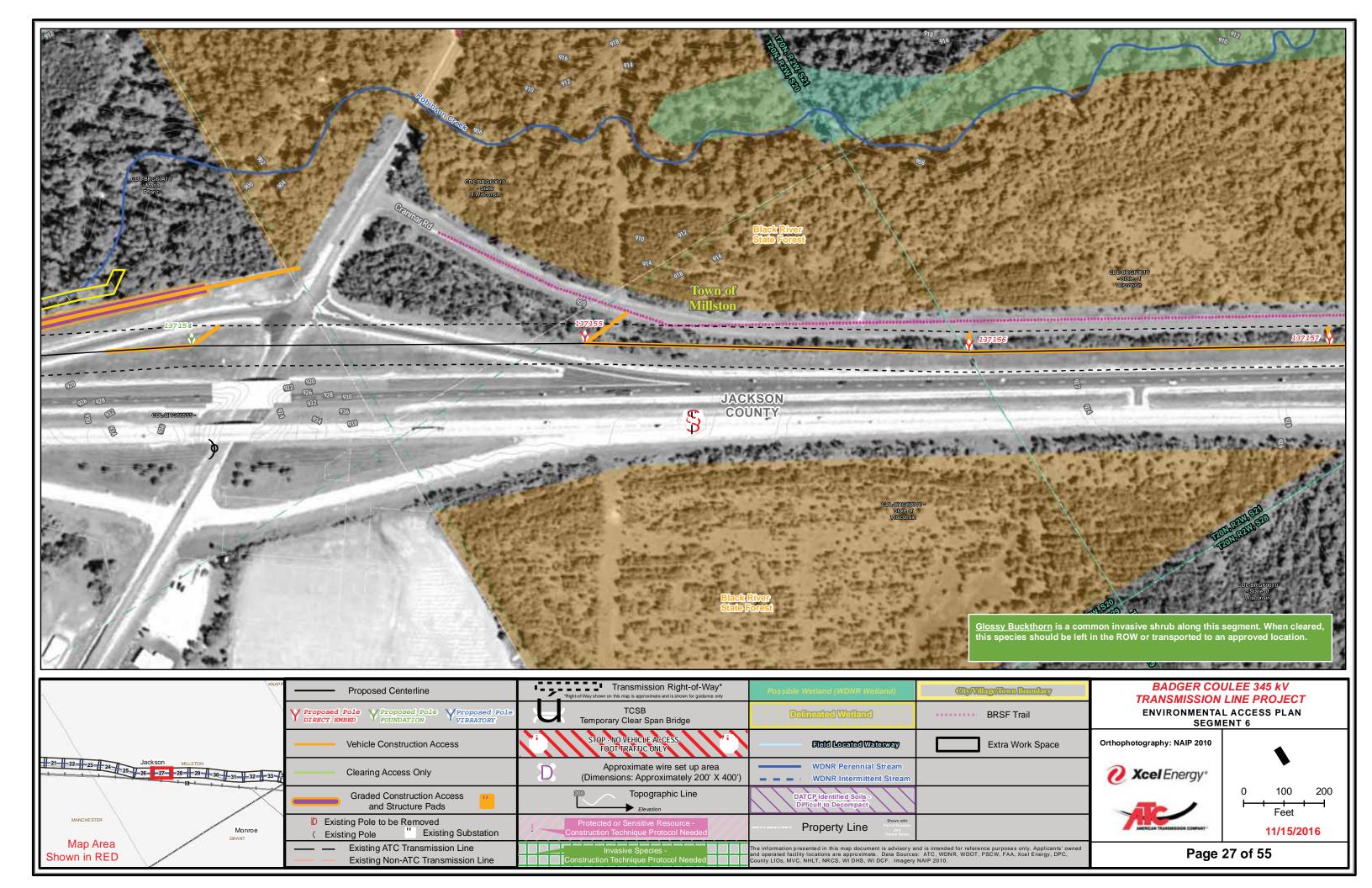
ses	on	ly. /	٩ppl	ica	n ts'	own
ιΑ,	Xce	el E	nerg	дy,	DP	C,

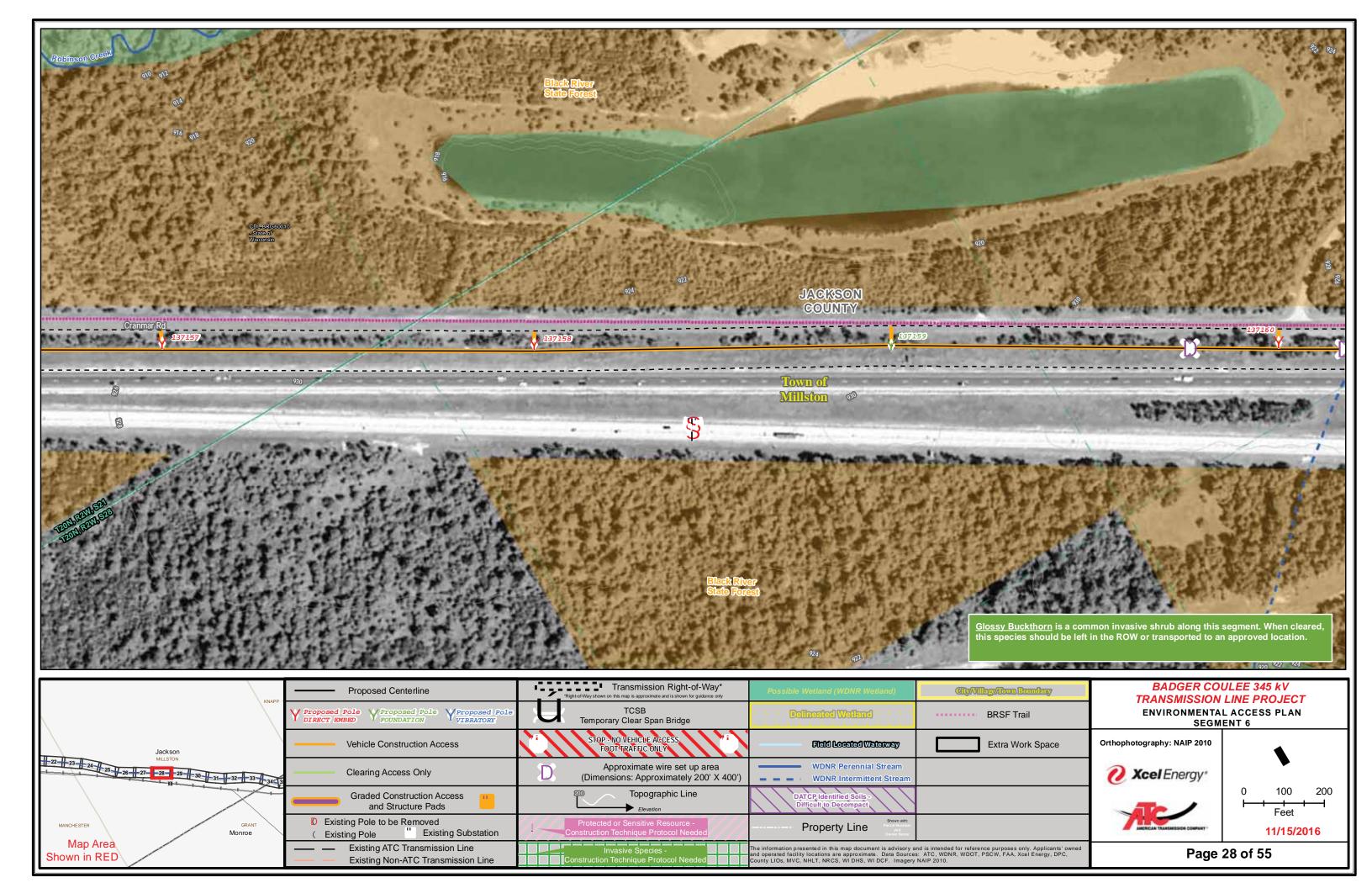
Page 24 of 55

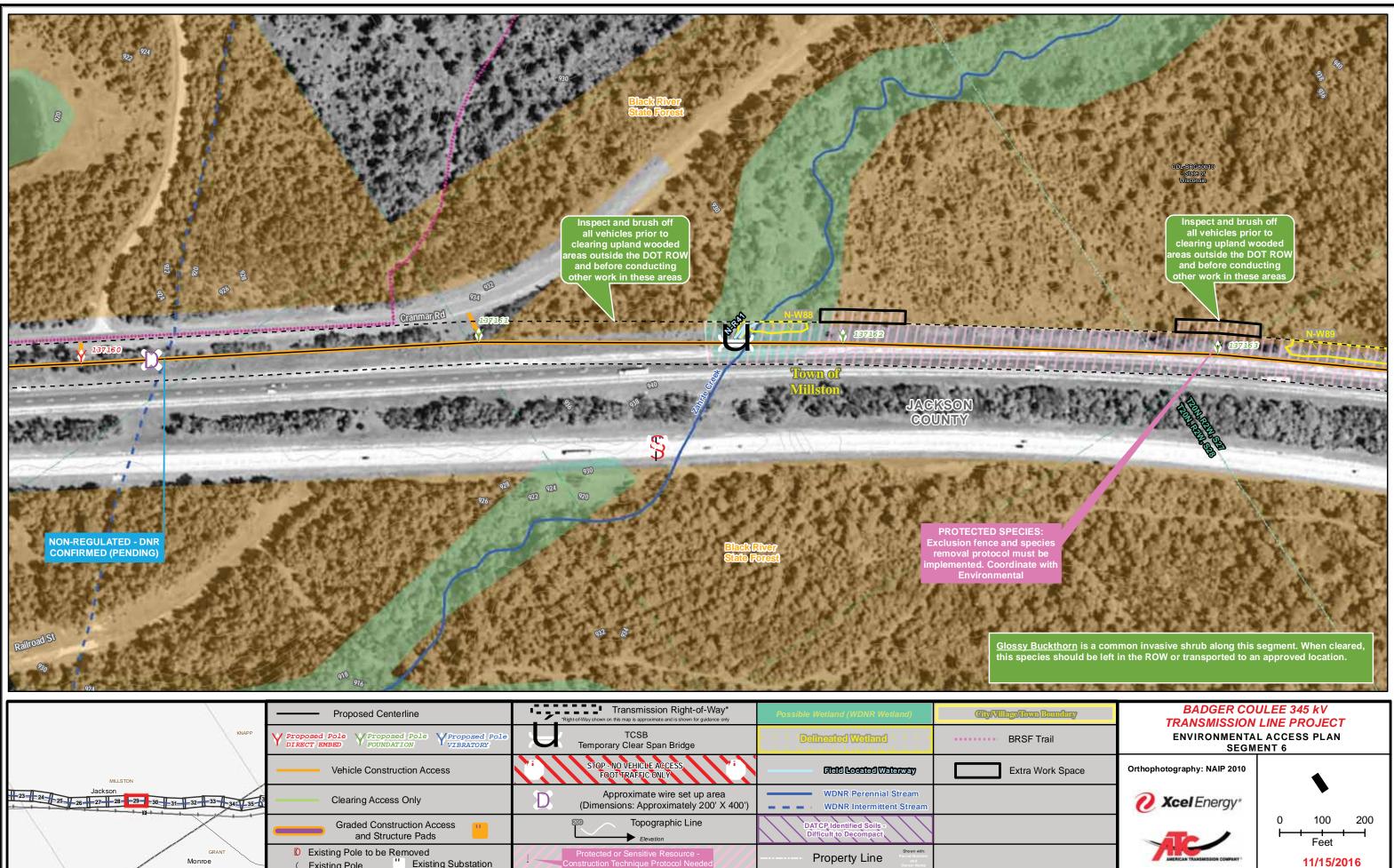




7	Proposed Centerline	*Right-of-Way shown on this map is approximate and is shown for guidance only	Possible Wetland (WDNR Wetland)	City/Village/Lown
	Y Proposed Pole DIRECT EMBED Y Proposed Pole FOUNDATION Y PROPOSED Pole	TCSB Temporary Clear Span Bridge	Defineated Wetland	BRSF T
Jackson MILLSTON	Vehicle Construction Access	STOP - NO VEHICLE AGCESS FOOT ⁴ TRAFFIC ONLY	Field Located Waterway	Extra W
	Clearing Access Only	D Approximate wire set up area (Dimensions: Approximately 200' X 400')	WDNR Perennial Stream WDNR Intermittent Stream	
MANCHESTER	Graded Construction Access and Structure Pads	Elevation	DATCP Identified Soils - Difficult to Decompact	
Monroe	 Existing Pole to be Removed Existing Pole Existing Substation 	Protected or Sensitive Resource - Construction Technique Protocol Needed	Property Line Shown with: Parce Number Owner Name	
Map Area Shown in RED	— Existing ATC Transmission Line — Existing Non-ATC Transmission Line	Invasive Species -	The information presented in this map document is advisory a and operated facility locations are approximate. Data Sources county LIOs, MVC, NHLT, NRCS, WI DHS, WI DCF. Imagery	S: ATC, WDNR, WDOT, PSCW, FAA,



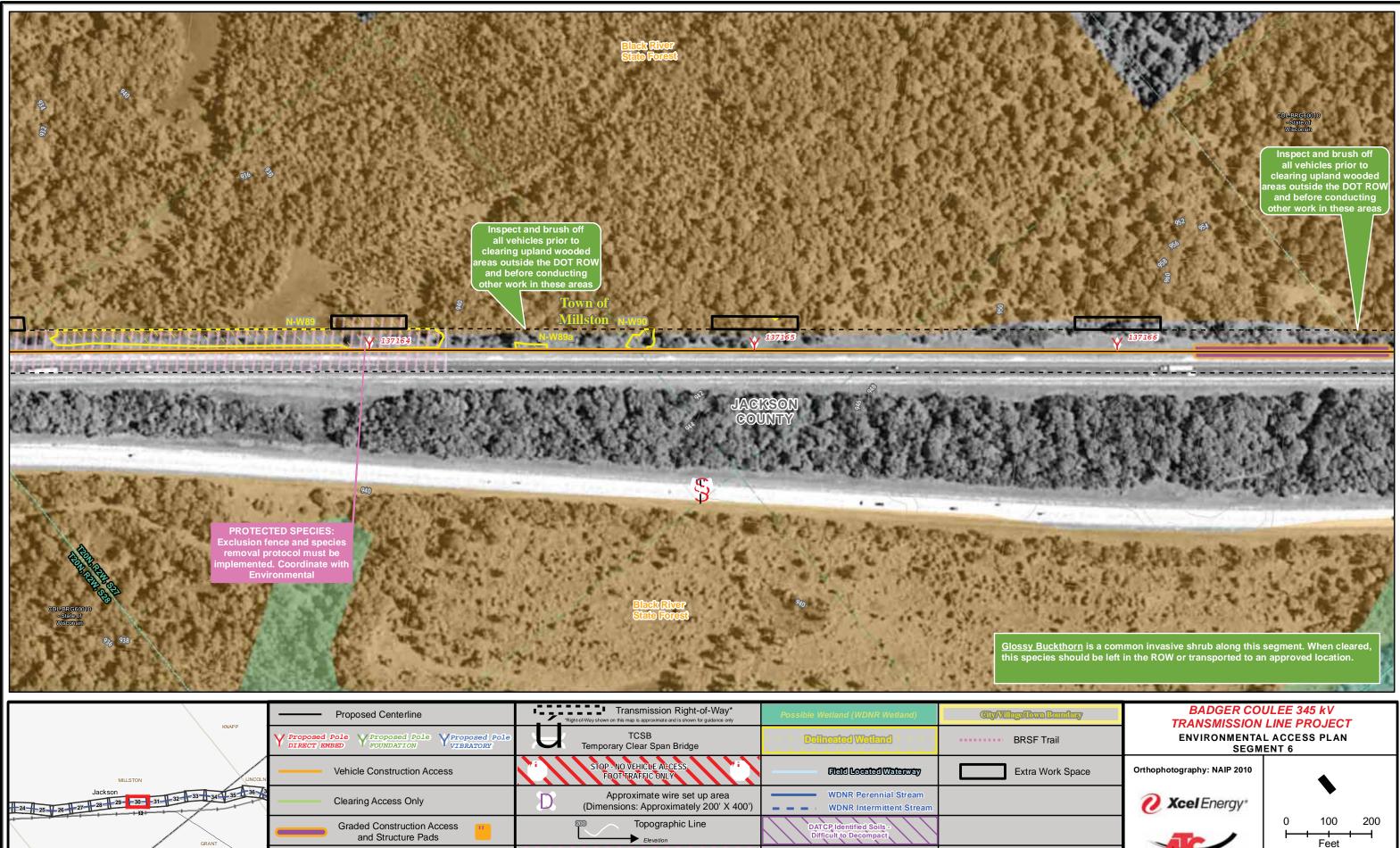




		*Right-of-Way shown on this map is approximate and is shown for guidance only	rossible medana (mbirri medana)	Carly Amiles 2000
KNAPP	Y Proposed Pole Y Proposed Pole Y Proposed Pole DIRECT EMBED Y POUNDATION Y DIRATORY	TCSB Temporary Clear Span Bridge	Non-Network Network Non-Network Network	BRSF T
MILLSTON	Vehicle Construction Access	STOP - NO VEHICLE AGCESS, FOOT TRAFFIC ONLY	Field Located Waterway	Extra V
Jackson -23 24 25 26 27 28 29 30 31 32 33 34 34 35 13 -29 30 31 31 32 33 34 34 35 13	Clearing Access Only	D Approximate wire set up area (Dimensions: Approximately 200' X 400')	WDNR Perennial Stream WDNR Intermittent Stream	
	Graded Construction Access and Structure Pads	Topographic Line Elevation	DATCP Identified Soils - Difficult to Decompact	
GRANT Monroe	 Existing Pole to be Removed Existing Pole Existing Substation 	Protected or Sensitive Resource - Construction Technique Protocol Needed	Property Line Shown with: Property Line and Owner Name	
Shown in RED	Existing ATC Transmission Line Existing Non-ATC Transmission Line	Invasive Species -	The information presented in this map document is advisory ar and operated facility locations are approximate. Data Sources County LIOs, MVC, NHLT, NRCS, WI DHS, WI DCF. Imagery	: ATC, WDNR, WDOT, PSCW, FAA,

ses only. Applicants' owne AA, Xcel Energy, DPC,

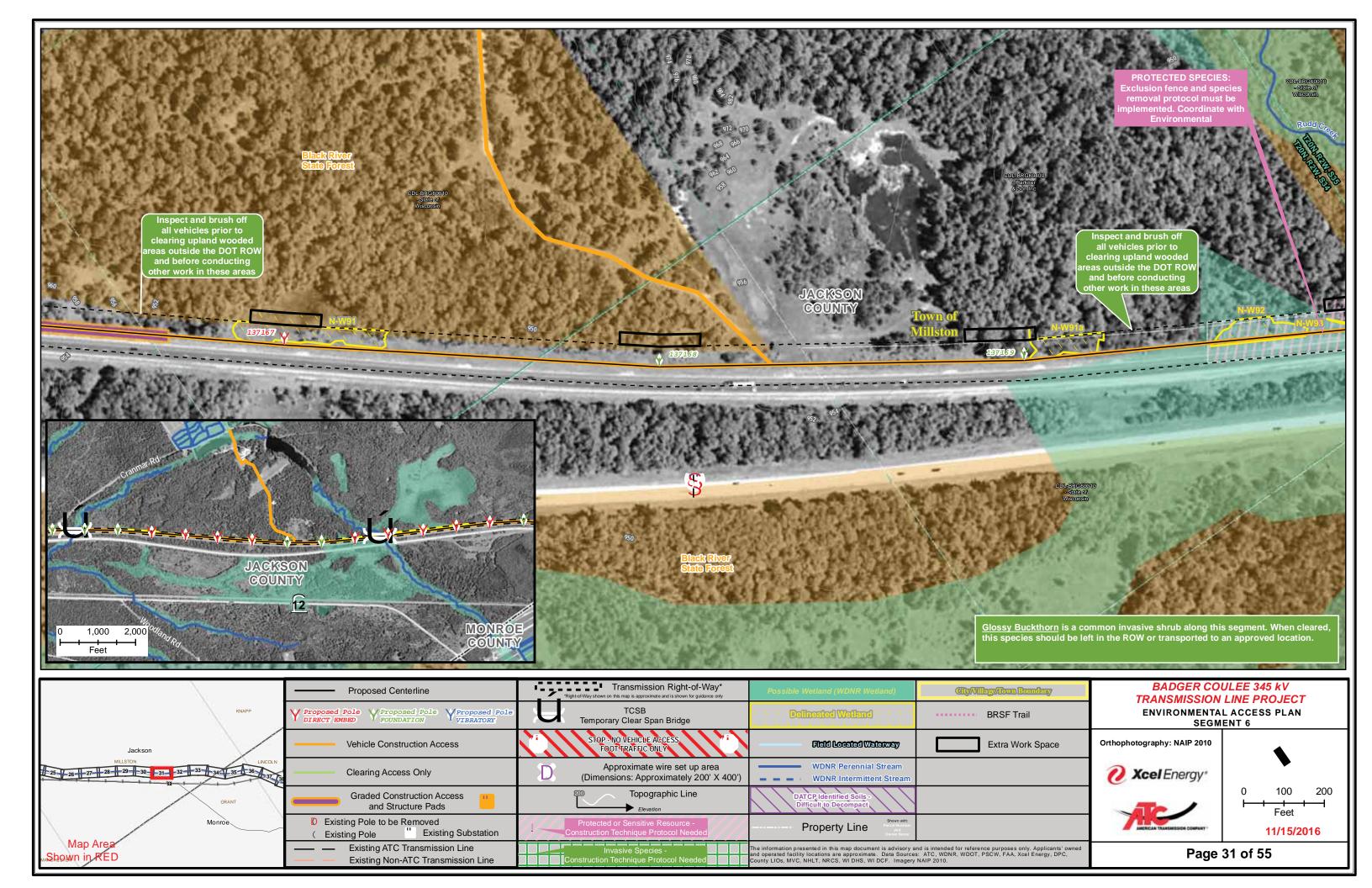
Page 29 of 55

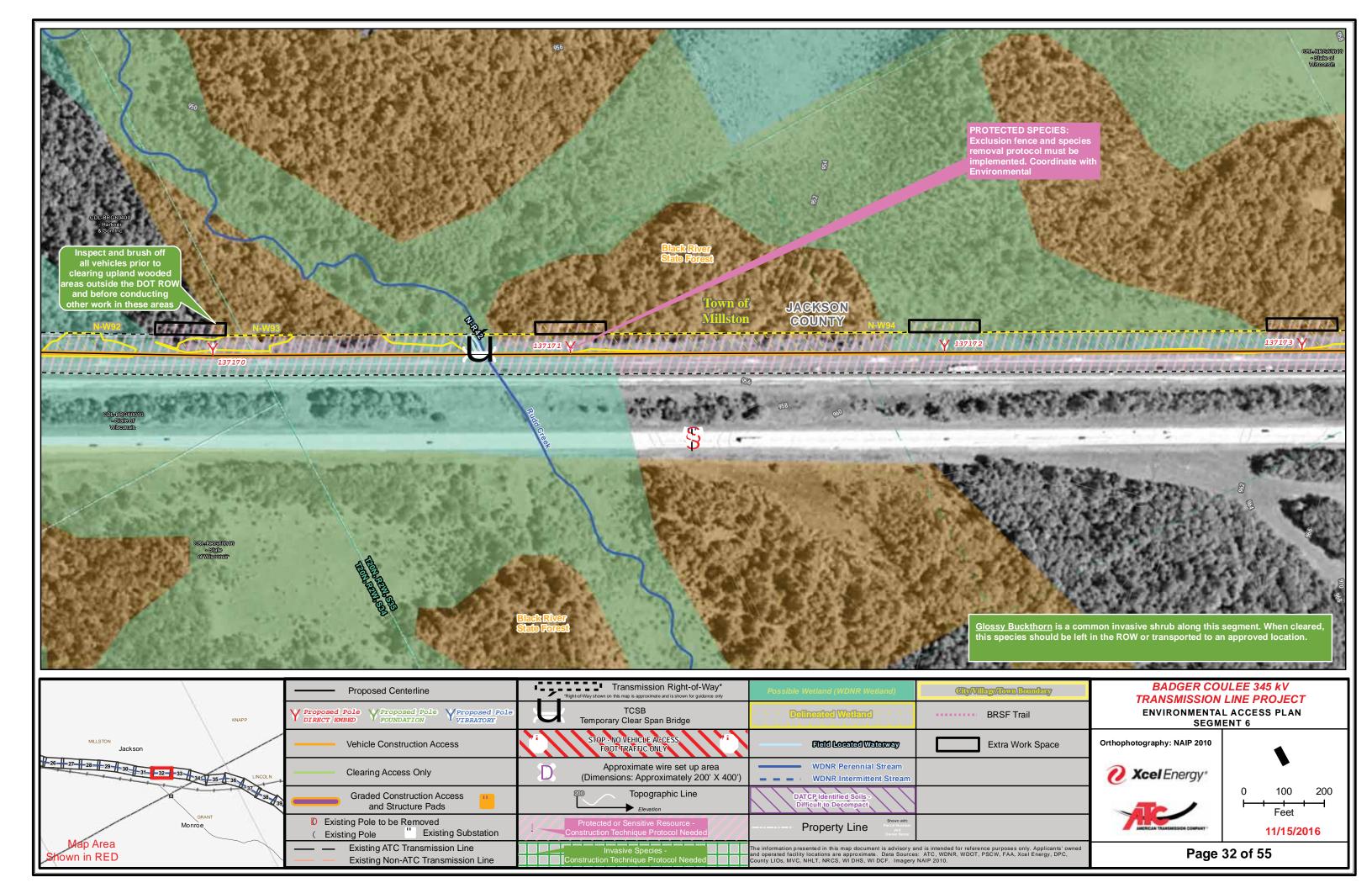


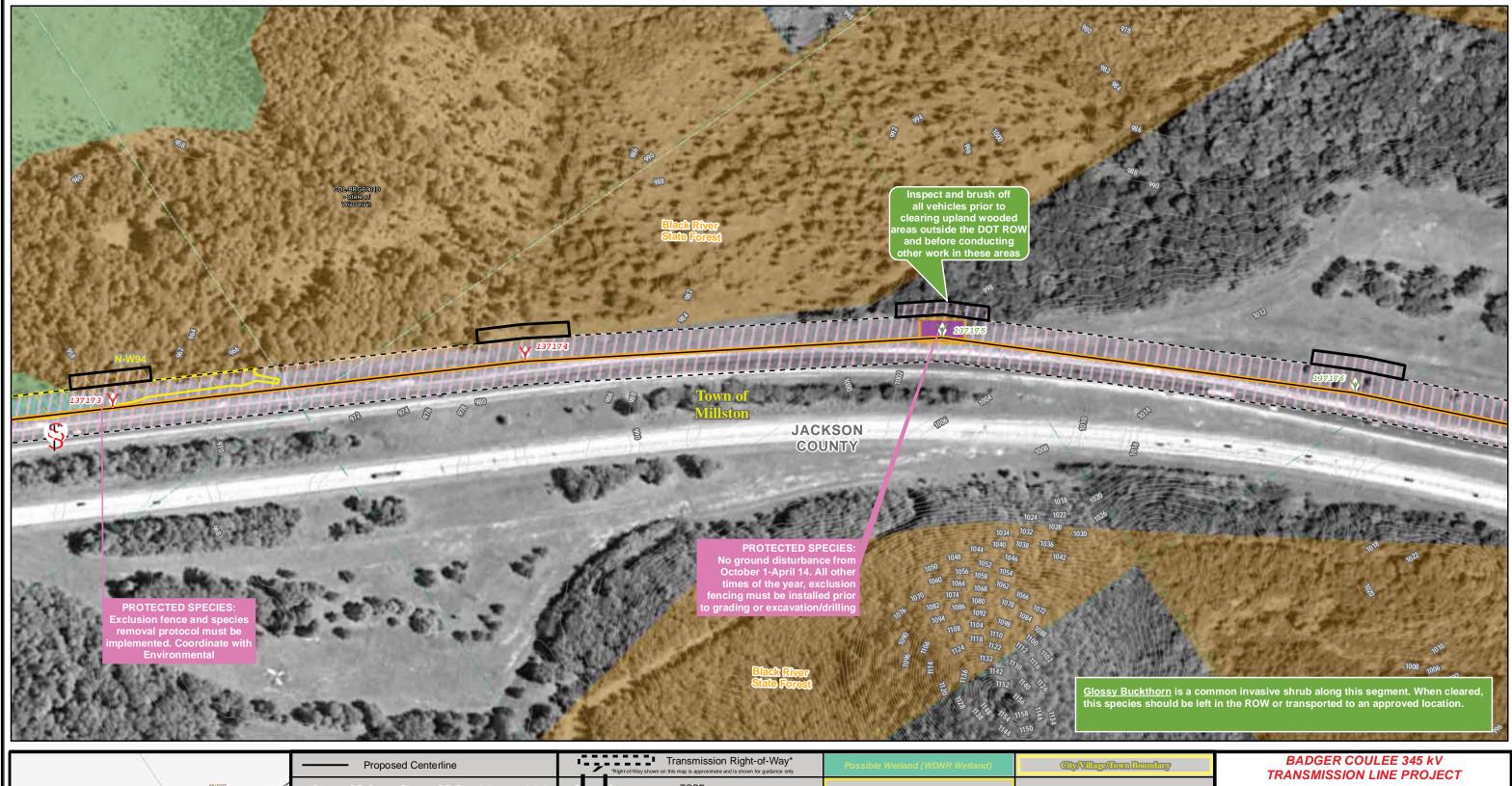
ses	only	Applica	nts'	owne
AA,	Xcel	Energy,	DPO	С,

Page 30 of 55

11/15/2016

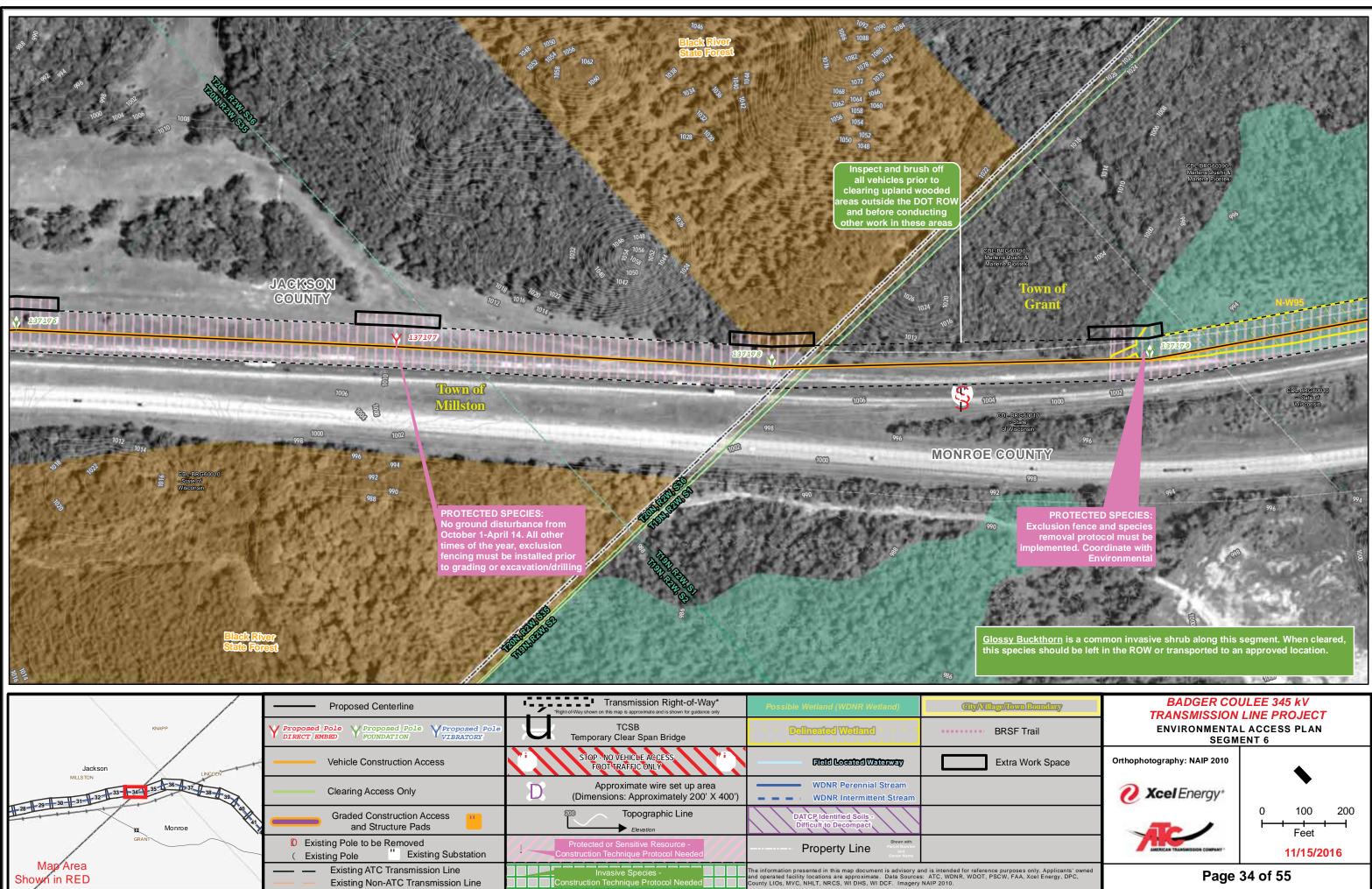






	Proposed Centerline	*Right-of-Way shown on this map is approximate and is shown for guidance only	Possible Wetland (WDNR Wetland)	City/Village/Ibwn
KNAPP	Y Proposed Pole Y Proposed Pole Y Proposed Pole VIBRATORY	TCSB Temporary Clear Span Bridge	Delineated Welland	BRSF T
Jackson MILLSTON	Vehicle Construction Access	STOP - NO VEHICLE AGCESS FOOT TRAFFIC ONLY	Field Located Waterway	Extra W
	Clearing Access Only	D Approximate wire set up area (Dimensions: Approximately 200' X 400')	WDNR Perennial Stream WDNR Intermittent Stream	
133 - 33 33 - 33 40 Monroe	Graded Construction Access and Structure Pads	Topographic Line Elevation	DATCP Identified Soils - Difficult to Decompact	
GRANT	 Existing Pole to be Removed Existing Pole Existing Substation 	Protected or Sensitive Resource - Construction Technique Protocol Needed	Property Line Shown with: Part Number owner Name	
Map Area Shawn in RED	Existing ATC Transmission Line Existing Non-ATC Transmission Line	Invasive Species -	The information presented in this map document is advisory a and operated facility locations are approximate. Data Source: County LIOs, MVC, NHLT, NRCS, WI DHS, WI DCF. Imagery	nd is intended for reference purposes s: ATC, WDNR, WDOT, PSCW, FAA, X NAIP 2010.

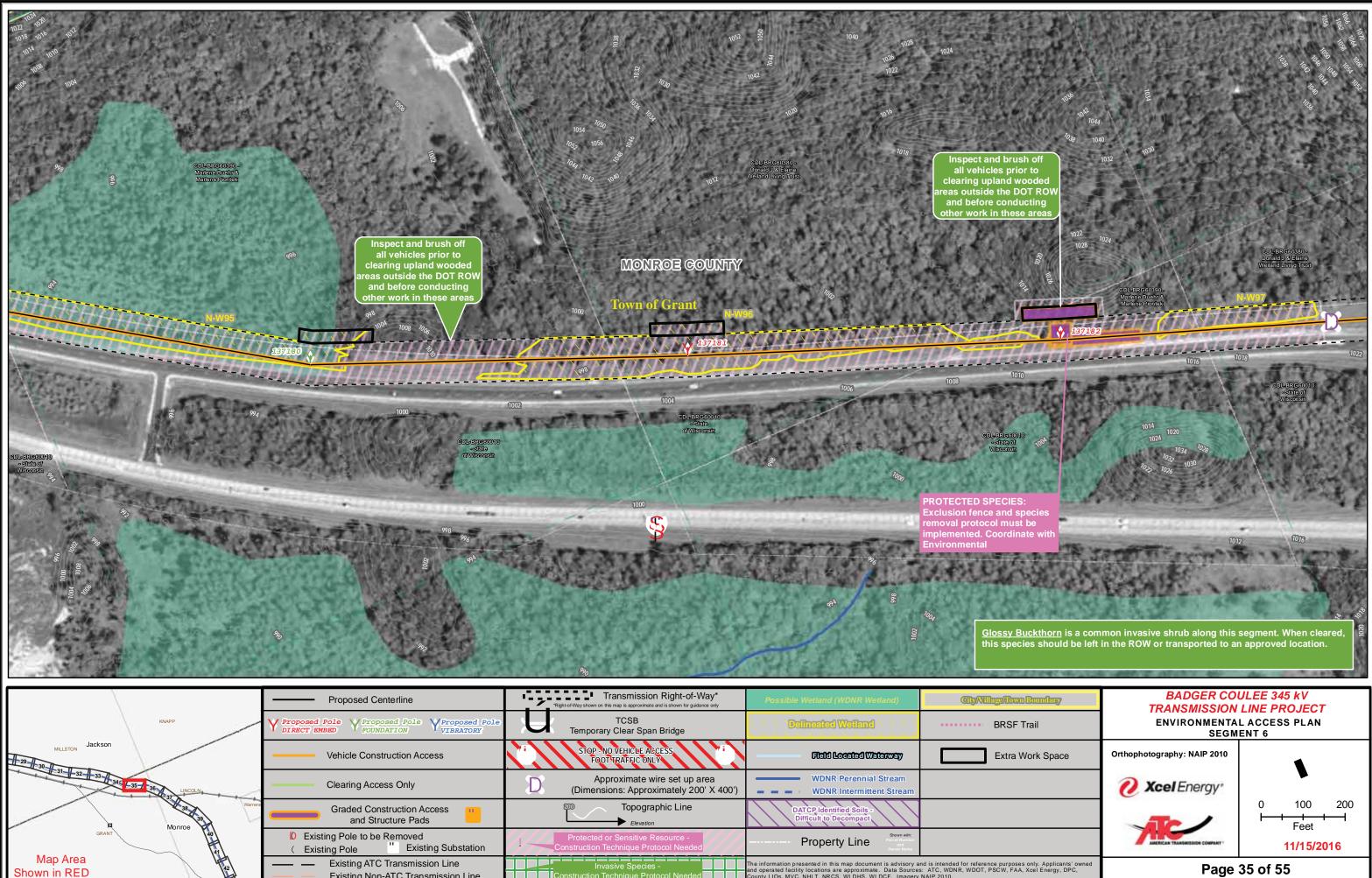
Trail ENVIRONMENTAL ACCESS PLAN SEGMENT 6				
Work Space	Orthophotography: NAIP 2010			
	🕖 Xcel Energy*	0	100	200
		0 	100 + + Feet	200 +1
	AMERICAN TRANSMISSION COMPANY		11/15/2	016
ses only. Applicants' owned NA, Xcel Energy, DPC,	Page	33 of {	55	



Construction Technique Protocol Nee

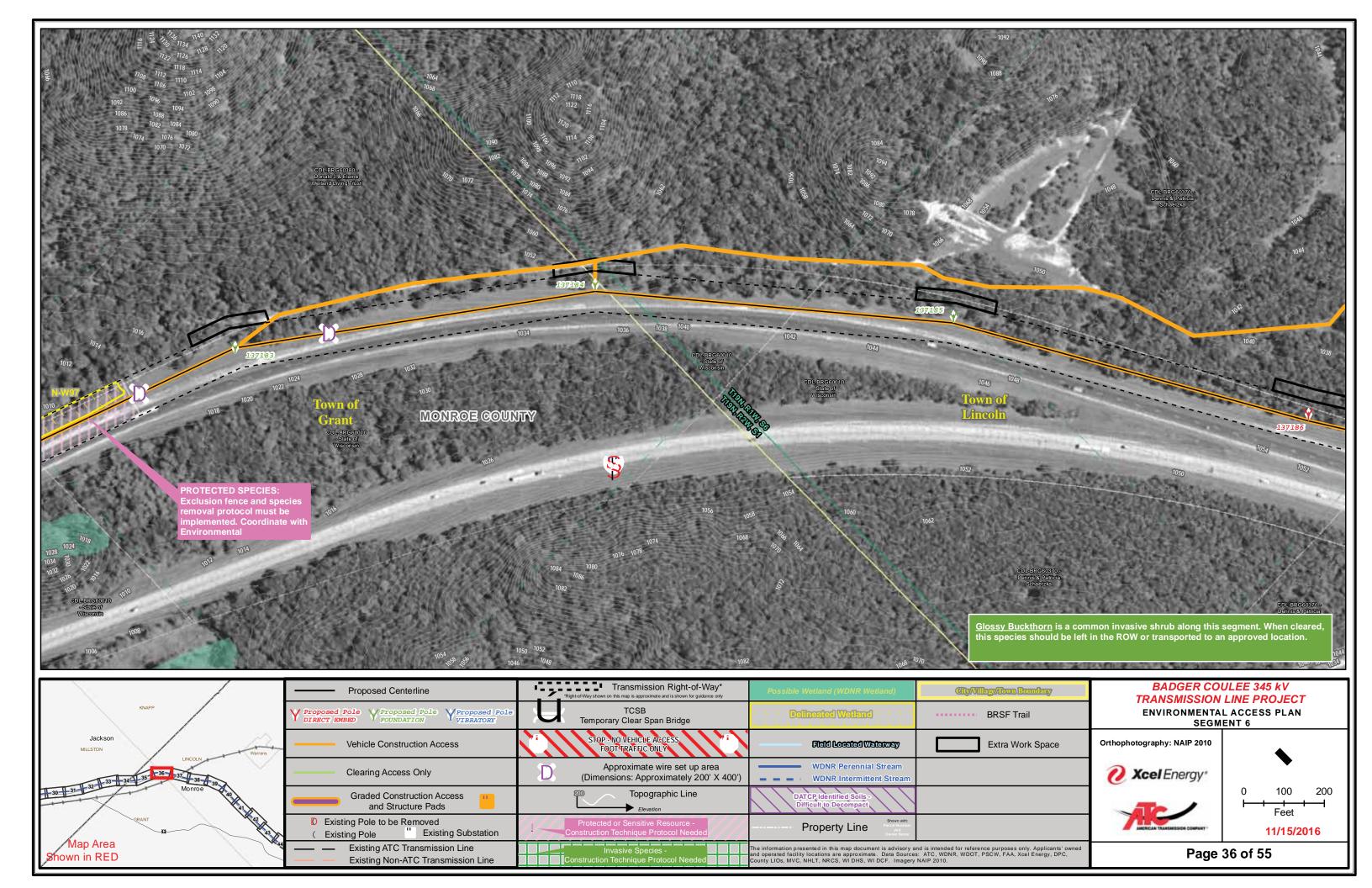
Existing Non-ATC Transmission Line

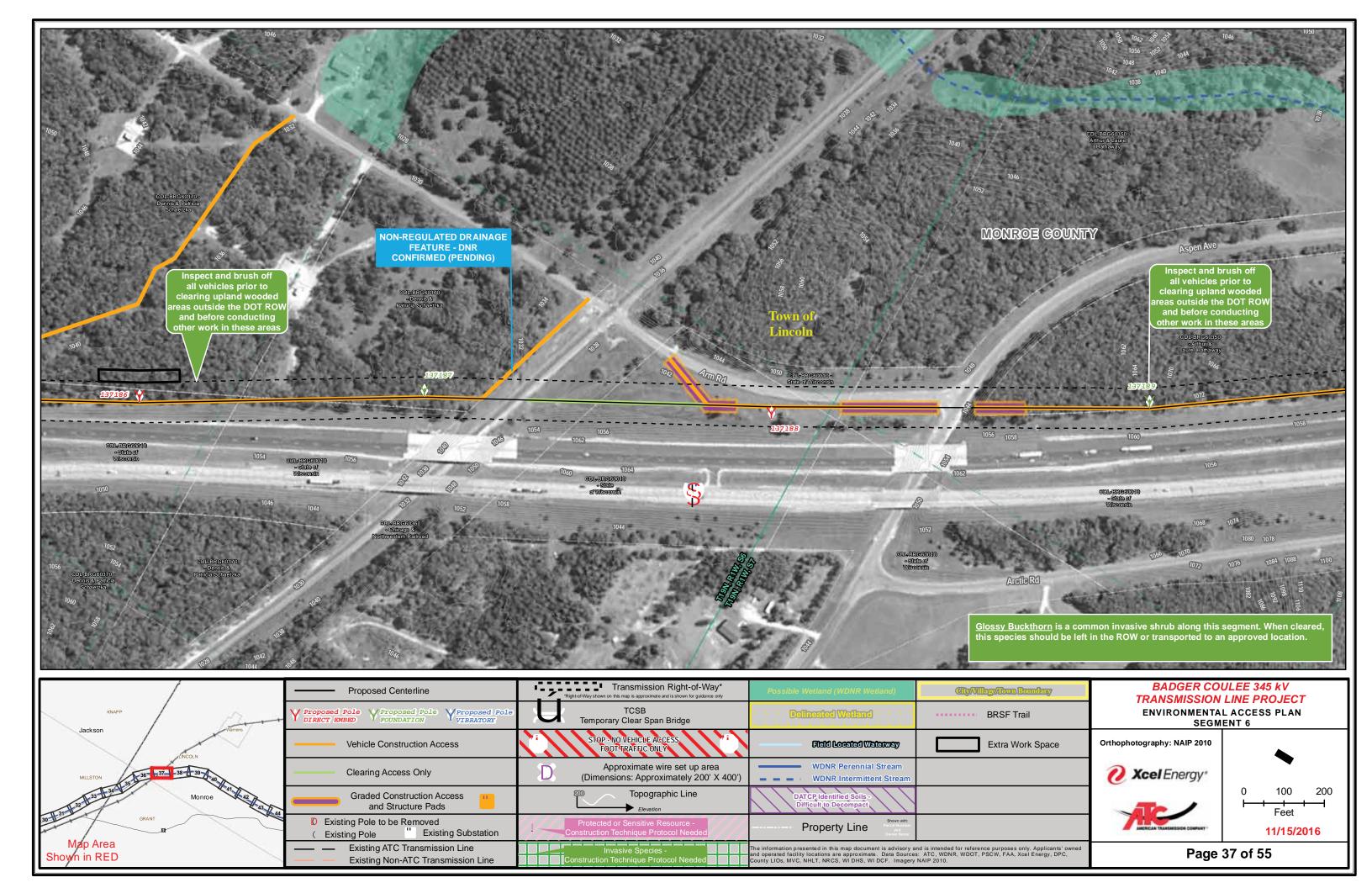
Page 34 of 55

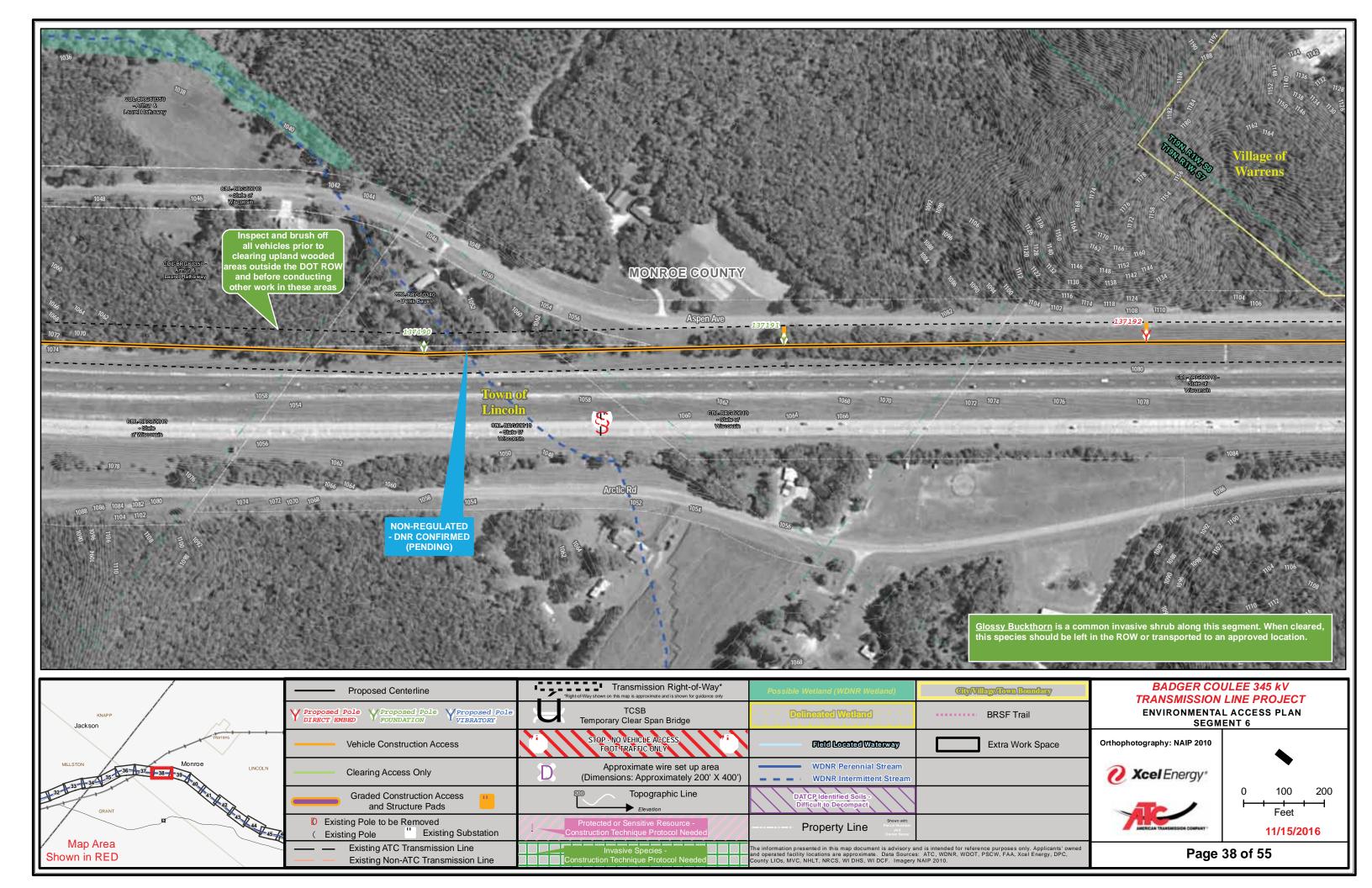


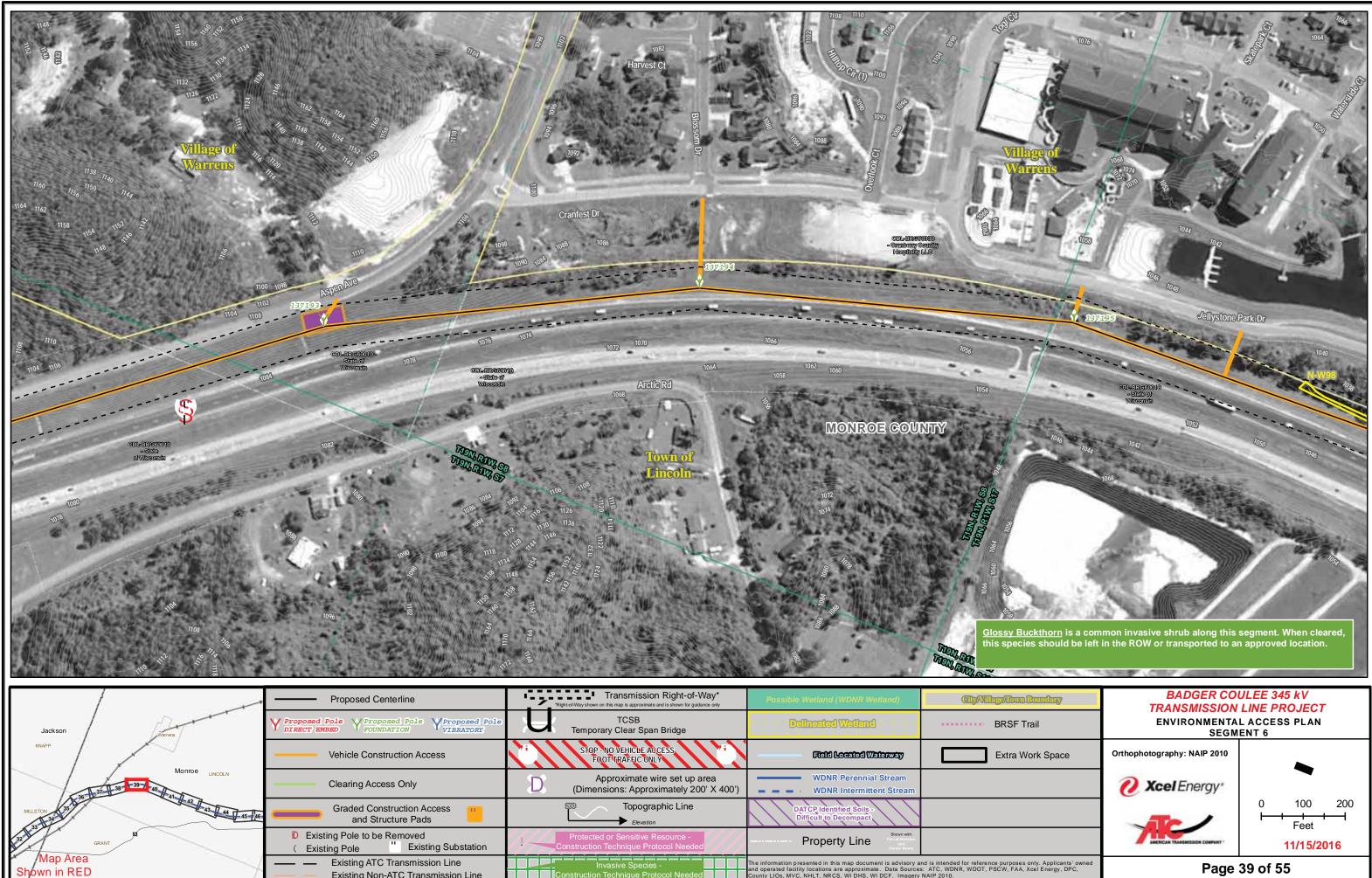
Shown in RED Existing Non-ATC Transmission Line

TI STOP - NO VEHICILE ACCESS FOOT TRAFFIC ONLY	Field Located Waterway	Extra V
D Approximate wire set up area (Dimensions: Approximately 200' X 400')	WDNR Perennial Stream WDNR Intermittent Stream	
Topographic Line Elevation	DATCP Identified Soils - Difficult to Decompact	
Protected or Sensitive Resource - Construction Technique Protocol Needed	Property Line Shown with:	
	The information presented in this map document is advisory a and operated facility locations are approximate. Data Source: County LIOs, MVC, NHLT, NRCS, WI DHS, WI DCF. Imagery	s: ATC, WDNR, WDOT, PSCW, FAA

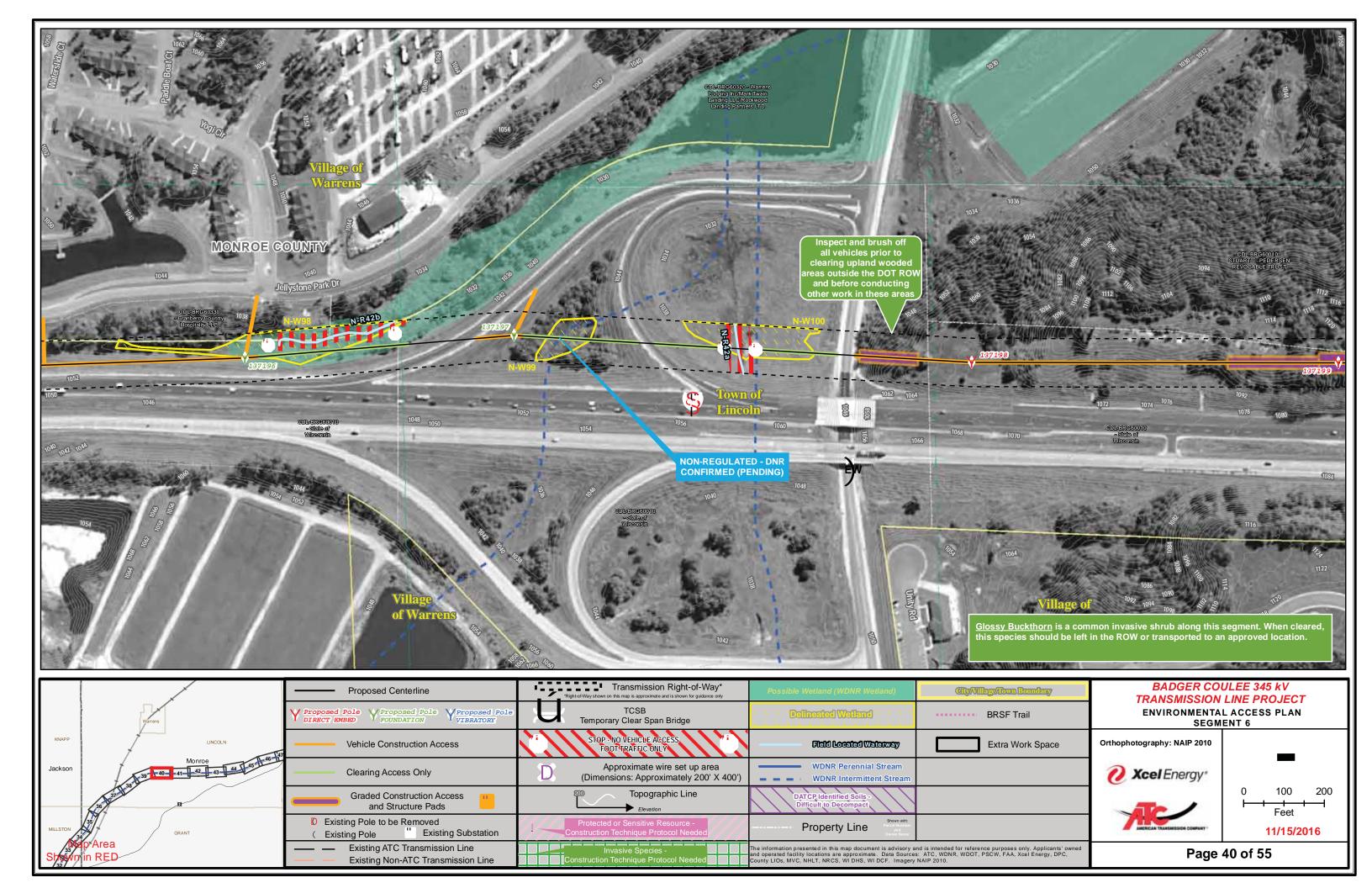


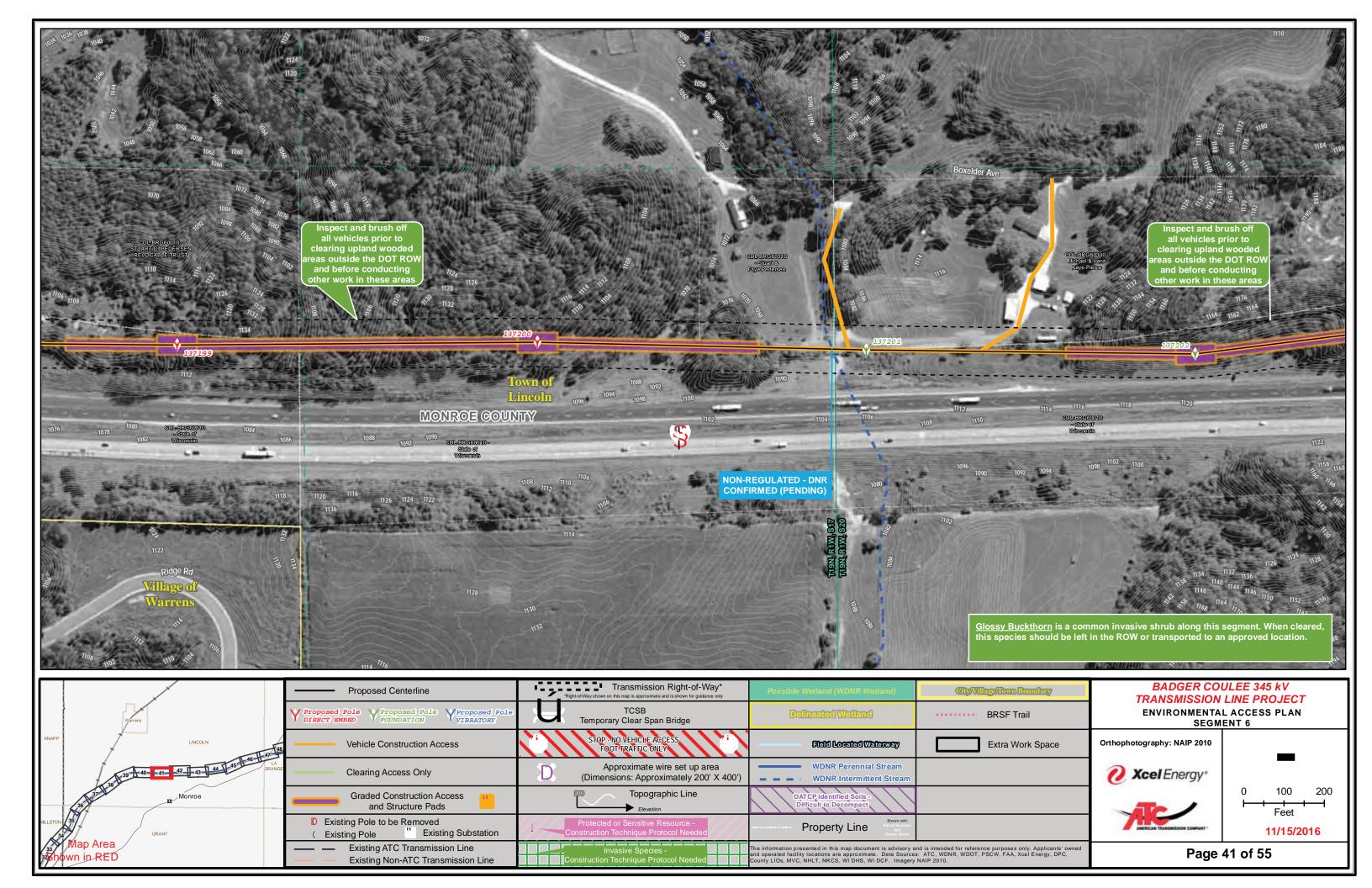


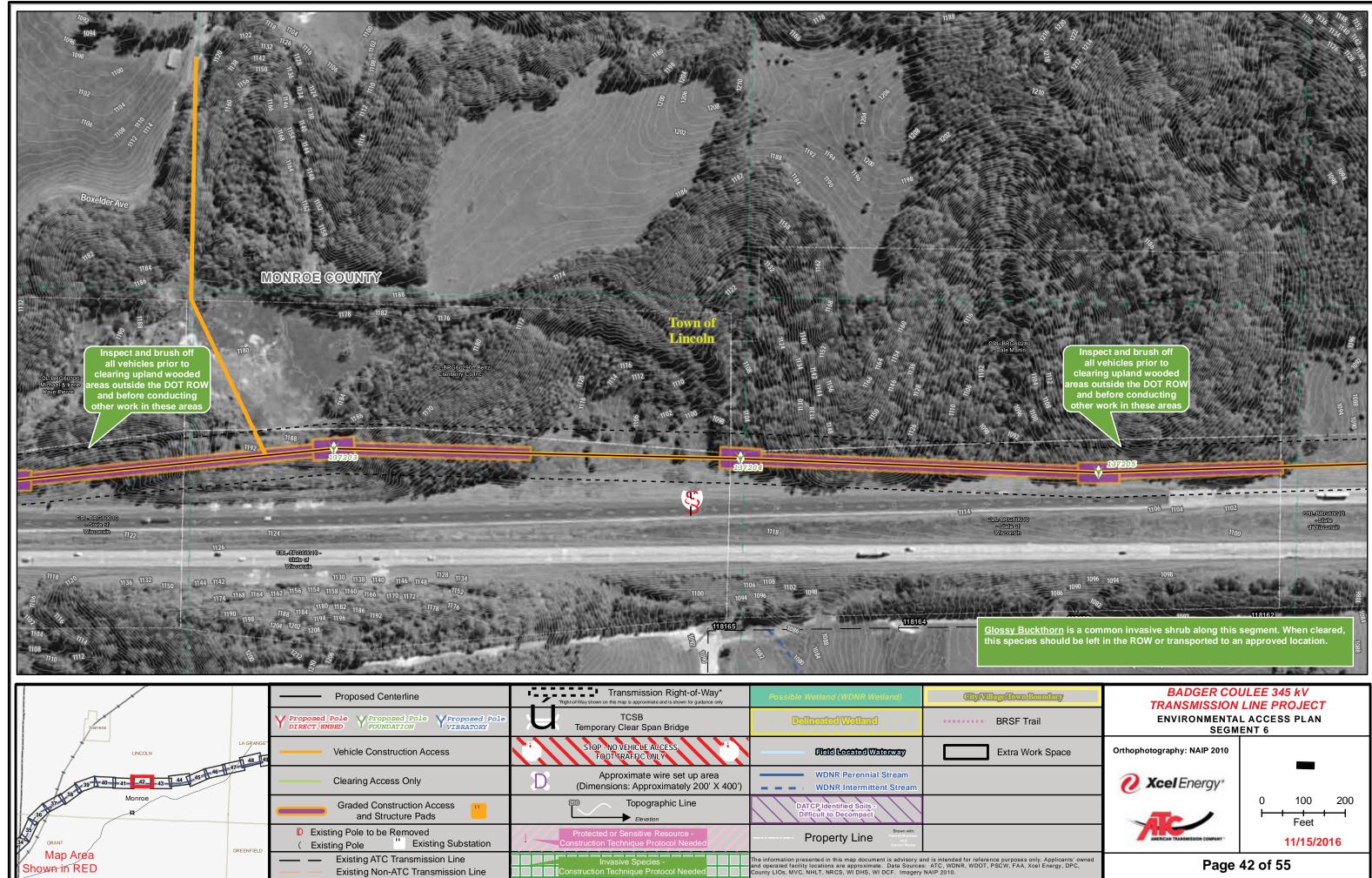




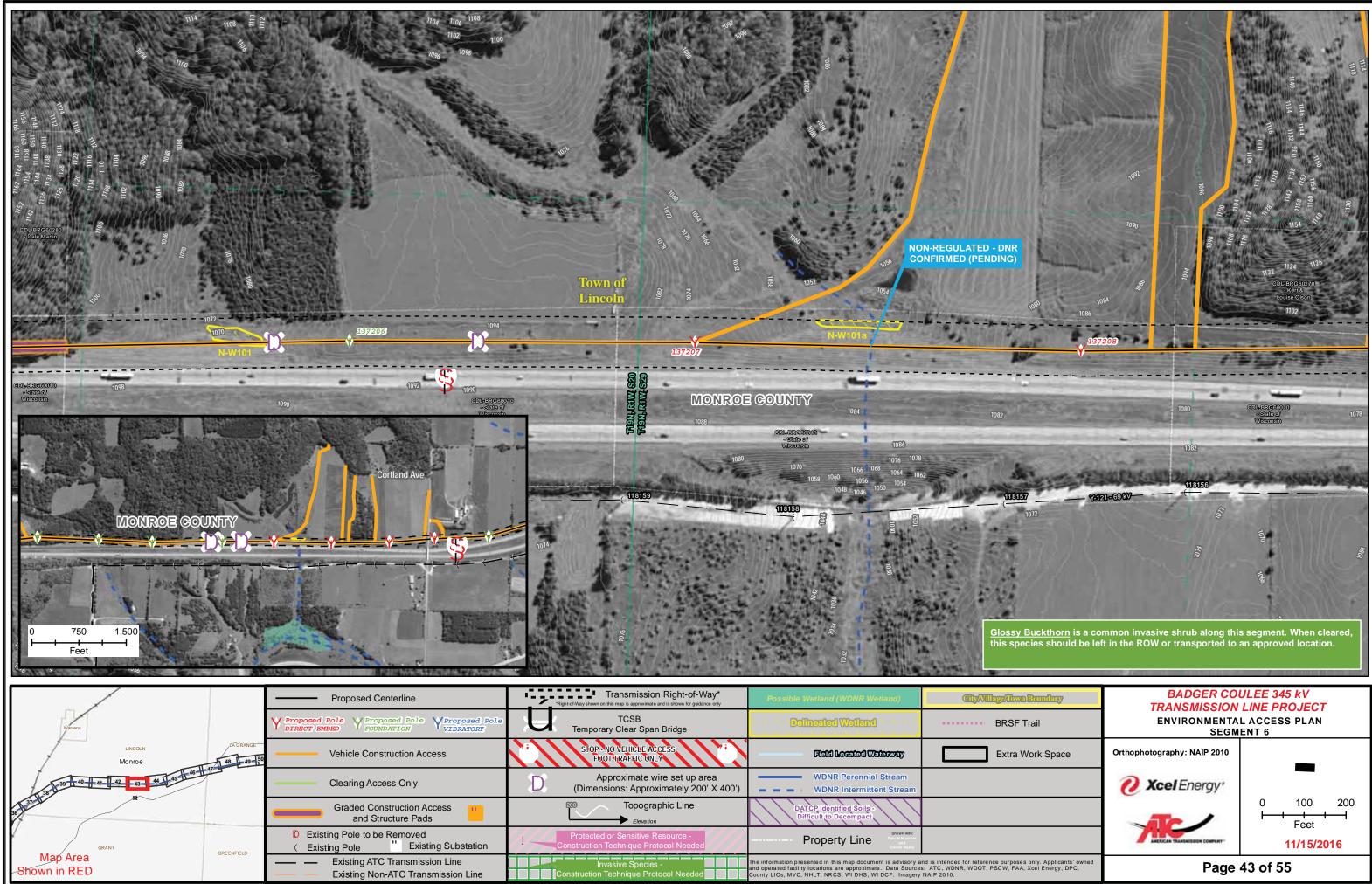
	Proposed Centerline	Transmission Right-of-Way*	Possible Wetland (WDNR Wetland)	City/Villags/Ibw
Jackson	Y Proposed Pole Y Proposed Pole Pole VIERATORY	TCSB Temporary Clear Span Bridge	Delineated Welland	BRSF 1
KNAPP	Vehicle Construction Access	STOP - NO VEHICLE ACCESS FOOT TRAFFIC ONLY	Field Located Waterway	Extra V
Monroe LINCOLN 36 37 38 39 7 40 41 41 42 43 11 44	Clearing Access Only	D Approximate wire set up area (Dimensions: Approximately 200' X 400')	WDNR Perennial Stream WDNR Intermittent Stream	
MILSTON 35 36 37 1 441 42 43 44 45 46	Graded Construction Access and Structure Pads	Topographic Line Elevation	DATCP Identified Soils - Difficult to Decompact	
32 GRANT	 Existing Pole to be Removed Existing Pole Existing Substation 	Protected or Sensitive Resource - Construction Technique Protocol Needed	Property Line Shown with:	
Map Area Shown in RED	Existing ATC Transmission Line Existing Non-ATC Transmission Line	Invasive Species -	The information presented in this map document is advisory a and operated facility locations are approximate. Data Source: County LIOs, MVC, NHLT, NRCS, WI DHS, WI DCF. Imagery	nd is intended for reference purposes s: ATC, WDNR, WDOT, PSCW, FAA, NAIP 2010.



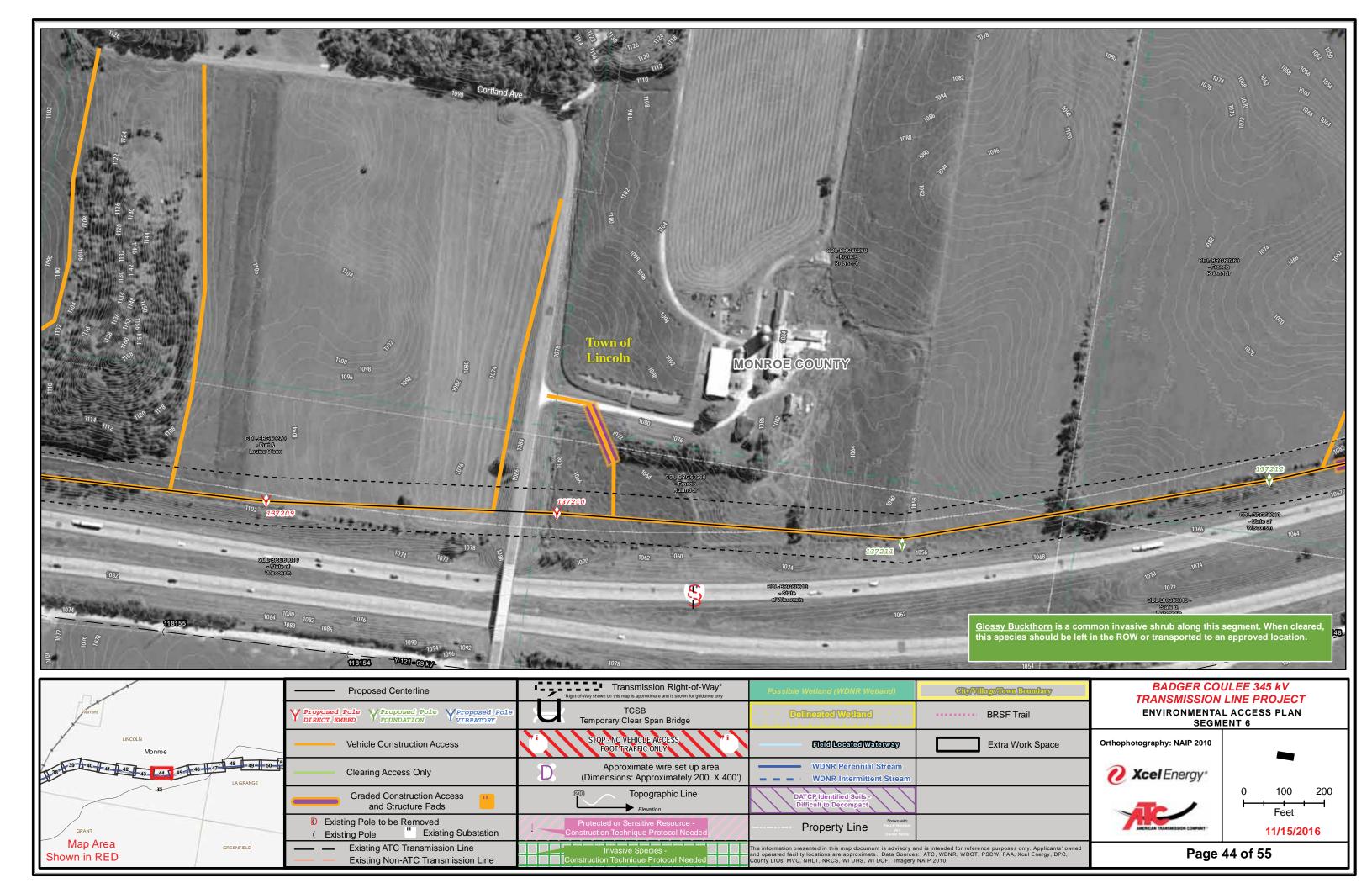


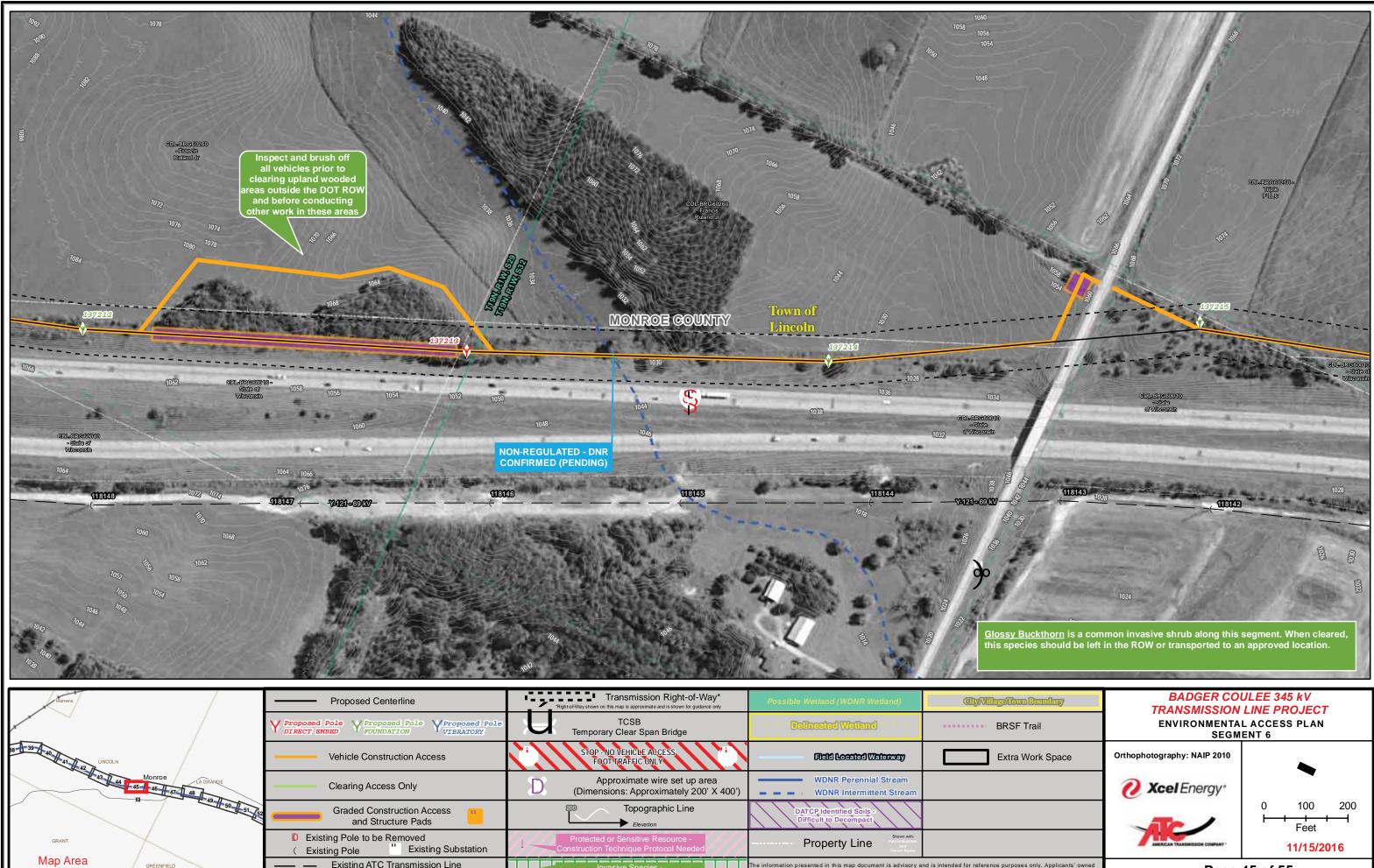


ses	only	. Аррпса	nts	own
٩A,	Xcel	Energy,	DPO	С,



ses	onl	у.	App	lica	n ts'	owne
AA,	Xce	è l	Ener	gy,	DP	C,



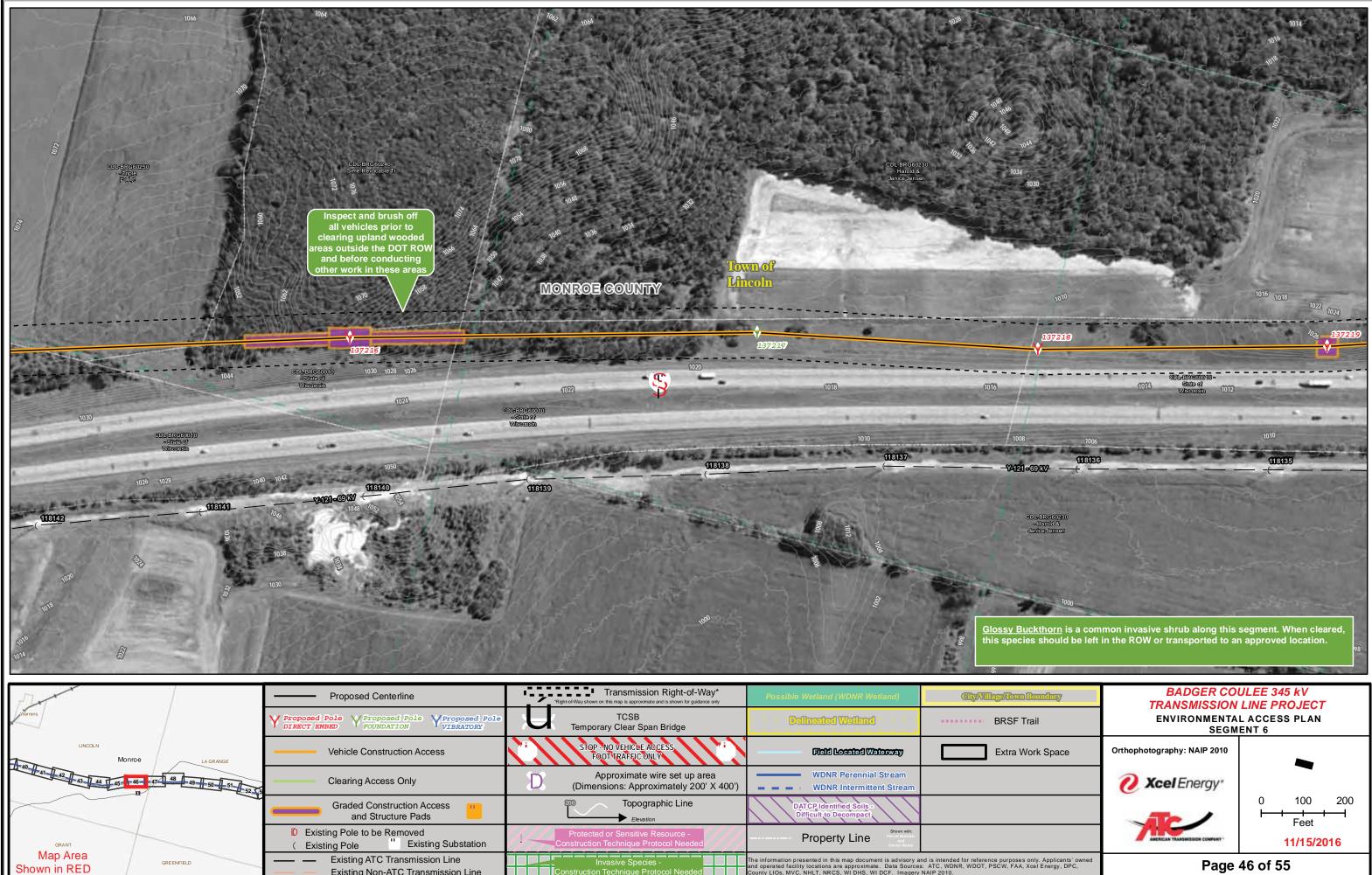


GREENFIELD Existing ATC Transmission Line Invasive Species - The information presented in this map document is advisory and is intended for reference purpos and operated facility locations are approximate. Data Sources: ATC, WDNR, WDOT, PSCW, FA Existing Non-ATC Transmission Line

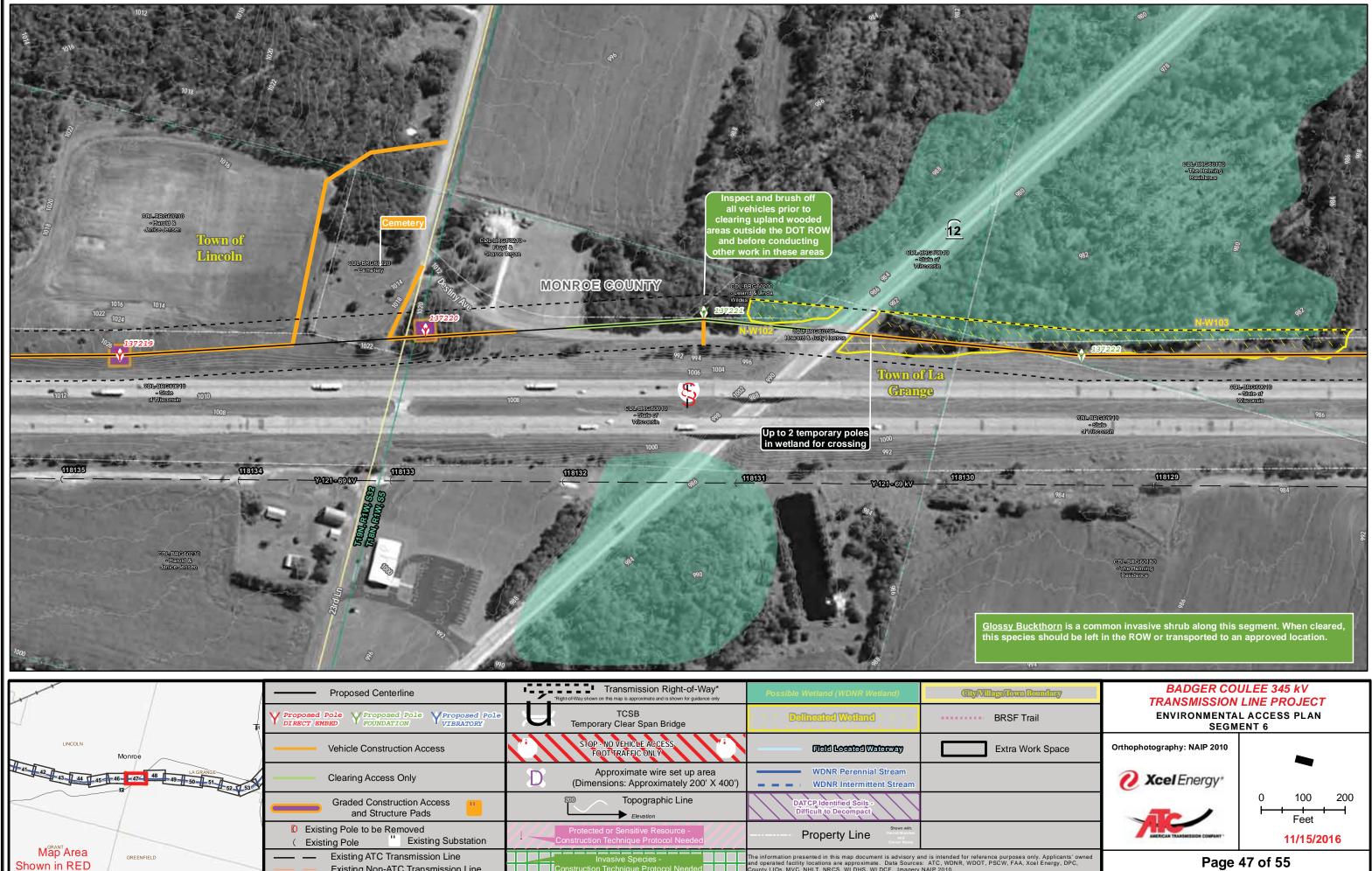
Shown in RED

ses	on	ly.	App	lica	nts	own
٩A,	Хсе	e.	Ener	gy,	DP	C,

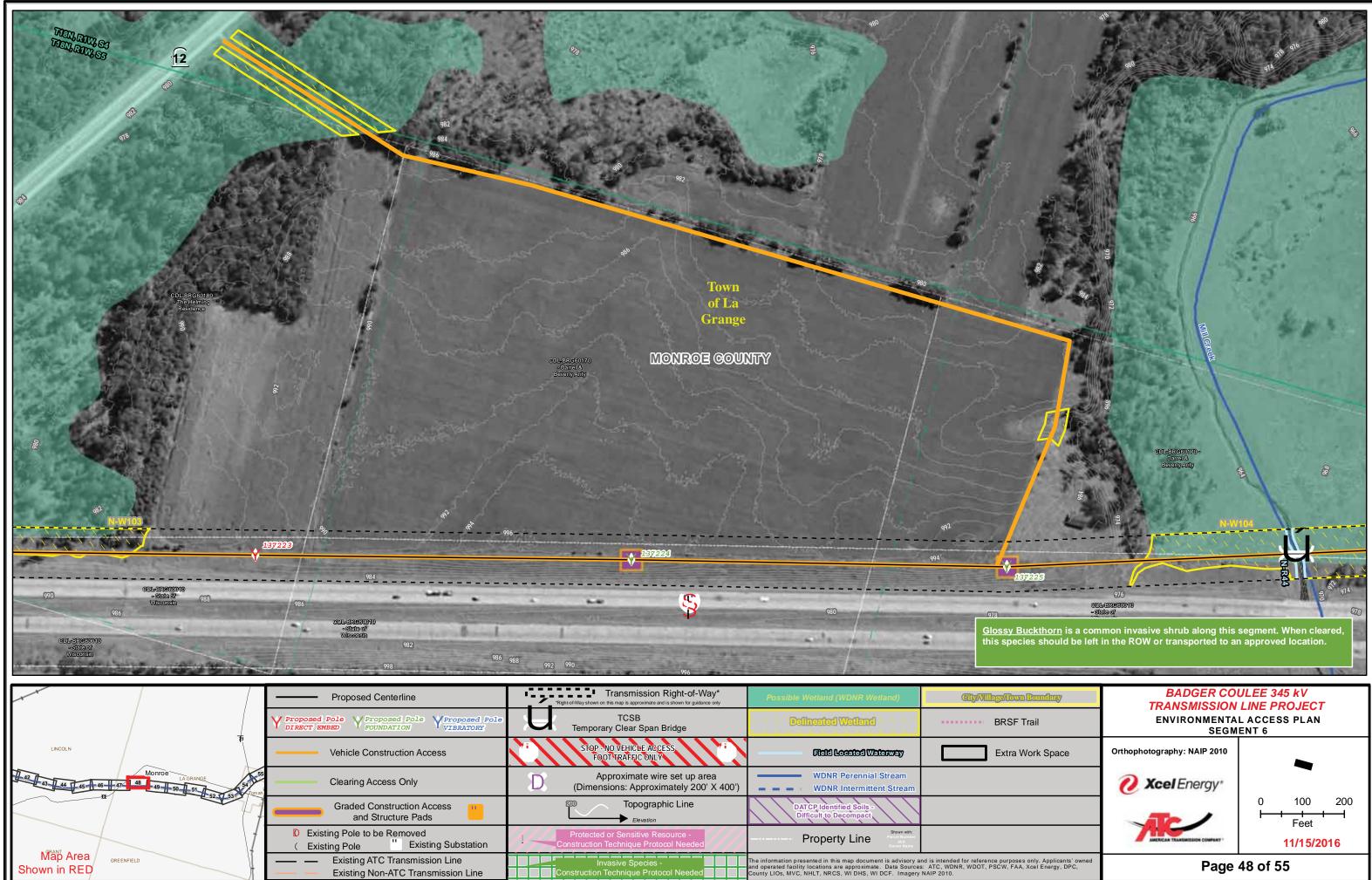
Page 45 of 55



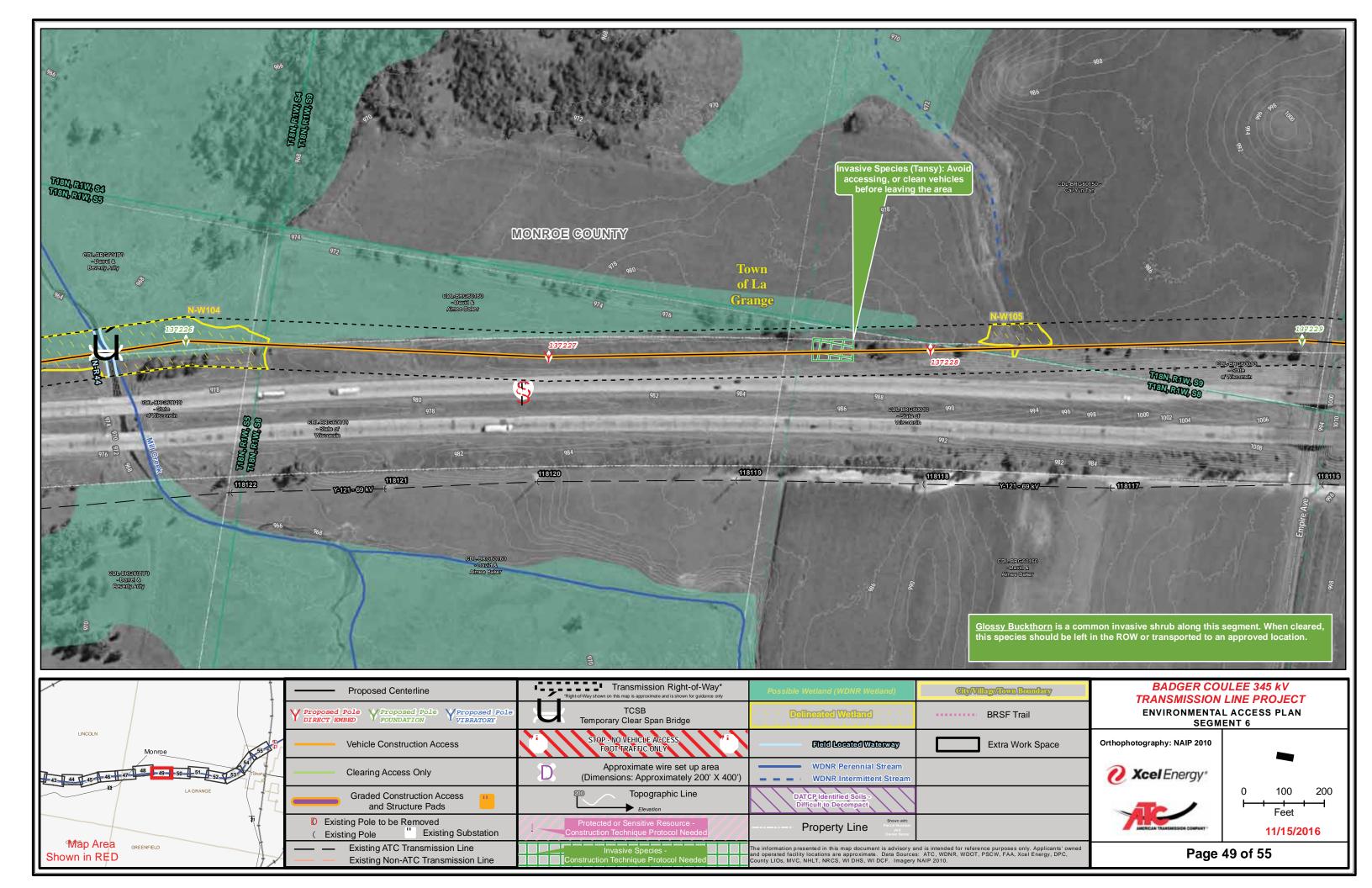
1 June 1	Proposed Centerline	*Right-ol-Way shown on this map is approximate and is shown for guidance only	Possible Wetland (WDNR Wetland)	City/Village/Ibwa
Warrens	Y Proposed Pole Y Proposed Pole Y Proposed Pole VIBRATORY	TCSB Temporary Clear Span Bridge	Delineated Wetland	BRSF T
LINCOLN Monroe La grange	Vehicle Construction Access	STOP - NO VEHICLE ACCESS FOOT TRAFFIC ONLY	Field Located Waterway	Extra W
	Clearing Access Only	D Approximate wire set up area (Dimensions: Approximately 200' X 400')	WDNR Perennial Stream WDNR Intermittent Stream	
	Graded Construction Access and Structure Pads	Elevation	DATCP Identified Soils - Difficult to Decompact	
GRANT	 Existing Pole to be Removed Existing Pole Existing Substation 	Protected or Sensitive Resource - Construction Technique Protocol Needed	Property Line Shown with: Parce Number and Owner Name	
Map Area Shown in RED	Existing ATC Transmission Line Existing Non-ATC Transmission Line	Invasive Species -	The information presented in this map document is advisory and operated facility locations are approximate. Data Sources County LIOs, MVC, NHLT, NRCS, WI DHS, WI DCF. Imagery	S: ATC, WDNR, WDOT, PSCW, FAA,

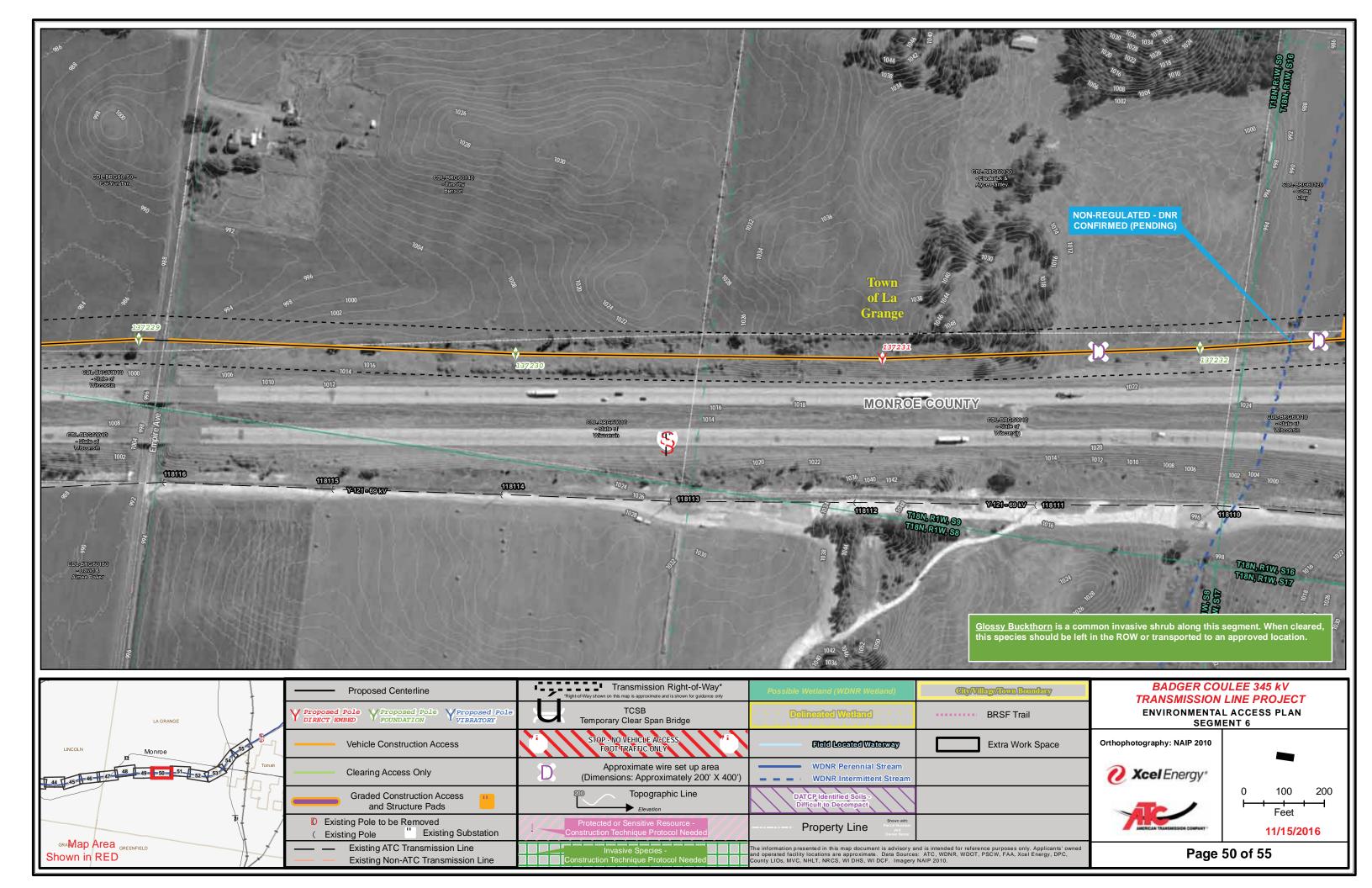


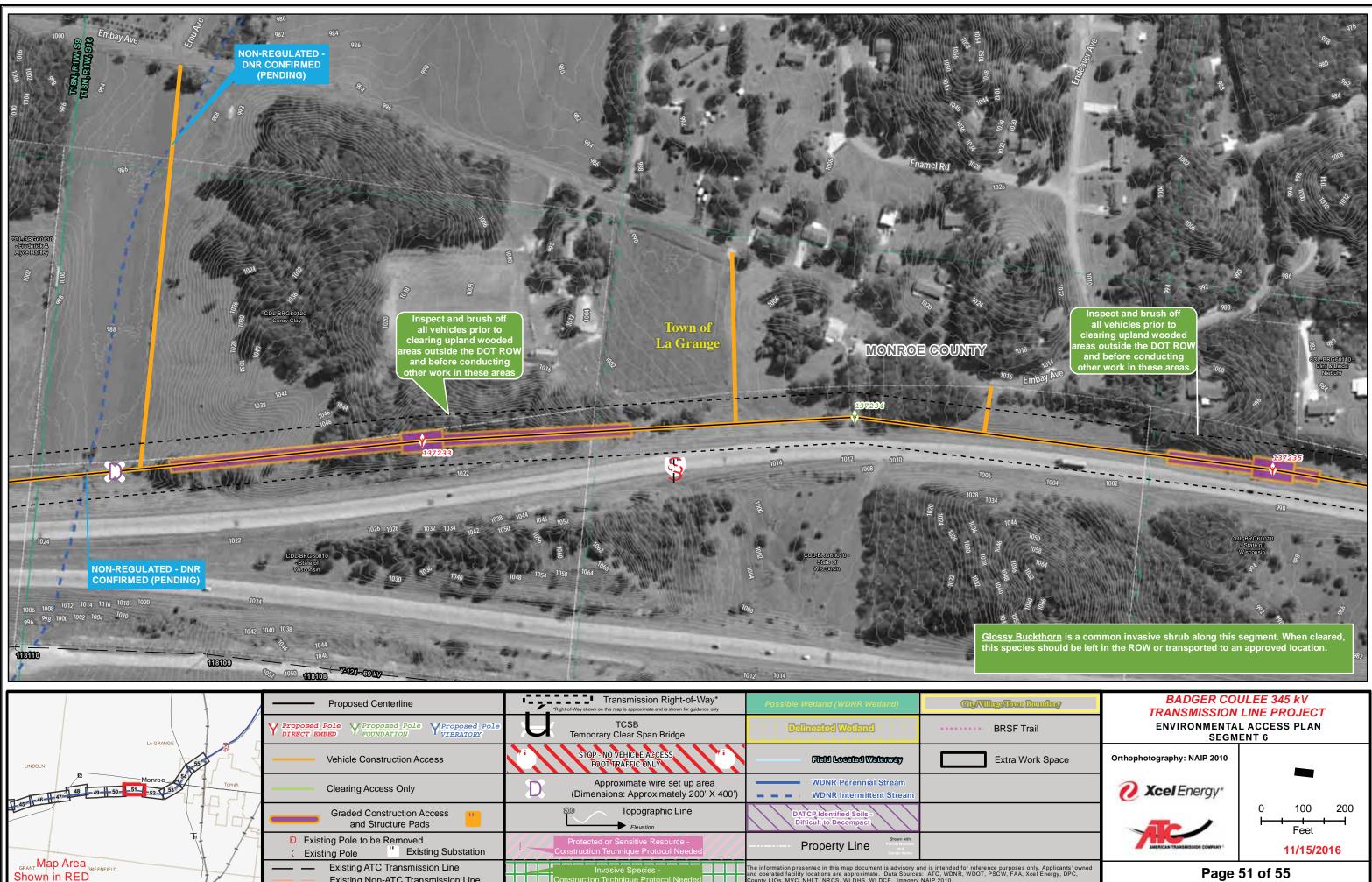
BRSF 1
raway Extra V
tream : Stream
Shown with: Parcel Number and Owner Name
is advisory and is intended for reference purposes Data Sources: ATC, WDNR, WDOT, PSCW, FAA, CF. Imagery NAIP 2010.
S ent



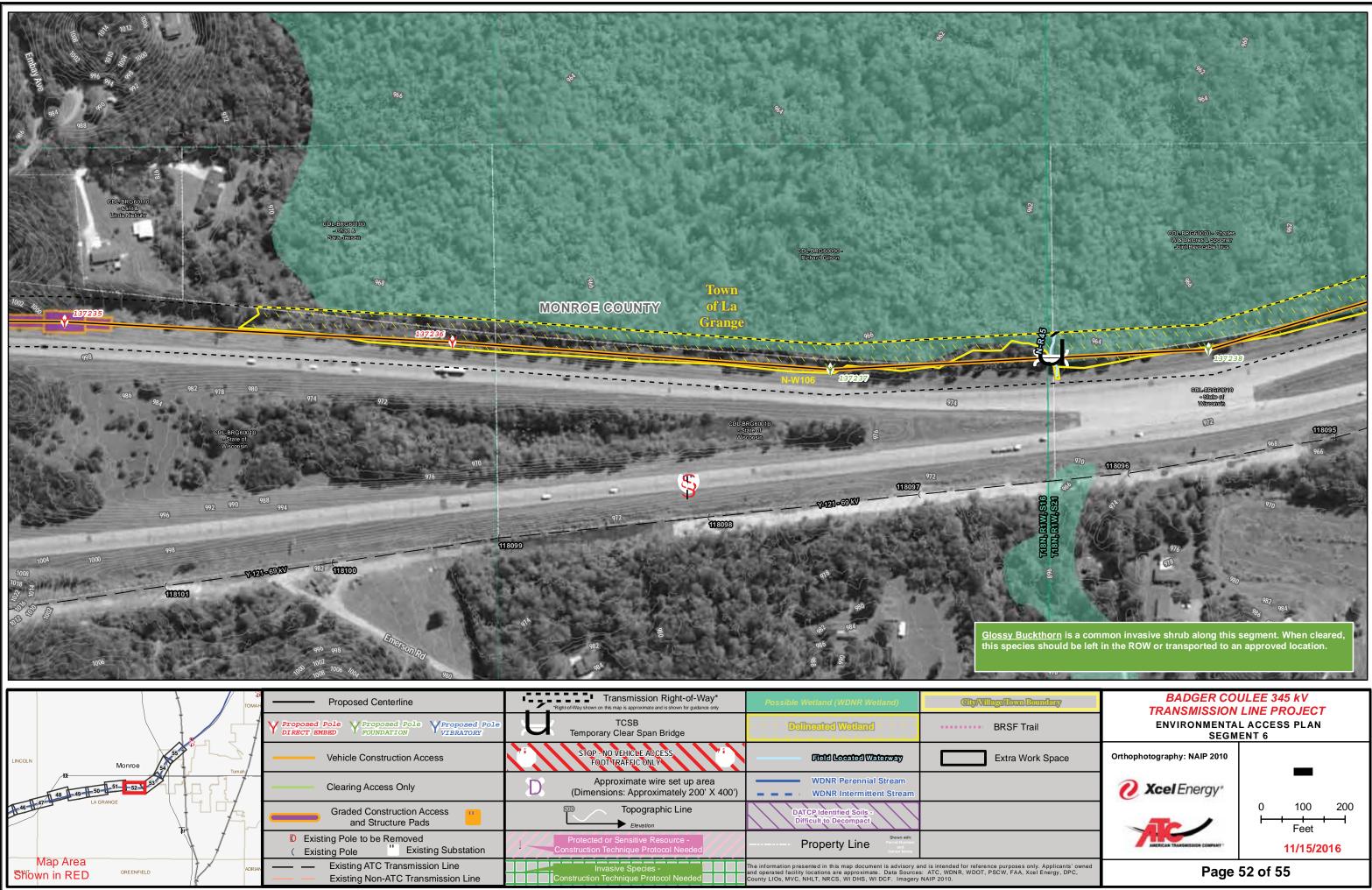
only. Applicants' owned Xcel Energy, DPC,	Page	48 of

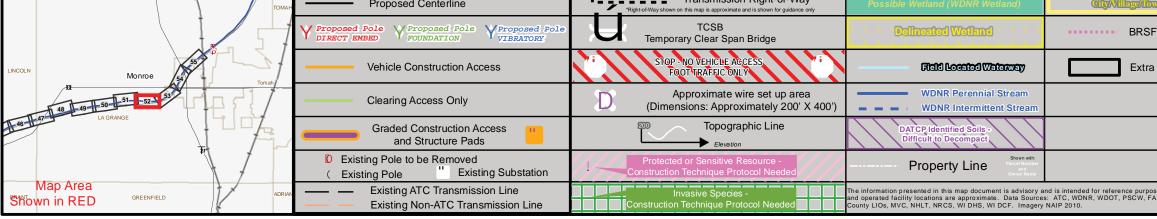


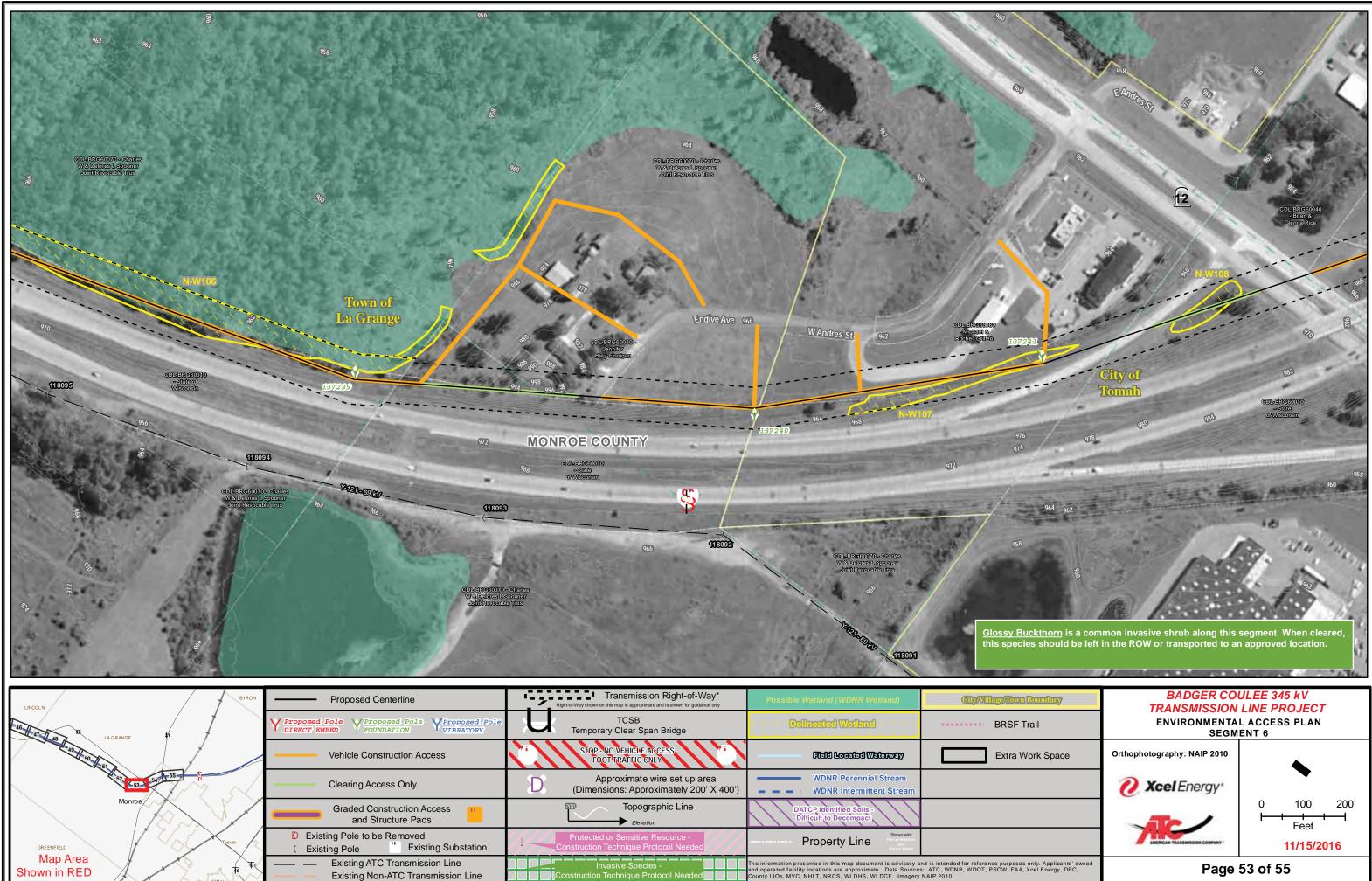




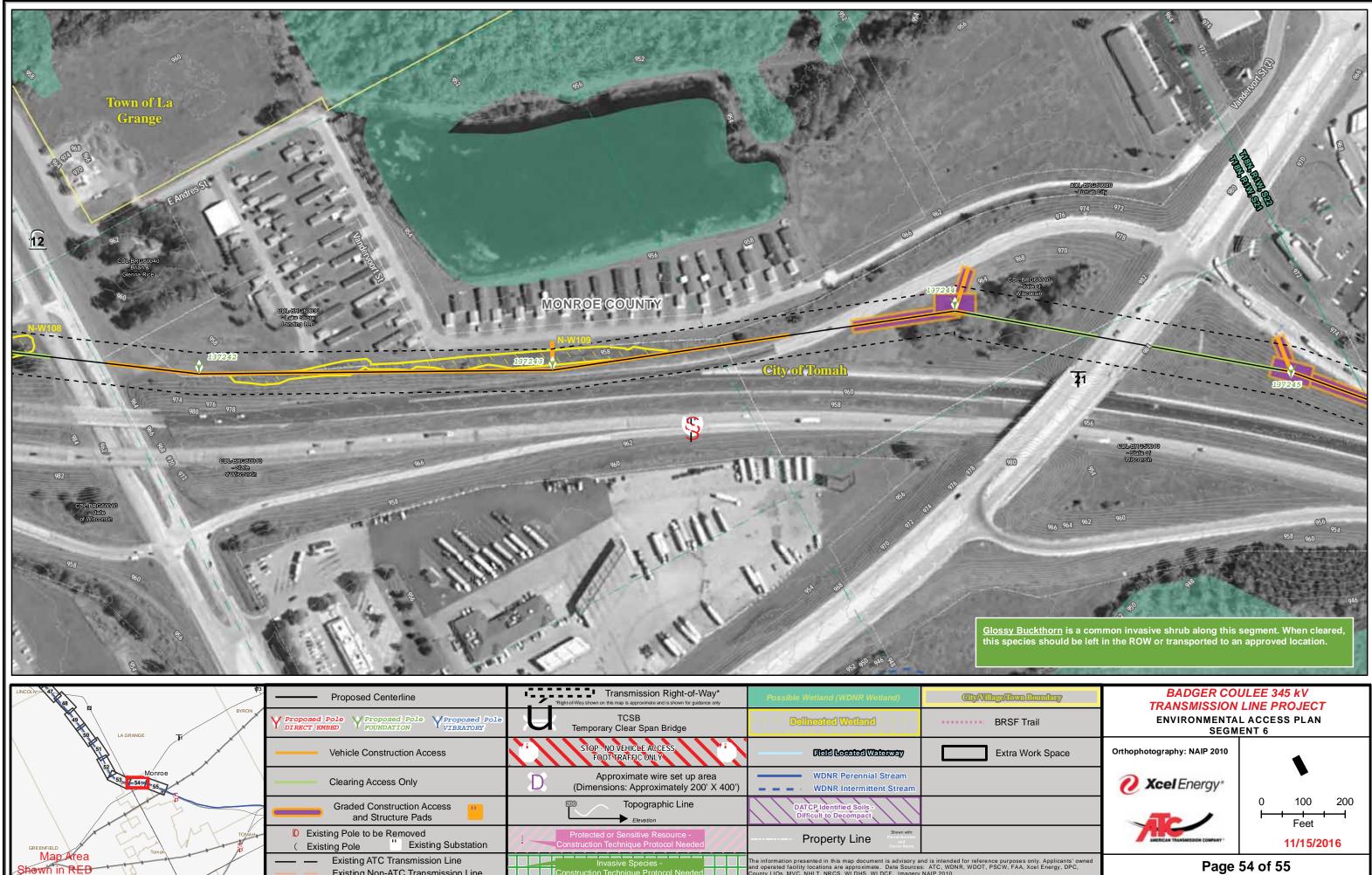
t t		*Right-of-Way shown on this map is approximate and is shown for guidance only		
LA GRANGE	Y Proposed Pole Y Proposed Pole Y Proposed Pole FOUNDATION Y PROPOSED Pole	TCSB Temporary Clear Span Bridge	N N Delineated Wetland N N	BRSF T
LINCOLN 555	Vehicle Construction Access	STOP - NO VEHICLE AGCESS FOOT ⁴ TRAFFIC ONLY	Field Located Waterway	Extra W
Monroe 54 Tomah	Clearing Access Only	D Approximate wire set up area (Dimensions: Approximately 200' X 400')	WDNR Perennial Stream WDNR Intermittent Stream	
	Graded Construction Access and Structure Pads		DATCP Identified Soils - Difficult to Decompact	
	 Existing Pole to be Removed Existing Pole Existing Substation 	Protected or Sensitive Resource - Construction Technique Protocol Needed	Property Line Shown with: Perce Number and Overer Name	
GRANT Map Area GREENFIELD Shown in RED	Existing ATC Transmission Line Existing Non-ATC Transmission Line	Invasive Species -	The information presented in this map document is advisory and and operated facility locations are approximate. Data Sources County LIOs, MVC, NHLT, NRCS, WI DHS, WI DCF. Imagery	nd is intended for reference purposes :: ATC, WDNR, WDOT, PSCW, FAA, NAIP 2010.



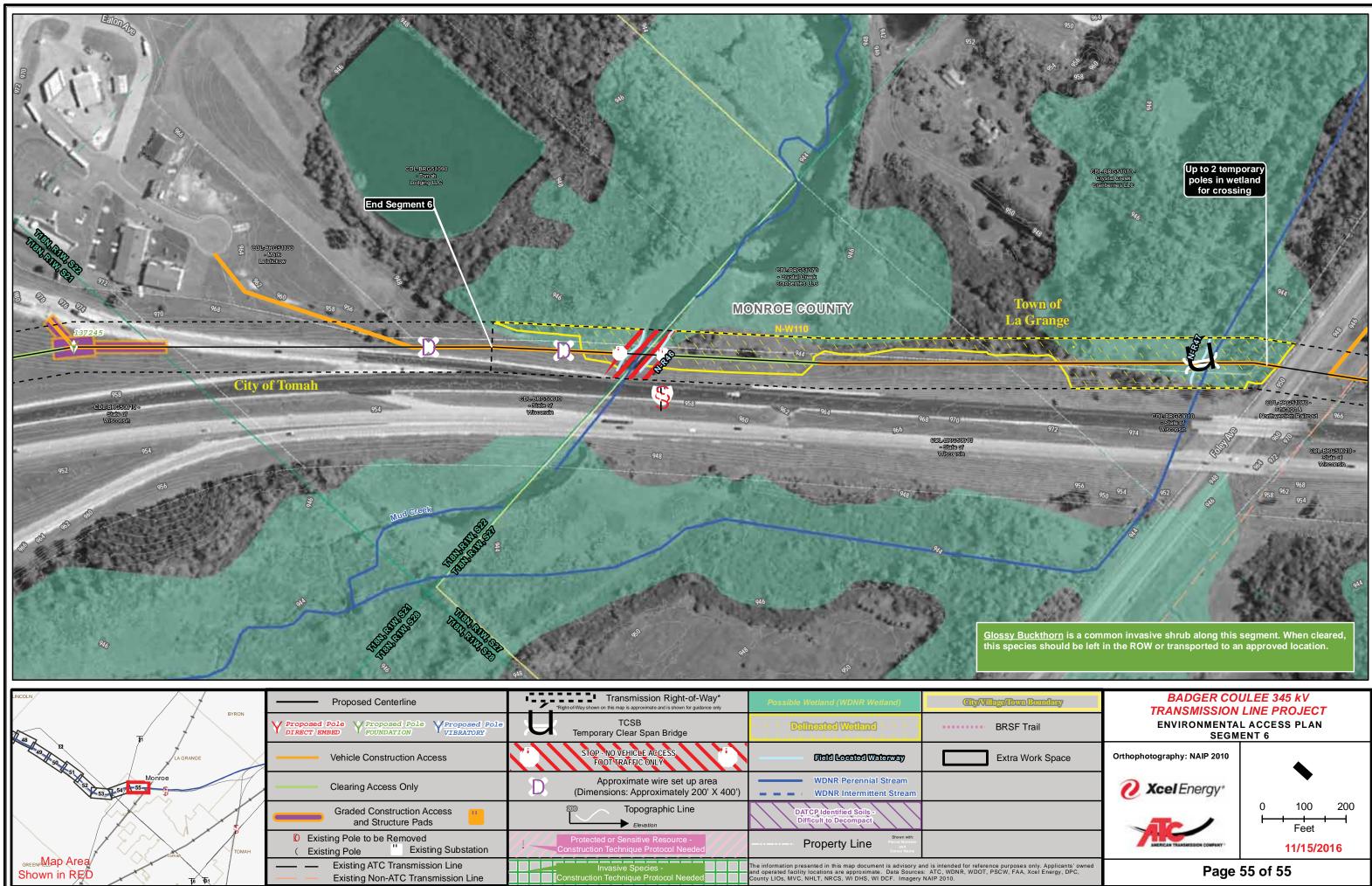




	· · · · · · · ·	*Right-of-Way shown on this map is approximate and is shown for guidance only		
46 47 T 48 12 LA GRANGE	Y Proposed Pole Y Proposed Pole Y Proposed Pole DIRECT EMBED Y Proposed Pole VIERATORY	TCSB Temporary Clear Span Bridge	N N N Delineated Weiland N N N	BRSF Ti
49,150,151,1	Vehicle Construction Access	STOP - NO VEHICLE AGCESS FOOT TRAFFIC ONLY	Field Located Waterway	Extra W
52 4 53 5 4 1 50 1 0	Clearing Access Only	D Approximate wire set up area (Dimensions: Approximately 200' X 400')	WDNR Perennial Stream WDNR Intermittent Stream	
Monroe	Graded Construction Access and Structure Pads	Topographic Line Elevation	DATCP Identified Soils - Difficult to Decompact	
GREENFIELD	 Existing Pole to be Removed Existing Pole Existing Substation 	Protected or Sensitive Resource - Construction Technique Protocol Needed	Property Line Shown with: and owner Name	
Map Area Shown in RED	Existing ATC Transmission Line	Invasive Species -	The information presented in this map document is advisory and is in and operated facility locations are approximate. Data Sources: ATO County LIOs, MVC, NHLT, NRCS, WI DHS, WI DCF. Imagery NAIP	C, WDNR, WDOT, PSCW, FAA, X



UNCOLN 47 48 48 48	Proposed Centerline	Transmission Right-of-Way* Right-of-Way shown on this map is approximate and is shown for guidance only	Possible Wetland (WDNR Wetland)	City/Village/Iowr
49 50 51 LA GRANGE	Y Proposed Pole Y Proposed Pole Y Proposed Pole FOUNDATION Y PROPOSED Pole	TCSB Temporary Clear Span Bridge		BRSF ⁻
	Vehicle Construction Access	STOP - NO VEHICLE AGCESS FOOT TRAFFIC ONLY	Field Located Waterway	Extra V
Monroe 53 1-54 55	Clearing Access Only	D Approximate wire set up area (Dimensions: Approximately 200' X 400')	WDNR Perennial Stream WDNR Intermittent Stream	
	Graded Construction Access and Structure Pads	Elevation	DATCP Identified Soils - Difficult to Decompact	
GREENFIELD TOMAH	 Existing Pole to be Removed Existing Pole Existing Substation 	Protected or Sensitive Resource - Construction Technique Protocol Needed	Property Line Shown with:	
Map Area Shown in RED	Existing ATC Transmission Line Existing Non-ATC Transmission Line	Invasive Species -	The information presented in this map document is advisory a and operated facility locations are approximate. Data Sources County LIOs, MVC, NHLT, NRCS, WI DHS, WI DCF. Imagery	s: ATC, WDNR, WDOT, PSCW, FAA,



Ses	only	. Applica	nts'	owne
	· · · · · ·	. reppilou		0
A	Xcel	Energy,	DPO	2

Badger Coulee 345 kV Transmission Line Project

Segment 6 CMP

Appendix B

Wetland Summary Table

Wetland ID	EAP Map Page		Community Description / Observations	Photo Number
N-W52	1	N/A	Hardwood swamp with a canopy of American elm, box elder, and silver maple over glossy buckthorn, box elder, and elderberry shrubs with white avens, jewelweed, Virginia creeper, and riverbank grape common in herb layer.	1
N.W/50-		N1/A	Degraded wet meadow in lowest point of roadside ditch dominated by reed canary grass and narrow- leaved cattail.	2
N-W52a	2, 3	N/A	Feature added during 2016 field investigations; located within mapped partially hydric/somewhat poorly drained soils.	
N-W53	3	N/A	Shallow marsh dominated by narrow-leaved cattail surrounded by shrub-carr dominated by glossy buckthorn, giant goldenrod, and scattered narrow-leaved cattail within highway interchange.	3
N-W54	3	N/A	Degraded wet meadow swale located within highway interchange; dominated by reed canary grass with scattered sedges, soft rush, wool-grass, and Canada thistle.	4
N-W55	3	N/A	Degraded wet meadow swale located within highway interchange; dominated by reed canary grass with scattered sedges, soft rush, white panicle aster, giant goldenrod, sensitive fern, few glossy buckthorn, and cattail near the culvert.	5
			Degraded wet meadow dominated by reed canary grass, giant goldenrod, and grass-leaved goldenrod with scattered soft rush, glossy buckthorn, and Canada thistle.	
			Shrub-carr in the central portion dominated by glossy buckthorn and reed canary grass.	6, 7
N-W56	3	N/A	Extended wetland to the west during 2016 field investigations to include a shallow marsh swale in the road ditch dominated by narrow-leaved cattail and reed canary grass. Reduced wetland at the northeast end to exclude an area of higher topography dominated by Kentucky bluegrass with little bluestem, staghorn sumac, glossy buckthorn, and riverbank grape common.	
			Shrub-carr dominated by glossy buckthorn and elderberry with scattered staghorn sumac, giant goldenrod, skunk cabbage, and orange jewelweed.	8
N-W56a	3, 4	137080	Degraded wet meadow within southern portion of DOT ROW; dominated by reed canary grass and giant goldenrod with scattered <i>Rubus</i> spp.	
			Feature added during 2016 field investigations.	
N-W56b	4	N/A	Small shrub-carr wetland within seepage area; dominated by glossy buckthorn and reed canary grass with scattered skunk cabbage, rattlesnake grass, various sedges, and Virginia creeper.	9
			Feature added during 2016 field investigations.	
N-W57	4	N/A	Shrub-carr wetland within seepage area; dominated by glossy buckthorn, skunk cabbage, various sedges, sensitive fern, and marsh fern with scattered speckled alder; few black ash and cottonwood trees; and scattered reed canary grass near the river bank.	10
N-W57a	4	N/A	Hardwood swamp within draw/seepage area associated with an intermittent channel. Dominated by black ash in the canopy; glossy buckthorn in the shrub layer; and rice-cut grass, cinnamon fern, orange jewelweed, and skunk cabbage in the herb layer.	11
			Feature added during 2016 field investigations.	
	Л	NI / A	Mucky seepage area in narrow band along N-R34; mostly unvegetated with glossy buckthorn on the fringe.	10
N-W57b	4	N/A	Feature added during 2016 field investigations.	1 2 3 4 5 6, 7 8 8 9 10

Wetland ID	EAP Map Page		Community Description / Observations	Photo Number
N-W57c	4,5		Wet meadow and emergent wetland along recently abandoned RR bed; dominants include reed canary grass, <i>Eleocharis</i> and sedges; surface water present in drainage path, possibly due to seepage	13
			Feature added during 2016 field investigations.	Number 13
N-W58	5	N/A	Feature consists of shrub-carr within the NW and SE portions with degraded wet meadow within the central portion. Drainage and seepage areas present within wetland. Shrub-carr dominated by glossy buckthorn and cinnamon fern; marsh fern, skunk cabbage, rattlesnake grass, and sensitive fern common; few quaking aspen and red maple trees.	14, 15
			Degraded wet meadow dominated by reed canary grass with invading glossy buckthorn and scattered skunk cabbage, giant goldenrod, rattlesnake grass, and Canada thistle.	
N-W59	6	137087, 137088	Degraded wet meadow dominated by reed canary grass, but with a variety of higher quality species including fox sedge, swamp milkweed, sensitive fern, common great Angelica, jewelweed, blue vervain, tussock sedge and grass-leaved goldenrod with scattered glossy buckthorn, meadowsweet, steeplebush, and Bebb's willow.	16
			Feature expanded during 2016 field investigations to include additional degraded wet meadow both within and beyond DOT ROW.	
			Wetland complex of shrub-carr, sedge meadow, degraded sedge meadow, and degraded wet meadow. Shrub-carr dominated by glossy buckthorn over mucky soils and standing water.	
			Sedge meadow within center of feature dominated by tussock sedge, lake sedge, and wool-grass.	
N-W60	6	N/A	Degraded sedge meadow portions with reed canary grass, wool-grass, leatherleaf, rattlesnake grass, wiregrass sedge, tussock sedge, and lake sedge over sphagnum with some broad and narrow-leaved cattail within DOT ROW.	17, 18, 1
			Degraded wet meadow within DOT ROW dominated by reed canary grass, giant goldenrod, woolly-fruit sedge, and mown glossy buckthorn.	
			Shrub-carr, wet meadow, and degraded wet meadow complex. Shrub-carr with glossy buckthorn, white pine, reed canary grass, various sedges, and some areas of sphagnum.	
N-W61	6, 7	N/A	Wet meadow near center of feature dominated by blue flag iris, woolly-fruit sedge, swamp milkweed, and only sparse scattered reed canary grass and glossy buckthorn.	16
			Degraded wet meadow comprised of reed canary grass.	
N-W61a	7	N/A	Shrub-carr in shallow depression with glossy buckthorn dominant in the canopy and shrub layer, some white pine, and a sparse herb layer.	23
			Feature added during 2016 field investigations.	Number 13 14, 15 16 17, 18, 19 20, 21, 22 23
N-W62	N/A	N/A	Feature merged with N-W63.	N/A

Wetland ID	EAP Map Page		Community Description / Observations	Photo Number
N-W63	7	137091	Shrub-carr and degraded wet meadow wetland. Degraded wet meadow primarily within DOT ROW; reed canary grass common, but a diverse species assemblage including giant goldenrod, grass-leaved goldenrod, blue vervain, prairie blazing star, swamp milkweed, soft rush, woolly-fruit sedge, and fox sedge. Shrub-carr components with glossy buckthorn common over reed canary grass, steeplebush, wool-grass, tussock sedge, and many species similar to those observed within degraded wet meadow. Feature extended during 2016 field investigations to include additional areas of shrub-carr and degraded wet meadow present beyond the DOT ROW.	24
N-W64	7, 8	137093, 137094	Expansive wetland complex comprised of shrub-carr, sedge meadow, hardwood swamp, and degraded wet meadow communities. Shrub-carr dominated by glossy buckthorn over standing water with sphagnum hummocks, tussock sedge, steeplebush, sensitive fern, wool-grass, and bluejoint. Hardwood swamp present as a narrow band primarily along south boundary of feature with quaking aspen, white pine, glossy buckthorn, and interrupted fern over hummocky ground surface. Small area of sedge meadow near east end of feature dominated by tussock sedge with wool-grass, steeplebush, lake sedge, marsh fern, and with tamarack, speckled alder, and glossy buckthorn at edges of community. Extensive sedge meadow comprising majority of feature near center dominated by lake sedge, tussock sedge, wool-grass, dark-green bulrush, steeplebush, bluejoint, and grass-leaved goldenrod over sphagnum hummocks. Small area of degraded wet meadow present along waterway N-R35 and extending into DOT ROW dominated by reed canary grass with wool-grass, giant goldenrod, and scattered glossy buckthorn.	25, 26, 27, 28, 29
N-W65	8, 9	137096	Shrub-carr, sedge meadow, hardwood swamp, and shallow marsh wetland located between railroad, interstate, and local road corridors. Shrub-carr areas dominated by glossy buckthorn over various sedges. Hardwood swamp with a canopy of quaking aspen and white pine over glossy buckthorn, and various sedges. Sedge meadow with tussock sedge, wool-grass, woolly-fruit sedge, and scattered steeplebush common. Shallow marsh near west end of feature with standing water, broad-leaved cattail, and various sedge and <i>Juncus</i> species.	30, 31, 32
N-W66	9	137097	Wetland complex comprised of sedge meadow, shrub-carr, and hardwood swamp. Sedge meadow primarily in western portion with shallow inundation; dominated by lake sedge with wool-grass, glossy buckthorn, and <i>Spiraea</i> common. Hardwood swamp dominated by red maple and quaking aspen in the canopy, glossy buckthorn in the shrub layer, and cinnamon fern in the herb layer. Shrub-carr in central portion dominated by glossy buckthorn with white panicle aster, lake sedge, sensitive fern, wool-grass, various sedges, marsh fern, and skunk cabbage common with few white pine and jack pine trees.	33, 34

Wetland ID	EAP Map Page		Community Description / Observations	Photo Number
N-W67	10	N/A	Sedge meadow in roadside swale within DOT ROW dominated by various sedges, soft rush, marsh fern, <i>Glyceria</i> spp., and wool-grass with scattered sphagnum, <i>Spiraea</i> , and boneset; scattered to common glossy buckthorn; and cinnamon fern at the northern perimeter. Shrub-carr within NE portion dominated by cinnamon fern, bristly dewberry, lake sedge, soft rush, bluejoint, paper birch, and glossy buckthorn. Wetland extended at NE end during 2016 field investigations to include additional shrub-carr in non-DOT ROW; dominated by cinnamon fern, glossy buckthorn, red maple saplings, <i>Spiraea</i> , wool-grass, and pockets of sphagnum.	35, 36
N-W68	10, 11	137102	Feature consists primarily of sedge meadow with a smaller component of hardwood swamp and shrub-carr. Sedge meadow dominated by various sedges, soft rush, <i>Spiraea</i> , scattered to common glossy buckthorn, sphagnum patches, wool-grass, with areas of inundation and few sundew. Shrub-carr in NW corner dominated by glossy buckthorn, cinnamon fern, wool-grass, bluejoint, and quaking aspen and red maple saplings. Hardwood swamp areas along N perimeter with microtopography and some upland inclusions; dominated by red maple, quaking aspen, glossy buckthorn scattered to common, <i>Spiraea</i> , cinnamon fern, and scattered huckleberry, skunk cabbage pockets, and paper birch. Previously delineated N-W68 was divided into four features during 2016 field investigations to exclude upland areas of higher elevation lacking hydrophyte dominance. Primary dominants in upland areas include bracken fern, early low blueberry, huckleberry, jack pine, and black oak.	37, 38, 39
N-W68a	11	137103, 137104	Feature consists primarily of sedge meadow with a smaller component of hardwood swamp and shrub-carr along the N perimeter. Sedge meadow with areas of inundation dominated by various sedges, soft rush, <i>Spiraea</i> , scattered to common glossy buckthorn, sphagnum patches, wool-grass. Small shrub-carr area dominated by glossy buckthorn, cinnamon fern, wool-grass, bluejoint, and quaking aspen and red maple saplings. Hardwood swamp areas along N perimeter with microtopography and some upland inclusions; dominated by red maple, quaking aspen, glossy buckthorn scattered to common, <i>Spiraea</i> , cinnamon fern, and scattered huckleberry, skunk cabbage pockets, and paper birch. Previously delineated N-W68 was divided into four features during 2016 field investigations to exclude upland areas of higher elevation lacking hydrophyte dominance. Primary dominants in upland areas include bracken fern, early low blueberry, huckleberry, jack pine, and black oak.	38, 40

Wetland ID	EAP Map Page		Community Description / Observations	Photo Number
N-W68b	11, 12	137105	Feature consists of sedge meadow within DOT ROW, hardwood swamp and shrub-carr within NW portions, and bog in the east. Sedge meadow dominated by various sedges, soft rush, <i>Spiraea</i> , scattered to common glossy buckthorn, sphagnum patches, and wool-grass. Shrub-carr dominated by glossy buckthorn, speckled alder, and tussock sedge. Hardwood swamp dominated by quaking aspen, glossy buckthorn, cinnamon fern, and skunk cabbage. Bog dominated by few-seeded hop sedge with <i>Juncus</i> spp. on sphagnum mat with shallow inundation; scattered jack pine and tamarack. Previously delineated N-W68 was divided into four features during 2016 field investigations to exclude upland areas of higher elevation lacking hydrophyte dominance. Primary dominants in upland areas include bracken fern, early low blueberry, huckleberry, jack pine, and black oak.	38, 41, 42, 43, 44
			Feature consists of a bog complex with a small component of shrub-carr in the E corner. Bog in W portion	
N-W68c	11, 12	137106	dominated by few-seeded hop sedge and wool-grass over a sphagnum mat with some spotted Joe-Pye weed and sensitive fern along the W edge. Bog in the E portion dominated by few-seeded hop sedge with wool-grass common and scattered leatherleaf and <i>Spiraea;</i> with a few patches of glossy buckthorn, jack pine, and tamarack; over a sphagnum mat with areas of open water and shallow inundation. Shrub-carr dominated by glossy buckthorn, jack pine, sedges, bluejoint, and huckleberry. Previously delineated N-W68 was divided into four features during 2016 field investigations to exclude upland areas of higher elevation lacking hydrophyte dominance. Primary dominants in upland areas include	45, 46
			bracken fern, early low blueberry, huckleberry, jack pine, and black oak.	
N-W69	12	137107	Shrub-carr, hardwood swamp, and sedge meadow complex. Shrub-carr at east end of feature with dense glossy buckthorn in DOT ROW extending into more open community beyond DOT fenceline with scattered glossy buckthorn over woolly-fruit sedge, blue-flag iris, rattlesnake manna grass. Shrub-carr community north of waterway N-R36 with dense glossy buckthorn over woolly-fruit sedge, sensitive fern, interrupted fern, and grass-leaved goldenrod. Hardwood swamp component dominated by red maple and quaking aspen over glossy buckthorn, various sedges, blue-flag iris, steeplebush, and swamp dewberry. Sedge meadow at west end of feature dominated by woolly-fruit sedge, wiregrass sedge, steeplebush, wool- grass, grass-leaf goldenrod, some scattered blue-flag iris and lake sedge.	47, 48, 49, 50
N-W70	12, 13	137109, 137110	Large wetland complex including hardwood swamp, sedge meadow, and wet meadow communities. Hardwood swamp with quaking aspen canopy over glossy buckthorn, winterberry, royal fern, interrupted fern, and woolly-fruit sedge. Sedge meadow within DOT ROW and extending into expansive sedge meadow near center of feature; common species include woolly-fruit sedge over sphagnum, swamp dewberry, steeplebush, interrupted fern, blue-flag iris, and sensitive fern. Small wet meadow within DOT ROW with a diverse assemblage of species including swamp dewberry, grass- leaved goldenrod, interrupted fern, woolly-fruit sedge, Turk's-cap lily, and giant sunflower.	51, 52, 53, 54

Wetland ID	EAP Map Page		Community Description / Observations	Photo Number
N-W71	14	N/A	Hardwood swamp within depressional swale with quaking aspen dominant in the canopy, red maple and glossy buckthorn in shrub layer at edges of feature only, and woolly-fruit sedge common in the herb layer.	55
			Expanded feature during 2016 field investigations to match feature extent on the ground within project ROW.	
			Sedge meadow, hardwood swamp, and wet meadow complex. Wet meadow near west end of feature with sensitive fern, Bebb's willow, steeplebush, Dudley's rush, rattlesnake grass, and grass-leaved goldenrod common.	
N-W72	14	N/A	Sedge meadow dominated by woolly-fruit sedge, steeplebush, royal fern, interrupted fern, dark-green bulrush, sensitive fern, and wool-grass extending into DOT ROW along depression with scattered glossy buckthorn.	56, 57, 58
			Hardwood swamp component with red maple and white pine over royal fern, interrupted fern, and early low blueberry, as well as components of tamarack over similar fern species and hummocks.	
			Extended feature during 2016 field investigations to include additional area of hardwood swamp and wet meadow at west end of feature.	
N-W73	N/A	N/A	Feature part of/merged with N-W72.	N/A
N-W73a	14, 15	N/A	Hardwood swamp dominated by red maple and swamp white oak with some quaking aspen over glossy buckthorn shrub layer with winterberry, swamp dewberry, interrupted fern, and early low blueberry.	59
			Feature added during 2016 field investigations to include hardwood swamp beyond the DOT ROW.	
N-W74	16, 17	137120, 137121	Wetland complex of hardwood swamp, shrub-carr, sedge meadow, and wet meadow. Western half of feature limited to DOT ROW between higher topography oak/pine woods to the north and interstate embankment to the south with wetland extending beyond project ROW at eastern end. Wet meadow portions limited to DOT ROW, but fairly high quality comprised of fox sedge, soft rush, boneset, water hemlock, sensitive fern, and marsh fern with scattered speckled alder, narrow-leaved cattail, and grass-leaved goldenrod. Sedge meadow pockets with lake sedge, wool-grass, hairy-fruit lake sedge, woolly-fruit sedge, sensitive fern, marsh fern, and royal fern common. Hardwood swamp at west end of feature along a narrow drainageway with a white pine and red maple canopy over cinnamon fern, royal fern, and scattered speckled alder shrubs. Hardwood swamp at east end of feature with white pine, red maple and tamarack in the canopy over winterberry, speckled alder, and poison sumac shrubs with sensitive fern, grass-leaved goldenrod, cinnamon fern, lake sedge, and scattered glossy buckthorn. Shrub-carr with steeplebush, speckled alder, glossy buckthorn, poison sumac, and scattered tamarack over lake sedge, swamp dewberry, skunk cabbage, cotton-grass, and royal fern over sphagnum.	60, 61, 62, 63, 64, 65

Wetland ID		Structures in Wetland	Community Description / Observations	Photo Number
			Shrub-carr, hardwood swamp, and sedge meadow complex. Within DOT ROW, shrub-carr is present where hardwood swamp has been cleared and glossy buckthorn, wool-grass, winterberry, woolly-fruit sedge, cinnamon fern, sensitive fern, swamp dewberry, and giant goldenrod are common. Beyond DOT fence near middle of feature, shrub-carr comprised of steeplebush, tamarack saplings, and poison sumac over tussock sedge.	
N-W75	17	137122, 137123	Hardwood swamp comprised of a white pine canopy over red maple, winterberry, scattered glossy buckthorn, speckled alder, and poison sumac; with cinnamon fern, skunk cabbage, some bluejoint, and swamp dewberry.	66, 67, 68, 69, 70
			Sedge meadow dominated by tussock sedge, soft rush, wool-grass, sensitive fern, cinnamon fern, giant goldenrod, and steeplebush with scattered poison sumac, glossy buckthorn, and red maple and white pine saplings near east end of feature.	
			Extended feature during 2016 field investigations to include area of hardwood swamp beyond DOT ROW which connected N-W75 and N-W76.	
N-W76	N/A	N/A	Feature merged with N-W75.	N/A
N-W77	17	N/A	Shrub-carr and hardwood swamp complex. Shrub-carr comprised of glossy buckthorn, winterberry, red maple saplings, Bebb's willow, and poison sumac over cinnamon fern, royal fern, woolly-fruit sedge, wool-grass, steeplebush, grass-leaved goldenrod, and giant goldenrod.	71, 72
			Hardwood swamp component with a red maple canopy over glossy buckthorn, some white pine and quaking aspen saplings, cinnamon fern, bluejoint, and swamp dewberry.	
N-W78	18	137125	Predominantly hardwood swamp with a small area of shrub-carr where hardwood swamp has been cleared within DOT ROW. Hardwood swamp comprised of a red maple canopy over royal fern, interrupted fern, cinnamon fern, glossy buckthorn, and whorled loosestrife.	72 74
IN-VV 7 8	Iδ	137125	Shrub-carr component with red maple and quaking aspen saplings, glossy buckthorn, with some scattered speckled alder and white pine over steeplebush, royal fern, sensitive fern, woolly-fruit sedge, and grass-leaved goldenrod.	73, 74
			Wet meadow, degraded wet meadow, shrub-carr, and shallow marsh wetland. Wet meadow at northwest end of feature dominated by bluejoint, woolly-fruit sedge, sensitive fern, steeplebush, and sparse reed canary grass.	
			Degraded wet meadow near middle to southeast end of feature dominated by reed canary grass and giant goldenrod.	
N-W79	18	N/A	Shrub-carr portions dominated by glossy buckthorn, red maple, and quaking aspen over tussock sedge, steeplebush, royal fern, cinnamon fern, and sensitive fern.	75, 76, 77, 78
			Shallow marsh located beyond DOT fenceline along excavated channel with narrow-leaved cattail, wool- grass, soft rush, and boneset common.	
			Feature extended during 2016 field investigations to connect to excavated shallow marsh ditch beyond DOT ROW.	

Wetland ID	EAP Map Page		Community Description / Observations	Photo Number
N-W79a	18	N/A	Shallow marsh ditch with narrow-leaved cattail, soft rush, wool-grass, and scattered reed canary grass, speckled alder, and giant goldenrod.	79
			Feature added during 2016 field investigation; shallow marsh associated with excavated ditch along newly created road/driveway	
N-W80	21	N/A	Wet meadow dominated by sensitive fern and marsh fern with red maple and willow saplings; <i>Spiraea</i> , tussock sedge, bristly dewberry, and bluejoint common. Hardwood swamp within NE portion of feature dominated by red maple, paper birch, and quaking aspen in the canopy; scattered to common glossy buckthorn in the shrub layer; and tussock sedge, royal fern, cinnamon fern, and bristly dewberry in the herb layer. Reed canary grass common along the eastern edge. Feature extended slightly to the west during 2016 field investigations to include wet meadow with species described above.	80, 81
N-W81	21, 22	137137, 137138	Wetland complex consisting primarily of sedge meadow with smaller components of hardwood swamp, alder thicket, and wet meadow. Sedge meadow dominated by tussock sedge with wool-grass, <i>Spiraea</i> , and sensitive fern common, scattered sphagnum, few speckled alder and glossy buckthorn, and one area of Canada thistle. Wet meadow in north central portion dominated by bluejoint, tussock sedge, and sensitive fern with a few cinnamon fern. Alder thicket at north corner dominated by speckled alder, glossy buckthorn, skunk cabbage, royal fern, and cinnamon fern. Hardwood swamp at NW and NE corners dominated by red maple, quaking aspen, glossy buckthorn, and cinnamon fern.	82, 83, 84, 85
N-W82	22	137139	Large wetland complex extending outside of corridor to the east consisting of sedge meadow, hardwood swamp, and alder thicket communities. Sedge meadow within western portion associated with a channelized drainageway and located within DOT ROW of eastern portion; dominated by tussock sedge and wool-grass with few soft rush and <i>Spiraea</i> , as well as pockets of sphagnum and cinnamon fern. Alder thicket with meandering seepage channels throughout; dominated by speckled alder and tussock sedge with areas of sphagnum, cinnamon fern, and skunk cabbage. Alder thicket at NW corner with similar species but also dominated by reed canary grass with glossy buckthorn common. Hardwood swamp with narrow meandering channels; dominated by red maple, cinnamon fern, skunk cabbage, tussock sedge (very hummocky); with few speckled alder, marsh fern, royal fern, and white pine. Wetland boundary modifications made during 2016 field investigations, primarily related to shift in ROW corridor to the north and the removal of a small mesic woodland lobe along southcentral perimeter.	86, 87, 88, 89

Wetland ID	EAP Map Page		Community Description / Observations	Photo Number
			Wetland connected to N-W82 outside of project corridor; consists of sedge meadow and alder thicket communities similar to those described in N-W82, as well as bog. Alder thicket also with scattered glossy buckthorn.	
	22	NI / A	Sedge meadow community in central portion of feature dominated by lake sedge with broad-leaved cattail scattered.	00.01.00
N-W83	22	N/A	Bog east of N-R38 with dense sphagnum carpet with mucky peat underlain by sand; dominated by <i>Carex</i> spp. such as long sedge, skunk cabbage, cinnamon fern, with 30-50% cover of white pine with few speckled alder and red maple.	90, 91, 92
			Excluded upland mesic woodland area along northcentral perimeter during 2016 field investigation; located on an area of higher topography dominated by white pine and early low blueberry.	
			Sedge meadow dominated by tussock sedge and wiregrass sedge with bluejoint common, scattered <i>Spiraea</i> , and <i>Juncus</i> spp.	
N-W84	23	N/A	Shrub-carr at N and NE corners dominated by quaking aspen saplings, tussock sedge, bluejoint, and <i>Spiraea</i> , with few glossy buckthorn and less than 40% cover of mature quaking aspen.	93, 94
N-W85	24	N/A	High quality, hummocky sedge meadow associated with Glenn Creek; dominated by lake sedge with bristly dewberry, tussock sedge, marsh fern, sensitive fern common and few cinnamon fern.	95
N-W86	26	26 N/A	Sedge meadow dominated by tussock sedge with bluejoint, swamp-candles, and wool-grass common. Alder thicket along the banks of Robinson Creek; dominated by speckled alder, tussock sedge, and cinnamon fern; with scattered elderberry; few glossy buckthorn, white pine, <i>Spiraea</i> , and <i>Glyceria</i> spp.	96
			Feature reduced at east end during 2016 field investigations to exclude mesic woodland at higher elevations than the wetland; dominated by white pine, huckleberry, early low blueberry, and Canada mayflower; with scattered cinnamon fern, bluejoint, and black oak.	-
N-W86a	26	N/A	Feature connected to N-W86 outside of the project corridor and associated with Robinson Creek. Hardwood swamp dominated by white pine, cinnamon fern, and bluejoint with skunk cabbage, orange jewelweed, lake sedge, red maple, and royal fern.	97
			Feature added during 2016 field investigations due to project corridor shift.	
N-W86b	26	N/A	Feature associated with Robinson Creek north of project corridor. Sedge meadow dominated by lake sedge and orange jewelweed with sensitive fern common.	98
			Feature added during 2016 field investigations due to project corridor shift.	
N-W87	26		Small sedge meadow within depressional lobe with sandy, alluvial soils associated with Robinson Creek; dominated by tussock sedge and bluejoint with northern dewberry and a few white pine and jack pine shrubs.	99

Wetland ID		Structures in Wetland	Community Description / Observations	Photo Number
N-W87a 26	26	N/A	Sedge meadow within DOT ROW dominated by tussock sedge and blue joint with few sensitive fern; extends into hardwood swamp beyond project ROW.	99
		Feature added during 2016 field investigations due to project corridor shift.		
			Alder thicket associated with the banks of Zahrte Creek; dominated by speckled alder, lake and tussock sedge, marsh fern, and sensitive fern.	
N-W88	29	N/A	High quality sedge meadow east of Zahrte Creek with hummocky topography; dominated by lake and tussock sedge, marsh fern, and sensitive fern with scattered <i>Spiraea</i> and purple-stem aster with few glossy buckthorn.	100, 101
			Reduced feature extent during 2016 field investigation at NW and E corners to exclude areas of high topography dominated by jack pine, hazelnut, and bracken fern. Slight extension to feature within DOT ROW to include additional sedge meadow wetland.	
N-W89	29, 30	137164	Large wetland complex extending outside of corridor consisting of sedge meadow, hardwood swamp, and bog communities. High quality sedge meadow with hummocky topography and areas of shallow inundation; dominated by tussock sedge with pockets of <i>Sphagnum</i> and leatherleaf, scattered white pine, <i>Spiraea</i> , and red maple seedlings with few glossy buckthorn. Sedge meadow/bog complex areas with tussock sedge hummocks, wool-grass, bluejoint common with <i>Sphagnum</i> , leatherleaf, and <i>Spiraea</i> scattered to common. Open bog areas with a nearly continuous mat of <i>Sphagnum</i> , few-seeded hop sedge dominant with scattered leatherleaf and <i>Spiraea</i> . Hardwood swamp pockets dominated by sedges, <i>Spiraea</i> , and cinnamon fern; white pine, red maple, bluejoint, and leatherleaf common; with scattered <i>Sphagnum</i> and skunk cabbage. There are a few areas of higher topography present within the wooded wetland that are dominated by white pine, early low blueberry, and huckleberry but with hydric soil.	
N-W89a	30	N/A	Isolated, linear, small sedge meadow within depressional area below highway slope. Dominated by tussock sedge; with marsh fern, iris, purple-stem aster, giant goldenrod, and white panicle aster common. Scattered common milkweed, Canada thistle, and glossy buckthorn.	105
			Feature added during 2016 field investigation.	
N-W90			Sedge meadow within DOT ROW dominated by tussock sedge, grass-leaved goldenrod, bluejoint, with scattered <i>Spiraea.</i>	
	30	N/A	Extended feature during 2016 field investigation to the NE to include depressional wet meadow lobe within mesic woodland area of non-DOT ROW. Wet meadow dominated by cinnamon fern with scattered bluejoint and leatherleaf. Red maple and white pine at edge of feature along and outside of wetland boundary.	106, 107

Wetland ID	EAP Map Page		Community Description / Observations	Photo Number
N-W91	31	137167	Feature consists of sedge meadow, bog, and hardwood swamp. Hardwood swamp at north end dominated by white pine and red maple in the canopy; cinnamon fern, bluejoint, and pockets of <i>Sphagnum</i> in the understory. Hummocks of tussock sedge present with shallow inundation between hummocks. Sedge meadow with hummocky topography and shallow inundation; dominated by tussock sedge with wool- grass, <i>Spiraea</i> , Fraser's marsh St. John's-wort, with a few broad-leaved cattail. Bog in NE portion of feature and extending off-ROW; dominated by few-seeded hop sedge, <i>Sphagnum</i> layer with open water areas, and leatherleaf common.	108, 109, 110
			white pine and cinnamon fern within a depressional area with evidence of ponding.	
N-W91a	31	N/A	Feature consists of sedge meadow and hardwood swamp. Hardwood swamp in non-DOT ROW dominated by white pine, red maple, cinnamon fern, and few jack pine. Hardwood swamp in DOT ROW dominated by white pine, jack pine, and red maple in the canopy; glossy buckthorn and quaking aspen saplings common; bluejoint and sensitive fern dominant in the herbaceous layer. Sedge meadow south of hardwood swamp in DOT ROW dominated by tussock sedge, bluejoint, sensitive fern, with a few willow and glossy buckthorn.	111, 112
			Feature added during 2016 field investigation.	
N-W92	31, 32	N/A	Feature consists of sedge meadow within DOT ROW and hardwood swamp in non-DOT ROW. Sedge meadow dominated by tussock sedge with white panicle aster common, scattered <i>Spiraea</i> , iris, marsh fern, sensitive fern; few reed canary grass and cottongrass present. Few glossy buckthorn, black oak, quaking aspen, and cinnamon fern at the edge. Hardwood swamp dominated by bluejoint, tussock sedge, leatherleaf and cinnamon fern; 40-60% cover by jack pine in the canopy; scattered <i>Spiraea</i> and glossy buckthorn.	113, 114
			Wetland community extended to north during 2016 field investigation to include hardwood swamp community in non-DOT ROW.	
N-W93	31, 32	137170	Hardwood swamp, wet meadow, and sedge meadow complex. Hardwood swamp with a red maple and white pine canopy over cinnamon fern and scattered sedges. Sedge meadow with well-defined hummocks of tussock sedge with steeplebush and marsh fern. Wet meadow within DOT ROW dominated by tussock sedge, steeplebush, marsh fern, sensitive fern, swamp dewberry, blue-flag iris, <i>Glyceria</i> sp., and giant goldenrod.	115, 116, 117

Wetland ID		Structures in Wetland	Community Description / Observations	Photo Number
N-W94	32, 33	137171, 137172, 137173	Large wetland complex comprised of hardwood swamp, shrub-carr, sedge meadow, and wet meadow communities. Hardwood swamp with a red maple and white pine canopy with scattered tamarack over cinnamon fern, skunk cabbage, and tamarack saplings. Shrub-carr with glossy buckthorn and tamarack saplings over tussock sedge, cinnamon fern, swamp dewberry, steeplebush, and sphagnum. Sedge meadow with well-defined hummocks of tussock sedge with cinnamon fern, steeplebush, and skunk cabbage. Wet meadow within DOT ROW dominated by giant goldenrod, cinnamon fern, sensitive fern, tussock sedge, elderberry, sparse reed canary grass, and scattered glossy buckthorn and speckled alder.	118, 119, 120, 121
N-W95	34, 35	137179, 137180	Hardwood swamp and shrub-carr complex with wet meadow predominant within cleared DOT ROW. Hardwood swamp with a white pine and red maple canopy, speckled alder in the shrub layer, and skunk cabbage, shining sedge, woolly-fruit sedge, sensitive fern, soft rush, and marsh fern common in the herb layer. Shrub-carr dominated by poison sumac with scattered tamarack, steeplebush, tussock sedge, lake sedge, and cinnamon fern over sphagnum. Wet meadow in DOT ROW dominated by woolly-fruited sedge, swamp dewberry, giant goldenrod, sensitive fern, and cinnamon fern.	122, 123, 124
N-W96	35	137181	Wet meadow in cleared DOT ROW dominated by woolly-fruit sedge, swamp dewberry, steeplebush, sensitive fern, marsh fern, cinnamon fern, royal fern, shining sedge, giant goldenrod, with scattered speckled alder along fenceline. Extends into hardwood swamp beyond fenceline with a white pine and red maple canopy over cinnamon fern, skunk cabbage, and sphagnum.	125
N-W97	35, 36	N/A	Wet meadow, alder thicket, and hardwood swamp complex. Wet meadow within DOT ROW dominated by woolly-fruit sedge, giant goldenrod, swamp dewberry, sensitive fern, steeplebush, and scattered speckled alder and quaking aspen. Alder thicket present along DOT fenceline with speckled alder over skunk cabbage, cinnamon fern, woolly- fruit sedge, giant goldenrod, swamp dewberry, and sensitive fern. Hardwood swamp beyond DOT fenceline with a red maple and white pine canopy over cinnamon fern, skunk cabbage, marsh fern, and scattered sedges. Extended feature during 2016 field investigations to include additional area of wet meadow and hardwood swamp.	126, 127, 128

Wetland ID	EAP Map Page		Community Description / Observations	Photo Number
N-W98	39, 40	137196	Shrub-carr, degraded wet meadow, and shallow marsh wetland complex associated with waterway N-R42b. Shrub-carr with red maple, box elder, and elderberry over reed canary grass, lake sedge, skunk cabbage, giant goldenrod, interrupted fern, jewelweed, and sensitive fern. Degraded wet meadow dominated by reed canary grass, jewelweed, giant goldenrod, and sensitive fern. Small areas of shallow marsh dominated by narrow-leaved cattail.	129, 130
N-W99	40	N/A	Shallow marsh dominated by narrow-leaved cattail with a fringe of cinnamon fern, sensitive fern, and lake sedge.	131
N-W100	40	N/A	Feature within highway interchange comprised predominantly of degraded wet meadow dominated by reed canary grass surrounding shallow marsh dominated by narrow-leaved cattail and associated with waterway N-R42a.	132
N-W101	43	N/A	Degraded wet meadow associated with a seepage area along the highway embankment and ditch/culvert at toe of slope. Recent highway construction has modified vegetative cover resulting in dominance by rye cover crop; however hydrology appears intact based on seepage from sideslope. Lower reaches not impacted by construction dominated by reed canary grass and red-top, scattered cattail and soft rush, Canada thistle and sweet clover common along wetland edges.	133
N-W101a	43	N/A	Feature consists of a degraded wet meadow community within a depressional area below a steep highway embankment; feature extends off-ROW. Giant goldenrod and soft rush abundant, dark-green bulrush and reed canary grass common.	134
			Feature added during 2016 field investigation.	
N-W102	47	N/A	Degraded wet meadow along roadway dominated by reed canary grass with skunk cabbage, cinnamon fern, sensitive fern with winterberry at edges extending into area of hardwood swamp with a white oak, white pine, and red maple canopy over winterberry, cinnamon fern, sensitive fern, interrupted fern and shining sedge. Hardwood swamp with approximately 20-30% of area with shallow rises dominated by more typical upland species including Canada mayflower, bracken fern, starflower, and partridgeberry.	135, 136
			Feature extended during 2016 field investigations to include area of hardwood swamp not accessible during original field surveys.	
N-W103	47, 48	137222	Hardwood swamp beyond DOT ROW dominated by American elm, swamp white oak, white pine, and common buckthorn over reed canary grass, sensitive fern, marsh fern, giant goldenrod, and cinnamon fern. Degraded wet meadow within DOT ROW dominated by reed canary grass, sensitive fern, giant goldenrod, soft rush, skunk cabbage, and sparse Canada thistle.	137, 138
N-W104	48, 49	137226	Degraded wet meadow dominated by reed canary grass with some lake sedge, prairie cordgrass, and tussock sedge.	- 139
			Feature reduced during 2016 field investigations to exclude area of high topography dominated by smooth brome, orange hawkweed, and Canada goldenrod.	

Wetland ID	EAP Map Page		Community Description / Observations	Photo Number
N-W105	49	N/A	Depressional degraded wet meadow associated with highway culvert and agricultural swale dominated by reed canary grass with giant goldenrod, giant ragweed, Canada thistle, and fox sedge.	140
N-W106	52, 53	137236, 137237, 137238	Large wetland complex comprised of hardwood swamp, shrub-carr, wet meadow, and degraded wet meadow. Hardwood swamp with a canopy of red maple, American elm, swamp white oak, and white pine over a glossy buckthorn dominated shrub layer with cinnamon fern, shining sedge, skunk cabbage, sensitive fern, royal fern, and sparse reed canary grass. Shrub-carr components dominated by glossy buckthorn with scattered swamp white oak, white pine, red maple, and honeysuckle shrubs over cinnamon fern, sensitive fern, reed canary grass, skunk cabbage, soft rush, giant goldenrod, and tussock sedge. Degraded wet meadow dominated by reed canary grass, giant goldenrod, sensitive fern, and Canada thistle. Small area of higher quality degraded wet meadow near south end of feature dominated by sensitive fern, giant goldenrod, bluejoint, woolly-fruit sedge, skunk cabbage, soft rush, and sparse reed canary grass.	141, 142, 143
N-W107	53	137241	Shallow marsh depression dominated by narrow-leaved cattail and reed canary grass.	144
N-W108	53, 54	N/A	Shallow marsh dominated by narrow-leaved cattail with some reed canary grass and jewelweed.	145
N-W109	54	137243	Shallow marsh within linear depression between highway embankment and frontage road; dominated by narrow-leaved cattail, reed canary grass, giant goldenrod, and scattered glossy buckthorn shrubs.	146

Badger Coulee 345 kV Transmission Line Project

Segment 6 CMP

Appendix C

Photographs of Wetlands and Waterways

Wetland Photographs



Photo 01. N-W52 HS; vW. June 2016



Photo 02. N-W52a DWM; vSE. June 2016



Photo 03. N-W53 ShM with SC fringe; vS. June 2016



Photo 04. N-W54 DWM; vNW. June 2016



Photo 05. N-W55 DWM; vSE. June 2016



Photo 06. N-W56 DWM, SC; vSE. June 2016



Photo 07. N-W56 ShM; vNW. June 2016



Photo 08. N-W56a DWM, SC; vNW. June 2016



Photo 09. N-W56b SC; vNW. June 2016



Photo 10. N-W57 SC; vW. June 2016



Photo 11. N-W57a HS; vNE. June 2016



Photo 12. N-W57b HS seepage along N-R34; vE. Sept 2016



Photo 13. N-W57c WM with drainge feature along old RR bed; vN. Sept 2016



Photo 14. N-W58 DWM; vS. July 2016



Photo 15. N-W58 SC; vNW. July 2016



Photo 16. N-W59 DWM; vW. July 2016



Photo 18. N-W60 DWM; vSE. July 2016



Photo 19. N-W60 SC; vSE. July 2016



Photo 20. N-W61 SC; vE. July 2016



Photo 21. N-W61 WM; vSW. July 2016



Photo 22. N-W61 DWM; vN. July 2016



Photo 23. N-W61a SC; vSE. July 2016



Photo 24. N-W63 SC, DWM; vN. July 2016



Photo 25. N-W64 HS; vNW. July 2016



Photo 26. N-W64 SC; vE. July 2016



Photo 27. N-W64 DWM; vE. July 2016



Photo 28. N-W64 extensive SM; vN. July 2016



Photo 29. N-W64 SM pocket at E end of feature; vNW. July 2016



Photo 30. N-W65 ShM; vS. July 2016



Photo 31. N-W65 SM; vSW. July 2016



Photo 32. N-W65 SC, HS from E end of feature; vW. July 2016



Photo 33. N-W66 SM and SC; vE. July 2016



Photo 34. N-W66 HS; vN. July 2016



Photo 35. N-W67 SM; vSE. July 2016



Photo 36. N-W67 SC; vSE. July 2016



Photo 37. N-W68 SC; vSE. July 2016



Photo 38. Representative HS within N-W68, W68a, W68b; vSE. July 2016



Photo 39. N-W68 SM; vNW. July 2016



Photo 40. N-W68a SM; vSE. July 2016



Photo 41. N-W68b HS; vE. July 2016



Photo 42. N-W68b SC; vNW. July 2016



Photo 43. N-W68b bog; vSE. July 2016



Photo 44. N-W68b SM; vSE. July 2016



Photo 45. N-W68c bog; vSE. July 2016



Photo 46. N-W68c SC; vN. July 2016



Photo 47. N-W69; SM at NW end of feature; vNE. July 2016



Photo 48. N-W69 HS; view N. July 2016



Photo 49. N-W69 SC of dense glossy buckthorn W of N-R36; view E. July 2016



Photo 50. N-W69 SC E of N-R36; vNE. July 2016



Photo 51. N-W70 typical SM in DOT ROW; vSE. July 2016



Photo 52. N-W70 typical HS; vN. July 2016



Photo 53. N-W70 extensive SM near center of feature; vE. July 2016



Photo 54. N-W70 WM at E end of feature; vNW. July 2016



Photo 55. N-W71 HS; vW. July 2016



Photo 56. N-W72 WM; vE. July 2016



Photo 57. N-W72 SM; vW. July 2016



Photo 58. N-W72 HS; vW. July 2016



Photo 59. N-W73a HS; vE. July 2016



Photo 60. N-W74 WM; vSE. June 2016



Photo 61. N-W74 HS W of N-R37; vNW. June 2016



Photo 62. N-W74 HS E of N-R37; vN. June 2016



Photo 63. N-W74 SC; vSE. June 2016



Photo 64. N-W74 SM in DOT ROW; vNE. June 2016



Photo 65. N-W74 SM beyond DOT ROW; vNW. June 2016



Photo 66. N-W75 SM at W end of feature; vNE. June 2016



Photo 67. N-W75 SC; vNE. June 2016



Photo 68. N-W75 HS; v W. June 2016



Photo 69. N-W75 SM at E end of feature; vNE. June 2016



Photo 70. N-W75 SC at E end of feature; vE. June 2016



Photo 71. N-W77 SC in DOT ROW; vNE. June 2016



Photo 72. N-W77 HS beyond DOT ROW; vE. June 2016



Photo 73. N-W78 HS; vSE. June 2016



Photo 74. N-W78 SC; vS. June 2016



Photo 75. N-W79 WM; vS. June 2016



Photo 76. N-W79 ShM; vSE. June 2016



Photo 77. N-W79 SC; vE. June 2016



Photo 78. N-W79 DWM vS. June 2016



Photo 79. N-W79a ShM; vNW. June 2016



Photo 80. N-W80 WM; vSE. June 2016





Photo 83. N-W81 SM; vSE. June 2016



Photo 84. N-W81 WM; vNW. June 2016



Photo 85. N-W81 HS; vSE. June 2016



Photo 86. N-W82 AT; vW. June 2016



Photo 87. N-W82 HS; vN. June 2016



Photo 88. N-W82 SM in DOT ROW; vNW. June 2016



Photo 89. N-W82 SM with standing water; vSE. June 2016



Photo 90. N-W83 SM, AT; vNE. June 2016



Photo 91. N-W83 bog; vNE. June 2016



Photo 92. N-W83 SM in DOT ROW; vSE. June 2016



Photo 93. N-W84 SM in DOT ROW; vSE. June 2016



Photo 94. N-W84 SC N of DOT ROW; VNE. June 2016



Photo 95. N-W85 SM; vE. June 2016



Photo 96. N-W86 SM, AT; vSE. June 2016



Photo 97. N-W86a HS; vNE. June 2016



Photo 98. N-W86b SM; vSE. June 2016



Photo 99. N-W87, N-W87a SM; vN. June 2016



Photo 100. N-W88 AT; vN. June 2016



Photo 103. N-W89 HS; vE. June 2016

Photo 104. N-W89 bog; vNW. June 2016



Photo 105. N-W89a SM; vNW. June 2016



Photo 106. N-W90 SM; vNW. June 2016



Photo 107. N-W90 HS; vE. June 2016



Photo 108. N-W91 SM; vNW. June 2016



Photo 109. N-W91 bog; vNW. June 2016



Photo 111. N-W91a HS; vE. June 2016



Photo 110. N-W91 HS; vW. June 2016



Photo 112. N-W91a SM, HS transition within DOT ROW; vE. June 2016



Photo 113. N-W92 SM; vSE. June 2016



Photo 114. N-W92 HS; vNE. June 2016



Photo 115. N-W93 HS; vN. June 2016



Photo 116. N-W93 WM; vW. June 2016



Photo 120. N-W94 HS; vN. June 2016

Photo 119. N-W94 SM; vN. June 2016



Photo 123. N-W95 SC; vN. June 2016

Photo 124. N-W95 HS in DOT ROW; vW. June 2016



Photo 125. N-W96 WM; vW. June 2016



Photo 126. N-W97 HS; vN. June 2016



Photo 127. N-W97 AT at fenceline with HS beyond; vNE. June 2016



Photo 128. N-W97 WM; vW. June 2016



Photo 129. N-W98 DWM, ShM; vNE. June 2016



Photo 130. N-W98 SC; vE. June 2016



Photo 131. N-W99 ShM; vNE. June 2016



Photo 132. N-W100 DWM, ShM; vNE. June 2016



Photo 133. N-W101 DWM N end; vS. June 2016



Photo 134. N-W101a DWM; vS. June 2016



Photo 135. N-W102 HS; vS. June 2016



Photo 136. N-W102 DWM; vW. June 2016



Photo 137. N-W103 DWM; vN. June 2016



Photo 138. N-W103 HS; vE. June 2016



Photo 139. N-W104 DWM; vNE. June 2016



Photo 140. N-W105 DWM; vN. June 2016



Photo 141. N-W106 SC; vE. June 2016



Photo 142. N-W106 HS; vNE. June 2016



Photo 143. N-W106 DWM; vE. June 2016



Photo 144. N-W107 ShM; vW. June 2016



Photo 145. N-W108 ShM; vW. June 2016



Photo 146. N-W109 ShM; vW. June 2016

Waterway Photographs



Photo 01. N-R32; vS. June 2016



Photo 02. N-R33; vSE from west bank. June 2016



Photo 03. N-R33; vNW from east bank. June 2016



Photo 04. N-R34; vNE. June 2016



Photo 05. N-R35; vE. July 2016



Photo 06. N-R36; vNE. July 2016



Photo 07. N-R37; vN. June 2016



Photo 08. N-R38; vN. June 2016



Photo 09. N-R39; vNE. June 2016



Photo 10. N-R40; vE. June 2016



Photo 11. N-R41; vE. June 2016



Photo 12. N-R42; vN. June 2016



Photo 13. N-R42b; vNW. June 2016



Photo 14. N-R42a; vE. June 2016



Photo 15. N-R44; vW, June 2016



Photo 16. N-R45; vN. June 2016

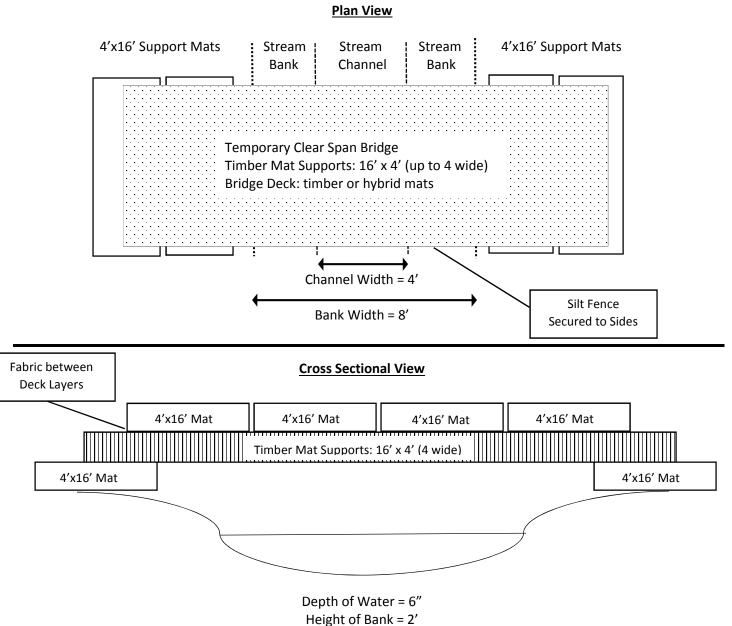
Badger Coulee 345 kV Transmission Line Project

Segment 6 CMP

Appendix D

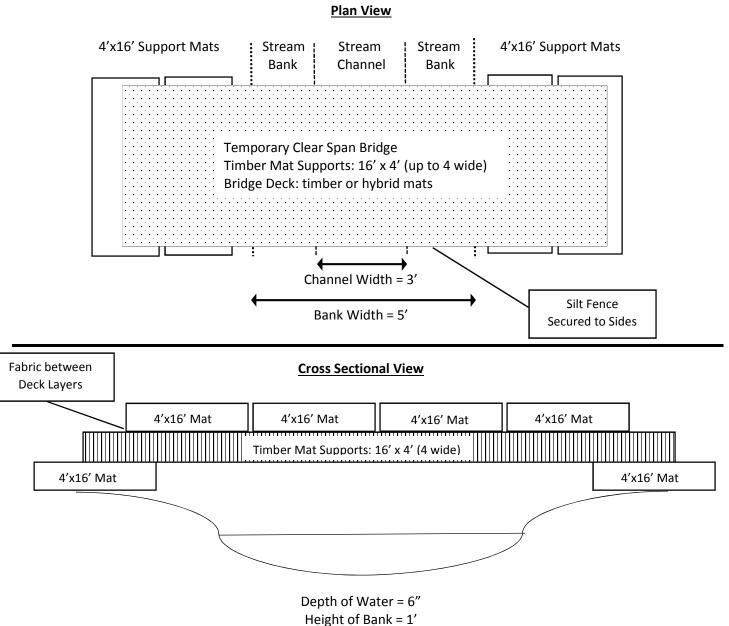
TCSB Plan and Profile Figures

Segment: 6 Waterway: N-R34 Nearest Structure: 137082



- Drawings are not to scale
- TCSB will be secured to a fixed anchor
- Sediment Controls: Silt fence shall be attached to the bridge sides and fabric laid between the deck layers.

Segment: 6 Waterway: N-R35 Nearest Structure: 137093

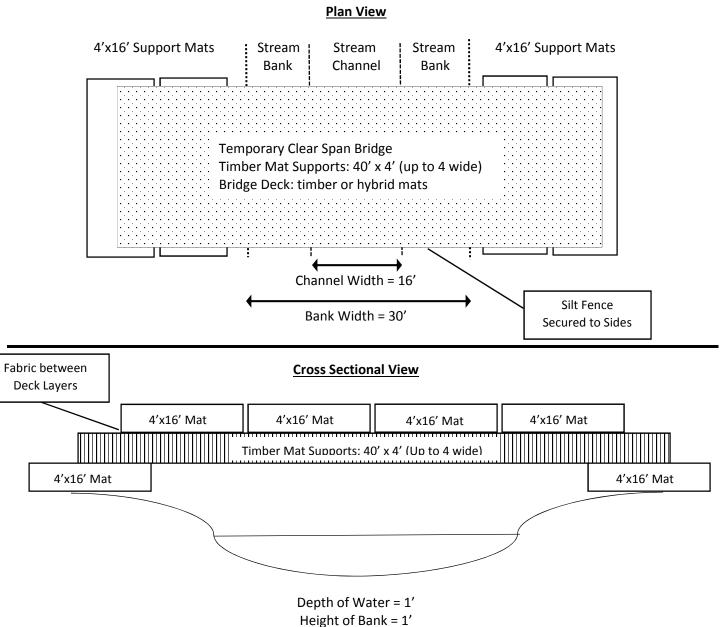


- Drawings are not to scale
- TCSB will be secured to a fixed anchor
- Sediment Controls: Silt fence shall be attached to the bridge sides and fabric laid between the deck layers.

Segment: 6 Waterway: N-R37 Nearest Structure: 137121 <u>Plan View</u> 4'x16' Support Mats 4'x16' Support Mats Stream Stream Stream Bank Channel Bank Temporary Clear Span Bridge Timber Mat Supports: 40' x 4' (Up to 4 wide) Bridge Deck: 4' x 16' Mats Channel Width = 6' Silt Fence Span Width = 28' Secured to Sides Fabric between **Cross Sectional View** Deck Layers 4'x16' Mat 4'x16' Mat 4'x16' Mat 4'x16' Mat Timber Mat Supports: 40' x 4' (Up to 4 4'x16' Mat 4'x16' Mat Depth of Water = 1' Height of Bank = 9"

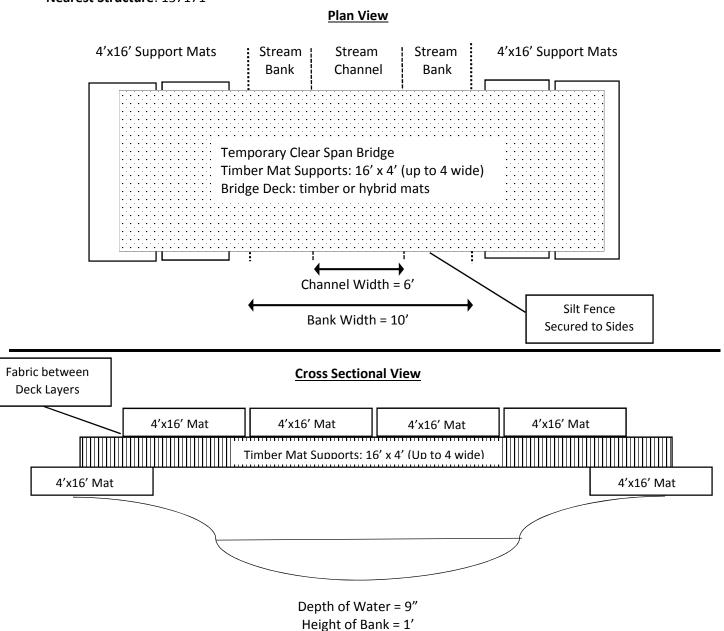
- Drawings are not to scale
- TCSB will be secured to a fixed anchor
- Sediment Controls: Silt fence shall be attached to the bridge sides and fabric laid between the deck layers.

Segment: 6 Waterway: N-R41 Nearest Structure: 137162



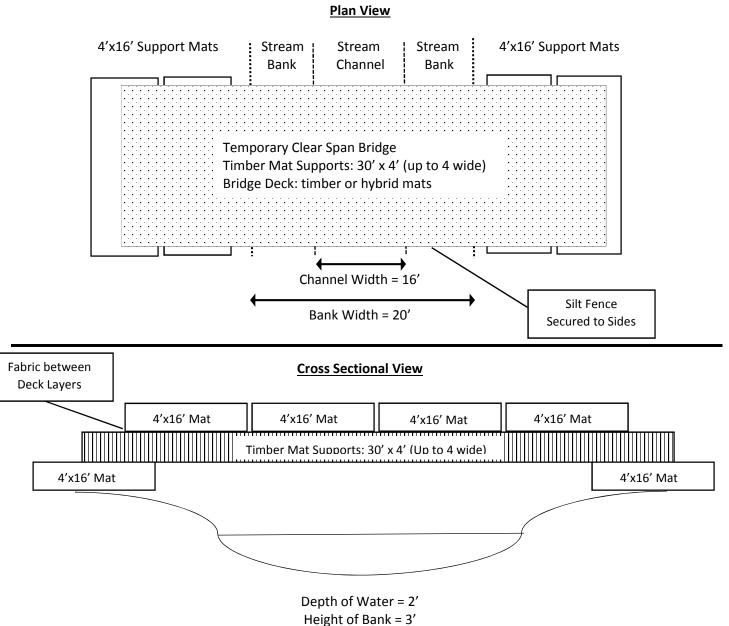
- Drawings are not to scale
- TCSB will be secured to a fixed anchor
- Sediment Controls: Silt fence shall be attached to the bridge sides and fabric laid between the deck layers.

Segment: 6 Waterway: N-R42 Nearest Structure: 137171



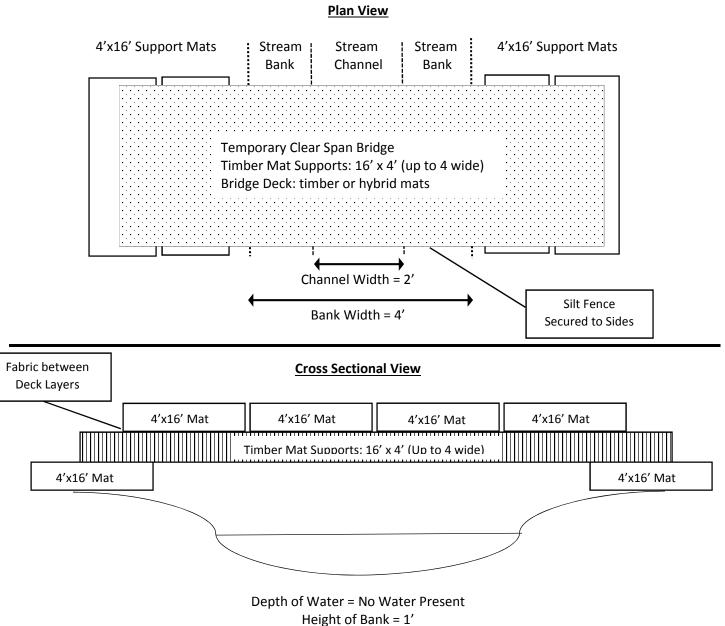
- Drawings are not to scale
- TCSB will be secured to a fixed anchor
- Sediment Controls: Silt fence shall be attached to the bridge sides and fabric laid between the deck layers.

Segment: 6 Waterway: N-R44 Nearest Structure: 137226



- Drawings are not to scale
- TCSB will be secured to a fixed anchor
- Sediment Controls: Silt fence shall be attached to the bridge sides and fabric laid between the deck layers.

Segment: 6 Waterway: N-R45 Nearest Structure: 137238



- Drawings are not to scale
- TCSB will be secured to a fixed anchor
- Sediment Controls: Silt fence shall be attached to the bridge sides and fabric laid between the deck layers.

Badger Coulee 345 kV Transmission Line Project

Segment 6 CMP

Appendix E

Photographs of Waterways Requiring a Navigability Decision



Photo 01. Feature W of STR 137073; view NE. Aug 2016



Photo 02. Feature SE of STR 137083 - drainage E of old RR; vSW. June 2016



Photo 03. Feature W of STR 137097; vN. July 2016



Photo 04. Feature E of STR 137135; vN. June 2016



Photo 05. Feature E of STR 137160; vS. June 2016



Photo 06. Ditch along off-ROW access to STR 137187; vN. Sept 2016



Photo 07. Ditch along off-ROW access to STR 137187; vN from S of RR. Sept 2016



Photo 08. Feature E of STR 137190; vSW. June 2016



Photo 09. Feature E of STR 137197; vSE. June 2016



Photo 10. Feature N of STR 137201; vE from DOT culvert. June 2016



Photo 11. Feature N of STR 137201; vN within DOT ROW. June 2016



Photo 12. Feature S of STR 137207; vS. June 2016



Photo 13. Feature S of STR 137213; vNE. June 2016



Photo 14. Feature S of STR 137232; vE. June 2016



Photo 15. Feature crossed by off-ROW access SE of STR 137232; vW. Sept 2016

Badger Coulee 345 kV Transmission Line Project

Segment 6 CMP

Appendix F

Approved Waivers of Seasonal Limitations for TCSBs



MAILING ADDRESS: P.O. BOX 47 • WAUKESHA, WI 53187-0047 STREET ADDRESS: N234 W2000 RIDGEVIEW PARKWAY COURT • WAUKESHA, WI 53188-1022 262-506-6700 • Toll Free: 866-899-3204 • Fax: 262-506-6124 • www.atcllc.com

January 11, 2017

Mr. Dan Hatleli Fisheries Biologist – Jackson County Wisconsin Dept. of Natural Resources 910 Highway 54 E Black River Falls, WI 54615

RE: Request for Seasonal Waivers – Temporary Bridge Construction Badger Coulee 345 kV Transmission Line Project, Segment 6 Utility Permit #IP-WC/SC-2015-N20001through N20273

Dear Mr. Hatleli:

American Transmission Company LLC, by its corporate manager, ATC Management Inc. (ATC); Dairyland Power Cooperative (DPC); Northern States Power Company, a Wisconsin corporation (NSPW); SMMPA Wisconsin, LLC (SMMPA Wisconsin), and WPPI Energy (WPPI) (the Applicants) respectfully requests your review and consideration of granting waivers for the seasonal restrictions normally associated with construction and removal of five temporary clear span bridges (TCSB) along Segment 6 of the Badger Coulee 345 kV Transmission Line Project. Completed Waiver Request Forms are attached for your convenience.

Construction activities along Segment 6 of this project are preliminarily scheduled to begin in March 2017 and extend through approximately June 2018. Restoration will follow during the 2018 summer months, and the bridges will be removed once restoration is complete. During this time, the Applicant's contractor will need to construct and utilize five TCSBs within Jackson County as outlined in Table 1.

All of these TCSBs have received a Ch. 30 permit from the Department. Characteristics of these waterways are listed in Table 1 and their locations are indicated on the attached figure. Photographs of each feature are also attached. Waterway N-R35 (Coffee Creek) is designated as a Class 1 trout stream while the remaining features are classified as warm water streams.

Seasonal waivers are being requested to reduce limitations on the contractor and maximize flexibility so the contractor will be able to adequately address construction limitations in the most sensitive areas of the project.

Should you have questions or concerns, please feel free to contact me at (262) 506-6788.

Sincerely,

Navo Parrett

Sr. Environmental Project Manager

Enclosures Cc: Ben Callan

Helping to keep the lights on, businesses running and communities strong[™]

Table 1. Waterways in Jackson County For Which a Waiver of Seasonal Restrictions is RequestedSegment 6 - Badger Coulee 345 kV Tranmission Line Project

	Stream Designation	Waterway (<u>UnN</u> amed <u>T</u> ributary)	Appears on WDNR 24K hydro layer? (Y/N)	Location						Morphometry
Permit #IP- WC/SC-2015-				County	Town	T / R	QQ	Q	Sect.	
20068	N-R34	UNT to Black River	Ν	Jackson	City of Black River Falls	21N / 4W	NW	NE	14	water depth = 0.5 ft bank height = 2 ft top of bank width = 8 ft
20073	N-R35	Coffee Creek	Y	Jackson	Brockway	21N / 4W	NW	SE	24	water depth = 0.5 ft bank height = 1 ft top of bank width = 5 ft
20081	N-R37	UNT to Perry Creek	Ν	Jackson	Manchester	20N / 3W	NW	NW	3	water depth = 0.75 ft bank height = 1 ft top of bank width = 28 ft
20090	N-R41	Zahrte Creek	Y	Jackson	Millston	20N / 2W	SE	NE	28	water depth = 1 ft bank height = 1 ft top of bank width = 30 ft
20095	N-R42	Rudd Creek	Y	Jackson	Millston	20N / 2W	SW	NW	35	water depth = 0.75 ft bank height = 1 ft top of bank width = 10 ft